Environmental, Health & Safety Management System Manual

LG/EHS/M/01

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DOCUMENT RELEASE AUTHORISATION

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(Appropriate status to be highlighted)

History of Revisions

Revision No.	Issue Date	Chapter/clause no. & text affected	Reason for revision
00	24.06.2011	New	First Issue
01	10.11.2012	Chapter 1.4	Updated revised EHS Policy
		Chapter 1.7	Updated EHS Organization, Structure
		Chapter 2	Incorporated EHS procedure for OHSMS Elements in line with OHSAS 18001:2007 requirements
		Chapter 15	Updated work instruction in line with OHSAS 18001:2007 requirements
		Chapter 24	Updated Operational control procedure in line with OHSAS 18001:2007 requirements
		Chapter 25	Updated EHS formats
			Updated signatories

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DISTRIBUTION LIST

Sr. No.	Department Head	Location	Department
1	Abhisheck Lodha	Corporate Office	Managing Director
2	Kishore Tidke	Corporate Office	Chief Operating Officer
3	Rajmohan Kaimal	Corporate Office	EHS Head
4	Jimmy Gandy	Corporate Office	Procurement
5	Tikam Jain	Corporate Office	Contracts
6	Shyam Sunder	Corporate Office	Purchase
7	Shaleen Madan	Corporate Office	HRRM
8	Mahesh Bhudia	Lodha Place	Construction Management
9	Vijay Chugh	New Cuffe Parade	Construction Management

INTRODUCTION

1.1 Purpose

The purpose of this EH&S Manual is to provide the employees & contractors a single source of reference of project requirements to manage and control Environment, Health & Safety aspects at all of the Lodha projects. It is designed to enable those involved to enjoy an Environment Friendly and Incident & Injury Free workplace.

This manual is not an alternative to ensuring legislative compliance and all parties involved in Lodha projects are to ensure compliance with the specific legislative obligations associated with their activities. Nothing contained in this manual is intended to relieve any contractor or supplier of the obligations assumed by the contractors under this contract with the authority or required by law. This manual is intended as a tool to ensure compliance with those requirements to make workplace free of hazards. The requirements given herein shall not relieve the contractor from complying with all national, local or other contractual requirements. Safety must be an integral part of each job. Full participation, coordination and support are necessary and required to ensure the safety and health of all person and property involved in the project.

This Manual depicts the Environment Health & Safety Management System of Lodha Group for the scope approved by the Managing Director and issued as a Controlled Copy by the Head - EHS. Head of EHS Department shall issue this Manual to the Key Functionaries as mentioned in the Distribution List on a controlled manner. Any changes / amendments to any portion of this Manual, if becoming necessary, then amendments may be initiated by the respective Key Functionaries / Department Head who shall justify the necessity and the need to amendments in his proposal for amendments as per document control procedure.

The Head- EHS and the respective PM / HOD for need, justification and also for the adequacy in meeting the requirements of ISO 14001: 2004 & OHSAS 18001:2007 shall review such a proposal jointly. The changes / amendments that are to be made as a result of the review, the same shall be submitted to the Head - EHS for approval. If the approval is accorded, the Manual is amended accordingly. Changes shall be identified in the first page of that particular chapter, then the obsolete chapter (s) shall be removed and the revised chapter(s) will be put in the EHS Manual and shall be issued by Head - EHS.

1.2 Company Profile

Established in 1980, Lodha Group is a premier real estate developer headquartered in Mumbai. The Group is currently developing in in Mumbai, Thane, Pune and Hyderabad making it one of the largest developers in the country. The group is now expanding into Western and Southern India. In addition, it works with leading financial Institutions, designers and product manufacturers to bring together the most premium offerings for its customers.

The Group focuses on development of residences and office spaces in various formats including standalone projects, IT campuses, weekend retreats and townships. From luxury garden residences in South Mumbai to large integrated townships in the suburbs, the group caters to diverse consumer needs across all segments. The Group currently employs over 3000 professionals. With a vision to build better lives, Lodha exceeds the expectations of customers through innovative, world-class solutions, thereby creating value and at the most opportune moment. The Lodha Group seeks to build a Better Life for its customers by leveraging its core strengths – the 5 Ls of Leadership, Luxury, Lifestyle, Location and Legacy - to create landmarks of exemplary quality and design that conform to the highest standards of international living

GENERAL DATA:

Registered name : Lodha Developers Limited
Form of company : Public Limited Co. (Listed)
Registered address : Lodha Excellus, 14th floor, Apollo Mills Compound, NM Joshi Marg,
Mahalaxmi, Mumbai – 400 011.
Office address : Same as above
Phone : +91-22-2302 4400 / +91-22-2300 0693 (Fax)
Web Site : www.lodhagroup.com

1.3 GENERAL REQUIREMENT

The organization has established and implemented an EHS Management System and will continue and maintain the same in conformity with internal requirements and in line with ISO 14001:2004 & OHSAS 18001:2007. All employees are expected to be involved in the Environment Health and Safety Management System and be responsible for EHS improvements.

EHS Management System is developed so as to integrate it with other Management Systems of the Organization. This EHS Management System established in the organization will be documented and categorized into four levels.

Level	Name of Document	Link Reference
I	Apex Manual	OHSAS 18001:2007
II	EHSMS Manual -Procedures, Operational Control Procedures / Guidelines & Work Instructions Formats.	OHSAS 18001:2007

1.3.1 Scope and application of the EHS Management System.

1.3.1.1 The EHS Management System, implemented to meet the internal commitment of continual improvement to EHS MS in line with requirements of ISO 14001:2004 & OHSAS 18001: 2007, that:

a) Demonstrates the ability to consistently provide concern intended for Environment Health and Safety of its employees and the others (sub-contractors, visitors, etc) involved in its activities, and to meet all legal requirements and international specifications.
b) .Aims to enhance present EHS practices at all its ongoing projects within the scope of EHS Management System and at Head Office to satisfactory perform through effective application of the EHS Management System, including the processes for the continual improvement of system and the assurance of conformity to objectives set.

1.3.1.2.1 Conformity to the specification is integrated entirely and no exclusions contemplated.

The system is implemented in all the functions related to the EHS Management System of the ongoing projects within the scope of this system & Head Office. Where Lodha is operating alone, or with alliance, when Lodha is the leading organization, will have the responsibility of EHS Management System.

1.4 EHS Policy & Objectives

The Policy will be made known to all employees and others involved with Lodha Group activities through display at conspicuous locations at site and through discussions within the departments. The concerned Project Manager will make the policy available to the others on request.

1.4.1 EHS Policy

Please refer in Attachment

1.4.2 ENVIRONMENT HEALTH & SAFETY OBJECTIVES

In order to meet the requirements of the Safety Policy the following objectives have been set.

1. Minimize risk to our employees, contractors, customers and other interested parties who may be exposed to EHS risks associated with our activities.
2. Continual improvement of the EHS Management System.
3. Restricting the frequency of all accidents and incidents and minimize the days lost.
4. Train and retrain the Site Personnel for enhancing their competence and expertise.
5. Implement use of Personal Protective Equipment (PPE) and improve safety culture.

6. .Integrate EHS with other business processes.
7. Promoting good practice in our industry to ensure process inbuilt safety.
8. Updating our emergency preparedness by organizing mock drills as per emergency plan.

1.5 Abbreviations & Definitions

Abbreviation Description

CM	Construction Management
DC	Design Coordinator
EHS	Environment, Health & Safety
ERT	Emergency Response Team
EHS - MR	EHS - Minimum Requirement
IIF	Incident & Injury Free
KPI	Key Performance Index
PI	Project Incharge
PM	Project Manager
DPM	Dy. Project Manager
PPE	Personal Protection Equipment
Project Team	Any Parties involved in Lodha project which include suppliers and contractors of design and construction.
R.O.A.D.	Risk and Opportunity at Design
Safety Communication	A safety memo issued on an as-required basis to the Project Team for update of site safety issues or procedures.
SWMS	Safe Work Method Statement
SWP	Safe Work Procedures

Definitions

Definitions

Class of Risk Severity

H	Potential Death, Permanent Disability or Major Structural Damage or Potential incident resulting in permanent or significant detrimental impact on environmental elements (naturalor built).
M	Potential Temporary Disability or Minor Structural Damage or Potential incident impacting on environmental elements (natural or built) that can be contained and remedied to acceptable conditions with no long-term effect.
L	Potential incident which has the potential to cause minor damage to the environment or persons that would require first aid.

Safety:

The condition or state of being safe; freedom from danger or hazard; exemption from hurt, injury, or loss.

Competent Person :

One who is capable of identifying existing and predictable hazards in the surroundings of working conditions which are unsanitary, hazardous or dangerous to employees and who has authorization to take proper corrective measures to eliminate these conditions.

Consultants :

Any individual, partnership, corporation or other business entity utilized by the authority as an independent contractor to provide engineering, design, construction management, technical support, testing or other related services.

Contract :

The written agreement by and between the authority and a contractor.

Contractor :

An individual, firm, partnership or corporation undertaking a project through one or more contractors within the authority, program manager or a tenant, performing work at job site located or either of the projects.

Contractor Project Manager :

The contractors senior management employee for a given project or task who has the overall responsibility to see that the work or job is satisfactorily and safely completed.

Contractor Safety In charge :

A full time on-site safety professional hired by the contractor to manage only the safety efforts. The person must be familiar with the type of work to be performed under the contract and have no other duties. The requirements contained herein are in addition to any other requirements contained in the contract documents.

Public Area :

Area which is accessible to general public without requiring issuance of badges or ID proofs from the contractor.

Sterile Area :

Area which is accessible to public only after processing through security points and possessing badges or ID proof and are inducted on safety.

1.6 Management System Planning

1.6.1 Planning for Hazard Identification, Risk assessment and Risk control.

The management of EHS will incorporate a system for hazard identification, risk assessment and risk ontrol measures at construction sites through “five steps to risk assessment system” methods. The five steps system consist of –

1. Identify Hazard - Identifying hazards, which could cause harm.
2. Assessing the risk out of identified hazard (H- High, M- Medium, L-Low risk) and finding out significant risks by risk grading system as per ‘EHS Apex Manual’.
3. Risk control- Deciding on suitable measures to eliminate or control risk.
4. Implementing & Maintaining risk control measures; &
5. Monitoring and reviewing the effectiveness of control measures.

The system will be applicable to the organization’s construction sites considering

a. Routine and non-routine activities carried out by persons at construction sites, to minimize risks and accidents. (Including those of sub-contractors and visitors).
b. Facilities will be made available at company’s construction sites to control risks efficiently for which reasonable measures will be undertaken.
c. Training and retraining to all those involved in organization’s construction activities for identifying hazards, risk assessment & risk control involved with their activities prior to commencement of work. Risk assessment will be in the form of safe work method statement – SWMS as detailed in Clause 5 of this manual.
d. .The risk control measures will be effective like a barometer for monitoring safety activities, project execution procedures, housekeeping, testing of plant and equipment, occupational health surveys and internal and external audits.

The hazards related to identify with significant risks would be considered for setting the safety objectives for the organization.

1.6.2 Legal & Other Requirements:

The EHS cell along with legal and HR department will identify the EHS related statutory requirements and work towards its compliances. The compliance will be maintained in the form of ROR (Register of Regulations) and will be made available for reference.

a. The legal documents will be updated as and when required for including the amendments or new legal requirements applicable to the organization. While updating the documents help will be sought from government agencies, Bureau of Indian Standards and other institutions associated with construction industry.
b. The documents will be available for reference to anyone who is associated with this organization. The legal requirements will be communicated to concerned employees, contractors and vendors for compliance.

1.6.3 EHS Management Program(s):

EHS Management Programs will be established for achieving the set objectives. This EHS Management Program will include responsibility of individual and authority for establishing and achieving the set objectives, the time bound scale and financial and human resources required will be provided. It will also identify various harmful tasks (activities), which will be scrutinized for proper risks control measures.

The environmental pollution reduction, frequency rate reduction and occupational illness will be controlled through risks control. As per the relevant legal requirement Health surveillance will be carried out at project sites to:

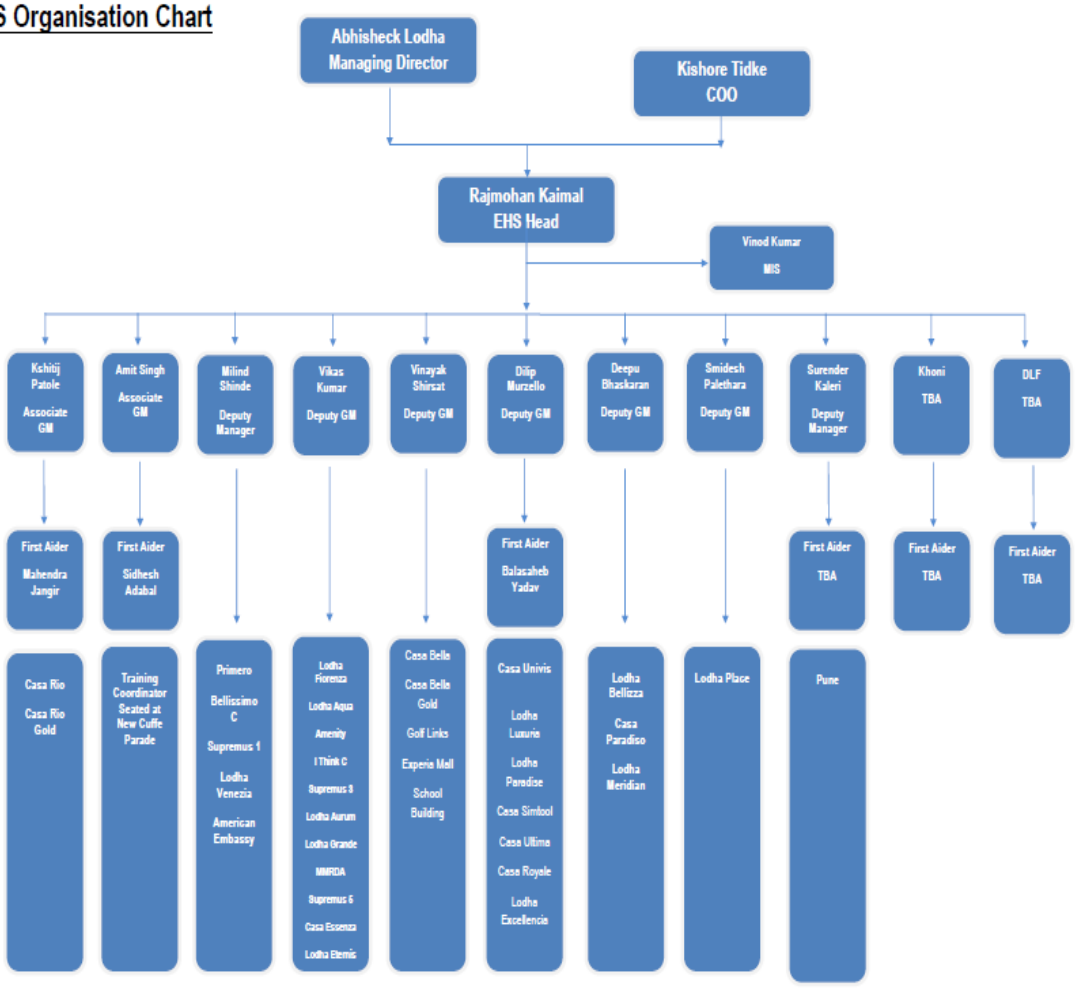
1. Check the effectiveness of control measures;
2. Providing feedback on the accuracy of the risk assessment and
3. Identifying and protecting individuals from increased risks. which will be implemented to achieve set EHS objectives.

EHS Management Program will be reviewed at annual intervals to monitor the progress against meeting the set objectives. EHS Management Program will be subject to amendment whenever there is a change in the activities, construction methodology, services or operating conditions of the organization, after due approval from COO or Head – EHS or his designated representative. The EHS Management Program progress will be monitored and communicated to all concerned personnel by the Project Manager at individual sites.

1.7 Structure & Responsibility

The current organization structure of EHS cell is as under and may be upgraded as per the requirements of the projects to meet our requirements and achieve our EHS objectives on due approval from COO and Head – EHS

EHS Organisation Chart



Lodha sites have been divided into four zones or regions to cover current live projects. The regions will be coordinated by one Manager - EHS for each region who will report to VP / GM of Construction Management - administratively and to Head – EHS and Head– EHS functionally. There will be other junior level EHS professionals at site level for important projects, as decided by Head& Head of EHS. These EHS professionals will be reporting to project managers, administratively and to regional Manager - EHS, functionally. The EHS objectives can be achieved only with contribution and coordination with internal departments of Lodha. Authority and Responsibility matrix is attached with manual for all the
functional departments of Lodha in contributing towards our EHS objectives and targets.

1.7.1 EHS Authority Matrix

Clause No.	Clause of ISO 14001:2004 & OHSAS 18001:2007	MD	COO	Head Procurement	Head Contracts	VP / GM Projects	Head Quality	Head EHS / Sr. Manager EHS	Head Asset Mgmt.	Head HR	Project Manager	Manager - EHS
4.1	General Requirements	ADC	ADC	AIC	AKL	AID	AIC	AID	AIC	AKL	AID	AIC
4.2	EHS Policy	ADC	ADC	AIC	AIC	AIC	AIC	AIC, AID, AFD	AIC	AIC	AIC	AIC
4.3	Planning	AKC	AKC	AIC	AIC	ADC	AID/AIC	AID	AIC	AFP	ADC.AIC	AIC
4.3.1	Planning for Hazard identification, Risk assessment &Risk control	AKC	AKC	AKL	AKL	AFP	AIC	AFD, AID	AKL	AKL	AIC	AIC
4.3.2	legal and other requirements	AKC	AKC	AIC	AFP	AIC	AIC	AID	AFP	AKL	AIC	AIC,AFD
4.3.3	EHS Objectives	AKC	AKC	AKC	AKL	AIC	AIC	AIC	AIC	AFP	AIC	AIC
4.3.4	EHS Management Programs	AKC	AKC	AFP	AKL	AIC	AIC	AIC	AIC	AKL	AIC	AIC
4.4	Implementation & Operation	ADC	ADC	AFP	AKL	AIC	AKL	AIC	AIC,AKL	AKL	AIC	AIC
4.4.1	Structure &Responsibility	ADC	ADC	AKL	AKL	AIC	AKC	AIC	AIC	AIC	AIC	AFD
4.4.2	Training, Awareness & Competence	AKC	AKC	AKL	AKL	AFP	AIC, AFC, AFD	AIC,AKC	AKL	AFC, AID AKC	AKL	AIC
4.4.3	Consultation and communication	ADC	ADC	AFP	AKL	ADC	AIC/AKC	AIC	ADL	AFP	ADC	AFP,AIC
4.4.4 & 4.4.5	Documentation /Document and data control	ADC	ADC	AFP	AFP	AFP	AFP	AFD	AFP	AFP	AFP	AID,AIC
4.4.6	Operational Control	ADC	ADC	AFP	AKL	AIC	AKL	AKC, AFD, AFP	AFP	AKC	AIC	AFD,AIC
4.4.7	Emergency Preparedness &Response	ADC	ADC	AFP	AKL	ADC	AFP	AFP	AKC	AFP	AKL	AIC
4.5	Checking &Corrective action	AKC	AKC	ADL	AKL	ADC	ADL	AFP	ADL	AFP	ADC	AFD,AIC
4.5.1	Performance Measurement & monitoring	AKC	AKC	AFP	AKL	AKL	AIC	AKL	AIC	AKL	AKL	AIC
4.5.2	Incidence, non conformance & corrective &preventive action	AKC	AKC	AIC	AKL	ADC	ADL	AFP	AIC	AFP	ADC	AFD,AIC
4.5.3	Records &Records Management	ADC	ADC	AKL	AKL	ADC	AID	ADC, AIC, AFP, AKC	AFP	AFP	ADC	AIC
4.5.4	Audit	AKC	AKC	AKL	AKL	AKC	AFP	ADC	AKC	AKL	AKC	AIC
4.6	Management Review	ADC	ADC	AIC	AIC	AIC	AIC	AIC	AIC	AIC	AIC	AFP,AKL

Where ADC – Authority to Decide Completely; ADL – AuthorityLimited as may be specified in the documented procedure; AIC – Authority to implement completely; AKL – Authority to information limited as per documented procedure; AKC – Authority to get complete information; AID – Authority to get implemented completed as per documented procedure; AFD – Authority to demand and get facilitation completely as per responsibilitymatrix; AFP – Authority to provide facilitation completely as perresponsibility matrix.

1.7.2 EHS Responsibility Matrix

Clause No.	Clause of ISO 14001:2004 & OHSAS 18001:2007	MD	COO	Head Procurement	Head Contracts	VP / GM Projects	Head Quality	Head EHS / Sr. Manager EHS	Head Asset Mgmt.	Head HR	Project Manager	Manager - EHS
4.1	General Requirements	D	D	I	K	I	I	I	I	K	I	I
4.2	EHS Policy	D	D	I	I	I	I	I	I	I	I	I
4.3	Planning	D	D	I	K	D	I	D	I	F	I	I
4.3.1	Planning for Hazard identification, Risk assessment & Risk control	K	K	K	K	F	I,K	I,F	K	K	I,F	I,F
4.3.2	legal and other requirements	D	D	I	F	I	I	I	F	K	I	I,F
4.3.3	EHS Objectives	D	D	K	K	I	I	I	I	F	D	I
4.3.4	EHS Management Programs	D	D	F	K	I	I	I	I	K	I	I
4.4	Implementation & Operation	D	D	F	K	I, K	I,K	I,K	I,K	K	I,K	I
4.4.1	Structure & Responsibility	D	D	K	K	I	I	I	I	I	D	I,F
4.4.2	Training, Awareness & Competence	K	K	K	K	F	I,K	I,K	K	D,I,F,K	I,K	I
4.4.3	Consultation and communication	D	D	F	K	D	K	I	D	F	D	I,F
4.4.4 & 4.4.5	Documentation /Document and data control	D	D	F	F	F	F	D	F	F	F	I
4.4.6	Operational Control	D	D	F	K	I	K	F	F	K	I	I,F
4.4.7	Emergency Preparedness & Response	D	D	F	K	D	F	F	K	F	D	I
4.5	Checking & Corrective action	D	D	D	K	D	D	F	D	F	D	I
4.5.1	Performance Measurement & monitoring	K	K	I	K	K	I	D	I	K	I,K	I
4.5.2	Incidence, non conformance & corrective & preventive action	K	K	I	K	D	D	F	I	F	D	I
4.5.3	Records & Records Management	K	K	K	K	D,K	D,I,K	D,I,F,K	F	F	D,I	I
4.5.4	Audit	K	K	K	K	K	F	D	K	K	K	I
4.6	Management Review	D	D	I	I	I	I	I	I	I	I	K,F

Where appropriate responsibility is denoted by DKIF, limited by delegation of powers / area of control / level of operations.
D – Deciding; K – Knowledge Only; I – Implementing; F – Facilitating

2.0 EHS Procedures

2.1 PROCEDURE FOR HAZARD IDENTIFICATION, RISK ASSESSMENT AND DETERMINING CONTROLS [Procedure No.: LG/EHS/P/01]

2.1.1 Purpose

To develop a method for Identification of Occupational Health and Safety (OHS) hazards, assessment of risks and determination of necessary control measures to reduce the risks of injury and ill health.

The overall purpose of this process is to understand the hazards that might arise in the course of routine/non-routine activities and ensure that the risks to people arising from these hazards are assessed, prioritized and controlled to a level that is acceptable.

2.1.2 Scope and application

- All routine and non-routine activities at its projects and offices;
- Activities of all personnel having access to the work place including suppliers, contractors and visitors;
- The facilities, infrastructure, equipment and materials at the work place provided by the organization or others;
- Human behaviors, capabilities, human factors and hazards created in the vicinity of the workplace by work related activities under the control of the organization;
- Hazards originating outside the workplace by work related activities under the control of the organization;
- Changes or proposed changes in the organization, its activities, or materials.
- Modifications to the OHS Management system, including temporary changes and their impacts on operations, processes and activities
- Hazards created in the vicinity of the workplace by work related activities under the control of the organization.
- Any applicable legal obligations relating to risk assessment and implementation of necessary control.
- The design of work areas, processes, installations, machinery/ equipment, operating procedures and work organization, including their adaption to human capabilities.

2.1.3 Definitions

Hazard: Source, situation or act with a potential for harm in terms of human injury or ill health or a combination of these.

Risk: Combination of the likelihood of an occurrence of a hazardous event or exposure(s) and the severity of injury or ill health that can be caused by the event or exposure(s).

Acceptable Risk: Risk that has been reduced to a level that can be tolerated by the organization having regard to its legal obligations and its own EHS policy.

Hazard Identification: Process of recognizing the hazards that exist and defining its characteristics.

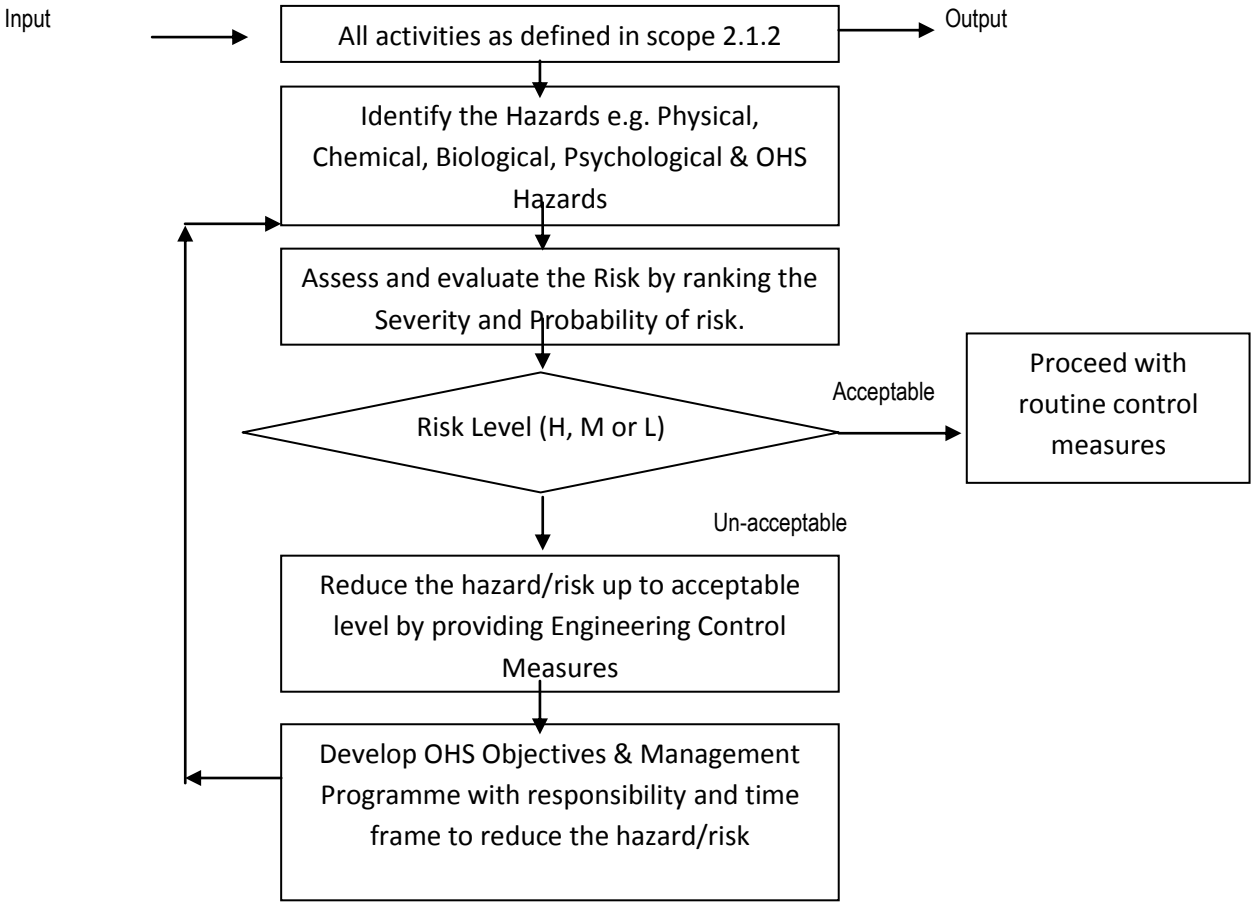
Risk Assessment: Process of evaluating the risk(s) arising from hazard(s), taking in account the adequacy of any existing controls, and deciding whether or not the risk(s) is acceptable.

2.1.4 Responsibility and authority

Department / Functional Head / Project Head/ Manager shall be responsible for hazard identification, risk assessment and implementation of necessary control measures in their area of responsibility:

- Before execution of any work, plant or equipment.
- Before significantly changing a work practice or procedure.
- Before changing any activity or process, where the change may give rise to a risk to health or safety.
- For managing risk arising out of changes in the inputs, process, technology regulatory regime etc.

2.1.5 Process Flow Chart



2.1.6 Process description

2.1.6.1 Hazard Identification

Department / Functional Head / Project Head/ Manager or their delegated staff shall identify all EHS hazards associated with their activity, process, materials, plants & equipment.

Basic steps of hazard identification are as below:

- Develop a list of process to be undertaken by the department.
- Break this process in to a list of major activities & sub-activities.
- Get an updated plan, methodology, list of manpower, materials and equipment to be used for execution of this activity & sub-activity.
- Identify and list down the hazards associated with each activity & sub-activity using the appropriate method such as
  - Visual Inspection
  - Auditing
  - Testing/monitoring
  - Technical or scientific evaluation
  - Discussion with specialist, designers, manufacturers, suppliers, supervisor, workers or relevant parties.

2.1.6.2 Risk Assessment

After identification of all potential hazards associated with the processes and activities, the next step is to assess the risk in all those identified hazards. The key points about risk assessment are:

- Assessment must cover all the risks to occupational health and safety of all persons having access to the work place.
- Whenever new or changed risks are encountered, the risk assessment must be revised.

2.1.6.3 Evaluation of Risk

The risk is the outcome of hazards and depends upon the severity and probability of risk. Each assessed risk is required to be ranked in 1 to 5 scale to rate their severity and probability for evaluating the risk level.

SEVERITY RATING:

People/Equipment/Production

Health Safety Loss & Environmental Impact

		OH&S	Environmental
1-3 Immediate	Very High - VH	Fatal / Permanent disability	Major Incident
4-9 Before task commences	High - H	Serious injury / illness	Serious Incident
10-16 Before task commences	Medium - M	Moderate injury / Illness	Moderate Incident
20-25 Acceptable	Low - L	Minor injury / Illness	Minor Incident
>25	Very Low - VL	Slight injury (No lost time). First Aid Case.	Slight Incident

MATRIX

Please Note

If the severity rating lies between 1 to 16, then corrective actions needs to be taken by concerned persons with documentary evidence

Severity	Probability 1	2	3	4	5
1	1	2	3	4	5
2	2	4	6	8	10
3	3	6	9	12	15
4	4	8	12	16	20
5	5	10	15	20	25
	Certain or Imminent	Very Likely	Likely	May Happen	Unlikely

SEVERITY FACTOR - (S)

S	Severity	Impact
1	Fatal / Permanent disability	Multiple fatalities from an incident or Occupational chronic illness leading to death/fatality (poisoning, cancer).
2	Serious injury / illness	Single fatality or permanent total disability or major occupational illness.
3	Moderate injury / Illness	Major injury or health effects (including permanent disability) – affecting work performance in longer term, e.g. irreversible health damage without loss of life (Noise induced hearing loss, chronic back injuries)
4	Minor injury / Illness	Minor injury or health effects-affecting work performance e.g. restriction to activities or need a time off to recover (Lost time accident) reversible health effects, e.g. skin irritation, food poisoning.
5	Slight injury (No lost time). First Aid Case.	Slight injury or health effects (including first aid and medical treatment cases) not affecting work performance or causing disability.

PROBABILITY FACTOR - (P)

P	Probability	Frequency	Ratio
1	Unlikely	1 in every 10 year of operation.	1:1000
2	May Happen	1 in every year of operation.	1:100
3	Likely	1 in every month of operation.	1:10
4	Very Likely	1 in every week of operation.	1:4
5	Certain or Imminent	1 in every day of operation.	1:2

2.1.6.4 Determine Risk Level by using S & P Factors using theformula given below:

Risk Level = Severity (S) X Probability (P)

Risk Slab	Risk Level
Less than 3	Very High Risk (VH)
Between 4 - 9	High Risk (H)
Between 10 - 16	Medium Risk (M)
Between 20 - 25	Low Risk (L)
More than 25	Very Low Risk (L)

Instructions:

- The hazards having legal obligations as per applicable OHS legal requirements shall be considered in high risk level**.**
- Low risk category and below is considered as an **acceptable risk.**

2.1.6.5 Determining Control Measures:

Increasing Control ↑	**Eliminate**	Eliminate the Hazard
	Substitute	Replace the Hazardous Substance, Machine or Tasks with a safe one
	Engineering	Modify/ Redesign Tools or Equipment, isolate/ enclose equipment and put guards in place
	Administration	Develop and implement safe procedures and training for Hazardous Jobs
	PPE	PPE such as Safety Helmet, footwear etc. can be important, but should be a last resort

Eliminating the hazard

The ideal solution is to get rid of a hazard completely. This is the most effective control and should always be attempted in the first instance. If a hazard is removed from the workplace, the associated risk is completely eliminated. e.g., eliminating the need to work in a confined space

Substitution

Involves replacing the hazard with one that presents a lower (and more manageable) risk. That is, replacing the plant, product or processes that represent the hazard with something that does the same job but has less potential to cause harm. For example, using a hydraulic machine instead of electrical power because of water on the site

Redesign

Involves changing the design of the workplace, equipment or work process. It involves thinking about ways the work could be done differently to make the workplace safer. For example, using damping or baffles to reduce exposure to noise and vibration; or using a track to hold a portable saw to prevent back strains or sprains.

Isolation

Involves isolating or separating the hazard from the person, or the person from the hazard. For example, installing guarding on equipment or operating machinery remotely

Administrative controls

Involve minimizing exposure to a risk through the use of procedures or instructions. It is often necessary to use these controls in conjunction with other measures. For example, posting warning signs or providing safety training

Personal Protective Equipment (PPE)

Is worn by people as a final barrier between themselves and the hazard. This measure does not control the hazard at the source. For example, using respiratory protection to minimize exposure to inhalation of silica dust

2.1.6.6 Implementation of Control Measures

A documented OHS control procedure shall be prepared for implementation of control measures. Implementing control measures involves:

- Developing work procedures
  Develop work methods and procedures in consultation with the workmen to make sure that the control measures are effective. Management, supervisor and worker responsibilities need to be clearly defined in the work procedures.

- Communication
  Inform workers and others about the control measures to be implemented. It is important to clearly communicate the reasons for changes.

- Providing training and instruction
  Provide training and instruction to the workers, supervisors and others in relation to the new control measures.

- Supervision
  Provide adequate supervision to ensure that the new control measures are in place and being used correctly.

- Maintenance
  Maintenance relating to control measures is an important part of the implementation process. Work procedures will spell out maintenance requirements to ensure the ongoing effectiveness of the new control measures. Records of maintenance will be kept.

2.1.6.7 Monitor and Review

The final step in the risk management process is to monitor and review the effectiveness of measures. For this step, it can be useful to ask questions to determine whether:

- Chosen control measures have been implemented, as planned;
- Chosen control measures are working; and
- There are any new problems or hazards.

This involves:

- Consulting with workers, supervisors and occupational health and safety representatives;
- Measuring peoples exposure (e.g. taking noise measurement in the case of isolation of a noise source); and
- Monitoring incident reports.

The Hazard identification and Risk assessment register shall be reviewed at least once in a year for incorporating hazards due to any changes/additions in the processes/activities and after any accident / incident / near misses to prevent recurrence.

2.1.3 Records

Name	Retention Period
HIRAC Register (**LG/EHS/004/RA)**	till project completion

2.1.4 References

- Apex Manual- OHSMS
- EHSMS Manual
- Clause 4.3.1 of OHSAS 18001: 2007

2.2 PROCEDURE FOR IDENTIFYING LEGAL AND OTHER REQUIREMENTS AND IMPLEMENTING CONTROLS [Procedure No.: LG/EHS/P/02]

2.2.1 Purpose

The purpose of this procedure is to facilitate –

- Identification of the applicable statutory, regulatory and other requirements related to Occupational Health & Safety.
- Communicating identified legal/regulatory & other requirements to all concerned for necessary action and compliance
- Tracking the amendments in the applicable legal/other requirements and updating the information with relevant personnel.
- Monitoring & evaluation of compliance with legal and other requirements.

2.2.2 Scope &Application

This procedure is applicable to all LODHA Projects and Offices.

2.2.3 Definitions

Legal Requirements

Legally mandated requirements established or permitted by law of land i.e. legislation including statutes, regulations, code of practices, decrees & directives, orders issued by regulatory authorities, permits, licenses or other forms of authorization etc.

Other Requirements:
Requirements established from subscribed or voluntarily commitment other than legal requirements i.e. contractual conditions, agreements with employees, interested parties, public commitments of the organization and corporate/company requirements etc.

2.2.4 Responsibility &Authority

Responsibilities of identification, communication and updating of applicable legal and other requirements are as follow:

S. No.	Process	Responsibility	Remark
1	Identification & preparation of Register of Regulation (ROR)	Corporate EHS Dept.& Legal Dept.	In association with Corporate Functions/ Projects
2	Communication of ROR to relevant functions/ projects	Corporate EHS Dept.& Legal Dept.	
3	Communication of specific requirements from ROR to relevant parties (Contractors, Suppliers) for necessary action & compliance	Project Head/ Manager	As per contract condition
4	Tracking of amendments/ updating ROR	Corporate EHS Dept.& Legal Dept.	In association with Corporate Functions/Projects
5	Monitoring & evaluation of compliance with legal & other requirements	Corporate EHS Dept.& Legal Dept.	In association with Corporate Functions/Projects

2.2.5 Process Flow Chart

Nil

2.2.6 Process Description

2.2.7 Identification of Legal & Other Requirements

- In reference to various legal updates (Sources: EHS magazines, EHS web sites, NSC)and in consultation with the relevant functions/ dept./ projects, corporate EHS department shall identify EHS legal & other requirements relevant to the activity, services & products of the organization.
- Corporate EHS department shall develop Register of Regulation in the format no. LG/EHS/F/02 containing the detailed information.

2.2.8 Communication of Legal & Other Requirements

- ROR shall be issued to all concerned functions/project for further communication and compliance as per document control procedure.
- From ROR, activity/ process/ services specific EHS legal & other requirements shall be communicated to concerned in-charge by Functional/ Project head.

- The legal and other requirements applicable to contractors/ suppliers shall be communicated by Functional/ Project Head.

2.2.9 Review & updating of Legal & Other Requirements

- Change in legal & other EHS requirements due to change in activity, products & services or amendments of the existing legal requirements or new legal requirements shall be identified by concerned functions/ Project Head and communicated to corporate EHS Function and legal dept.
- Corporate EHS department & legal dept. shall review the change to adjudge the applicability. Accordingly ROR shall be updated.
- Corporate EHS department & legal dept. shall also review legal and other requirements annually by referring subscribed updates, books, websites etc. and update the ROR as per requirements.
- However in case of major amendments/ revision in legal & other requirements, which have a significant impact on the EHS performance of the organization, the same shall be included in ROR at the earliest available opportunity.
- Updated ROR shall be communicated to all concerned Function/ Project Head for necessary action and compliance.

2.2.9 Monitoring & evaluation of Legal & Other Requirements:

- Corporate EHS Head and & legal dept. Shall evaluate compliance with legal and other requirements once in 6 months in format no. LG/EHS/F/03
- All concerned Functions/Project Head shall submit OHS legal compliance status annually to Corporate EHS Head and & legal dept. Along with an undertaking in the specified format.
- The input from internal audit, accident/incident investigation report shall also be used by EHS Head for evaluation of legal compliance.
- Corporate EHS Head and & legal dept. Shall analyze all inputs and evaluate the compliance status of EHS legal & other requirements.
- Corporate EHS Head & legal dept. Shall present the compliance status of EHS legal & other requirements in management review meeting.

2.2.10 Records

Record	Retention period
▪ Register of Regulation (ROR)- LG/EHS/F/01	Regularly updated
• OHS legal compliance Checklist- LG/EHS/F/02	Till project completion

2.2.11 Reference

- EHSMS Manual
- Clause 4.3.2 & 4.5.2 of OHSAS 18001:2007

2.3 PROCEDURE FOR OBJECTIVE(S) AND PROGRAM(S) [Procedure No.: LG/EHS/P/03]

2.3.1 Purpose

The purpose of this procedure is to provide basis for establishing, monitoring, revising and reviewing EHS Objectives and Programme as a part of system performance improvement.

2.3.2 Scope & Application

This procedure is applicable to all LODHA Projects and Offices for establishing, monitoring, revising and reviewing EHS Objectives and Programme.

2.3.3 Definition

EHS Objectives
It is EHS goal, in terms of EHS performance that LODHA sets itself to achieve. Objectives should be SMART &quantifiable wherever practicable and consistent with organizational EHS policy

Programme
A programme or management programme is an action plan for achieving the EHS Objectives. It includes responsibility, authority and time-scale for achieving EHS objectives.

2.3.4 Responsibility & Authority

Responsibilities of setting objectives, developing programmes and monitoring are as follow:

Sr. No	Process	Responsibility	Remark
1	Setting EHS objectives & developing programme at relevant functions & levels.	EHS/Projects Head	In consultation with MD & COO
2	Review of EHS objectives and programme for adequacy.	Management Appointee	
3	Communication of EHS objectives & programme to relevant personal	EHS/ Projects Head	
4	Review of EHS Objectives & Programme at Organizational level and appraising Top Management.	Management Appointee	In consultation with MD & COO

2.3.5 Process Flow Chart
Nil

2.3.6 Process Description

Setting EHS Objective(s) & developing Programme(s):

- Keeping in view the outcome of HIRAC & EIAC, EHS objectives & programme shall be established at with an aim to minimize or eliminate the un-acceptable risks and environmental impacts.

- While setting EHS objectives & programme, the following shall be considered:
  a. EHS Policy and Corporate EHS Objective.
  b. Results of HIRAC.
  c. Legal & other EHS requirements
  d. Technological options, financial, operational and business requirements
  e. Evaluations of the effectiveness of the EHS management system (e.g. from internal as well as external audits)
  f. Information from employee, workers and interested parties (through EHS consultations, reviews etc.)

g. Analysis of performance against previously established EHS objectives
h. Past records of EHS nonconformities and incidents
i. Results of the management review
j. The need for and availability of resources.

- EHS Objectives could be formulated as illustrated below:

a. Objectives to increase or reduce something should specify a numerical figure (e.g. reduce handling incidents by 20 %)
b. Objectives to introduce controls or eliminate hazards (e.g. noise reduction in a workshop)
c. Objectives to introduce less hazardous materials in specific products
d. Objectives to increase worker satisfaction in relation to EHS, e.g. reduction of workplace stress
e. Objectives to reducing worker exposure to hazardous substances, equipment or processes, e.g. the introduction of access controls, or guarding.
f. Objectives to increase awareness or competence in performing work tasks
g. Objectives that are put in place to meet legal requirements prior to their enactment.

- The basis of setting specific EHS objective shall also be recorded to facilitate future review.
- For every objective, specific programme shall be developed by EHS/ Project Head. Programme shall include the planned schemes/ activities and corresponding responsibility, resources required and time-scale as per the format attached. Also a sample EHS Objective and programme is enclosed for illustration.
- EHS Objective(s) & programme shall be reviewed for adequacy by Management Appointee (MA) and approved.
- The approved EHS Objective(s) & programme shall be communicated (by training and/or group briefing etc.) to relevant personnel for implementation

2.3.7 Monitoring & Review of Programme(s)

- The status of the implementation of EHS programme shall be reviewed periodically by concerned functions/project Head. The programme(s) can be adjusted/modified where necessary.
- MA shall review all EHS programme once in six month to assess the level of achievement against objective.
- MA shall present the review findings in management review meeting for direction & guidance from top management with an aim to ensure continual improvement.

2.3.8 Records

Record	Retention period
• EHS Objectives & Programme(LG/EHS/ F/03) -	Three Year

2.3.9 References

- EHSMS Manual
- Clause 4.3.3 of OHSAS 18001:2007

2.4 PROCEDURE FOR IDENTIFYING EHS TRAINING NEEDS, IMPARTING TRAINING AND ASSESSING EFFECTIVENESS [Procedure No.: LG/EHS/P/04]

2.4.1 Purpose

The purpose of this procedure is to identify the training needs, plan and impart the training and assess the effectiveness of training.

2.4.2 Scope & Application

This procedure is applicable to all EHS trainings except Specialized Technical Training for the employees of LODHA.

The Scope includes:

- Identification of training needs
- Design of Training & Training Calendar
- Organize the training
- Evaluation of the training
- EHS Induction Training

2.4.3 Definitions

Training

The term training refers to the acquisition of knowledge, skills, and competencies as a result of the teaching of vocational or practical skills and knowledge that relate to specific useful/ related competencies.

Induction Training

Induction training is a type of training given to new employee/ joiner as an initial preparation upon taking up a post. Its goal is to help new employee/ joiner reach the level of performance expected from a new employee. An attempt may also be made to introduce the individual to key employees and give an impression of the culture of the organization.

General Safety training

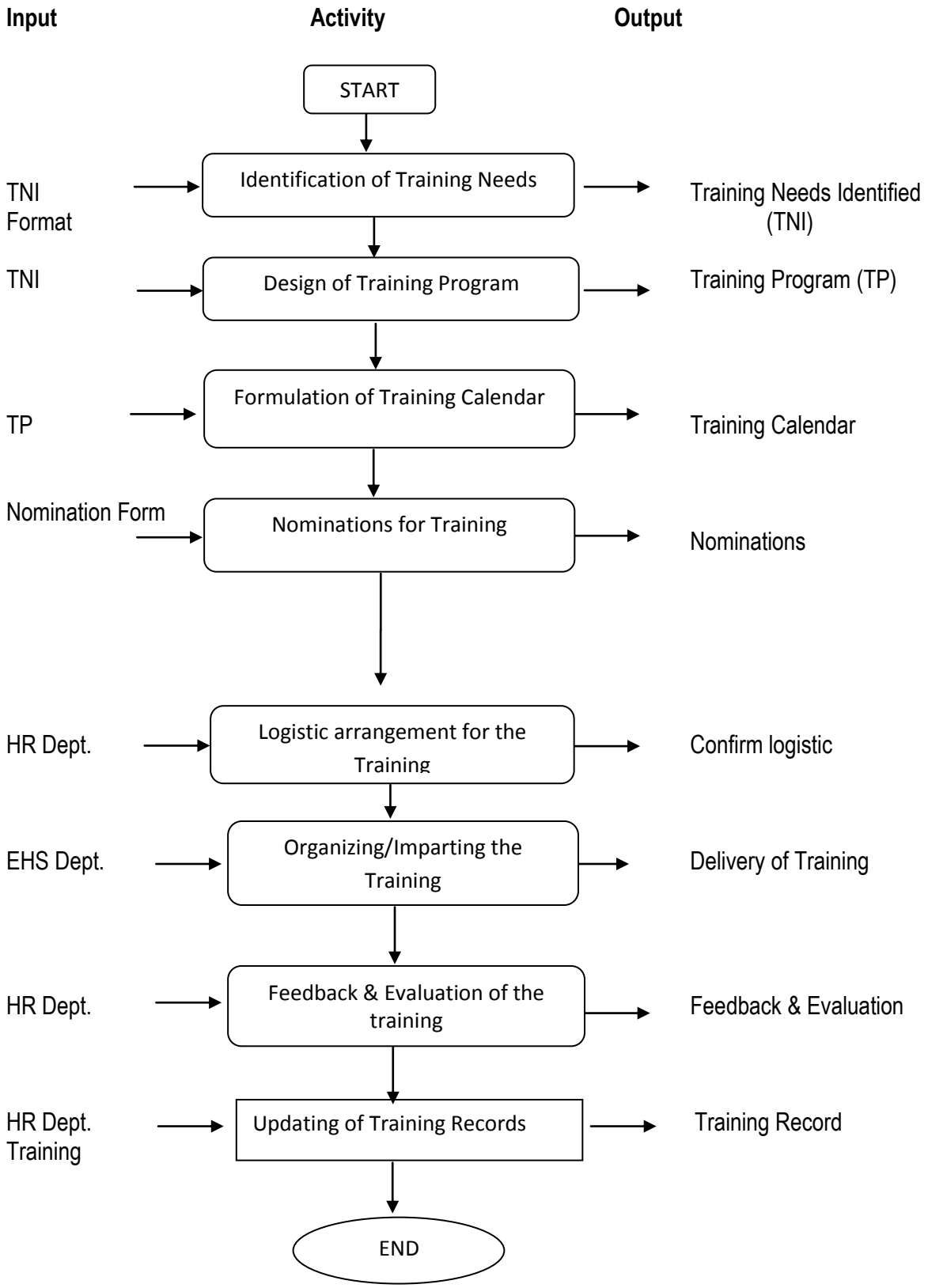
The above category includes training for creating awareness about Emergency Preparedness& Response Plan, Fire safety, First Aid & basic life support and Environment.

2.4.4 Responsibility & Authority

Responsibilities with respect to processes of training are as follow:

Items	Co- Responsibility	Prime Responsibility
1. Identification of training needs, 2. Design of training & Training Calendar, 3. Organize & Evaluation of the training 4. Induction Training	HO EHS Dept. responsible for all technicality of training	HR Dept. is responsible for logistic arrangements, communication, evaluation, feedback & record

2.4.5 Process Flow Chart



2.4.6 Process Description

2.4.6.1 Identification of Training needs

Training needs shall be identified by using any of the following tools:

- **Inputs by internal customers (top management / senior management):** Any training needs expressed by the top/senior management shall be considered for design of training programme. In addition, training need shall be taken from individual Functions/project Head for specific area of specialization.
- **From an analysis of the performance appraisal:** The specific training requirement mentioned in the performance appraisal of an individual shall be taken as an input for training design.
- General EHS awareness training will be given to all

2.4.6.2 Design of Training & Training Calendar

- On the basis of the information collected above, training programme shall be designed in standard format for approval and further action.
- Apart from others, objective, priority, importance and budget of the specific training shall be chalked out during training design.
- Based on the importance and approval of training design, an annual training shall be developed and circulated to all Functions/project Head for nominations.

2.4.6.3 Training & Evaluation

- Training shall be organized based on the training design and training calendar.
- Any change/modification in the training design/schedule shall be communicated to all participant and Functions/ Project Head after approval from management.
- Records of training (training attendance, feedback etc.) shall be collected and recorded for analysis and future reference.
- Feedback received from participant shall be analyzed to evaluate the effectiveness of the training as per established objective. The result of the training evaluation shall be communicated to relevant person for further improvement.

2.4.6.4 Induction Training

- Minimum 1 Hours EHS Induction Training shall be imparted to new joiner. The purpose of this training is to appraise the individual with organizational objectives, structures, policies, code of conduct, processes and key personnel. At HO, EHS Induction shall be part of HR Induction.
- At project level, EHS induction training shall be given by EHS in charge to all new joiner including visitors and contractor workmen.

- Records of induction training (training attendance, feedback etc.) shall be collected and recorded for analysis and future reference.

2.4.7 RECORDS

Record	Retention period
• Training Calendar (LG/EHS/F/04)	One year
• Training Attendance (EHS/HO/001)	One year
• Training feedback	One year

2.4.8 REFERENCE

- EHSMS Manual
- Apex Manual-OHSMS,
- Clause 4.4.2 of OHSAS 18001: 2007

2.5 PROCEDURE FOR COMMUNICATION PARTICIPATION AND CONSULTATION [Procedure No.: LG/EHS/P/05]

2.5.1 Purpose

To establish processes to ensure communication to, participation of and consultation with all interested parties in regards to organization's EHS issues and its EHS management system with an aim to:

- Demonstrate management commitment to EHS issues;
- Deal with concerns and questions about EHS issues;
- Raise awareness of EHS policies, objectives and programs;
- Inform interested parties about organization's EHS management system and performance.

2.5.2 Scope and Application

Procedure is applicable to entire organization including project site for the stated purpose. The scope of the procedure includes:

- Internal communication within organization at various levels and with all functions;
- External communication with interested parties (contractors, visitors, customers, regulatory authorities, etc.);
- Participation of workers and consultation with contractors and external interested parties.

2.5.3 Definitions

Interested party

Person or group, inside or outside the workplace, concerned with or affected by the EHS performance of an organization.

Workplace

Any physical location in which work related activities are performed under the control of the organization.

Internal communication

It is the communication among the various levels and functions within the organization.

External Communication

It involves communication with interested parties (contractors, visitors, customers, regulatory authorities, etc.).

2.5.4 Responsibility and Authority

Responsibilities and authorities for internal and external communication are indicated at relevant subsection in Para 6.0.

2.5.5 Process Flow Chart

Nil

2.5.6 Process Description

2.5.6.1 Internal Communication

Relevant information concerning EHS hazard/ risk and EHS management system shall be communicated to all concerned to ensure their effective participation and contribution in prevention of injury and ill health.

- EHS policy shall be communicated to all employees by Management Appointee. Corporate Communication & Administrative Services shall arrange to display EHS Policy in work places, offices and notice board. EHS Policy shall be enclosed with project EHS plan.

- Identified hazards and risks shall be communicated by the concerned department/ function to the relevant employees through E-mail/ distribution of hard copies. The same shall be communicated to workers by site engineers or EHS engineers in Hindi/ regional languages through EHS briefings/ tool box talk/ induction talks/ posters/ warning signage.

- EHS objectives and program including progress; EHS performance evaluation; opportunities for improvement shall be communicated by the concerned department/ function to the relevant employees through E-mail/ distribution of hard copies and briefing.

- The work instructions, procedures, and warning notices, etc. shall be communicated to the concerned employees, contractors as per need and relevance by concerned department/ function.

- The information such as EHS policy, EHS hazardous & EHS management system shall be communicated to all newly joined employees and workers by the EHS department at HO and site thorough induction process.

- The work place hazards, control measures and use of PPEs shall be communicated all newly joined workers at site about by the EHS department at site before starting the work.

- Findings, particularly learning from incident investigation shall be communicated to all concerned employees by the EHS department at HO through e-mail. The same shall be communicated to concerned engineers and workers by site EHS department through EHS meeting and tool box talks.

- The role, responsibility, accountability and authority of concerned employee/ worker shall be communicated by department/ function.

Any EHS issues such as unsafe conditions/ acts/ At Risk Behavior, deviation from EHS management system, near misses, etc; complaints and suggestions for improvement shall be reported to EHS department at site through suggestions box/ verbal communication. The EHS department shall respond to it appropriately.

2.5.6.2 External Communication

The following are the external interested parties with whom organization shall communicate related to EHS:

- Contractors;
- Visitors;
- Suppliers;
- Public/ community;
- Regulatory bodies including local authorities.

2.5.6.3 Communication with contractors:

- EHS performance requirements, appropriate to the EHS hazards and risks associated with the work to be performed, shall be communicated to the contractors through contractual agreements by Procurement & Contract department.

- EHS requirements shall be discussed and re-confirmed in project kick-off meeting to ensure that appropriate controls are incorporated to protect individuals at workplace.

- The contractor shall be asked to submit EHS management plan for implementation. Necessary suggestions shall be made by EHS department at HO/ site if required.

- EHS requirements shall be discussed with contractor progress meeting during project execution.

2.5.6.4 Communication with visitors

Visitors (including delivery people, customers, members of the public, service providers, etc.) shall be communicated through EHS induction training, warning signs, security barriers and verbal or written communication by the site EHS department and security. Information that shall be communicated includes:

- EHS Policy;
- EHS requirements to be followed relevant to their visit;
- Evacuation procedures and responses to alarms;
- Traffic controls;
- Access controls and escort requirements;
- Any personal protective equipment that needs to be worn (e.g. safety helmet, dust masks, glasses, etc.).

2.5.6.5 Communication with regulatory bodies, local authorities, public/ community and any other interested parties

- EHS policy and EHS performance shall be communicated to regulatory agencies as per relevant legal requirements.

- In case any of the identified emergency that has a potential to become offsite, the emergency response plan shall also be communicated in writing/ verbally to the neighboring public/ communities/ industries and local authorities, etc.

2.5.6.6 Receiving, Documenting and Responding to Communications from External Interested Parties

- Receiving of communication: Inquiries and other communications, received by e-mail/ fax/ letter, from external interested parties concerning the organization's EHS and EHS management system or its performance shall be

received by EHS department at project and EHS department at HO. All such communications received by any other department at project shall be directed to EHS department. Similarly such communications received by other departments at HO shall be directed to EHS department at HO.

- Recording of communication: On receipt of the communication the EHS department at project and EHS department at HO shall register details of the received communication in the External Communication Register.

- Responding to communication: EHS department at project and EHS department at HO in consultation with the concerned personnel shall take appropriate action & respond to the interested party. The details of response with name of interested party, date, etc. shall be recorded in the "Response Section" of the External Communication Register.

- Maintaining Records of Communication: Record of all communications (both incoming and outgoing) shall be maintained by the EHS department and document controller at project and EHS department at HO. All non-written communications, if any, from external parties will be documented appropriately.

- Communications having serious concern from external interested parties, such as complaints/ suggestions/ any serious issue which needs consultation with EHS at HO shall be sent to MA for review.

2.5.6.7 Participation of Workers

- Project EHS Committee, named as **"Safety Committee"** at project level shall be formed represented by equal number of representatives of organization and building workers and representatives from contractor to ensure participation of workers as per the provisions of **The Building and Other Construction Workers (Regulations of Employment & Conditions of Service) Act 1996** and respective state rules.

- The agenda and minutes of the meeting shall be prepared and circulated to all the concerned. Copy of the minutes of the meeting shall be sent to MA for review.

- The respective department in charge within reasonable time limits shall comply with the decision and recommendation of the Safety Committee.

- The Safety Committee shall meet at least once in a three month.

2.5.6.8 Consultation with Contractors and External Interested parties

- The contractors and other external interested parties shall be consulted for any specific EHS concern, where appropriate.

- Regulatory agencies concerning certain EHS matters (e.g. applicability and interpretation of EHS legal requirements), or with emergency services shall be consulted by Corp. /Project EHS In-charge.

- Contractors shall be consulted on changes that can affect their EHS. It includes new or unfamiliar hazards, re-organization, new or amended controls, changes in materials/ equipment/ exposures, changes in emergency arrangements, changes in legal or other requirements.

- Consultation shall be done with external parties by the project EHS department on issues such as: changes in emergency arrangements, hazards that may impact neighbours/ hazards from neighbours and changes in legal or other requirements.

2.5.7 Records

Records		RETENTION PERIOD
• Register for External Communication	(LG/EHS/F/05)	till the end of Project
• Minutes of Safety Committee Meeting		till the end of Project

2.5.8 References

- EHSMS Manual
- Apex Manual-OHSMS,
- Clause 4.4.3 of OHSAS 18001: 2007

2.6 PROCEDURE FOR DOCUMENTS, CONTROL OF DOCUMENTS AND CONTROL OF RECORDS [Procedure No.: LG/EHS/P/06]

2.6.1 Purpose

This procedure is established to set a mechanism for preparation, standardize, control and of all kinds of documents and records and define process to:

- Approve documents for adequacy prior to issue,
- Review and update as necessary and re-approve documents,
- Ensure that changes and the current revision status of the document are identified,
- Ensure that relevant version of applicable documents are available at points of use,
- Ensure that documents remain legible and readily identifiable,
- Ensure that documents of external origin are identified and their distribution controlled and
- Prevent the unintended use of obsolete documents and apply suitable identification to them if retained for any purpose
- Identify, store, protect, retrieval, retention and disposal of records

2.6.2 Scope & Application

This procedure includes the following:

- Standardization of documents
- Codification of documents
- Document preparation, review, approval and amendments
- Documents issue and control
- Document storage, protection, retrieval, retention and disposal of records

This procedure is applicable to all LODHA GROUP Offices and Projects.

2.6.3 Definitions

Document

Information and its supporting medium. The information can be either a manual; procedure; guideline; work instruction; plan; specification or a standard depending on degree of detail. The medium can be paper; magnetic; electronic or optical computer disc, photograph or master sample or a combination thereof.

Manual
It is a document that describes various elements of a function or system (OHSAS 18001:2007 their inter-relationship and reference. This may include Apex manual as well as EHS site manual.

Procedure
It is a specified way to carry out an activity or a process. Note: Procedures can be documented or not.

Work Instruction
It is a document that provides 'step by step' instructions of how to perform and record particular/or specific tasks. Work Instructions may be, for example, detailed job instructions, flowcharts, templates, and models, technical notes incorporated into drawings, pictures, videos, checklists, or combination thereof.

Guideline
It is a document that provides the 'possible ways' to perform a specific activity or a task. Unlike a procedure, it does not specify a 'performance criteria' for acceptance. The intent of a guideline is to provide guidance and/or recommendations for a particular activity/task.

Plan:
It is a document that specifies which procedures and associated resources shall be applied by whom and when to a specific project, product, process. The plan may include or provide reference to detailed procedures, work instructions and records. Generally, plans have orientation towards certain target to be achieved.

Specification and standard
Specification is a document stating requirements by a body/authority/agency usually owner/engineer etc. Specifications are unique to the projects. A standard is a document, established by consensus and approved by a recognized body that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context.

Format
Format is a document developed and controlled to record the data demonstrating compliance to specified requirements.

Checklist
Checklist is a compilation of specific checks to verify a process, or a product.

External Document
Document not originated by the Organization but under use for various purposes and including consultant drawings, specifications, statutory and regulatory requirements, standards, codes and maintenance manuals etc.

Controlled document
It is an authentic, latest and currently valid document marked as **CONTROLLED COPY**.

Uncontrolled document
It is a document where the 'change control' is not intended and is marked as **UNCONTROLLED COPY**.

Record
It is a document stating results achieved or providing evidence of activities performed

2.6.4 Responsibility & Authority

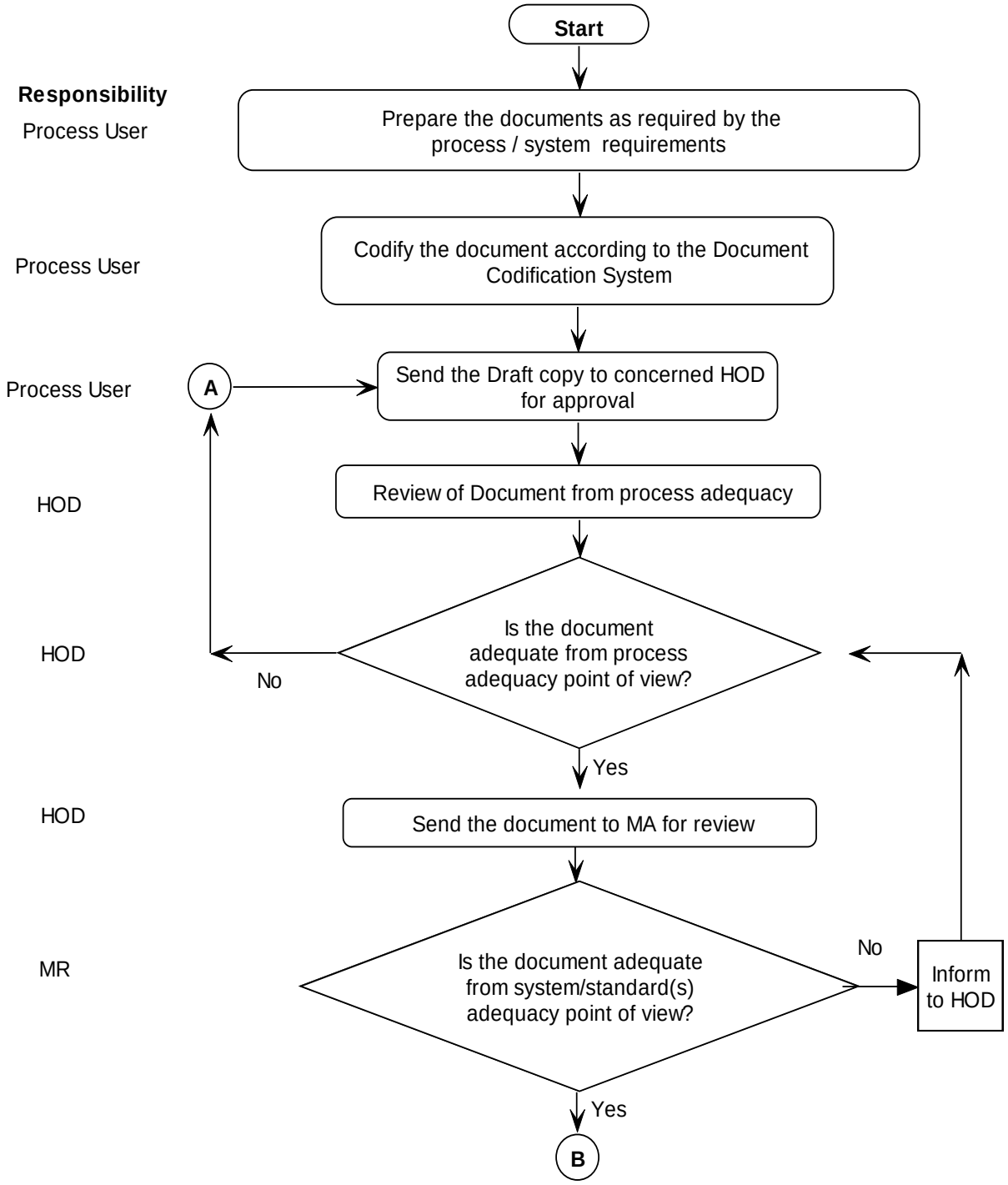
Responsibilities & authority for preparation, review, approval, issue, and distribution of various types of documents illustrated below in the Matrix.

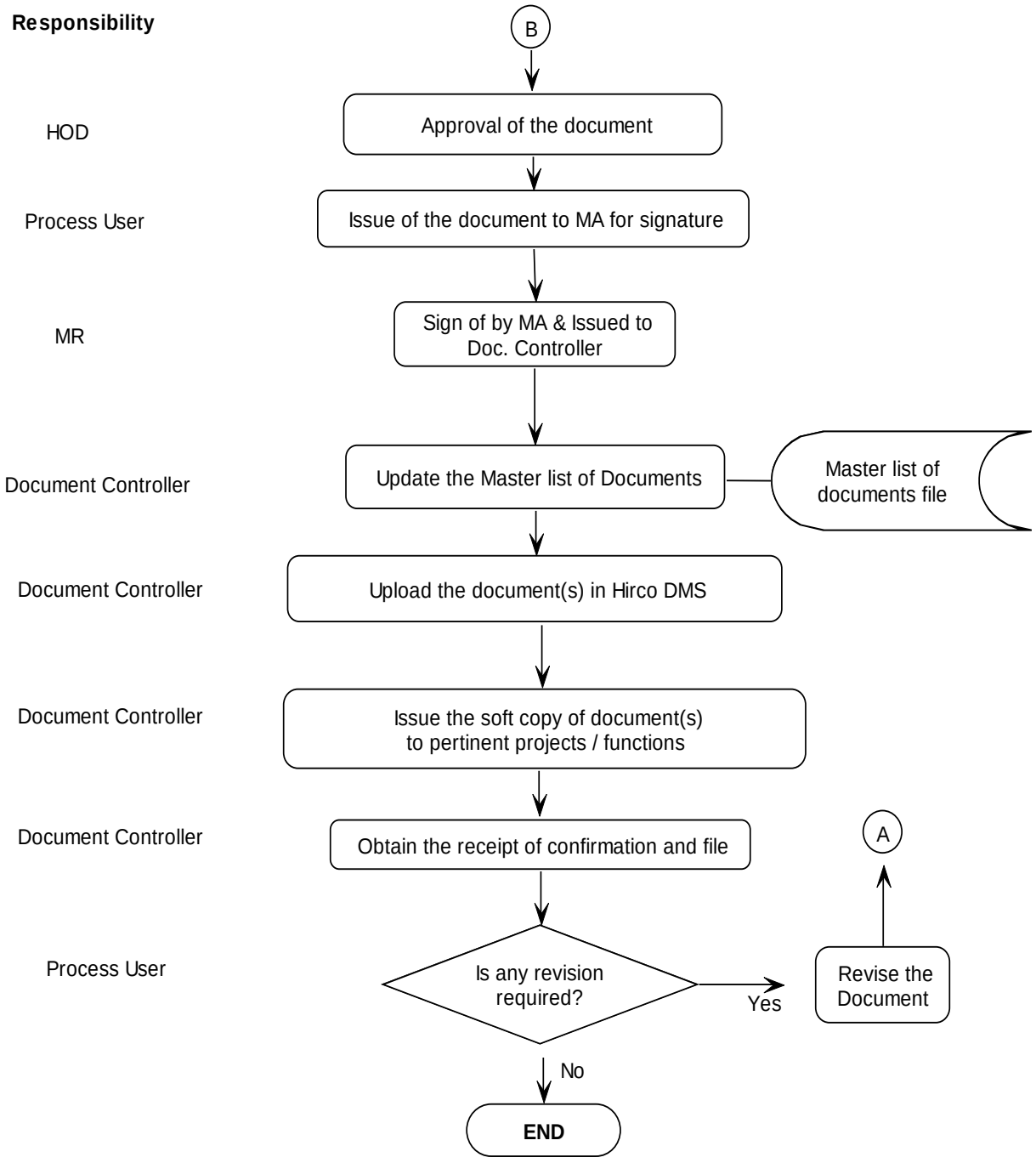
Doc. Type	Preparation	Review	Approval	Issue & Distribution	Applicability
Org. Policy & Code of Conduct	Concerned Function	Senior * Management	MD/COO	Doc. Controller	LODHA Group
Manual	Concerned Function	Senior* Management	MD & COO/ MA	Doc. Controller	LODHA GROUP
Dept./Functions Procedures, Guidelines etc.	Concerned Function	MA/HOD	MA/HOD#	Doc. Controller	Respective dept./ Project site
Dept./site specific Objectives & Programs	Concerned Function	MA/HOD	MA/HOD#	Doc. Controller	Respective dept./ Project site
Documents of external origin	NA	Respective Head (Project site/ Dept.)	NA	Doc. Controller	Respective dept./ Project site

*Senior Management includes Management Appointee (MA) of OHSAS

#System (OHSAS) related documents shall be approved by respective MA

2.6.5 Process Flow Chart




Responsibility
B
HOD
Approval of the document
Process User
Issue of the document to MA for signature
MR
Sign of by MA & Issued to Doc. Controller
Document Controller
Update the Master list of Documents
Master list of documents file
Document Controller
Upload the document(s) in Hirco DMS
Document Controller
Issue the soft copy of document(s) to pertinent projects / functions
Document Controller
Obtain the receipt of confirmation and file
A
Process User
Is any revision required?
Yes
Revise the Document
No
END

2.6.6 PROCESS DESCRIPTION

2.7.6.1 Procedure, Guideline, and Work Instruction shall be designed in a particular sequence as presented below:

1 Purpose
2 Scope & application
3 Definitions
4 Responsibility & authority
5 Process Flow Chart
6 Process Description
7 Records
8 Reference

2.6.7 Codification of documents

Document Code	
Document Type	**Code**
Apex Manual – EHSMS	A
Manual	M
Procedure	P
Operational Control Procedure	O
Work Instruction	W
Record/ Register/ File	R/HO
Guideline	G
Specification/ Standard	S
Format	F
Checklist	C
Plan	N

2.6.8 Documents preparation, review, approval and issue:

- The process user shall develop the necessary documents viz. Manual /procedure/ guideline/ work instruction as per the requirement.
- The draft document shall be reviewed for adequacy by the concerned as per the Matrix given at section 4.0.
- The modified documents shall be submitted to designated authority as per Matrix (Section 4.0) for approval.
- If necessary, a review meeting shall be held between the process users/ Functional Head (FH)/ Project Head (PH), Sr. Management and MA to finalize the document.
- Upon approval, the document Controller shall update the Master List of Documents, retain the Master Copy and upload it on DMS/ Intranet.

- In case of amendments to the existing document, revision status shall be indicated in the 'History of Revisions' page of the concerned document(s).

2.6.9 **Documents issue and distribution control system:**

- Document controller shall issue CONTROLLED COPY (hard copy or scanned copy) to concerned users and update "Document Issue Register" accordingly.
- Request for additional controlled copies of documents shall be send to document controller from user department.
- Upon receipt of documents, the Document Controller shall update its Master List of Documents. For distribution, documents shall be multiplied and re-marked as CONTROLLED COPY by the document controller prior to issue. The Document Issue Register shall be updated accordingly.
- Before issue of documents, the obsolete documents shall be withdrawn and destroyed by the Document Controller. One copy of obsolete document (hard or soft copy) with due identification mark as **SUPERSEDED** shall be preserved for future reference and for information purpose.
- The above document issue and distribution control system shall be also applicable to external origin documents such as specifications, drawings, codes/standards. All external documents shall be listed in separate master list of documents by concerned recipient department. External documents shall be issued to concerned users by Process Owner/ Coordinating Dept and issue status will be entered in document issue register/ DMS/ Intranet.

2.6.10 **Records**

Record		**Retention period**
• Master list of documents	LG/EHS/F/06	Regularly updated

2.6.11 Reference

- Clause 4.4.4, 4.4.5 & 4.5.4 of OHSAS 18001:2007
- Apex Manual-EHSMS

2.7 PROCEDURE FOR OPERATIONAL CONTROLS [Procedure No.: LG/EHS/P/07]

2.7.1 Purpose

The procedure intends to describe process for establishing operational controls (procedures/ work instructions) evaluating its effectiveness and integrating it into the overall EHS management system.

2.7.2 SCOPE & APPLICATION

All operational controls as mandated by the need to control the unacceptable hazards/risk associated with the organizational activities, purchased goods, equipments, product & services are within the scope of this procedure. This

shall include controls related to contractors and other visitors to the work place. Management of change shall be given due importance.
This procedure is applicable to Head office & project sites of LODHA.

2.7.3 **Definition**
Nil

2.7.4 Responsibility & Authority

Responsibilities of Preparation, implementation and review of Operational Control Measures are as follow:

Sr. No.	Process	Responsibility	Remark
1	Preparation of Operational Control Measures	Functions/ Projects Head	In consultation with Corp. EHS Dept.
2	Implementation of Operational Control Measures	Functions/ Projects Head	
3	Review Operational Control Measures	Functions/ Projects Head/ MA	

2.7.5 Process Flow Chart
Nil

2.7.6 Process Description

2.7.6.1 Preparation of Operational Control Procedure

- Unacceptable hazards/ risk determined by HIRAC Procedure shall form the primary basis for developing the operation control procedure.
- In addition, the need for operational control procedure shall emanate from the following;
  - Legal and other requirements governing specific requirements during handling/use of product/process
  - Interested parties' concern necessitating control of specific processes
  - Controlling hazards/risk associated with supply of products/ services
- Operational Control Procedure (OCP) shall be structured in line with established Document Control Procedure.
- Established guideline for assessing need for, selection and use of PPE's shall be referred while developing OCP.
- OCP shall aim to covert unacceptable hazards into acceptable one if elimination of hazard/ risk is not practically possible. OCP shall follow the following hierarchy of control in order of reducing preferences.

Increasing Control ↑		
	Eliminate →	Eliminate the Hazard
	Substitute →	Replace the Hazardous Substance, Machine or Tasks with a safe one
	Engineering →	Modify Tools or Equipment, isolate, enclose equipment and put guards in place
	Administration →	Develop and implement safe procedures and training for hazardous jobs, visual signage
	PPE →	PPE such as Safety Helmet, footwear etc. can be important, but should be a last resort

2.7.6.2 Implementation of Operational Control Procedure

- Section In charge/ Project Head shall ensure the effectively implementation of established OCP during execution of work including contractor works.
- Necessary records shall be maintained by the concerned department/ project as evidence.

2.7.6.6 Review of Operational Control Procedure

- Effectiveness OCP's shall be reviewed proactively during safety inspection/ audit, and internal/ external audit of EHS.
- Operational Control Procedures shall also be reviewed after any change in process/ methodology, any incident, near misses, HIRAC or change in Corporate Policy and objectives.
- Any modification/ amendments shall be reviewed and approved by MA.

2.7.7 Records

Nil

2.7.8 Reference

- Apex Manual- EHSMS,
- Clause 4.4.6 of OHSAS 18001:2007
- Clause 4.3.1 of OHSAS 18001:2007

2.8 PROCEDURE FOR EMERGENCY PREPAREDNESS AND RESPONSE [Procedure No.: LG/EHS/P/08/]

2.8.1 Purpose

The purpose of this procedure is to provide basis for establishing and implementing Emergency Preparedness and Response Plan.

2.8.2 Scope & Application

The scope of this procedure includes:

- Identification of potential emergency situations,
- Establishing & implementing emergency preparedness and response plan,
- Emergency response training,
- Periodic testing of emergency plan,
- Reviewing and revising emergency plan

This procedure is applicable to all offices, facilities and projects of LODHA

2.8.3 Definitions

Incident

Work related event(s) in which an injury or ill health (regardless of severity) or fatality occurred or could have occurred.
Note 1- An accident is an incident which has given rise to injury, ill health or fatality.
Note 2 -An incident where no injury, ill health, or fatality occurs may also be referred as a "near-miss", "near-hit", "close call" or "dangerous occurrence".

Note 3 - An emergency situation is a particular type of incident.

Emergency

An emergency is a situation which poses an immediate risk to health, life, property or environment. It could be defined as a situation which is a threat for the safety of people and the surroundings. It may require outside help also.

Emergency Preparedness & Response Plan

The Emergency Preparedness Plan deals with measures to prevent and control situation in emergencies and take appropriate actions to mitigate emergencies within LG premises without affecting outside public or environment.

2.8.4 Responsibility & Authority

Responsibility of establishing and implementing Emergency Preparedness and Response Plan is as follow:

Sr. No.	Process	Responsibility	Remark
1	Establishing and implementing Emergency Preparedness and Response Plan at project site	Project Head	
2	Establishing and implementing Emergency Preparedness and Response Plan at Head offices/ offices	Head Administration	
3	Review of Emergency Preparedness and Response Plan	MA	

2.8.5 Process Flow Chart

Nil

2.8.6 Process Description

Every project site including head office shall develop and implement an Emergency Preparedness and Response Plan in line with this procedure.

2.8.6.1 Identification of potential emergency situations

- The plan shall include the potential emergency situations that could have environmental impacts and/ or OHS impact on persons within and/ or in the immediate vicinity of workplaces controlled by the organization. This could include employees, temporary workers, contract workmen, visitors, neighbours or other members of the public.
- The plan should also consider potential impacts on emergency services.
- While developing the Emergency Preparedness and Response Plan, the following shall be considered:
  a. Results of hazard identification, risk assessment and existing controls,
  b. Results of environmental impact assessment and control
  c. Legal & other requirements
  d. Previous incident and emergency experience,
  e. Information posted on the websites of regulatory agencies or emergency response agencies.
- The potential emergencies may include but not limited to:
  1. Fire,
  2. Explosions,
  3. Severe weather, Flood, Storm

4. Earthquake,
5. Release of hazardous materials,
6. Food poisoning,
7. Spread of Epidemic,
8. Riots,
9. Bomb Scare,

- When identifying potential situations, consideration should be given to emergencies that may occur during both normal & abnormal situations. While preparing Emergency Preparedness Plan possibility of failure of alarms/ monitoring system should also be considered.
- Contractors having major presence at site to develop their own Emergency Preparedness Plan in line with this procedure.

2.8.6.2 Establishing & implementing Emergency Preparedness and Response Plan:

Emergency Preparedness and Response Plan shall consist of Emergency Response Team, Evacuation Procedure and Emergency Response Equipment as detailed subsequently.

2.8.6.3 Emergency Response Team

- An Emergency Preparedness &Response Team shall be constituted appropriate to the size of the project & possible number of affected person under leadership of top management. This may include main controller, incident controller, floor marshal/ area marshal, communication officer, first aid team, fire fighting team etc.
- The roles, responsibilities and authorities with respect to emergency response duties shall be defined and communicated to the team members.
- Detailed of the actions (mitigation measures) to be taken by the personnel during emergency (including actions to be taken by staff working off-site, by contractors and visitors) shall be included in the plan.
- A mechanism for communication with employees (both on-site and off-site), regulatory agencies and other interested parties (e.g. family, neighbours, local community, media) shall be developed and included in the plan.
- Necessary information e.g. site layout, location of emergency response equipment, contact information for emergency response providers (Hospital, Fire Brigade, ambulance etc.) shall be provided along with this plan.

2.8.6.4 Evacuation Procedure

- A warning system (alarm) shall be developed and included in the plan to warn the people against any emergency.
- Basic do's & don'ts to be followed during warning shall also be narrated in the plan.
- Safe & appropriate assembly points shall be identified and marked for assembly during emergency. A list of all identified assembly points shall be included in the plan.
- Access to assembly points or emergency exit shall be identified and marked to provide safe access during any emergency.

2.8.6.5 Emergency Response equipment

- Emergency response equipment shall be assessed and made available based on the nature of emergency identified, no. of person affected and size of the project etc. This equipment may include public address system, communication system, necessary PPE's, stretches, emergency light etc.
- This equipment shall be available in sufficient quantity and stored in locations where it is readily available.
- This equipment shall be inspected /tested at regular intervals to ensure operational in an emergency situation.
- Emergency Preparedness and Response Plan shall be reviewed by MA for adequacy prior to issue for use.

2.8.6.6 Emergency Response Training

- All the persons including visitors shall be made aware of the emergency preparedness and response plan through display/ induction/ toolbox talks.
- Emergency contact no shall be displayed in all prominent locations.
- Emergency response team shall be imparted training with respect to roles, responsibilities, authorities and basic Do's & don'ts during any emergency to ensure the competency to carry out their assigned responsibilities.
- Training shall be given to all relevant personnel, in case of any change in emergency preparedness and response Plan

2.8.6.7 Periodic testing of Emergency Plan

- Periodic testing through Mock Drill or any other appropriate method(s) like Table top exercise and audit of all the possible emergency scenarios shall be done at least once in a year to ensure the effectiveness of the preparedness.
- This testing may include the external agency (if required) to develop an effective working relationship.
- Outcome of testing, any observations, recommendations, significant achievement or problems shall be recorded and maintained for future improvement.

2.8.6.8 Reviewing and revising Emergency Plan

- Review of Emergency Preparedness and Response Plan shall be done at least once a year or
  a. Following an event that activated emergency plan or
  b. Following mock drill that identified deficiencies or
  c. Following changes to legal or regulatory requirements
  d. Following management of change,

2.8.7 Records

Record	Retention period
• Mock Drill Report	Three Year

2.8.8 Reference

- Apex Manual-EHSMS
- Clause 4.4.7 of OHSAS 18001:2007

2.9 PROCEDURE FOR PERFORMANCE MEASUREMENT, MONITORING AND EVALUATION OF COMPLIANCE [Procedure No :LG/EHS/P/09]

2.9.1 Purpose

The purpose of this procedure is to establish, implement and maintain a procedure(s) to monitor and measure organization's EHS performance on a regular basis.

2.9.2 Scope & Application

This procedure determines leading and lagging EHS indicators and set mechanism for its monitoring &measurement of both qualitative and quantitative aspects, recording of data and results and reporting on regular basis.
This procedure is applicable to all Head office of LODHA Group including project sites.

2.9.3 Definitions

Two sets of indicators shall be used to track EHS performance at LODHA Group. These sets of indicators are Leading Indicators and Lagging Indicators.

Leading Indicators:

Leading Indicators are sets of proactive measurements that focus on such behavior which have credible impacts on EHS performance of LODHA Group. The indicators in this category includes but not limited to;

- Attendance at safety training sessions
- EHS Induction/ Tool-Box Talk
- Completing HIRAC
- Safety suggestion
- Safety Committee Agenda
- Safety walk through at site
- Identification and correction of Unsafe act, Unsafe conditions
- Safety promotional campaign
- Reward & Recognition programs

Lagging Indicators:

Lagging Indicators are sets of reactive measurements that focus on outcomes of EHS Policy, Process, Initiatives and their deployment. Obviously, Lagging Indicators are expression of qualitative and quantitative impacts of Leading Indicators. The indicators in this category includes but not limited to;

- Man Days Lost in Accident/ Incident
- No. of Injuries/ Near Misses/First Aid Cases

2.9.4 Responsibility & Authority

Responsibilities with respect to monitoring & measurement of leading and lagging indicators are as per matrices given in section 6.1.

2.9.5 Process Flow Chart

Nil

2.9.6 Process Description

2.9.6.1 Monitoring & Measurement of Leading Indicators:

- The monitoring and measurement of leading indicators shall be done as per the Responsibility Matrix given below:

Sr. No.	Process & Deployment	Responsibility	Monitoring Parameters	Bench Mark	Frequency of Monitoring
1	EHS Policy	Top Management in consultation with MA	Intent realization	Fulfillment of the intent	Once in a year
2	HIRAC	Concerned HOD/ Project Head	Adaptability & effectiveness	Updated HIRAC	Once in a year/ as required
3	Objectives & Programmes	Concerned HOD/ Project Head, MA	Program parameters & respective timelines	Meeting Timelines	Once in six month
4	Training & Awareness	Concerned HOD/Project Head	Training objectives	Meeting Training objectives	After every training through Feedback

					analysis
5	Communication, participation & Consultation	Concerned HOD/ Project Head, MA	Participation & Communication	Compliance with set procedure	Once in a six month
6	Operational Controls	Concerned HOD/ Project Head	Operational Control Parameters as detailed in relevant OCP's	Compliance with set OCP's	On-going & real time
7	Emergency Preparedness & Response/ Disaster Management Plan - DMP	Concerned HOD/ Project Head, MA	Effectiveness of DMP	Compliance with established DMP	Once in a year covering all possible emergency scenarios & after every mock drill and emergency
8	NC, CA & PA,	Concerned HOD/ Project Head, MA	Effectiveness of NC, CAPA process	Elimination of similar NC	Once in six month
9	Incident investigation	Concerned HOD/ Project Head, MA	Root causes & CAPA	Elimination of root cause	After every incident
10	Internal Audit/ External Audit/ Site inspection	Top Management/ REC/ PH/ MA	Effectiveness of audit process	No NC against audit process	After every audit
11	Management Review	Top Management/ MA	Effectiveness of MRM	Concrete action against minutes of MRM	Once in a year
12	EHS Induction, Tool Box Talk at projects	PH/EHS Head/ Project EHS Incharge	Content & effectiveness	As per goal sheet	Monthly/ Weekly
14	Safety Committee Meeting at Projects	PH/ Project EHS Coordinator	Agenda & MOM	Concrete action on MOM	Once in three Monthly
15	EHS Initiatives at Projects	PH/ Project EHS Coordinator	Intent realization	Fulfillment of Intent	Monthly

- Records relevant to performance monitoring and measurement as per the above matrix shall be maintained by the concerned HOD/ Project Head/ MA/ Project EHS incharge as the case may be.

2.9.6.2 Review of Monitoring & Measurement:

- MA shall keep top management informed on Project's Safety Performance on regular basis. A structured review of all project's safety performance shall be presented by MA in the Management Review.
- Top management direction and recommendation for improving Project's safety Performance shall be communicated by MA to all concerned for action.

2.9.3 Records

Record	Retention period
• Safety Performance Record	Till project completion

2.9.4 Reference

- Apex Manual- EHSMS,
- Clause 4.4.7 of OHSAS 18001:2007

2.10 ROCEDURE FOR INCIDENT INVESTIGATION, NON-CONFORMITY, CORRECTIVE ACTION & PREVENTIVE ACTION [Procedure No.: LG/EHS/P/10]

2.10.1 Purpose

To establish, implement and maintain a procedure of recording, reporting, investigation, and analyzing the root cause(s) of incident/ near misses to determine corrective and preventive actions for prevention of reoccurrence of the same. It aims to put in place a mechanism for follow up of the implementation of proposed corrections, corrective actions and preventive actions and document, maintain & record the results of these actions.

2.10.2 Scope & Application

All incident/ near misses (as defined under section 3.0) within physical boundary of the project site(s) including construction areas, offices involving persons/ equipment / vehicles / materials of LODHA Group, contractors, suppliers, customers or visitors.

2.10.3 Definitions

Incident – Work related event(s) in which an injury or ill health (regardless of severity) or fatality occurred, or could have occurred (OHSAS 18001:2007).

Accident – An incident, which has given rise to injury, ill health or fatality (OHSAS 18001:2007).

Accident – An unintended occurrence arising out of and in the course of employment of a person resulting in injury (IS: 3786 -1983).

Fatal Accident: An accident, which results in the death of an individual employee or contractor workers.

First Aid Cases: An incident resulting in injury addressable through First-aid.
[First-aid is defined as treatment of minor injuries where treatment is not required by a doctor, nurse or other medical professional]

Reportable Lost Time Accident (LTA) – An accident, which results in the injured person being absent from work for a period of forty eight hours or more immediately following the accident (BOCW Rules).

Near Miss: An incident, which did not result in bodily harm or property damage, but had a high potential to become an accident under slightly different circumstances.

Man-Days Lost (MDL) – In case of incident resulting in disablement of a temporary nature, Man Days Lost is the number of days for which the injured person was unable to report the work.

In case of death or disablement of a permanent nature , the Man-Days Lost is the amount, in days of earning capacity lost as specified in IS : 3786 –1983.

2.10.4 Responsibility & Authority

In line with the processes outlined at Section 5.0 & 6.0, responsibility & authority of key personnel shall be as per description given below:

Incident Investigation Team (IIT):

- Comprised of appropriate members of LODHA Group, Contractor personnel.
- Convened by EHS area In charge (LODHA Group) under advice of PH/ Corporate Head-EHS.
- Ultimate responsibility for evaluation, response and auditing of corrective measures.
- Has authority to seek information related to incident from appropriate parties

Injured Party/Witness:

- Responsible to immediately seek rescue and medical assistance
- Responsible to report incident as soon as possible to PM and EHS area In charge

EHS In charge (Contractor):

- Report the incident to his Head & EHS area In charge (LODHA Group) as Primary Reporter
- Prepare First Information Report (FIR) or Flash Report and submit it to EHS area Incharge (LODHA Group .Maintain record of incidents and medical aids provided to the injured
- Participate in incident investigation as a member to Incident Investigation Team (IIT)
- Coordinate with appropriate contractor's personnel for implementation of the corrective or preventive actions recommended by the IIT
- Review implementation & provide feedback to LG & his/ her own management

EHS Area In charge (LG):

- Authorized to direct activities at site of incident to control the situation appropriately and prevent further injury or damage.
- Report incident to Site Project Head/ Manager (LG) & Corporate Head-EHS.
- Responsible to convene IIT and establish resources required for accident investigation under review and approval of Site Project Head/ Manager.
- Responsible & authorized to lead incident investigation process.
- Obtain guidance /technical assistance from Corporate Head- EHS as per requirements
- Review and follow up of implementation of proposed corrections/ corrective actions/ preventive actions by the contractor.
- Authorized to obtain information regarding incident from site and witnesses, and to secure property or site as required.

Head (Contractor):

- Report incident to Site Project Head/ Manager (LG)
- Submit report as required to Regulatory Authority in the prescribed Format
- Facilitate Incident Investigation by IIT
- Provide necessary resources for implementation of corrections/corrective actions/preventive actions recommended by the IIT
- Overall responsibility for implementation of recommended corrections/corrective actions/preventive actions
- Responsible to provide status of action taken to Site Project Head/ Manager (LG)

Site Project Head/ Manager (LG):

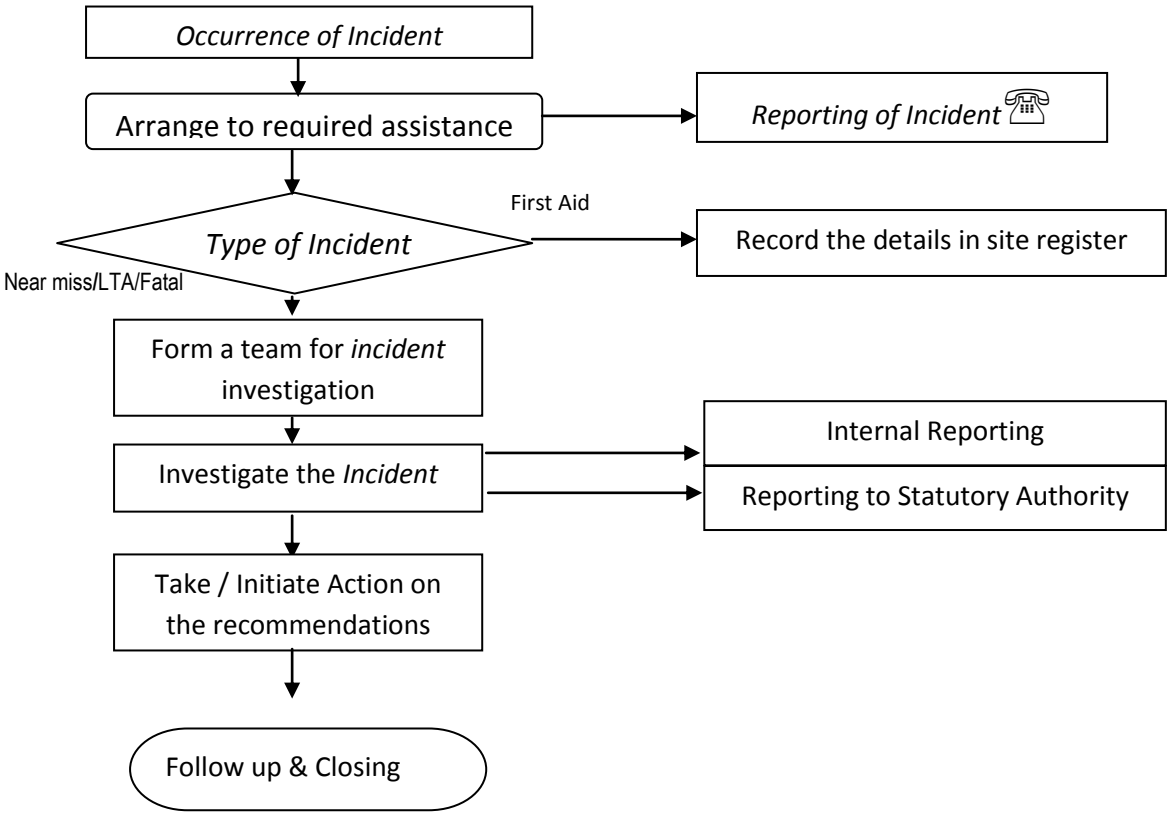
- Report Incident to Head – EHS,COO and MD (LG)
- Responsible & authorized to constitute and direct activities of Incident Investigation Team (IIT) as per recommendation of EHS Area Incharge (LG)
- Provide resources as required by IIT
- Responsible & authorized to sign the Incident Investigation Report (IIR) and send a copy to Head (Contractor) for action
- Mark a copy of IIR to Zonal project head (LG) & Corporate Head –EHS

Corporate Head – EHS (LG):

- Provide technical assistance/ guidance to site IIT
- Responsible & authorized to include expert from HO or outside in IIT as per the requirement

- Review IIR and guide IIT in developing adequate corrective & preventive actions.
- Review the implementation of corrective & preventive actions recommended by IIT.

2.10.5 Process Flow Chart



2.10.6 Process

2.10.6.1 Incident communication:

- Any witness to an incident shall immediately seek necessary assistance for situation and contact their EHS coordinator and/ or EHS Area In charge (LG).
- Immediately after incident, Contractor's EHS coordinator shall contact to EHS Area Incharge (LG) and his own Head to inform them about incident.
- EHS Coordinator (LG) shall ascertain status of activity at incident site and direct activity to provide first aid, security, or prevent further incident or damage.
- Within 1 hour, EHS Coordinator (LG) and/ or EHS Area Incharge (LG) shall brief Site Project Head (LG) & Corporate EHS-Head regarding incident.
- Site Project Head/ Manager (LG) shall inform to top management about the incidence.
- Contractor EHS Coordinator shall prepare First Information Report/ Flash and submit it to EHS Coordinator (LG) within 4 hours.
- Contractor shall maintain a register at site office containing details of injury along with treatment given.

2.10.6.2 Incident Investigation & Reporting:

- Immediately after report of any incident, the EHS coordinator (LG) shall secure the site and property as required by IIT.
- Immediately after report of any incident, Site Project Head/ Manager shall constitute Incident Investigation Team (IIT) as per recommendation of EHS Area Incharge (LG). The team shall comprise of concerned Section In charge (LG),

Contractor's EHS coordinator, and others as warranted by circumstance under chairmanship of EHS Area Incharge (LG).

- Depending on the situation Corporate Head-EHS shall depute expert from HO or outside to IIT. EHS Area Incharge (LG) shall seek advice from Corporate Head-EHS on all matters related to constitution of IIT, process of investigation, recording of witness, report preparation and follow up.
- IIT members shall investigate the incident; collect all evidences with a goal of establishing root cause(s) of the incident, not culpability. The evidence may include sketches, photographs, witness reports (verbal transcripts or written), drawings and plans and any documents/ records etc.
- The IIT will review the evidence and establish root cause(s) of the incident.
- The IIT shall recommend corrective and preventive actions to avoid the reoccurrence of the Incidents keeping in view of prevailing condition and contractual requirements.
- To implement the proposed control measures, an action plan shall be prepared containing the responsibility & time frame for implementation.
- The IIT members will prepare an Incident Investigation Report (IIR) and include, circumstances, events, analysis, and recommended corrective and preventative actions, supported by copies of appropriate evidence.
- IIR shall be submitted to site Project Head/ Manager for final review, approval and signature. After approval the same shall be circulated to all concerned including contractor for implementation of corrective and preventive actions.
- Head (Contractor) shall send incident report in prescribed format to the statutory authority in specified time limit as per BOCW rules with a copy to site Project Head/ Manager for information.

2.10.6.3 Implementation & Follow Up of Correction/ Corrective/ Preventive Actions:

- On the basis of established root cause(s), the team shall have recommended the corrective and preventive actions to avoid the reoccurrence of incidents.
- The recommended corrective and preventive actions shall be implemented by Contractor within the stipulated time period.
- IIT shall review the status of implementation of action plan and submit their remark to site Project Manager and Corporate – Head (EHS) against the implementation.

2.10.6.4 Guidelines for Incident Investigation

- The scene of a serious incident should be left undisturbed until the IIT has had an opportunity to inspect and investigate. The investigation should include but not be limited to the following:
  - Finding out the injured/ Involved person's name, address, next of kin, employer and job or normal position and function of the damaged equipment or plant
  - Questioning the supervisor & workers regarding planned activities and observed events
  - Questioning the injured/ Involved person as soon as possible
  - Studying and photographing the environment and equipment/ plant for signs of causes of incident
  - Finding the explanation for any irregularities

- Recording Evidence: Evidence may include the followings but not limited to:
  - Documents of all kinds,
  - Material exhibits of all kinds,
  - Photographic Evidence,
  - Interview of injured & witness.

2.10.7 Records

- Incident Reporting (EHS/HO/13) -to be maintained till completion of project.
- Incident Reporting and Investigation Report (EHS/HO/14) -to be maintained till completion of project.

2.10.8 References

- IS 3786: 1983,
- BOCW Act & Rules,
- Conditions of Contract
- Apex Manual- EHSMS
- Clause 4.5.3.1 &4.5.3.2 of OHSAS 18001:2007

2.11 PROCEDURE FOR INTERNAL AUDIT, NON-CONFIRMITY AND IMPLEMENTATION OF CORRECTIVE & PREVENTIVE ACTION [Procedure No.: LG/EHS/P/11]

2.11.1 Purpose

To establish an internal audit process with the objective to review and evaluate the performance and effectiveness of organization's EHS management system and ensure its continued conformity with LG EHS Manual, EHS Processes and OHSAS 18001: 2007.

2.11.2 Scope & Application

Broadly the scope includes the following:

- Audit planning and scheduling;
- Conducting internal audit;
- Preparing and communicating the audit report;
- Completing the audit and conducting audit follow up;
- Selection and development of internal auditors
- Evaluating the effectiveness of audit

This is applicable to all internal audits with various audit objectives including compliance with LG EHS Manual, EHS Processes and OHSAS 18001 Management System.

2.11.3 Definitions

Audit:
Systematic, independent and documented process for obtaining "audit evidence" and evaluating its objectivity to determine the extent to which "audit criteria" are fulfilled

Internal audit:
Conducted by, or on behalf of, the organization itself and can form the basis for an organization's self-declaration of conformity

Follow-up audit
Follow-up audits are conducted to verify the corrective actions initiated on previous nonconformities and its effectiveness.

Audit criteria
Set of policies, procedure and other applicable documents/records etc. based on which audit shall be conducted

Audit evidence
Records, statements of fact or other information which are relevant to the audit criteria and that are verifiable

Audit finding
Results of the evaluation of the collected audit evidence against audit criteria.

Audit conclusion

Outcome of an audit, provided by the audit team after consideration of the audit objectives and all audit findings

Audit scope:
Extent and boundaries of an audit

Auditee:
Organization being audited

Principal Auditee
Project head in projects and HODs for functions/ departments
Auditor
Person with competence to conduct an audit

Audit team
One or more auditors conducting an audit

Competence
Demonstrated personal attributes and demonstrated ability to apply knowledge and skills.

Correction/ Remedial Action
Action taken to mitigate the consequences of an existing EHS nonconformity

Corrective action
Action taken to eliminate the cause of an **existing** nonconformity or other undesirable situation in order to prevent recurrence

Preventive action
Action taken to eliminate the cause of **potential** nonconformity, defect or other potentially undesirable situation in order to prevent occurrence

Nonconformity
Non-fulfilment of a specified requirement with respect to LG EHS Processes, EHS Policy, Code of Conduct and Management Systems (ISO 14001: 2004 &OHSAS 18001:2007)

2.11.4 Responsibility & Authority

2.11.4.1 Management Appointee (MA)/ EHS Head

- Preparation of annual audit plan and half-yearly audit schedule;
- Selection and development of internal auditors;
- Determining audit scope, criteria and audit team for each audit;
- Review audit findings and advise auditor and auditee for improvements/ effectiveness;
- Presenting audit findings in half-yearly management review meetings;
- Consult top management and recommend improvement actions for continual improvement;
- Plan audit follow up and review of effectiveness of CA/PA implemented.

2.11.4.2 Lead Auditor (Team Leader)

- Representing and managing audit team;
- Preparation of detailed audit schedule and assign area(s) and role(s) to audit team members;
- Review of audit checklist prepared by team members where necessary;

- Conduct opening meeting with auditee team members;
- Presenting audit findings in closing meeting, clarifying the NCs where necessary to auditee team members;
- Preparation of audit summary report and briefing MA/ EHS Head;
- Act as coordinator and moderator during audit.

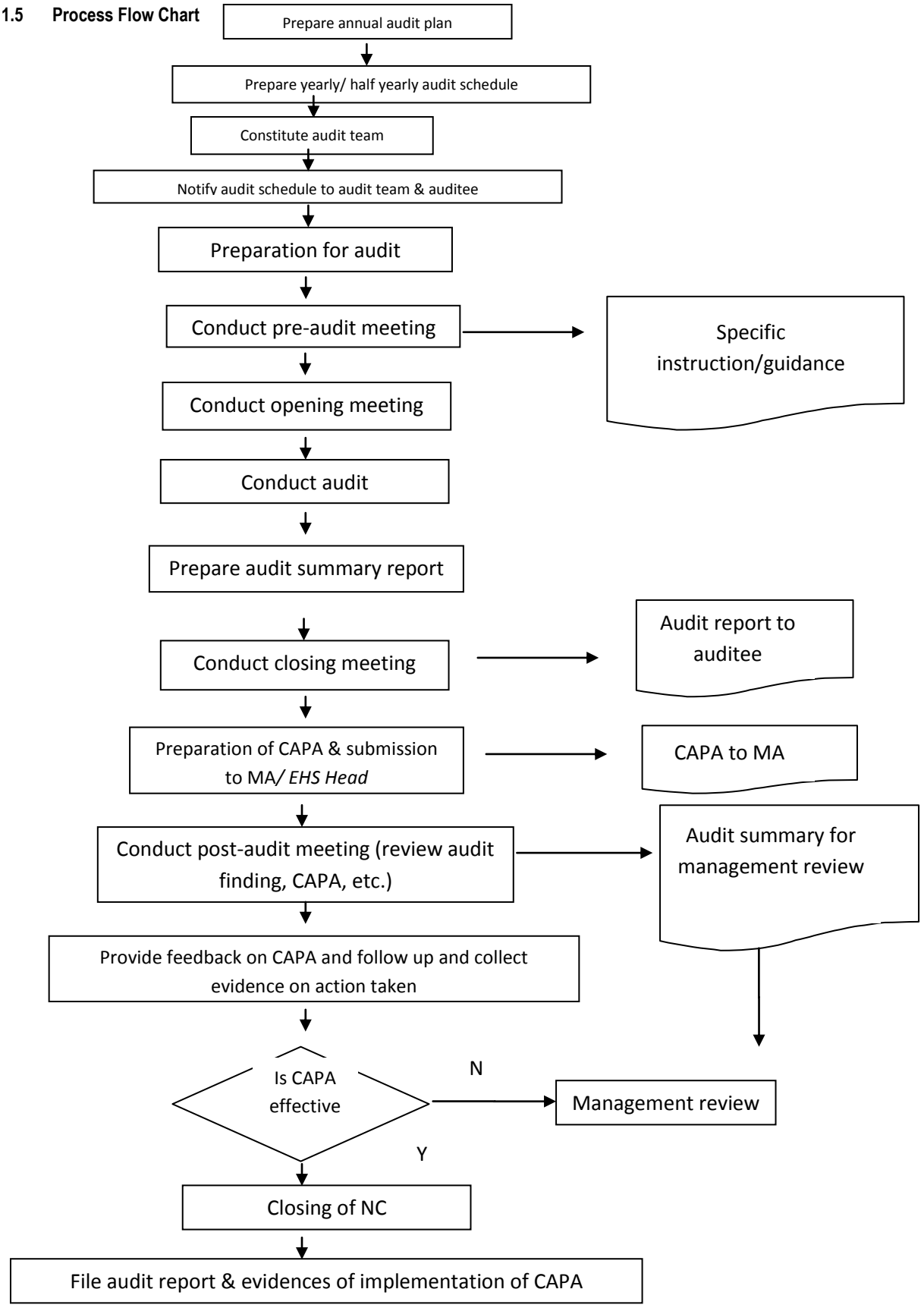
2.11.4.3 Auditor (Team Member)

- Preparation of audit checklist where necessary;
- Conduct audit as per schedule at designated areas as decided by team leader;
- Follow audit schedule and exhibit desired attributes;
- Recording audit findings in specified forms and reporting the audit findings to team leader.

2.11.4.4 Principal Auditee

- Acknowledgement of audit schedule notification released by MA/ EHS Head;
- Providing necessary logistics and accommodation to audit team members;
- Producing required audit evidences as sought by audit team member(s) during auditing;
- Acknowledging the nonconformities and/or observations issued by audit team;
- Proposing and implementing corrective actions within the agreed time frame;
- Forwarding necessary evidence for effective implementation of corrective actions to audit team members within the agreed timeframe;
- Cooperation with audit team members in effective functioning of internal audit process;
- Participate and chair opening meeting and closing meeting;
- Providing feedback on auditor's performance.

2.11.5 Process Flow Chart



2.11.6 Process Description

2.11.6.1 Audit Planning and Scheduling

- Annual internal audit plan shall be prepared in the beginning of calendar year. It shall be ensured that Corporate Office and projects get audited at least once in a year.
- Audit plan shall be reviewed and updated half yearly for incorporating any changes, if required. Annual internal audit plan shall be communicated to all concerned.
- "Yearly/ Half Yearly Internal Audits" shall be scheduled in line with annual internal audit plan. The following factors shall be considered while planning and scheduling audit:
  - Importance of particular process/ function/ project and its impact on health and safety of involved personnel, and established management system, policies, objectives and system requirements;
  - Current status of relevant project, i.e. mobilization/ most of the processes in-progress/ demobilization, etc., to ensure enough scope for audit;
  - Number of outstanding nonconformities/ category of NCs issued in previous round of audit, substantial delay in implementation of corrective actions, etc;
  - EHS performance of project/ function;
  - Statutory and other requirements, concerns of interested parties.

- Internal audit schedule shall be communicated to relevant auditee functions/ departments and project through e-mail/ fax at least 10 days prior to scheduled audit date.
- Respective auditee shall acknowledge/ accept the audit schedule by e-mail/ fax. In case of non-receipt of acknowledgement or no response within 2 days from auditee, the concerned audit schedule shall be deemed as accepted.
- Change request for scheduled date, if any, on a valid reason can be made by concerned auditee (only HOD/ Project Head) by e-mail/ fax immediately after receipt of the audit schedule. MA/ EHS Head shall approve change request if the reason is found genuine. Accordingly the revised audit schedule shall be forwarded to concerned auditee.

2.11.6.2 Selection and development of internal auditors

- Prospective internal auditors will be selected from various functions/ departments/ projects in the organization based on their qualifications, functional expertise, and communication skills assessed by MA as well as feedback received from their HOD/ Project Head.
- Selected auditors shall be trained by external faculty.
- Qualified internal auditors shall be listed in the internal auditors register. List of internal auditors shall be updated half yearly/yearly.

2.11.6.3 Selection of audit team

- MA/ EHS Head shall select audit team from list of internal auditors considering the relevant functional expertise, experience, etc. One of the senior auditors from selected audit team shall be designated as lead auditor. It shall be ensured that the auditor(s) selected are independent of the department/ function/ project being audited.

2.11.6.4 Pre-audit preparation

- Lead auditor shall start pre-audit preparations such as: finalizing detailed audit schedule, preparation of audit checklist, distributing the responsibilities for auditing sub-processes, sub-sites etc. among respective team members. A detailed break up of sub-departments, sub-sites audit schedule shall be forwarded to relevant project site/ department by team leader, where necessary.

- A pre-audit meeting shall be conducted by MA as part of pre-audit preparation to oversee the pre-audit preparation, discuss specific issues, clarify queries (if any), provide focus, communicate specific instruction, etc.

2.11.6.5 Audit execution

- A formal opening meeting shall be conducted by audit team to announce start of the audit by explaining audit scope, criteria, audit schedule and providing clarifications to auditee, if any. The attendance of the meeting shall be recorded.

- Audit shall be performed as per scheduled programme at respective areas/ sub-sites and all audit findings made during the audit shall be entered in audit summary report.

- In the audit summary report, against each audit finding the auditor shall write whether the audit finding is conforming (C) or nonconforming (NC) or observation (OBS). Concerned auditor(s) shall obtain the necessary audit evidence for each conformity/ nonconformity/ observation and get signature from principal auditee.

- **Major nonconformity** can be issued for the cases such as:
  - Absence or total breakdown of a system to meet the requirement of OHSMS;
  - Significant failure to implement the specific requirement of a documented procedure;
  - A number of minor nonconformities against one requirement can represent a total breakdown of the system and thus be considered a major nonconformity;
  - Any non-compliance that would adversely affect health and safety of involved personnel;
  - Non-compliance to applicable legal requirements.

- **Minor nonconformity** can be issued for the cases such as:
  - A failure to comply in some part(s) of the documented procedure(s);
  - A single observed lapse in following one activity of established process/ system;
  - A non-conformity for which corrective action can be implemented immediately and closed by an auditor.

- An observation can be issued for the cases such as:
  - Situations where there is not enough objective evidence found to conclude either conformity or non-conformity at the time of audit;
  - Has a potential to lead into a nonconformity if corrective action is not taken up immediately;
  - Issued as a system improvement suggestion for the benefit of auditee and organization.

- At the end of audit, an audit summary report shall be prepared. Audit findings will be communicated/ presented by team leader in the closing meeting with clarification, if sought by auditee.

- **Reporting of audit findings-** Team leader shall submit the audit finding report to MA/ EHS Head for his review. MA/ EHS Head after review of audit findings may change the degree of nonconformity or drop the particular nonconformity where necessary.

2.11.6.6 Corrective actions and follow-up audit

- The auditee shall prepare corrective/ preventive actions on non-conformance and observations and submit MA/ EHS Head for review in the format. Corrective/ Preventive actions shall be initiated as described in the relevant procedure.
- Upon receipt of documentary evidence by respective auditee/ HOD/ Project Head, MA/ EHS Head shall provide feedback on CAPA and may close the NCs based on documentary evidence or may schedule a specific follow-up audit to verify the action taken for various non-conformities and their effectiveness or the same will be verified in the next round of internal audit.

- Concerned auditor(s) will verify the CAPA and their effectiveness in the follow-up audit/ or next round of internal audit.
- Upon completion of follow up/ subsequent round of audit and verification of effectiveness of corrective actions, MA will close the NCs.

2.116.7 Records

Records		Retention Period
• Annual Internal Audit Plan	-	Min. 1 Yr./ till the end of Project
• Audit Schedule	-	Min. 1 Yr./ till the end of Project
• List of Internal Auditors	-	Min. 1 Yr./ till the end of Project
• Audit Summary Report	-	Min. 1 Yr./ till the end of Project
• NC Report	-	Min. 1 Yr./ till the end of Project

2.11.6.8. References

- Apex Manual-EHSMS,
- Clause 4.5.5 of OHSAS 18001: 2007

LG/EHS/F/07

ANNUAL AUDIT PLAN - AAP | **YEAR----------**

Region	Location	Quarter I [April – June]			QuarterII [July-Sep.]			QuarterIII [Oct.- Dec.]			QuarterIV [Jan.-March]		
		April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	March
AAP SUMMARY		NO. OF IA-			NO. OF IA-			NO. OF IA-			NO. OF IA-		
		NO.OF EXTERNAL AUDIT -			NO.OF EXTERNAL AUDIT -			NO.OF EXTERNAL AUDIT -			NO.OF EXTERNAL AUDIT -		

Legend : IA-Internal Audit, EA- External Audit

Prepared by: | Approved by:

LG/EHS/F/08

AUDIT SCHECULE- AS					
AUDIT REFERENCE :			AUDIT TYPE:EXTERNAL/INTERNAL (In case of EA indicate the name of agency)		
PROJECT/HO:			PRINCIPAL AUDITEE :		
AUDIT SCOPE	AUDIT CRITERIA	AUDIT DURATION & DATE	AUDIT TEAM	AUDIT TEAM LEADER	REMARKS ON OPENING/CLOSING MEETING
PREPARED BY:			APPROVED BY:		

LG/EHS/F/09

LIST OF AUDITORS- LOA					
Sr. No.	Name of Auditor	Qualifications		Functional Expertise	Audting Experience
		Educational	Training/ Professional		
Prepared By:			Approved By:		

LG/EHS/F/10

AUDIT: NON-CONFORMANCE REPORT - NCR		
AUDIT REF. NO. – **DEPT./PROJECT -**	**PROCESS AUDITED –** **NCR NO. -**	
AUDITEE	**AUDITOR**	**DATE OF AUDIT**
Non-Conformance Description (statement supported by the evidence)		

AUDIT CRTERIA(specify criteria to establish NC)	**CATEGORY OF NC**
LODHA GROUP EHSPolicy/Code Of Conduct:	Major
LODHA GROUP EHS Manual:	Minor
LODHA GROUP EHS Process:	Observation (Suggestion for improvement)
OHSAS 18001:2007 :	

Signature of Auditor		Signature of Auditee	
Name of Auditor		Name of Auditee	

Correction/Corrective Action (Proposed/Taken by Auditee)

Target Date of completion — Signature of Auditee

Preventive Action (Proposed/Taken by Auditee)

Target Date of completion — Signature of Auditee

Follow Up Audit Remarks

Status of NC	**Closed** (date of closure)-
	Open –
Name of Auditor:	Signature of Auditor:

LG/EHS/F/11

AUDIT SUMMARY REPORT - ASR	
Audit Ref. No.:	Date of Audit:
Dept./Project:	
Lead Auditor:	Audit Team Members:
Auditee:	
Audit Scope:	Audit Criteria:
SUMMARY OF NON-CONFORMITY	

Sr. No.	NC Statement	Evidence (refered to in support of NC)	Category (Conformance – C, Major- MJ, Minor – MI)	Remarks on Closing
1				
2				
3				
SUMMARY OF OBSERVATONS				
Sr. No.	Observation	Evidence (refered to in support of Observation)	Category (Conformance – C, Major- MJ, Minor – MI)	Remarks on Closing
1				
2				
3				
4				
Name of Auditee Team Leader			**Signature of Audit Team Leader**	

2.12 PROCEDURE FOR MANAGEMENT REVIEW
[Procedure No.: LG/EHS/P/12]

2.12.1 PURPOSE

To establish processes for periodic review of the performance of organization's OHS management system by top management with an aim to ensure its continuing suitability, adequacy and effectiveness.

2.12.2 SCOPE AND APPLICATION

This procedure covers the following activities:

- Preparation of agenda for management review;
- Conduct of Management Review Meeting;
- Recording and communicating outcome of Management Review Meeting.

The procedure is applicable to Management Review of OHS management system.

2.12.3 DEFINITIONS

Nil

2.12.4 RESPONSIBILITY AND AUTHORITY

Management Appointee

- Preparation of agenda for Management Review (MR) Meeting;
- Organizing MR Meeting, presenting performance of OHS management system and recommend actions for continual improvement;
- Recording and communicating the output of MR Meeting to all concerned.

Top Management

- Reviewing the OHS performance and assessing suitability, adequacy and effectiveness of OHS management system in changing environment;

- Assessing opportunities for improvement and need for change to OHS management system including OHS policy and OHS objectives ;
- Evaluating and approving recommendations of MA for continual improvement.

2.12.5 PROCESS FLOW CHART

Nil

2.12.6 PROCESS DESCRIPTION

- Management Review Meting (MRM) shall be organized half yearly by MA as convener. Managing Director & Chief Executive Officer (MD & COO) shall be de-facto chairman for MRM. HOD's of all function and Project Heads shall participate in MRM. MA shall invite other members to MRM in consultation with chairman.

- Prior to MRM, Management Appointee (MA) shall prepare and communicate agenda to all participants and invitees. The agenda shall include but not limited to the following:
  - Results of internal audits and evaluation of compliance with applicable legal requirements and with other requirements to which the organization subscribes;
  - The results of participation and consultation;
  - Relevant communications from external interested parties, including complaints;
  - OHS performance of the organization;
  - Status of organization's overall objectives against planned budgets, targets and schedules;
  - Status of incident investigations, implementation of preventive/corrective actions;
  - The continuing suitability of established OHS management system in relation to changing circumstances, including developments in legal and other requirements w.r.t. OHS;
  - Performance of contractors, suppliers w.r.t. its OHS performance which would affect the organization's overall OHS performance;
  - Recommendations for improvement;
  - Review of suitability and adequacy of resources allocated;
  - Follow up actions from previous management reviews;

- Additional points may be included in MRM meetings as per changing situations, strategies and new business initiations after obtaining confirmation from chairman.

- Minutes of Meeting (MoM) and attendance of MRM shall be recorded in format no. LG/EHS/F/12. Copy of MoM of MRM shall be forwarded to all members for their information and necessary actions.

- Relevant output from management review shall be communicated to all concerned.

2.12.7 RECORDS

RECORDS	RETENTION PERIOD
• Minutes of Meeting of MRM :	Min. 1 Year/ till the end of Project

2.12.8 REFERENCES

- Apex Manual- OHSMS,
- Clause 4.6 of OHSAS 18001: 2007

LG/EHS/F/12			
MINUTES OF MANAGEMENT REVIEW MEETING			
Management Review Meeting No:		**Venue:**	
Date:		**Time:**	
Reference:			
Attended by:			
Sr. No.	**Agenda discussed/ Issues decided**	**Action by**	**Time frame**
Reviewed by Management Appointee: **Signature:**			
Date:			

3. EHS Standards & Regulations

Contractor's work shall be performed in accordance with this document, the applicable laws of any local legislative requirements and other contract documents. Where these documents address the same subject, the most stringent requirement shall apply. All construction activities should progress in line with the Minimum EHS standards of Lodha Group as attached in Appendix 1.

3.1 Indian Government Regulations

All the projects must follow all applicable Indian Government EHS Rules & Regulations.

3.2 Local Authority Requirements

Contractors shall manage his project in accordance with all regulating state regulations.

3.3 Safety Minimum Requirements

The projects operated within the Lodha Group must meet Lodha Group specific requirements that have been developed to meet the EHS Minimum Requirements (EHS-MR). EHS-MR is available from the Head - EHS and form an attachment to all the work orders or purchase orders.

1. All the workers of the contractors should be first inducted for safety to make them aware on site safety rules made for individual protection. All workers should be provided with ID card by the contractor which shall be stamped 'SAFETY INDUCTED' by our EHS cell, to ensure all workers are inducted on safety.
2. Personal Protective Equipments to be used by contractor should comply with following specifications and as specified in EHS Site Implementation Plan;

Sr. No	PPE	Details	Specifications	Remark
1	Safety Helmet	Helmet with adjustable chin strap. Yellow colour for contractors.	IS 2925 : 1984 or EN 397	Test certificate to be produced.
2	Safety Shoes	With steel toe and black in colour.	IS 15298 : 2002 or EN ISO 20345 or EN 345	For monsoon gumboots with steel toe should be used
3	Safety Belt	Full body harness with 1.8m lanyard and auto snap spring hook.	IS 3521 : 1999 or EN 361 : 2002	For working above 2m height. Test certificate to be produced.
4	Dust Mask	< 10 micron pose size to avoid respirable particles.	IS 8522 : 1977 or EN 149 : 2001 FFP2	For working in dusty atmosphere.
5	Ear Plugs	Disposable foam ear plugs.	IS 6229 : 1980 or EN 352 - 2	For working in high noise area above 85 dB(A)
6	Cotton Hand Gloves	Fast Grip Dotted Gloves	IS 6994 : 1973 BS EN 388:2003	For working with sharp objects

(a) Safety Net to be used by the contractor should be made of 6mm PP rope (as per IS – 5175:1992) having breaking strength of 602 kgs and border rope of 12mm PP rope (Breaking Strength – 2210 kgs). The mesh size shall be of 4"square. HDPE net of 10mm x 10mm mesh size is fixed on top and IS 5175:1992 complied PP rope to be used. Net shall meet the requirements of IS 11057: 1984.

(b) Other PPE to be used by the contractor should comply to IS standards and should be used as per the activity requirement for personal protection or as recommended by Lodha engineers and EHS Manager.

3. No worker should be allowed to smoke at site or consume alcohol or tobacco or Gutkha. Entire construction site is designated as no smoking, no tobacco and no alcohol site and canteens provided in the construction sites shall not sell any such products within the site premises.
4. No labour below age of 18 years shall be allowed to be deputed at site. In case of any doubt, contractor may be required to submit proof of age of the worker.
5. Housekeeping has to be maintained on daily basis at the constructions site and as building height increases, garbage chute has to be provided and used for transportation of waste from higher floors to ground level.
6. All openings in the buildings like lift ducts or pipe ducts or floor edges should be barricaded at each floor in form of pipe barricading with standard hand rail, mid rail and toe board in yellow colour. Where resources are not available, waste rebars may be used for edge barricading, but after approval from EHS Manager. Also every third floor of such opening should be covered with safety net to avoid free fall depth in the opening.
7. Safety net should be provided / erected by the contractor at two levels. One peripheral safety net should be provided at a height not greater than 15 m of the building and second level of safety net should be provided not more than 10m below the working level. The second level of safety net should be lifted as the number of floor is increased. The

access walkway to the building should be barricaded and covered with safety net or metal sheet to protect employees, contractor and visitors.

8. Electrical cable connections for operation of any of electrical appliance should be through plug and socket arrangement only and ELCB should be provided for such connections. Loose laying of electrical cables at ground level shall not be allowed. Only double insulated cables will be allowed at site which is to be always laid above 2m height.
9. All machines having moving parts should be guarded properly and only authorized person should be deputed for its operation.
10. Scaffold erection should be done in a standard way with its entire component being erected. It should be certified to be safe from Lodha engineers before start of any activity to be performed using scaffold.
11. One person should be deputed by the contractor as Safety Representative with basic experience of safety, to represent contractor in Safety Committee Meetings and shall be entirely responsible for ensuring implementation of EHS standards of Lodha at construction site, as communicated from time to time by Lodha engineers and EHS Manager.
12. All lifting tools & tackles and Equipment to be used by contractor should be tested by authorized third party and should have test certificate in Form 12. This includes Cranes, Lifting machine, slings, D-shackle, chain pulley, etc.
13. All incidents including near miss has to be reported to the EHS Managers and Lodha engineers immediately. On investigation of an incident, contractor has to take all necessary corrective and preventive actions as suggested by the investigating team.
14. Contractor is required to keep and maintain a First Aid Box in his site office for any emergency during an incident. All records of consumption of first aid items have to be maintained by the contractor along with First Aid Box.
15. Contractor safety representative shall be responsible for conducting daily toolbox talk before start of day's activity to make workers more aware on safety. The records of same should be maintained by the contractor.
16. Contractor should encourage all its workers to participate in any of the motivational events organized by the EHS Managers and in making any of arrangements for contract workmen's workplace safer.
17. Contractor should display all appropriate signage as required and recommended by Lodha from time to time to increase awareness level in site.
18. .In any event of non compliance to above safety norms of Lodha, penalty shall be levied on contractor as per penalty rules of Lodha.
19. All RA bills of contractors will be supported by safety checklist and in case of non compliances, either bills will be withheld or contractors will be debited with cost of corrective action taken by the company with penalty charges.
20. Contractor shall submit all the MIS as required by the Manager EHS in specified time frame and in specified format.

3.4 Project EHS Standards or Operating control Procedure

Lodha Group has developed specific standards regarding Environment, Health and Safety for the construction of the facility that will be enforced for all work activities, as mentioned in this manual or communicated as and when upgraded. Minimum EHS Operating control procedure are attached as Attachment 1 to this manual for reference and implementation.

The EHS Managers of the project along with the Project Manager shall prepare a Safe Work Procedure and/or Safe Work Method for all the activities of the respective project and maintain a SWP register. Contractors shall refer to these SWP's and obtain the applicable copy from Lodha Construction Management staff. Updated Operating control procedure or procedures will be issued as required from time to time via Safety communications during the course of work.

3.5 Site Rules

Lodha Group has developed specific site safety rules that will be enforced for all the participating members from the client, the consultants, contractors and their visitors. The current set of site rules in the form of Golden Safety Rules is as follows. All contractor workmen to be inducted on safety should be aware of these golden rules and should strictly adhere to it to complete all the tasks in safe manner. Updated site rules will be issued as required during the course of work.



4. Roles & Responsibilities

All Contractors performing construction activities at Lodha site are responsible for compliance with all regulations and rules set for the project and are DIRECTLY RESPONSIBLE for the safety of their employees and their subcontractor's employees.

Responsibilities for contractors include:

The contractor is responsible for accident prevention and job site safety. This responsibility cannot be delegated to subcontractors, suppliers, the authority, project management consultant, or other persons. Lodha Construction Management team must be informed in advance if the contractor safety personnel will not be on duty when work will be undertaken.

The contractor's project manager will ensure compliance of the contract, including the Lodha EHS Site Manual, local legal and legislative requirements and other construction EHS requirements and standards.

1.) Upon notification of contract award, submit in writing a Contractor's EHS/Safety plan to Lodha Construction Management Team for review and recommendations. The EHS Plan will be approved by the Manager EHS and Project Manager after making the recommended amendments as per requirement of Lodha Standard.
2.) Ensure that all employees are committed to the Incident and Injury Free (IIF) program and actively participate in the IIF activities.

3.) Provide a written EHS plan and Safe Work Method Statement / Risk Assessment to Lodha Construction Management team. The plan must be site specific and identify the particular hazards to / of their trade and provide precautions to perform the work safely. The plan must be submitted & approved before any work is performed on the jobsite and must include provisions for implementation on the project for work to be conducted by any additional contractors.
4.) Ensure that sufficient resources are allocated to achieve the Site EHS requirements and responsibilities for their own employees and site supervisory staff are assigned.
5.) Designate enough number of jobsite Safety Officers to be full time assigned on site responsible for implementation of their EHS Program, to co-ordinate with Lodha, to maintain records, and to organize and participate in training sessions. The Safety Officer provided by the Contractor must be certified by authority that is accredited by the Government and considered by Lodha EHS Cell or approved by Head – EHS of Lodha.
6.) Ensure that all employees attending site safety induction.
7.) Attend safety inspection and safety meetings as required by Lodha Team.
8.) Conduct regular safety meetings and "Toolbox Talks" for all their employees on the jobsite, and maintaining records of all such meetings & Toolbox Talks.
9.) Perform their work in accordance with Statutory and Lodha EHS requirements.
10.) Not permitting the interchange and use of tools and/or materials by another trade without written permission.
11.) Providing and enforcing the use of PPE as required by Statutory and Lodha EHS guidelines.
12.) Using proper tools for each task and maintaining these tools in a safe operating condition. Contractors will verify that all employees are trained and understand operating procedures before machinery or equipment is used.
13.) Checking for and correcting any unsafe practices and conditions (especially high risk activities) that exist in the performance of their work, and reporting to Lodha EHS Dept, any unsafe conditions created by others.
14.) Make a complete investigation of accidents or incidents to determine the cause so that corrective action can be taken. In addition, Contractors will report all incidents and injuries on a timely basis as defined in the Incident Reporting section.
15.) Provide appropriate first aid supplies for their employees and also providing personnel qualified to administer first aid as required.
16.) If for any reason during the performance of the work, safety lines, barricades, floor or roof opening covers, holes covers, or fall protection related items are removed to perform work, prior agreement shall first be obtained from Lodha Construction Management, and it will be the responsibility of that Contractor to replace them promptly.
17.) Maintain good general housekeeping in their work area and minimizing all combustible debris in their work areas.
18.) Fulfil requirement under 2.1 of this manual and other requirements as required by Lodha for safety of all including up-keeping of Labour camps in hygienic condition, where labour camp area is provided by Lodha.

Responsibilities for Project / Construction Management Team include:

1.) Ensure that all employees are committed to the Incident and Injury Free (IIF) program and actively participate in the IIF activities.
2.) Evaluate the written EHS plan and Safe Work Method Statement / Risk Assessment that is submitted by the contractor, in consultation with Manager EHS.
3.) Ensure that sufficient resources are allocated to achieve the Site EHS requirements and responsibilities for own employees and site supervisory staff are assigned.
4.) Coordinate with contractor jobsite Safety Officers to ensure that contractor assigns a full time qualified safety professional on site who is responsible for implementation of their Site EHS Program, to maintain records, and to organize and participate in training sessions.
5.) Ensure that all employees attending site are safety induction.
6.) Attend safety inspection and safety meetings as required by Lodha EHS Cell.
7.) Ensure that contractor conducts and monitors regular safety meetings and "Toolbox Talks" for all their employees on the jobsite, and maintains records of all such meetings & Toolbox Talks.
8.) Monitoring that the contractor works in accordance with Statutory and Lodha EHS requirements.
9.) Monitoring and enforcing the use of PPE as required by Statutory and Lodha guidelines.
10.) Checking for and correcting any unsafe practices and conditions (especially high risk activities) that exist in the performance of their work area, and reporting to Lodha EHS Cell, any unsafe conditions created by others.

11.) Make a complete investigation of accidents to determine the cause so that corrective action can be taken by the contractor. In addition ensure that contractor will report all incidents and injuries on a timely basis as defined in the Incident Reporting section
12.) Provide and ensure appropriate first aid supplies for Lodha employees and also providing personnel qualified to administer first aid as required.
13.) Ensure compliance to clause 2.1 of this manual by the contractor.
14.) Maintaining good general housekeeping in their work area and minimizing all combustible debris in their work areas.
15.) Fulfil other requirements as required by Lodha for safety of all.
16.) Adhering to Work Permit System as per Lodha Permit to Work Procedure on the projects as communicated by EHS Manager or Head – EHS.

Responsibilities for EHS Team include:

The duties of a safety officer shall be to advise and assist the employer in the fulfilment of his obligations, statutory or otherwise concerning prevention of personal injuries and maintaining a safe working environment. These duties as per Building & Other Construction Workers Act, shall include the following, namely,

1.) Developing the methodology for EHS risk assessment / SWMS and training the site personnel.
2.) Supporting the EHS management system by Generating and submitting reports required by the Government / Management related to EHS.
3.) Facilitating inspection and certification of Pressure vessels, Lifting Equipments, Lifting Tools & Tackles, Hoists etc by competent person under Factory act.
4.) Facilitating servicing and maintaining of all the Fire extinguishers, First Aid Box.
5.) Establishing emergency preparedness plan, its periodic review, training and response through Mock drills.
6.) Periodically reviewing the progress made in EHS by participating in the EHS Committee Meetings organized by Site Team.
7.) To advise the building workers in planning and organizing measures necessary for effective control of personal injuries.
8.) To advise on EHS aspects in a building or other construction work and to carry out detailed studies of selected activities;
9.) To check and evaluate the effectiveness of action taken or proposed to be taken to prevent personal injuries;
10.) To advise purchasing and ensuring quality of personal protective equipment confirming to national standards;
11.) To carry out safety inspections in order to observe the physical conditions of work and the work practices and procedures followed by building workers and to render advice on measures to be adopted for removing unsafe physical conditions and preventing unsafe actions by building workers;
12.) To investigate all the incidents including near miss incidents along with CM team and maintain records.
13.) To promote the working of safety committees and to act as an advisor to it.
14.) To organize motivational programs, in association with concerned departments.
15.) To design and conduct, either independently or in collaboration with other agencies, suitable training and educational programs for prevention of accidents to building workers;
16.) To frame safe rules and safe working practices in consultation with senior officials of the establishment;

5. Contractor's EHS Plan Submission Requirements

Contractors are required to submit their Site EHS Plan to Lodha EHS Manager and Project Manager for review and approval at least seven days before work commences on site. No work shall be performed without obtaining a written approval from Lodha Construction Management team. The Plan shall include the following as a minimum :

5.1 Site Organization

5.1.1 An organization chart showing detailed site management hierarchy with trade divisions, names, titles and contact numbers of the trade supervisors, and forecasted manpower of each trade shall be submitted.

5.1.2 Submit a list for each subcontractor with name, scope of work, anticipated duration, average & peak manpower, safety record & statistics, site manager's & safety manager's CV.

5.2 EHS Management Procedures

A written procedure with flowchart shall be submitted by the contractor for each category of work undertaken. The safety procedure shall be provided in a job specific step-by-step manner and not in generic form.

5.3 Safety Personnel & Equipment Resource

5.3.1 Safety Personnel

5.3.1.1 Contractors are required to maintain a ratio of 100 employees to 1 full-time safety personnel upto 500 employees and thereafter 1 full-time safety personnel for each addition of 500 employees, on site throughout the entire duration of their contract works.

5.3.1.2 Contractors shall submit a full list of their safety personnel assigned on site giving their names, qualifications, and experiences.

5.3.1.3 The contractor shall advise Lodha, prior to safety officer starting the project to confirm that the safety officer has suitable experience. Lodha may interview each assigned safety officer for the project. The contractor shall give Lodha a minimum 72 hour notice for this required interview. Lodha will gauge the suitability for the safety officer with the client. The duty of all contractors is to assemble the correct skill set for the safety team at Lodha Sites.

5.3.1.4 If more than 500 workers on site, the contractor must supply at least one qualified safety manager with recognized qualification in safety.

5.3.2 Safety Equipment

The contractor shall submit a list of safety equipment and tools for use by the safety personnel and workers for the different trades during the course of work.

6. Safe Work Method Statements (SWMS) / Risk Assessment Requirements

Contractors shall submit their SWMS to Lodha Construction Manager / Project Manager for review and approval at least two days prior to work commencement on site. No work shall be performed without obtaining a written approval from Lodha Construction Managements Project Incharge of the site. The proposed work must be conducted in accordance with the safety procedures in the SWMS/ Risk Assessment.

6.1 Preparation of SWMS

Preparation of the SWMS is done by the contractor at the time of contract award or as risk assessment identifies additional risks. As a minimum, the SWMS must include the following components:

1. The sequence of activities or work tasks to be carried out.
2. An identification and assessment of the risks arising from those activities or tasks in relation to the site and any person likely to be affected by them.
3. The way(s) in which the identified risks will be reduced to an acceptable level, for example, by using engineering control and PPEs.
4. The management system used to monitor compliance with the agreed safe system of work.
5. The way in which the progress of the work will be reviewed for the purposes of environment, health and safety protection in order that any necessary modifications and improvements to the system of work can be identified and introduced.
6. The target date of completion of activity in a safe manner and the person responsible for ensuring adoption of safe work procedure.

6.2 Review & Revision

The SWMS submitted by the contractor shall be reviewed by Lodha staff including the Construction Manager / Project Manager, EHS Manager, Project Engineer, Supervisors, Foreman, or other parties, as required and delegated by CM head. Revision is made by the contractor following comments and suggestions from Lodha Construction Management Team and EHS Dept.

6.3 Implementation

After the SWMS is completed and revised to the satisfaction of the Project Team, the SWMS is implemented through the following steps.

Induction to SWMS

First-Day-At-Work safety induction must be given to new workers to follow the working method presented in the SWMS

Tool Box Meeting

The toolbox meeting must be conducted by the respective contractors of individual trades to their workers under their charge, where specific issues of the SWMS or updates of them are discussed, agreed and implemented.

EHS Observation or Inspection

The purpose of a EHS observation or inspection is to review the SWMS put in place and to determine its suitability. The following general rules apply to such observations / inspections:

1. EHS observations or inspections are conducted by the Lodha EHS Manager together with the Construction/Project Manager, Foreman, Supervisor or other parties, as well as representatives of the Contractor.
2. The Contractor shall revise the SWMS if the inspection finds it unsuitable or deficient.
3. Retraining / re-induction of workers and supervisors in the revised SWMS.

7. Site Induction & EHS Training

Lodha Group contends that EHS management begins with ensuring all staff and contractors are properly trained to conduct their work in accordance with an Incident and Injury Free philosophy. Workers shall possess sufficient knowledge of the risks they may encounter as well as the knowledge and skills to mitigate those risks. The following training programs should be organized at all Lodha Projects:

7.1 Site Induction

All workers without exception shall attend a site specific safety induction performed by Lodha site team. Based on this training, workers ID badge stands valid or else entrance will be restricted. The induction shall include an introduction of the following:

- Site Access & Amenities
- Site Safety Golden Rules
- Site Emergency Procedures
- Safe Work Method Statements
- Disciplinary Processes
- Injury Reporting / Incident Investigation Procedures

Lodha places special emphasis on high hazard activities such as Fall Protection & Electrical, The two highest killers in the construction industry.

7.2 Specialty Training Sessions

Lodha ensures that specialty trades and activities receive appropriate training as required by Indian Legislation and/or site specific risk assessment. Specialty Training includes but is not limited to

Sr. No	Topic
1	Fall Protection in Building Construction.
2	Electrical Safety in Building Construction.
3	Scaffold Basic Components.
4	Basic First Aid
5	Basic Fire Fighting
6	Use & Care of PPE's
7	Emergency Preparedness
8	Construction Equipment Safety

7.3 Tool Box Talks.

Lodha provides strict control and oversight with regard to contractor Daily Tool Box talks. Tool box talks are to be trade specific and relevant to the work to be performed. The tool box talks shall be conducted daily by the contractors. Lodha monitors compliance and attends contractor talks on an unscheduled basis to ensure effectiveness. Contractor management, engineers & supervisors to compulsorily attend tool box talk. All contractors' safety personnel to attend every tool box talk.

8. Site Entry Requirements

8.1 Entry Process

8.1.1 Site Identification Badge

- All employees must wear a valid site identification badge at a location that can be seen to enter the site through designated security checkpoints. Employees without a site badge or wearing a false badge will be removed from the site.
- Contractors shall provide proper ID cards for their workers and duly stamped for being inducted on safety and display it at the security checkpoints. Contractors must also maintain following documents in order:

8.1.1.1 Employee Insurances

Valid certificates for (1) Labor Insurance and (2) Employer's Accident Liability Insurance must be produced.

8.1.1.2 Physical Examination

Valid certificate for Physical Examination performed in accordance with the Labor Health Regulation.

8.1.1.3 Legal Work Permit for foreign workers, if employed.

8.1.1.4 Safety Induction Training

Valid ID card issued by contractor and stamped for being inducted on safety.

8.1.2 Golden Safety Rules

All employees and contractors will be provided with Golden Safety Rules which should be attached with individual ID cards and will be checked randomly during site monitoring process.

8.1.3 Personal Protection Equipments (PPEs)

All personnel entering the works area must wear the following PPEs as a minimum and mandatory requirement:

- Safety Helmet with a chin strap.
  - ✓ White : 3A & Above Level Upto 0A
  - ✓ Blue : 3B & Below Level Upto 5C
  - ✓ Green : EHS Team
  - ✓ Red : Electricians
  - ✓ Yellow : Contractors
- Safety Shoes Black in colour and high ankle.
- Safety Reflective Jackets, as and when instructed by Lodha.

Note:

- ❖ Smooth sole shoes or gumboots are required for concrete finishing.
- ❖ Clean Room Shoes required for clean room activity.

Additional PPE will be required for special tasks.

8.2 Visitors

Visitors are defined as those who come to the site for a short period of time for various TEMPORARY purposes such as meetings, short term technical support, equipment repair, testing and maintenance, etc. (Temporary is defined as less than 2 hours of time on the project site.).

When visiting the site, visitors will

1. Fill out visitor log at the main security booth entrance.
2. Deposit a photo ID in exchange of visitor badge.
3. Undergo a short induction for visitors, receive a temporary badge and then escort to site if required.
4. Use mandatory PPE, if required to go to construction site.
5. Return the visitor badge and PPE at the end of the visit to receive submitted Photo ID.

When inside the construction perimeter within Lodha sites, visitors must be escorted all the times by a person who has a regular site badge to assure that the visitors are following site safety rules. Visitors must wear the other activity based required PPE, if they enter the work area.

9. Work Permits

9.1 Hazardous Work Permits

Contractors are required to apply and obtain an approved work permit prior to performing tasks which are of high-risk nature. The work permit shall not be applicable for routine construction activities. The application of work permit system along with type of work permits for the projects will be jointly evaluated by Construction Management Head and Head – EHS along with site Project Managers.

9.1.1 Standard work permits that may be used on Lodha project:-

- Permit for Electrical Work.
- Permit for Excavation

- Permit for Working on Edges of Building.
- Permit for Working on Height.
- Permit for working in confined space.
- Permit for Lifting & Shifting of Material.
- Permit for Hot Work.
- Permit for Night Work or On Sundays or On Holidays.

Other work permits may be required and developed on the project as directed by the project manager after approval from Head - EHS.

10. EHS Inspections & Corrective Actions

10.1 Contractor Requirements

Contractors must follow the safety management procedures as stated in their Safety Plan to perform self-inspections for each trade tasks.

10.2 Documentation Requirement

Lodha EHS Manager shall make daily rounds of the construction site to monitor any deviations form safe procedures and shall note it in the daily observation Sheet to ensure the compliance is made in time frame manner.

Other formats to be used at construction site are stated below and attached as Attachment 2. The formats are to be revised only after approval from Head – EHS.

Sr. No	Format Details	Format No	Rev No	
1	Safety Training / Induction / Toolbox	EHS/HO/001	0	
2	Daily Observation Record.	EHS/HO/002		
3	Safety Violation Record.	EHS/HO/003		
4	Fire Extinguisher Inspection Record	EHS/HO/004		
5	First Aid Box Inspection Record.	EHS/HO/005		
6	Emergency Contact Number Record	EHS/HO/008		
7	Fire Fighting Team Record.	EHS/HO/009		
8	First Aid Team Record.	EHS/HO/010		
9	Rescue Team Record.	EHS/HO/011		
10	Mock Drill / Evacuation Drill Record.	EHS/HO/012		
11	Incident Reporting Format.	EHS/HO/013		
12	Incident Investigation Report.	EHS/HO/014		
13	Safety Net Inspection Record.	EHS/HO/015		
14	Tower Crane Inspection Record	EHS/HO/016		
15	Scaffolding Inspection Record	EHS/HO/017		
16	Site Safety Audit Record.	EHS/HO/019		
17	Excavation Safety Inspection Record.	EHS/HO/022		
18	Safety Performance Record	EHS/HO/023		

11. EHS Committee

11.1 Safety Committee Members

Safety Committee at all the projects shall comprise of

Project In charge (Contractor)	as Chairperson
EHS Manager (Contractor)	as Secretary
Project Engineer	to represent staff
Contractor Supervisor	to represent workers
Other Departmental Heads,	as required in agenda.

LODHA representatives are required to join the Safety Committee organized by Contractors at individual projects. LODHA Project Manager and EHS In charge shall be assigned as official representatives to attend Safety Committee meetings which will be held regularly on a monthly basis. The objectives of the Safety Committee are:

- To formally address issues and take appropriate actions in relation to the achievements of the site safety plan.
- To comply with regulations of local Govt. authorities, Lodha and safety good practices to maintain safety consciousness among the workers on site.
- To act as a means of safety communication between employees and contractor's management.
- To promote cooperation in achieving and maintaining environmental friendly, healthy and safe workplace.
- To participate into safety walk rounds and close all the identified unsafe acts and unsafe conditions at the earliest.
- To participate into emergency preparedness of the site and actively involve in organizing emergency mock drills.

The Safety Committee member is responsible for:-

1. Be aware on EHS procedures and policies within the organization.
2. Raise issues relating to their representation project area and suggest controls to eliminate or minimize the hazards and exercise same in their area.
3. Identifying hazards and risk assessment in their respective work areas and taking precautionary measures for eliminating or minimizing the hazards.
4. Carry out investigation for LTA, NLTA, First Aid, Near Miss cases or any incidents at site.
5. Participate in training/toolbox/Induction to the workers to upgrade their awareness level.
6. Meet every month to discuss various safety related issues & take corrective actions where needed and document it.

   Note : No issues other than site EHS issues should be discussed in this forum. Other issues may be discussed in forum focusing on them.
7. Provide timely information to the Project & EHS Manager on any violations observed at site and recommendation of corrective or disciplinary actions.
8. Implement the safety improvement programs in their respective projects as suggested and approved by project manager and/or EHS manager of Lodha.
9. Actively participate as Member of Emergency Response Team for conducting mock drills and upgrading awareness level among workers.
10. Actively participate and encourage workers participation in various motivational and promotional activities.

12. Emergency Preparedness

Contractors are required prepare emergency plan and follow the emergency response plan & evacuation procedures established by Lodha for individual projects, in case of emergency.

12.1 Immediate Reporting to Emergency Numbers

Contractors shall call and inform emergency numbers as displayed on construction site on a 24/7 basis to report any EHS issues or emergency situations.

12.2 Safe Passage & Evacuation Access

Contractors must maintain a safe passage within their work area and keep clear of all accesses to evacuation routes at all times.

12.3 CPR & First Aid Responder

Contractors shall have a trained CPR & first aid employee on site for fast response to emergencies. Certificates of Training must be current and on file in contractors office plus submitted to Lodha Records after imparting training to their employees.

12.4 Emergency Drills

Contractors shall conduct emergency drill and join the emergency drills as directed by Lodha.

13. Hazardous Materials Communication

The Contractor shall comply with all applicable local regulations and hazard communication requirements

13.1 MSDS, Labelling, Training, PPE and Delivery Requirements.

Hazardous materials and waste minimization efforts are essential elements in reaching the project goal of zero environmental infractions and no injuries to employees. It requires the contractor to:

- Follow the written hazard communication plan for the site in form of visual display.
- Obtain, submit to the Construction Management team and maintain Material Safety Data Sheet (MSDSs) on site for all hazardous materials.
- Hazardous materials without provision of MSDSs at the gate are not allowed to enter the site. Only the amount used for the day is allowed to be delivered into the site.
- Hazardous materials must be kept at a designated location directed by Lodha. MSDS must be posted at the location.
- Train each employee in handling hazardous materials and provide the employee with proper PPEs.
- Develop and maintain a list of hazardous chemicals used on the project.
- Properly label each container of hazardous materials.
- The Contractor shall obtain Project Manager's approval before introducing any hazardous materials onto project site.

13.2 Spillage

Any spillage of hazardous substances must be reported immediately to the Project Manager.

Note:

- If a spill of a hazardous material (fuel, oil, antifreeze, etc.) occurs on the site, the material and any contaminated matter at least 15cm of additional material from the sides and bottom (soil, vegetative material, etc.) must be collected, labelled, stored, removed and disposed of by the Contractor in accordance with all applicable national and local regulations. All spills shall be reported immediately to the EHS Manager. Do Not throw any hazardous materials in any dustbin or on the ground.
- All fuelling operations from tankers shall have a person from the receiving contractor monitoring the operation to ensure correct procedures are used to prevent spills.
- All threading machines shall be used over a drip containment tray with absorbent materials and shall be under a roof if used outside. Contractors shall maintain an adequate supply of absorbent material or spill kit on site to absorb any potential spill of their materials.

14. Plant & Equipment Inspection

All plant and equipment used or to be used by the Contractor shall be stored, used and maintained in good order and:

- Are subject to Construction Management team inspection at the time of entry to construction site and at any time while on the project site.
- Are subject to removal, or restriction of use of tools and equipment determined by the Construction Management team to be in unsafe working conditions.

14.1 Power Tools & Electrical Equipment

14.1.1 GFCI

Contractor shall provide ground fault circuit interrupter (GFCI) protection for all cord sets, receptacles, and electrical tools and equipment connected by cord and plug which are used or available for use by employees. Use of permanent building receptacles requires GFCI. GFCI shall be tested quarterly and the testing shall be documented.

14.1.2 Grounding

All power tools and electrical equipment shall be inspected and tagged each month by a qualified electrician appointed by the contractor. The inspection tag will be color coded for each month. Those tools and equipment without a valid tag will not be allowed to enter the site until they have been properly inspected. Violators will be fined.

14.1.3 Temporary Generators

- Temporary generators must be grounded and inspected by Lodha Electrical team before use.
- Fuel for generator shall be stored in metal container approved by Lodha. The fuel container shall be put inside a secondary spill containment vessel. The vessel shall be leak-proof and of the same volume as the fuel container.
- No Temporary Fuel Containers allowed on site.
- Fuel will be stored only at designated storage space provided by Lodha where contractor will organize containment covered storage with spill kit and fire fighting arrangement.

14.2 Gas Cylinders

Compressed gas cylinders shall be operated, maintained and stored as required below and:

- Shall be properly secured on two-wheel hand trucks designed for this use and brought into buildings only as needed and removed as soon as work is completed or tanks are emptied. Unless individual cylinders are equipped with regulating devices, they shall have the safety cap secured in place.
- Shall be broken down with regulators removed and protective caps screwed down hand-tight at the end of each shift.
- Shall be stored only at a location designated by Lodha. The cylinders shall be secured all the time with ropes or chains to a fixed anchorage point and tightened with protective cap always when in storage. Gas cylinders found not stored at designated locations or not meeting the above requirements will be confiscated and the contractor fined

Gas Cylinder Inspection

Gas cylinders will be subjected to a visual inspection conducted by Lodha Construction Management Team at the gate. Acceptable cylinders will be labeled by the inspector with a tag color coded for the month. Cylinders without the monthly inspection label will not be allowed to enter the site.

14.3 Cranes & Hoist

Tower / Mobile Cranes

- Valid manufacturer's certificate & warranty, (if applicable) must be submitted to Lodha for acceptance.
- Third Party Inspection certificate required.
- The crane operator must possess adequate experience of operating similar type of crane and a valid operator's license for Lodha Project manager acceptance.
- In the case that on-site erection of the mobile or tower crane is required; the contractor must submit a detailed installation & protection plan and SWMS for erection of the mobile or tower crane to Lodha Project Manger for approval.
- Mobile / Tower cranes shall be inspected by Lodha construction management team or appointed agency when they enter the site and are subjected to the monthly tagging system.
- Mobile / Tower cranes shall be inspected daily before use by the operator and records to be maintained in form of log book. Passenger-Goods Hoist
- Passenger-Goods Hoist shall be inspected and approved by the local authority or manufacturer, as may be required.
- Third Party Inspection certificate required.
- Valid manufacturer's certificate & warranty (if applicable) must be submitted to Lodha for acceptance.
- The hoist operator must possess adequate experience of operating similar type of hoist and a valid operator's license for Lodha Project Manager acceptance. This shall be on display at all times.
- The contractor must submit a detailed installation & protection plan and SWMS for erection of the Passenger-Goods Hoist to Lodha Project Manager for approval.

14.4 Gondolas/Rope suspended Platforms

- Gondolas for façade installation works shall be inspected and certified by third party as per local regulations before use.
- Valid manufacturer's certificate & warranty must be submitted to Lodha for acceptance. (If applicable)
- The operator must possess adequate experience of operating similar type of gondola and a valid operator's license for Lodha Project Manager acceptance.
- The contractor must submit a detailed installation & protection plan and SWMS for erection of the gondola to Lodha Project Manager for approval.
- The contractor must submit and implement a daily inspection program for Lodha Project Manager for approval.

14.5 Earth Moving Machineries

Excavators / Loaders

- Submit valid manufacturer's certificate & maintenance record to Lodha Project Manager for acceptance.
- The operator must possess adequate experience of operating similar type of machine and a valid operator's license for Lodha Project Manager acceptance.
- Earth moving machineries shall be inspected by Lodha staff or appointed agency when they enter the site and are subjected to the monthly tagging system.
- The contractor must submit and implement a daily inspection program for Lodha Project Manager for approval.

14.6 Slings, ropes, chains & rigging gears

All slings, ropes, chains and rigging gears shall be inspected and tagged with monthly inspection label by contractor inspector before use. Indication of SWL and date of testing and due date of testing by third party should be available on the tools.

14.7 Safety Harness, lanyard & shock absorber

All safety harness shall be inspected by Lodha staff before it is brought at the site and tagged with the monthly inspection label by contractor staff before each use. Harnesses and lanyards must comply with local regulations and those that does not comply or are not shall be immediately discarded and removed from site.

14.8 Ladders

All ladders shall be inspected and tagged with the monthly inspection label by Lodha staff before they enter the site and regular inspection by contractor staff before each use. Any damaged ladder should be disposed off and make shift ladders should not be allowed unless it meets the specifications.

14.9 Suspended Welding Platforms for structural steel installation

All hanging welding platforms shall be inspected and approved by Lodha staff before they enter the site and regular inspection by contractor before they are used at the site.

15. Work Instructions

Contractors are required to observe the following site management requirements:

15.1 Fall Prevention

Contractors must adhere to all applicable regulations and standards for fall prevention provisions at all times.

15.1.1 Guardrails

Guardrails are to be provided at all openings and edges where persons or materials could fall from any height. Where this can not be achieved in a practical sense or a physically sense, safety line should be installed according to requirement and red warning tapes after approval from Lodha EHS Manager.

15.1.2 Safety Nets

Safety nets shall be installed at workplaces as according to the regulation requirement and at all uncovered openings as directed by Lodha Project Manager / EHS Manager.

15.1.3 Safety Lines or Life Line

Horizontal or vertical safety lines shall be installed according to regulation requirement at workplaces where workers could fall more than 1.8 meters and require 100% tie-off. The safety line material and anchorage points shall meet the regulation requirement (2,300kgf) and Lodha EHS Standard requirement.

15.1.4 All employees exposed to a fall of 1.8 meters or more shall use full-body safety harness with double lanyard and shock absorber to ensure 100% fall protection. Note: If the area / scaffold is fully decked with top and mid rails plus toe boards, harness is still required as an extra precaution to avoid incident out of unsafe act or behaviour, even though it has been tagged with green tag as a safe workplace for use. In addition, the Contractor shall provide a fall protection plan to the Project Manager that identifies potential fall hazards and the method the Contractor shall use to prevent falls

15.2 Live Circuit Work Procedure

Work with live circuits is prohibited. Work adjacent to live parts must be unless approved by Lodha Project Manager following the Permit for Electrical Work Procedure.

15.3 Temporary Electrical Systems, Panels & Leads

- All temporary electrical systems, panels and leads shall be subjected to inspection and approval by Lodha Electricians before use.
- LOTO procedures shall be used for temporary panels where circuits are exposed.
- All leads shall be elevated by hooks or stands at a height of 2 meters minimum above ground, and grouped in an orderly manner approved by Lodha.
- All panels shall be equipped with ELCB and proper earthing provision.

15.4 Personal Protective Equipment (PPE)

The Contractor employees shall wear all applicable personal protective equipment (PPE) as required and as mentioned in clause 2.3.

15.5 Barricades & Guardrails

Contractor shall furnish, erect, maintain, and dismantle all barricades required for their work.
Barricades shall be constructed and maintained as described below:

- Warning Tape (White and Red Tape) for temporary barricading for not more than 6 hrs.
- Protective barricades (Class B wire mesh partition) – use wire mesh partition with stands at areas requiring access control or separation as agreed with Lodha Project Manager or EHS Manager.
- Edge barriers as may be recommended by EHS Manager.
- Protective barricades (metal tube) – metal tube barricades shall consist of guard rails and mid-rails meeting the OSHA definition of "standard railing" Section 1926.500(f)]. All rigid barricades are to be equipped with an entrance / exit "gate". Protective barricades are required as a minimum:
- Around un-sloped excavations over 1.2 Meters in depth
- Around floor openings
- At floor and roof edges
- At elevated wall openings
- On scaffold platforms

15.6 Scaffolds

In addition to being erected, used, maintained and dismantled as according to the relevant standards & regulation requirements listed in this manual, scaffolds shall comply with the following requirements:

- A competent trained person of contractor will assess the structural integrity of scaffolding systems.
- All workers shall be 100% tie off with a safety harness when working over a height of 1.8 meters on a scaffold.
- A scaffold which is ready for use after inspected by contractor scaffold supervisor shall be tagged with a green tag. Scaffolds are not to be modified after green tagged.
- Weekly inspections shall be performed by Lodha staff to ensure all tags are legible and in good condition and all scaffolds are safe.
- Any scaffold which must be specially adapted to the work place must be approved by a qualified supervisor and safety professional.
- Scaffold handrails shall be a minimum of 1.0 meters above the work platform.

15.7 Construction Vehicles

In addition to complying with the relevant standards & regulation requirements listed in this manual, Contractors shall observe the following:

- All employees operating vehicles and the passengers in those vehicles are required to wear seat belts at all times. Vehicles must have a firmly attached seat for each passenger except for vehicles exempted by the local authorities.

- Drivers must possess and carry a current, valid vehicle operator's license for the type of vehicle used. Employees must be seated, with arms and legs inside of the vehicle. Employees may mount or dismount vehicles only when fully stopped. Only three people may ride in the front seat of a truck.
- All vehicles enter the site must be marshaled. The marshal shall carry a whistle to alert people when the vehicle is in motion. The maximum speed shall not exceed 10 km/h.

- When repair work or maintenance of any sort is performed on any vehicle, the parking brake shall be set, the engine turned off and the wheels chocked to prevent movement of the vehicle. The bucket or blade of forklifts, loaders and backhoes shall be lowered when not in use.

All vehicles including mobile cranes and excavators used on site shall be equipped in accordance with national and local laws and regulations. And require the following equipment:

- Non-glare rear-view mirror
- Left-hand outside rear-view mirror
- Turn signals
- Two windshield wipers
- Reverse horns

A back-up or rotating alarm with signal light audible above the surrounding noise levels is required on:

- All earth moving vehicles, machines and cranes,
- All other vehicles used in the work area that have restricted or no view through the rear window

Note: STORAGE OF FUEL ON SITE IS PROHIBITED

PETROLEUM WASTE: Oil changes and similar maintenance activities are preferred to be done off-site. If it is necessary to do this work on site, a qualified person must perform the work and ensure that proper protection is provided to avoid a spill. ALL SPILLS MUST BE CLEANED IMMEDIATELY. The dispensing of fuel into equipment shall be performed only over something that will catch any spills. All equipment shall be grounded prior to the fueling operation starting.

The contractor is responsible for containing such waste. Waste shall be removed by the Contractor in accordance with applicable laws of PCB requirements.

15.8 Rigging Plans

A rigging plan shall be submitted to the Project Manager no later than 5 calendar days before any critical lift is scheduled to be made. A lift is considered critical when any of the following conditions exist:

- The load exceeds 80% of the crane capacity in the configuration to be used during the lift.
- Lifts involving more than one crane to handle a common load.
- Any lift greater than 20 tons
- Any lift during erection of equipments like tower crane, etc.

The rigging plan shall include:

- Manufacturer, model, and capacity of the crane(s).
- Capacity charts / Load Chart of the crane(s)
- Working radius of the crane(s)
- Boom length of the crane(s)
- Weight of the load including rigging
- How the weight of the lift was determined
- Size and capacity of all rigging hardware (slings, shackles, etc.)
- A plot plan showing crane location with pick, swing and set points.
- Form 12 of lifting equipment and tools & tackles.
- Copy of Lifting equipment license, insurance, PUC, etc as legal requirements.

If requested by the Construction Manager, the Contractor shall submit a rigging plan no later than 7 calendar days before each non-critical lift is scheduled to be made.

15.9 Use of Ladders

The Contractor shall adhere to the relevant standards & regulation requirements listed in this manual concerning maintenance and work on/around ladders and observe the following:

- Metal ladders are not allowed for use on site close to overhead lines. Only electrically insulated ladders made of materials such as FRP are to be used for such activities.
- Ladders shall not be more than 3 meters high unless approved by Lodha Project Manager and Safety professionals because of access limitations by other means, such as scissor lifts or mobile work platforms.
- The top 2 steps of step ladders (excluding the top plate) shall be painted red and not allowed to use.
- Only light, short-term (less than 15 minutes) work shall be performed from step ladders. Straight ladders shall be used for access purpose only and shall be secured at the top end to prevent displacement. The top end shall be extended at least 1 meter above the landing. Workers are to face the ladder all the time.
- Ladders shall not be placed in front of doors that open toward the ladder unless the door is locked or otherwise guarded.
- Always have two employees to work as a team when using ladders. One employee is to hold the ladder when the other one is on the ladder.
- Carrying material up or down ladders is not acceptable
- Ladders shall be inspected before each use and monthly for deterioration and damage. Damaged ladders shall not be used and shall be removed from site.

15.10 Oxygen LPG welding / cutting plant

The Oxygen / Acetylene bottles and the welding/cutting plant shall be secured in a trolley and flash back arrestors shall be installed at the bottle outlets and inlets to the flame torch. Hose with joints shall not be permitted. A fire extinguisher & spanner must be attached with the trolley at all times. Remove Gage and secure cap on when not in use.

15.11 Fire Protection

Contractors shall comply with all relevant standards & regulation requirements listed in this manual for fire protection.

- Contractor's employees will be oriented on the fire fighting and evacuation procedure.
- Smoking will not be permitted in construction site.
- Contractors shall furnish fire extinguishers as required for carrying out their work, such as hot works. Contractors shall not relocate any Lodha owned fire extinguishers located on site at designated positions for emergency use.
- Dirty and oily rags shall be kept in labelled fireproof metal containers with self closing lids and removed from work areas daily.
- Access to exit doors, electric or elevator panels, and fire extinguishers or other emergency equipment shall not be blocked at any time.

15.12 Projecting materials / Impalement Hazards

- Projecting materials shall be protected or guarded as described in the standards & regulation requirements listed in this manual.
- Reinforcing steel or similar material projecting above horizontal surfaces shall be capped or otherwise protected to prevent the possibility of impaling personnel. Plastic caps are not approved for falls of 1.8 meters or more above vertical projections. Use covers of wood or other approved material.
- Protective caps shall be used on ends of all protruding ends of scaffolds.

15.13 Drinking Water

Contractors shall provide adequate supply of drinking water for their workers at the work locations.

15.14 Lighting

Contractors shall provide adequate task lights for their workers to enable safe access and to lux level required for performing the tasks required. Contractor shall take night work permit, in case if work is to be continued after 18:30 hrs.

15.15 Housekeeping & Clean Up

- Contractors shall clean up and remove all scrap materials and waste materials that accumulate from its operations on a daily basis. The scrap shall be placed in approved containers.
- Should the Contractor fail to keep its work areas clear of debris, Lodha Project Manager may put his running bills to halt till the work areas are clear of debris.
- The Contractor shall segregate the waste materials as required by regulation. Any containers that contain hazardous materials, hazardous waste or waste oil shall be labeled as per PCB norms. The Contractor shall empty the containers at frequent and regular intervals, or as directed by the Project Manager.

15.16 Site Canteen / Break Area

- Contractors shall have their employees taking their breaks only at the designated break time and break area.
- Smoking and tobacco is not allowed in the entire construction site.
- No food or sleeping is allowed inside the construction site or inside the building except the designated site canteen / break area.
- No gambling or consumption of alcoholic drinks is allowed for contractors inside or around the boundary of the Project site.

15.17 Temporary Site Offices

- Contractors' temporary site offices shall be erected at a secure manner at locations directed by Lodha Project Manager.
- Connection of power or water shall be approved by Lodha Project Manager. All power supply shall be grounded.
- Generators and fuel storage are not allowed in the site office area unless prior approval has obtained from Lodha PM.
- No living accommodation or cooking is allowed inside the site office.
- Fire extinguishers rated A:B:C or higher shall be provided by contractors for all temporary site offices / trailers.
- All temporary site offices / trailers shall have a sign prominently displayed, indicating the contact person's name and telephone number in case of emergency.

15.18 Noise and Hearing Protection

Contractors shall provide ear protection to their employees when the workplace noise level exceeds 85 db.

15.19 Site Photograph

No photographing is allowed on site unless a Photo Permit has been obtained from Lodha Project In charge.

15.20 Site Signage

- Identification signboards and notices for safety or instruction are permitted on site only after approval by Lodha for format, location and quantity.

- All signage shall be bilingual.
- All posted safety signage shall be followed.
- Signage shall be as per the approval of EHS Manager of Lodha.

15.21 Site Parking

Contractors shall park their vehicles at locations directed by Lodha. No blockage of site access and violation to the local authority rules or site traffic rules is permitted

15.22 Site Labour Camp

Contractors may be allocated a space for labour camp as per the condition in contract document or as may be agreed with the site project manager. Up-keeping of the labour camp in terms of cleanliness, hygiene is the responsibility of the contractor and Lodha staff can inspect the camp premises at any time. In case if labour camp area is provided within the building under construction, cleanliness and
housekeeping should be given the out most importance to keep the site in presentable form for the customers.

16. Rewards & Penalties

16.1 Rewards

An annual safety incentive program will be in place for all contractors' site personnel during celebration of 'National Safety Day'. A reward and recognition will be given to the contractor's employees if he/she has not committed any safety violations & eligible for the requirement during the period. Note: This reward program is for trades or working superintendents, foreman, etc. that perform construction or equipment installation only.

Other recognition & awards will also be given to those site supervisors who have demonstrated a proactive approach or initiatives to promote safety and also the employees and contractors who are declared as winners in competitions.

16.2 Penalties

Management Violations

Contractors will be subjected to a fine if they have committed any violations to the requirements stated in this manual, site golden rules, etc. Non-life-threatening Violations by Employees Contractors will be fined if any of their employees have committed a non-life threatening violation. The employee's site badge will be recorded. Those employees who have a badge with 3 strikes will be removed from site.

Life-threatening Violations by Employees

Contractors will be fined and the employee who committed the life-threatening violation shall surrender his/her site badge and be removed from the site immediately and permanently.
Employees who commit linguistic or physical acts of insult, threats and sexual harassment will be dismissed, and the contractor fined. The penalty system shall be based on below table and actual penalty may based on severity of the violation and as decided by the Project Manager and EHS Manager of Lodha.

Note :

1. The Penalty amount shall increase with repetition of the same violation; hence penalty shall be multiplied by number of times of repetition of violation by a person. i.e. if there is repetition of violation for second time the penalty shall be 2X and if repeated for third time the penalty shall be 3X. But on fourth repetition, a disciplinary action shall be taken by the reporting authority.
2. Any violation not mentioned above will be penalized at the rate of Rs. 1000/- per person per observation.
3. Penalty form shall be issued to the contractor under whom the individual is working as it is responsibility of contractor to ensure compliance.

Penalty Table

Sr. No	Safety Violation /indiscipline	Risk	Fine (Rs)	Structure	Immediate Action
1	Working at height above 2m without safety belt.	Fatality	5000/-	Per Person Per Obs.	Worker to be allowed to work only after use of safety belt
2	Rotating parts of machine kept exposed	Amputation/Loss of body parts	1000/-	Per Observation	Rotating parts of the machinery to be guarded within 24hrs.
3	Bare wires inserted in socket, more than two joints, cable on ground, improper capacity of cable, other electrical hazard	Electrocution/fire/short circuit	5000/-	Per Observation	Electrical connection to be disconnected by electrician till rectified
4	Labours working without safety helmet	Head injury	1000/-	Per Person Per Obs.	Helmet to be provided immediately
5	Railing not provided to scaffold or platform at top.	Fall of person or material may cause even fatality	1000/-	Per Observation	Provide railing within two hours.
6	Fire extinguishers not provided for hot jobs.	Fire	500/-	Per Observation	Provide extinguishers immediately.
7	Flashback arrestor not provided for gas cutting machine	Explosion of gas cylinders	500/-	Per Observation	Provide flash back arrestor within two hours
8	Welding shield /goggles and hand gloves not provided for hot jobs.	Loss of eyesight	500/-	Per Observation	Provide all the PPE'S immediately.
9	Child labour found working without any age proof at site.	Legal requirement	5000/-	Per Person Per Obs.	Labours to be removed from site unless produces age proof.
10	Life-line or barricading not provided at periphery area	Fall of person may even leads to fatality	1000/-	Per Observation	Provide immediately
11	Proper cross-bracing not provided to scaffold.	Collapse of scaffolding may even leads to fatality	1000/-	Per Observation	Provide scaffolding within 24 hrs.
12	Scaffolding is not braced properly to fixed structure.	Collapse of scaffolding may even leads to fatality	1000/-	Per Observation	Provide support immediately.
13	Structure of winch machine is not braced properly to fixed structure	Collapse of structure may even leads to fatality	200/-	Per Observation	Provide support immediately.
14	Labour found smoking or chewing tobacco, gutkha at site.	Fire/health and hygiene	1000/-	Per Person Per Obs.	Cigrates/tobacco/gutkha to be submitted immediately.
15	Entry to site without valid I.D and safety induction.	Low awareness on basic safety rules.	5000/	Per Person Per Obs.	Inform to safety department and induct the labour within 24 hrs.
16	Vehicles exceeding speed limits of 10km/hr.	Severe accident	1000/-	Per Observation	Counselling of driver by security team
17	Non Compliance to Legal Requirements as per BOCW	Legal obligations	5000/-	Per Observation	Immediate compliance to the legal requirement.
18	Poor housekeeping leading to	Accidents	2000/-	Per	

	first aid cases			Observation	
19	Contractor not reporting incident or near miss	Reoccurrences of same Incident.	5000/- or cost of accident	Per Observation	Investigation and CAPA by Contractor.
20	Unauthorized interference or damaging safety equipment / setup.	Increase in risk level	5000/- or cost of Damage.	Per Observation	Rectification and reinstallation

17. Incident Reporting & Investigation

Incident Reporting

- Contractors shall report immediately all incidents to Lodha via information to site In charge and EHS Manager at construction site.
- Report the location and type of incident, and the inform name clearly when reporting such incidents for smooth investigation.
- Follow the instructions given by the Lodha staff or EHS Manager to control the situation immediately.
- Contractors should be aware of emergency response procedure and a copy made available to them for immediate actions.

Incident Investigation

Contractors shall submit a Preliminary Investigation Report of the incident to Lodha within 24 hours in accordance with the format listed in the Appendix. The contractor shall work with Lodha to prepare the Final Investigation Report within 72 hours under normal situations.

18. Environmental Management

Contactors shall comply with all applicable standards and statutory requirements listed in this manual to meet environmental protection requirements.

18.1 The contractors shall provide effective compliance measures to prevent blockage of all public drainage system. These measures shall include truck wash facilities, settling pits, catch channels and basins, fine mesh protection at drainage water discharge points, etc.

18.2 Contractors shall maintain an effective chemical and petrochemical containment and control, as applicable.

18.3 Contractors shall follow Lodha direction for spill response measures.

18.4 Contractors shall interface with local authorities to ensure compliance efforts are effective as required.

18.5 Contractors shall have effective waste collection and disposal plan in place for site and labour camp to keep the site premises clean and hygienic. Waste bins should be arranged accordingly as directed by Lodha.

18.6 Contractor shall dispose of all the waste and hazardous waste generated as per the requirement of PCB and CPCB.

19. EH&S Reports

Weekly Report

Contractors shall submit a weekly EHS report in accordance with a format approved by Lodha on every Monday morning. The weekly report shall include the weekly manpower hours and breakdown per each subcontractor; safety violations, defects and corrective actions, incidents and investigations, and update of any EHS issues and personnel.

Monthly Report

Contractors shall submit a monthly EHS report to a format approved by Lodha. The monthly report shall include all man-hours, safety violations, defects, corrective actions taken, incidents, waste management issues, environmental issues and any other EHS issues. Apart form this contractor shall update EHS Manager on day to day EHS issues as may be requested by EHS Manager.

20. EHS Records & Documentation

Contractors shall keep all safety records and documentation including employee site badge register, toolbox talks record, safety communications, meeting minutes, inspection records, incident reports, etc. on site in an orderly manner for periodic audit by Lodha EHS Dept.

The EHS Management System of the organization is in the form of manual, procedures, work instructions, formats and other references which are designed, documented in four levels and will be updated as necessary. The system will provide for interlinking of documents of different levels and integration of other system documents for example, Environment Management System. The broad description of documents of four levels is as follows: -

a. APEX Manual – Level I

This is the System Manual describing the core elements of EHS Management System in accordance with ISO & OHSAS and their Interaction. It gives reference to various documents of EHS for implementation uniformly throughout all the sites of Lodha.

b. EHS Management System Manual – Level II

These are the procedures referred against each system element of EHS Manual. These provide the procedures for controlling different operations in EHS in a user friendly manner, Operational Control Procedures (OCP), Work Instructions

21. Document and Data Control

The process of document control consists of:

a. System to ensure that all documents and data are readily identified located and retrieved.
b. System to enable the review, updating, preview and re-approval of a document before reissue.
c. System to ensure that the changes and current revision status of documents are identified and located.
d. System to identify and control the storage and issue of documents of external origin.
e. System to prevent unintended use of absolute document and to apply suitable identification, whenever such documents are retrieved/ stored.
f. System to ensure that all relevant documents are available at locations wherever required.
g. Obsolete documents are promptly removed from all points of issue and use.
h. Maintenance of legal requirement and incident registers.
i. The responsibility is fixed for creation and updating of various EHS Management System documents.
j. Any obsolete documents retained for legal and/or knowledge preservation purpose are suitably identified.
k. The document should be always legible, having date of issue/revision, will carry status and retention period will be ensured.

All Corporate documents will be issued by Head EHS or HeadEHS after review and approval from MD/COO. Project site level documents will be reviewed by the Area EHS Manager and Approved by Head EHS or HeadEHS and issued thereon. This shall be as per the 'EHS APEX Manual' of Lodha.

22 Checking And Corrective Actions

22.1 Performance Measurement And Monitoring:

- The EHS Objectives and matters will be communicated to all and verified annually for measuring the achievements proactively.
- The jobs involving high risk will be under scrutiny for safety measures before they are being carried out.
- Calibrations of special purpose safety equipments will be carried out periodically.
- All legal and other requirements will be complied with.
- Near misses, accidents, incidents and occupational illness will be subjected for evaluation as required under Management System.
- The representatives forming Safety Committees from Management and Concerned Staff will meet regularly to resolve and improve the EHS related issues.
- Preventive and planned procedures will be adopted to improve project conditions with respect to safety.
- The Area EHS Manager will carry out the responsibility for measuring and monitoring and report to] Head - EHS and ensure that measuring and monitoring of EHS activities are implemented through Project Manager. The Project Manager will have ultimate responsibility for implementation of measuring and monitoring of EHS management system.

22.2 Accidents, Incidents, Non-Conformances and Corrective and Preventive Action.

It is the responsibility of the Line Management Managers and engineers to record accidents, incidents, near misses, and non-conformances to EHS procedures with respect to construction sites.

The Project site EHS Manager along with Project Team and Contractor Representative will carry out investigation to identify the root causes of accidents, incidents, and non-conformances. Whose role and responsibility is to work as facilitator between site and Head - EHS. He will undertake preventive measures required for the non-conformances and ensures corrective actions are taken immediately. EHS Manager will intimate Head - EHS in details about corrective, preventive measures complied by him to mitigate accidents in future. Head - EHS and Head– EHS will advise to EHS Managers at site on the analysis and findings of the accident, incident data for taking corrective and preventive measures to prevent reoccurrences. The documents/ procedures corresponding to the corrective / preventive actions will be revised whenever required and will be recorded as per the requirement of
document control procedure. Corrective and preventive actions will be reviewed at the proposal stage through the risk assessment process prior to implementation.

22.3 EHS Audits

The EHS audit will determine whether EHS Management System conforms to the planned arrangements of the specification. Management system of the organization will be audited internally at a fixed periodicity according to a set procedure and also through external agencies according to the
requirements or as agreed by the top management, in order to: -

a. Determine whether EHS Management System

(i) Conforms to planned arrangements for EHS Management including the requirements of ISO 14001 & OHSAS 18001.
(ii) Has been properly implemented and maintained
(iii) Is effective in meeting Safety/EHS Policy and objectives.

b. Review the results of previous audits.

The internal EHS auditors will be trained to conduct the audit objectively and with prejudice. The audit program will be planned to include all the departments and entities related to EHS Management System. The frequency of audit will be decided based on the criticality in terms of EHS hazards, risks and the results of the previous audits. The audit procedure will provide for coverage/scope, methodology, competencies, responsibilities and requirements for conducting audits and reporting the audit findings. Audit will be conducted by personnel independent of those having direct responsibility of the functions being audited.

The audit findings will be made available to the Management Review Group.

23. MANAGEMENT REVIEW

The Management Review will be carried out once in six momth by Management Review group. A group, named Management Review Group (MRG) will carry out the Management Review. The Review will be chaired by Managing Director (Construction Management) or Chief Operating Officer (in absence of MD):

Members:

- Managing Director (Construction Management)
- Chief Operating Officer
- Head of Quality
- Head of Asset Management
- Head of Contracts
- Head of Procurement
- Head of HR
- Head of Finance and Accounts
- Head of Construction Management (VP/GM/PM)
- Head of Training
- Head of Corporate Communications
- Head of IT

The Chairman-MRG may invite Senior Managers of any relevant group also as may be appropriate to the agenda of the Review.

Convener and Member Secretary

- Head - EHS.

The agenda of the Management Review Group meeting will cover the following information's on EHS Management System.

a. Suitability of current safety/EHS policy
b. Setting and updating of objectives for the forthcoming period
c. Progress of ongoing Management program
d. Adequacy of current hazard identification, risk assessment and risk control processes.
e. EHS complaints
f. External communication.
g. Changes planned
h. Adequacy of resources
i. Effectiveness of safety inspection process.
j. Effectiveness of the hazard reporting process.
k. Accident and incidents statistics and analysis
l. Non-effective recorded instances of procedures.
m. Effectiveness of internal & external audits.
n. State of emergency preparedness

o. Improvements to EHS Management System
p. Foreseeable changes to legislation or technology.

Records of Management System Review will be maintained and circulated to all concerned personnel.

ATTACHMENT 1

OPERATING CONTROL PROCEDURES

1. Electrical Safety

PURPOSE

This operating control procedure is established to ensure safety, especially against electric shock, in the use of electricity at all Lodha projects. This includes a Operating control procedure for the installation of lightning protection systems for temporary buildings (site offices, workers accommodation etc) on our projects.

SCOPE

The Operating control procedure is applicable for all the project sites for temporary electrical installations.

ROLES

EHS Manager: To recommend safe practices to be followed at construction sites, train the staff and electricians in electrical safety and to monitor the compliances & report them, as and when required for corrective actions.

Project Manager: To provide resources for implementation of safe electrical practices, which is in scope of company and to take corrective actions as per recommendations of EHS Manager.

Project Site Team : To implement the safe practices as per the Operating control procedure and as per 'EHS Site Implementation Plan', and to monitor the compliances from contractors end and take corrective actions for non compliances, either by own electricians or by contractor.

Contractor: To adhere to the safe practices as specified by the Lodha Staff and EHS Manager, as per Operating control procedure and 'EHS Site Implementation Manual'.

OPERATING CONTROL PROCEDURE

A. MINIMUM OPERATING CONTROL PROCEDURE (TEMPORARY ELECTRICS)

1. Installation, Inspection, Testing, and Maintenance

1.1 All temporary electrical installations at construction sites must be licensed by the relevant Authority (i.e. Power Grid / Power Supply) and these shall only be installed by competent person(s) possessing electrical license.

1.2 Electrical installations on site shall be inspected and tested in accordance with the requirements of Lodha as per our safety checklist and safe operating procedure.

1.3 Only competent persons are allowed to maintain and periodically inspect (at least once a month) the electrical installation and the wiring distribution system. A copy of the mandatory inspection report / checklist completed and signed by an inspector and competent person must be handed to EHS cell.

1.4 All portable electrical appliances shall be permanently numbered and a record kept by the competent person. Record should indicate the date of issue, date of the last inspection carried out and the recommended inspection period. The supply voltage of all electrical hand tools used at site shall not be greater than 230 V (AC supply) and be fully insulated or of double insulation construction. These hand tools must be connected to a power source, operating with an Earth Leakage Circuit Breaker (ELCB or RCB) of 30 mA tripping sensitivity and tripping time of 0.1 second.

2. Electrical Supplies

2.1 If AC, generating sets are used to supply electricity, such equipment and their installation shall be erected and maintained similarly as required for systems connected to the Authority's supplies where the metal frame of the generator sets shall be bonded to the metal work of the site distribution system. The bonding shall be effectively earthed. All generators shall be equipped with earth leakage devices.

2.2 For single-phase generator, bonding shall be made either to the mid-point of the windings or to the earth termination of the generator, where applicable.

2.3 Set-up of Portable Generators at a Site

2.3.1 All generators must have 2 earth points, linked between 2 inspection chambers. The earth points must be connected to the neutral and to the chassis forming a ring circuit. The resistance of the earth points must not be less than 1 ohm.

2.3.2 All circuits must be protected. These circuits must consist of the ELCB, MCCB and sufficient Miniature Circuit Breaker (MCB) for connection / distribution to the sub-DBs at the various locations.

2.3.4 Generator set(s) connected to main DB(s) shall be fenced off to prevent unauthorized entry and warning signs shall be displayed prominently.

2.3.5 Outgoing electrical cables from generator(s) / main DB(s) shall be suspended at least 5 metres above ground or buried 600mm below ground with the cables protected by pipe. Electrical cables connecting generator set and main DB shall also be protected by pipe if buried under ground.

3. Mains Incoming Supply and Earth Leakage Protection

3.1 For incoming supply up to 300 A three-phase, only high rupturing capacity (HRC) fuse switch or MCCB shall be used for earth fault protection.

3.2 For incoming supply exceeding 300 A three-phase, a circuit breaker incorporating over-current and earth fault protective devices shall be provided.

3.3 Earthing lead shall be appropriately sized and earthing conductors shall be properly terminated and have good continuity.

3.4 Distribution board (DB) shall be properly labeled and provided with adequate warning signs.

4. Earthing Arrangement

4.1 Metalwork not belonging to the installation (including steel scaffolding) which is liable to come into contact with electrical current by chance and become live as a result, shall be effectively earthed at all time.

4.2 Exposed metalwork of all portable appliances and tools shall be connected to the circuit protective conductors in the flexible cables/cords unless they are double insulated or of extra-low voltage system.

4.3 For three-phase generator greater than 55 V, the star-point shall be earthed and for single-phase generator greater than 55V, the neutral point shall be earthed.

4.4 For double-wound 110 V single-phase transformer, the centre tap of the secondary winding shall be earthed.

5. Final Circuits

5.1 All flexible cables/cords switches, fuses, plugs and socket outlets shall be in good and serviceable condition. Re-wireable fuses are not to be used in any part of the installation.

5.2 All switches for single-phases supplies equal or less than 110V shall be of double pole type with circuit protection in each line conductor.

5.3 Temporary lighting shall not be supplied from the same final circuit supplying socket outlets.
5.4 Final circuits and outlet units of rating not exceeding 60A three-phases or single phase at mains voltage shall incorporate a current-operated earth leakage circuit breaker (ELCB) with a tripping current not exceeding 30 mA and a tripping time within 0.1 second.

5.5 Final circuits and outlet units exceeding 60 A three-phase or single phase at mains voltage and supplying equipment of inherently high leakage current, an ELCB with a tripping current not exceeding 300 mA shall be provided.

5.6 ELCB shall not be the sole means of protection against earth leakage by eliminating the circuit protective conductor, even if the tripping current is equal or less than 30 mA.

6. Wiring Systems

6.1 Laying of cables / cords on the ground or floor of a structure shall be avoided. Where it is unavoidable, the cables shall be of the armoured type and shall also be laid in such a manner that the risk of mechanical damage is prevented.

6.2 All cables / cords to be laid direct in the ground shall be armoured underground cables while all cables which are likely to be moved in normal use shall be double insulated flexible cables. Cables / cords buried direct in the ground or under roadways or access ways for transport and mobile plant shall be laid at a minimum depth of 600 mm with a cable marker installed at each end of each crossing.

6.3 All cables are to be installed without obstruction to the use of passageways, walkways, ladders, stairs and the like.

6.4 All cables shall be installed so that they are at least 150 mm clear of piped services such as gas and water and shall not be located directly below and parallel to these pipes.

6.5 Overhead cables shall be fully insulated and shall be so placed and at such a height as to be out of reach of any source of mechanical damage reasonably to be foreseen in the area where they are erected. Overhead cables/cords shall be supported by catenary wires in a manner such that the cables are not subject to harmful mechanical stress

6.6 Flexible cords of conductor size smaller than 1.0 mm 2 (32/0.20 mm) shall not be used.

6.7 Any joint in a flexible cable / cord shall be effected by means of a cable coupler and shall be securely supported above floor or ground level in a manner such that the risk of mechanical damage is prevented. All joints shall be mechanically and electrically sound, fully insulated, and inaccessible to workmen or others and clear of all materials.

7 Electrical Equipment

7.1 All plugs, socket outlets, switches and cable couplers likely to be exposed to the weather shall be contained in weather-proof enclosures unless they are of the weather-proof types.

7.2 Plugs of one voltage system shall not be capable of entering socket outlets of other voltage systems used in the same site.

7.3 Plugs, socket outlets and cable couplers of a 110 V single-phase operation shall be of the 3-pin industrial type and those for three-phase operation of the 4-pin type. In both cases, the “numbered hour position” shall be 4H.

7.4 Plugs, socket outlets and cable couplers for use with 230V single-phase system shall be of the 3-pin industrial type with the numbered hour position 6H.

7.5 Plugs, socket outlets and cable couplers for use with 400V three-phase system shall be of the 5-pin type, 3-pole + pilot + earth, and numbered hour position 6H.

7.6 Where several voltages are used in the temporary installation, all plugs, socket outlets and cable couplers shall be identified by different colors as follows:

55 V – White, 110 V – Yellow, 230 V – Blue, 440 V – Red

7.7 Connection of flexible cables / cords to socket outlets shall be by means of industrial plugs only and where heavy electrical plant such as tower cranes, required the use of plug and socket outlets as a convenient form of connection at mains, they shall be either mechanically or electrically interlocked.

7.8 Light fixtures used outdoor or at locations where there is likelihood that such fixtures are subject to splashing water, shall be of the weather-proof type. Suitable guards shall be fitted on light fixtures if they are exposed to risk of mechanical damage.

7.9 Portable hand-lamps supplied through flexible cords shall be of the moulded composition or other type designed for the purpose and equipped with a handle and also equipped with substantial guard attached to the lamp holder or the handle. The use of lamp holders fitted with pin contacts intended to be penetrated into tough rubber sheath is prohibited.

7.10 All welding machines must be equipped with low voltage shock preventors which shall effectively reduce the open circuit secondary voltage to a safe level of 25 V.

8. Temporary Distribution Boards

8.1 Distribution boards (DBs) shall be of structurally sound construction and of weatherproof, preferably of metal structures. DBs of timber structure is not preferred but if used should have locking arrangement and shall preferably be wall-mounted or if not practical, the “free-standing” types shall be adequately supported / propped to prevent toppling over.

8.2 All DBs, including sub-DBs must be earthed and locked at all times only to be accessible to authorized personnel such as Licensed Electrician.

8.3 Incoming electrical supplies from main DB shall be connected to the sub-DB’s MCB and then the ELCB or RCB, from where the supplies shall be connected to the rows of MCBs. Incoming electrical supplies shall be connected to the top of the sub-DBs and elevated from the ground / floors of the building under construction.

8.4 Socket outlets shall only be located at the bottom of the panel for coupling of extension wires.

8.5 ELCBs shall be accessible even with the panel closed/locked. MCCB and MCBs shall only be accessible to licensed Electricians.

8.6 The typical design of a recommended sub-DB for temporary electrical supplies at site is as sketched below:

9. MINIMUM OPERATING CONTROL PROCEDURE (LIGHTNING PROTECTION)

9.0 Smaller unprotected buildings, sheds, and temporary shelters offer little or no protection from Lightning. As a minimum, temporary buildings such as site offices and workers’ quarters shall be protected with lightning conductors.

9.1 The principal components of a lightning protection system shall be in place in areas where lightening protection is not in place in close vicinity. For example, air terminations; down conductors, joints and bonds; testing joints, earth terminations; and earth electrodes.

9.2 Conductors shall be located over the roof(s) and down the corner(s) and side(s) of the temporary building(s) to form an enclosed network.

9.3 Vertical conductors (such as finials (rods)) connected to horizontal conductors at roof level shall be at least 300 mm high and installed at intervals not exceeding 8 metres.

9.4 Horizontal conductors, installed parallel to one another on the roof of a building, shall not be more than 20 metres apart.

9.5 Down conductor system shall be directly routed from the air termination (vertical conductor) to the earth termination network. The spacing between parallel down conductors shall not exceed 30 metres.

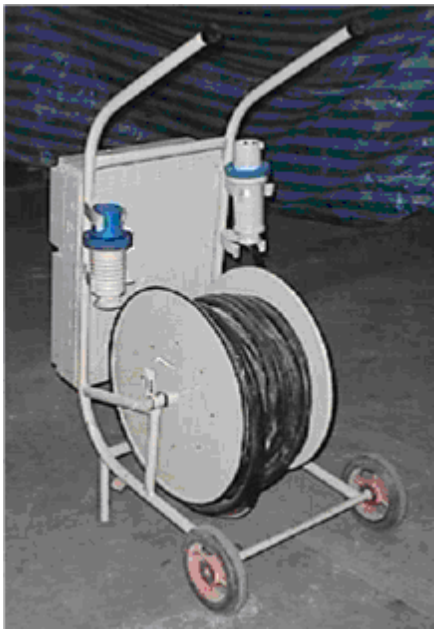
9.6 Earth electrodes shall be located as close as is practicable to the down conductor.

9.7 The whole of the interconnected lightning protective system shall have a resistance to earth not exceeding 10 ohms. And as a minimum, the system must be ":mega" tested at least once a month.

9.8 In case of use of tower cranes, which are at the highest working level above the building, Lightning Arrestors shall be installed on the tower crane.

STANDARD TEMPORARY SWITCHBOARD WITH DOUBLE ENCLOSURE FOR SAFETY PROTECTION





2. Scaffolds

PURPOSE

This minimum Operating control procedure is established as a guide for the safe erection, usage, alteration and dismantling of scaffolds for the purpose of construction, maintenance, repair and demolishing works at all Lodha projects.

SCOPE

This minimum Operating control procedure addresses the most common uses of scaffolds, including tower scaffolds and bamboo scaffolds.

ROLES

EHS Manager : To train staff and contractor in implementing the scaffold system as mentioned in this Operating control procedure and to monitor its compliances to ensure safe practices are always followed.

Project Manager : To provide resources and motivate staff and contractors in complying the minimum Operating control procedure of scaffold.

Project Site Team : To implement the Operating control procedure and ensure that all the scaffolds constructed at project site are sound in nature and complied to the minimum Operating control procedure.

Contractor : To comply to the requirements of scaffold Operating control procedure and as recommended by EHS Manager, to ensure that all the scaffolds used at Lodha projects are sound and approved for safe construction.

REFERENCES

- Indian Standard IS :3696 (Part 1) - 1987

OPERATING CONTROL PROCEDURE

Only approved types of scaffolds with approved material are allowed to be used. Any person who intends to erect a scaffold other than a mobile tower scaffold shall notify the project manager at least 1 week prior to the erection of the scaffold. Scaffolds shall be erected, added to, altered, or dismantled only under the immediate supervision of an authorized supervisor of the contractor. No such activity shall be carried without supervision of the contractor.

Scaffolds shall be erected, added to, altered, or dismantled only by workers who have undergone a training or who have experience as declared by the contractor in writhing and should be further trained by EHS Manager for scaffolding safety. Scaffold erecting team must use the appropriate PPE and as follows:

- Safety helmets – at all times at site.
- Safety belts – when exposed to falling more than 2 meters.
- Safety shoes, where recommended by Project Manager.

Prior to erection or dismantling of scaffolds, the surrounding area(s) must be barricaded and warning signs positioned to prevent access by persons other than scaffold erecting team working in the area(s).

Contractor Supervisor shall inspect and certify that scaffold is safe for use and record the results of such inspections in a register containing details as required by the Lodha in their format. He should display a green tag with his signature on it, as recommended by Lodha on scaffolds inspected, indicating that the scaffold is safe for use. Lodha site staff shall monitor the compliances and in case of any discrepancy shall bring to the notice of project manager and EHS manager for immediate action.

Erected scaffolds must be inspected once every 7 days, and after each inclement weather. Where the scaffold is unsafe for use (incomplete, awaiting rectification, alteration, modification, etc), warning signs such as “Not Safe for Use” must be posted at prominent locations of the scaffold and scaffold should not be used except by the scaffold erecting team. Scaffold shall be constructed in accordance with the design and drawings of a Professional Engineer (P.E.) if:

- A A scaffold exceeds 45 metres in height

The following scaffold types also require special design form professional engineer:

- Cantilevered scaffold

- Tower scaffold for material platform
- Scaffold with special load conditions

Standards of metal scaffolds shall be spaced not more than 2.5 metres apart unless approved by the P.E. Ledgers metal scaffolds shall be spaced at vertical intervals not more than 2 metres apart unless
approved by the P.E. Every second lift of an independent tied scaffold shall be effectively tied to the building or structure by means of ties which shall be located no farther than one bay from the ends of the scaffold and thereafter at intermediate spacing of not more than 3 bays or 7.5 metres apart, whichever is the lesser. Ties other than tie tubes and couplers shall not be used without the written approval from the project manager. Every tie shall be capable of withstanding a force of 1000 kgf applied in either direction along the length of the tie.

Scaffolds shall be effectively braced by means of longitudinal and transverse bracing systems
which shall extend from the base to the top of the scaffold. Modular scaffolds or tube and coupler scaffolds shall be provided with transverse horizontal members or transoms for each lift at or near the intersection of the standards and ledgers.

1. Metal Scaffolds

The height of an independent tower scaffold (excluding hand rails and the support) shall not exceed 8 times the lesser of the base dimensions and shall not exceed 3 times the lesser of the base dimensions if it is not tied to the building or any structure.

Mobile tower scaffolds (moved on castors/wheels) shall be provided with a positive locking device to hold the scaffold in position. The castors/wheels shall be locked at all times except when moving the mobile scaffold.

Mobile scaffolds with a working platform height of 2 metres or more from the floor shall be provided with guardrails, knee/mid-rails, toe/kick boards and internal ladders. Access ladder (where required) shall be installed internally and shall extend to the full height of the scaffold and to a minimum distance of 1 metre above the working platform. Internal ladder shall be secured against displacement at top and bottom. No tower scaffold shall be moved except by applying force at or near the base and no person shall remain on the tower scaffold when it is being moved.

MOBILE ACCESS SCAFFOLDS

Mobile access scaffolds provide a safe means of access for high level works where either the nature or duration of the work makes it inappropriate to provide traditional scaffolding.

ERECTION AND DISMANTLING (COMPETENT PERSON)

Mobile access towers constructed from steel scaffold tubes and fittings are to be Erected / dismantled by a competent scaffolding workers with similar experience. Prefabricated mobile access towers are to be erected in accordance with the manufacturer's instructions by competent operatives, i.e. a course run by members of the Prefabricated Aluminum Scaffolding Manufacturers Association. All such towers whether bought or hired must be accompanied by the manufacturer's instructions.

GROUND SURFACE

Towers should only be used on suitable surfaces such as concrete, tarmac or similar. Where ground conditions are soft, sloping or uneven, towers are to be set on boards or other rigid packing, which will provide a firm base.

STABILITY OF TOWERS

The height to which a freestanding mobile tower may be erected is calculated as a ratio between the height of the working platform above the ground and the minimum base dimension.

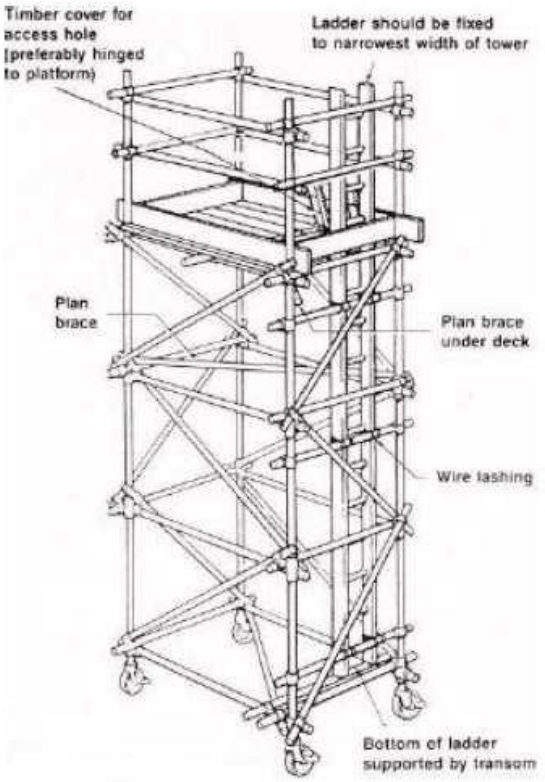
Condition of Use	Height/Base Ratio
A. Within enclosed buildings or where not subjected to wind force	3.5 : 1
B. External to buildings or exposed conditions subject to wind force	3.0 : 1

The use of outriggers or stabilizers will enable the minimum base dimension to be increased so that additional height can be obtained within the height / base ratio. Above these heights the tower must be tied rigidly to a structure. (Refer to manufactures instructions for spacing of ties). Ties for aluminum towers are to be connected to both inner and outer standards, grouped in pairs and repeated at intervals not greater than the maximum free standing height.

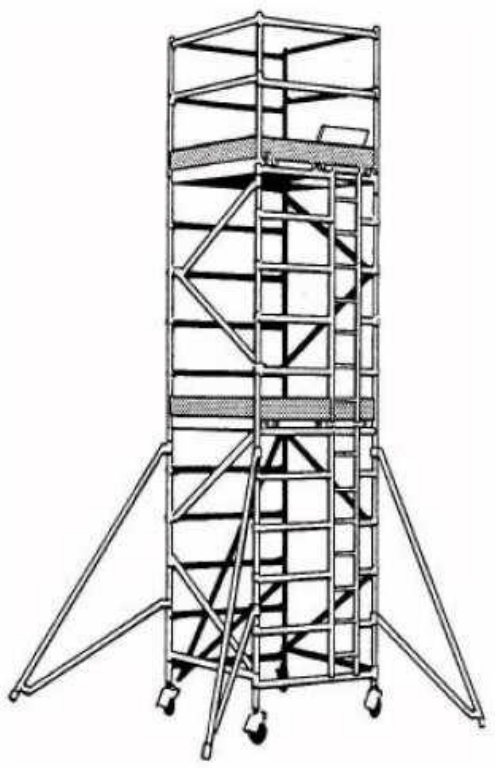
Where the scaffold cannot be tied to the structure, advice from EHS Manager is to be sought as to the use of guy ropes, grounds anchors or ballast weights. NB: Minimum Base Dimension

A. Towers constructed from steel not less than 1.2m Tubes&fittings(BS5973)
B Aluminum Alloy Towers *Single width 0.75m Double width 1.3m

- Single width aluminum towers may only be provided for use with the agreement of the Construction Management Department.



Typical arrangement for a tube and fitting mobile access tower



Typical arrangement for a prefabricated mobile access tower

INSPECTION/REPORTS

Mobile scaffolds must be inspected by a competent staff of contractor having undergone training in scaffolding. A written report on the inspection is required if the mobile tower remains in the same place for seven days or more. A green tag with 'Safe for Use' shall be displayed with signature of person who has inspected the scaffold, which will be monitored by the staff and EHS team during site visits.

LOADINGS

Safe Working Loads

For towers constructed from steel tube and fittings a S.W.L. of 1.5 kN/m2 is not to be exceeded. For proprietary steel or aluminium towers the manufacturer's S.W.L. is not to be exceeded.

Wind Loading (Horizontal)

All towers when properly constructed and used are safe for use in winds up to Beaufort Scale Force 4. (sheeted towers must be adequately tied to a structure).

Other Horizontal Loads

When work from the platform of a mobile tower requires either a pushing or pulling action this should not exceed 20 kg and should be avoided where possible.

Vertical Loads (Eccentric)

Towers must not be used for heavy lifts outside the base area.

MEANS OF ACCESS

Access to towers constructed from steel tube and fittings will normally be provided via a ladder securely lashed vertically to the narrowest side of the tower. Where possible this is to be towards the inside of the tower frame. Proprietary steel or aluminium alloy towers have a variety of means of access, these being:-
i) Integral diagonal stairway. As well as providing access this will form part of the bracing of the tower.
ii) Ladder units, which slip onto the end frame or inclined ladders, securely fixed, inside the scaffold frame.
iii) Climbing a ladder section which is incorporated within the end frame.

Such ladder section will have rungs no more than 300mm apart with stiles not more than 480mm apart. Climbing horizontal members of other types of end frame is not to be accepted as a safe means of access.

NB: Access is from the inside of the tower frame to avoid eccentric loading of the tower. Working platforms are to be provided with trap doors to facilitate access. Where the vertical distance between the ground and working platform exceeds 9.144m (30ft.) an intermediate platform with guard rails must be provided. Minimum platform width 600mm or 3 boards.

COMPONENTS

Working Platforms

Working platforms are to be fully boarded (minimum 600mm wide). They should be at least 800mm. wide when used for the deposit of materials. The working platform must be protected from tipping or sliding by being properly supported and by the use of cleats or other proprietary fittings. Where 38mm timber scaffold boards are used, they must be supported at least every 1.5m. Loads on the platform must be evenly distributed. Any trap door on the platform must be closed when not in use.

Guard Rails and Toe Boards

Guardrails and toe boards must be fitted on all four sides of the platform, regardless of height. Toe boards must rise at least 100 - 150mm and the top guard rail must be at least 1000 - 1200mm above platform level. There must not be an unprotected gap of more than 500mm in height in the means of protection against a person's fall. An intermediate guardrail or other form of effective barrier must therefore be fitted. Where materials need to be stored above toe board height, additional boards or suitable mesh barriers must be fitted to prevent the fall of the material.

Bracing

Towers erected from steel tubes and fittings will incorporate normal ledger and diagonal bracing. Ensure that the diagonal bracings oppose each other on each elevation or the tower may tend to twist and loose rigidity. Proprietary steel and aluminium alloy towers must be braced in accordance with the
manufacturer's instructions and at the correct phase of assembly.

Wheels and Castors

Wheels and castors must be a minimum of 125mm in diameter, free running, fitted with effective brakes and capable of being securely fixed to the standard. Whilst in use, wheels on mobile towers must be locked and aligned outwards from the tower to increase to a maximum the base area of the tower. Each wheel/castor must be marked with its safe working load and therefore be matched with the loading to be imposed.

Adjustable Legs

Where legs are adjustable it is solely to ensure that the structure is erected vertical. The adjustment mechanism is not designed to provide additional height to the tower and is to be used to a minimum.

Outriggers and Stabilizers

These are used to increase the effective base area of a tower in order to gain height from the height/base ratio and are fitted at 135° to each side of the tower. Outriggers are fitted with wheels or castors and should be used on towers which will be moved frequently. Stabilizers have self aligning feet and are used on towers which are moved less frequently.

MOVING TOWERS

Towers must NEVER be moved with men or materials upon the platform and may only be moved by applying a horizontal force at or near the base.

Prior to moving a tower, ensure that the route to the new desired location is free of obstructions. In particular ensure any holes, pits, ducts or gratings are securely covered and that also no overhead obstructions such as electric cables or beams are present. When towers are to be moved and outriggers with adjustable feet are fitted, they must first be raised to a minimum height (12mm) to allow movement. However the tower must be reduced in height to not more than 2.5 times minimum base dimension.

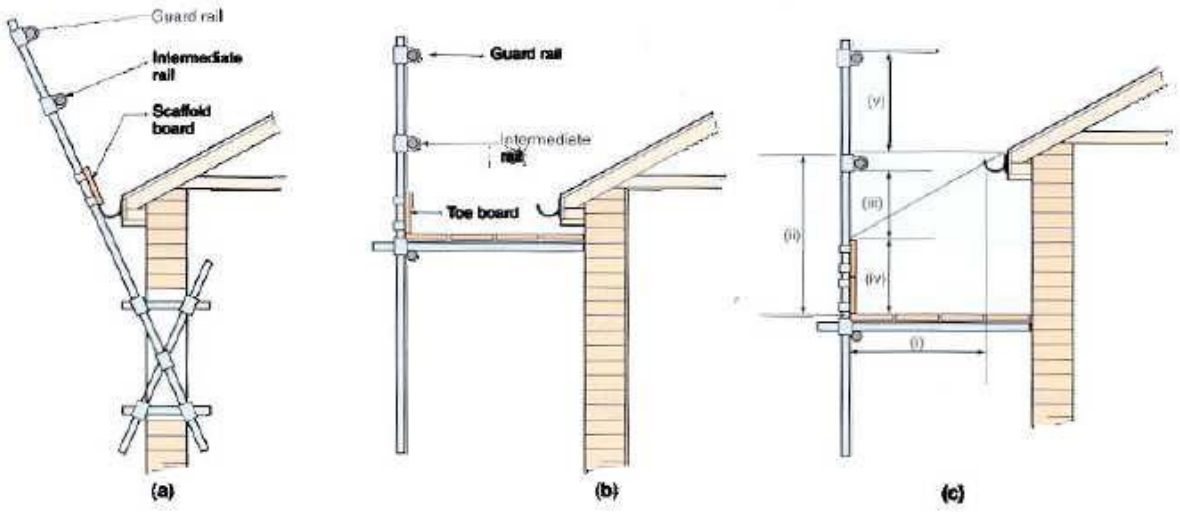
HAZARDS

Common faults which cause accidents with mobile towers are as follows:-

i) Height being too great relative to minimum base dimension.
ii) Failure to use or correctly use outriggers or stabilisers when required.
iii) Tower being used or moved on sloping, uneven or obstructed surfaces without attention to vertical alignment and stability.
iv) Towers not tied to a structure where necessary.
v) Moving the tower from the working platform
vi) Not ensuring pot holes and ducts etc. are adequately covered before moving tower.
vii) Tower fouling overhead obstructions when moved.
viii) Tower inadequately braced to ensure rigidity
ix) Guard rails and/or toe boards not fitted.
x) Unlocked wheels/castors when tower is in use.
xi) Exceeding the Safe Working Load

xii) Eccentric loads such as lifting heavy materials outside the base area or persons climbing up the outside of the frame.

xiii) Use of tower sin windy/adverse weather conditions.



Sloping roof edge protection; typical arrangement in conventional tube and fittings

(a) Supported from window opening

(b) Working platform below the eaves

(c) Top lift of a scaffold. Dimensions should be as follows:

- **(i) Working platform minimum width 600 mm**
- **(ii) Minimum 910 mm**
- **(iii) Maximum gap 470 mm**
- **(iv) To rise to the line of the roof slope with a minimum height of 150 mm**
- **(v) Gap between rails no more than 470 mm**

2. BAMBOO SCAFFOLD :

Bamboos to be used in the construction of scaffolds should be reasonably straight, sound, free from splits, knots dry rot, worm holes and other dangerous defects which tend to reduce the strength of bamboos. It is light duty (UDL of 150 kg/m_2) scaffold recommended to be used for height upto 18m for plastering and painting work only. Lodha recommends use of double pole scaffold at its construction sites and single pole only for painting work, but with permission of project manager. Double pose scaffold consists of two rows of standards, inner row next to the wall and outer row at a distance of 1.2m to 1.5m away from the wall. The putlogs shall rest entirely on the scaffold ledgers. The standards to be fixed 1.5m apart and ledgers spaced to 1.5 – 1.8 m apart. The mean diameter of standards shall be not less than 100mm which should not be measured at the knot points. Length to diameter ratio should not exceed 50, where length is length of the standard between putlogs.

Bamboo scaffold should always be secondary option for all the projects. In case of using bamboo scaffold 'IS 3696 : 1987 - Safety Code for Scaffold & Ladders' should be complied.

2.1 General requirements

(a) Bamboo scaffolds shall be erected, added to, or altered by trained workmen under the immediate supervision of a competent supervisor of contractor.
(b) Work should be started from the bottom level to the top level and from the interior part to the exterior part. The height of the bamboo scaffold erected at any side should not be higher than the topmost part of the building/structure by one storey.
(c) The standards of the scaffolds should be plumbed.
(d) The width of any working platform of the scaffold shall be not less than 400mm.
(e) Every working platform shall be closely planked, boarded or plated, or of open metal work without any interstice exceeding 4,000mm2.
(f) Every board or plank forming part of a working platform shall be of sound construction, adequate strength and free from patent defects. The plank should be straight-grained, sound and free from irregular knots, dry rot, wormholes, cracks and other defects affecting its strength. Also, the board should be sound and free from cracks and other defects affecting its strength.
(g) Every board or plank forming part of a working platform shall be not less than 200mm in width and not less than 25mm in thickness or not less than 150mm in width when the board or plank exceeds 50mm in thickness.
(h) Every board or plank forming part of a working platform shall not protrude beyond its end support to more than 150mm. Otherwise; it is sufficiently secured to prevent tipping. It shall rest on at least 3 supports unless, taking into account the distance between the supports and the thickness of the board or plank, the conditions are such as to prevent undue or unequal sagging.
(i) Every side of a working platform shall be provided with suitable guardrails. The height of a top guard-ail shall be between 900mm and 1,200mm above the platform. The height of an intermediate guard-ail shall be between 450mm and 600mm above the platform. Otherwise, the platform shall be protected by not less than 2 horizontal bamboo members of the scaffold spaced at intervals between 750mm to 900mm as shown in the figure.
(j) Toe-boards and end toe-boards shall be suitably fixed to all working platforms and shall have a minimum height of 200mm (Third Schedule to the CSSR). They should be placed inside the standards.
(k) Space between platform and wall of a building or structure should be as small as practicable. Guard-rails should be provided if there is a risk of falling from height.
(l) Working platforms should be cleared of debris like concrete waste.
(m) Working platforms should not be overloaded and the load should be evenly distributed.
(n) No shock loading on the platforms should be allowed.
(o) The scaffold should be effectively braced to ensure stability of the whole structure.
(p) The bracings should extend from the base to the top of the scaffold.
(q) If electrical equipment such as power hand tools or electric installation including lighting is to be used on the scaffold, they should be of proper design and installation to prevent electrical hazard.
(r) Where a scaffold is erected adjacent to a road or pathway, overlay or screen nets must be erected to envelop the scaffold for the protection of person or vehicular traffic against falling objects.
(s) Safe access to and egress from place of work should be provided for the scaffolders and the users of the scaffold. One way of providing a safe access to and egress from a scaffold is to provide a safe gangway between the existing building/structure and the scaffold. Access and egress provided should be used and no climbing along the standards/ ledgers of the scaffold should be allowed.
(t) When a scaffolders or workman has to work in a place where it is impracticable to erect a safe working platform or to provide safe access and egress, the use of safety nets and safety belt full body harness with double lanyard and snap hook attached to a secure anchorage point or an independent lifeline throughout the work is required. Bamboo members should not be used for anchorage purpose.

2.2 Specific requirements

a) Proper working platforms shall be provided for construction works involving working at height so as to ensure that the works can be carried out safely. The simplest and practical means to provide a proper working platform is the provision of proper wooden planks/boards on a double-row bamboo scaffold with transoms between the rows.

b) The number of working platforms of a scaffold being put into use at any one time should be limited. For a scaffold less than 15m in height, no more than 2 working platforms for very light duty purpose or no more than 1 working platform for heavy duty purpose should be put into use at any bay (space between two adjacent standards along the face of a scaffold) on the scaffold. If more working platforms are to be used, the stability of the scaffold should be verified by professional engineer.

c) The distance between two adjacent standards on the same scaffold plane should not be greater than 1.3m, while for between two adjacent transoms, the distance should not be greater than 0.75m. Furthermore, the distance between two ledgers (i.e. distance between the upper one or lower one) should not be greater than 1.2m andthe height of the boarded lift for forming working platform should be between 1.9m to 2m as shown in fugure.

d) The working platform of the double-row bamboo scaffold shall be at least 400mm wide. Where it is impracticable by reason of limitation of space to provide a working platform of such width, the working platform shall be as wide as is reasonably practicable.

e) (e) For every scaffold erected, there should be bracings provided all over it (i.e. in the case of a double-row bamboo scaffold, bracings should be provided for both the inner and outer scaffold planes). Each bracing section should consist of two bamboo members that are tied in a 'X' shape over the section of scaffold to be braced. The horizontal span of each 'X' shape bracing section should not be greater than 9m. Besides, the two bamboo members forming each 'X' shape bracing section should not be erected at more than 60° from the horizontal level, and preferably be at 45° from horizontal level as shown in figure.

f) (f) When a bamboo scaffold having a height greater than 7m, for every 4m or less rise and 7m or less apart horizontally, there should be ties to fasten the scaffold securely at the building/structure facade. As an example, ties can be formed by connecting steel wires between the ledgers/standards of the scaffold and the structural anchor bolts pre-set into the structural sound members of building facade. The steel wires (minimum 6mm in diameter) and the structural anchor bolts used should be of adequate strength. Besides, at every position of ties, a short length of bamboo of effective diameter not less than 40mm (acts as strut) should be connected between the inner scaffold and the building facade to restrict any inward movement of the scaffold as shown in figures below.

g) (g) When a bamboo scaffold having a height 7m or below, bamboo rakers should be provided and connected from the ground to the third lift or fourth lift of the scaffold. The angle of the rakers from ground should approximately be equal to 60°. Each raker should be tied to both the standard and the transom of the scaffold. For every 7m apart horizontally or less on the scaffold, there should be one such raker provided. In exceptional case when the scaffold is less than 7m in width, two such rakers should be provided near the two ends along the width of the scaffold. To prevent any movement of the rakers, they should be inserted into the ground for not less than 500mm or be securely fixed in position by suitable means.

h) (h) The two ends of the transoms on the double-row scaffold should protrude beyond the ledgers for not less than 300mm. All the inner edge of the working platform of the scaffold should be as close to the facade of the building/structure as is practicable.

i) All the fastenings between bamboo members should be tight and secure. Fastening of bamboo members between standards and ledgers, or ledgers and transoms, or for bracings/rakers, etc. should be tied by either nylon or bamboo strips of adequate strength. For standard, ledger and transom to be tied together, any two of them should be tied up first and then the remaining one should be tied up on top of them.

j) Nylon strips of adequate strength should be used for fastening and connecting standards, ledgers, transoms, bracings/rakers and ties together to form scaffold. For example, nylonstrips of width 5.5mm to 6mm and length 2m should be used, and their tensile strength should be greater than 50kg with rate of elongation less than 20%. Besides, the strips should be anti-aging.

(k) Alternatively, bamboo strips may be used for tying purposes. Normally, the bamboo strips should be 0.5mm to 1mm in thickness and 5mm to 7mm in width. They should be stored in places that can shelter from rain, and should also be free from corrosive substances such as cement or soda powder, etc. Also, they should be soaked with water completely for a full day's time before use.

(l) For connection between two bamboo members, the following length of overlap should be bserved:

- 1.5m to 2m for standards,
- at least 2m for ledgers and bracings/rakers.

Besides, the distance between two fastenings on the overlapping portion of the bamboo members should not be greater than 300mm, and the 'tail' of one bamboo member should be connected to the 'head' of the other.

(m) All the ledgers, bracings, rakers, ties and transoms should not be used for hanging equipment, tools and materials.
(n) For a scaffold greater than 15m in height, it should be designed and approved by professional engineer.

2.3 Truss-out bamboo scaffold (single lift type)

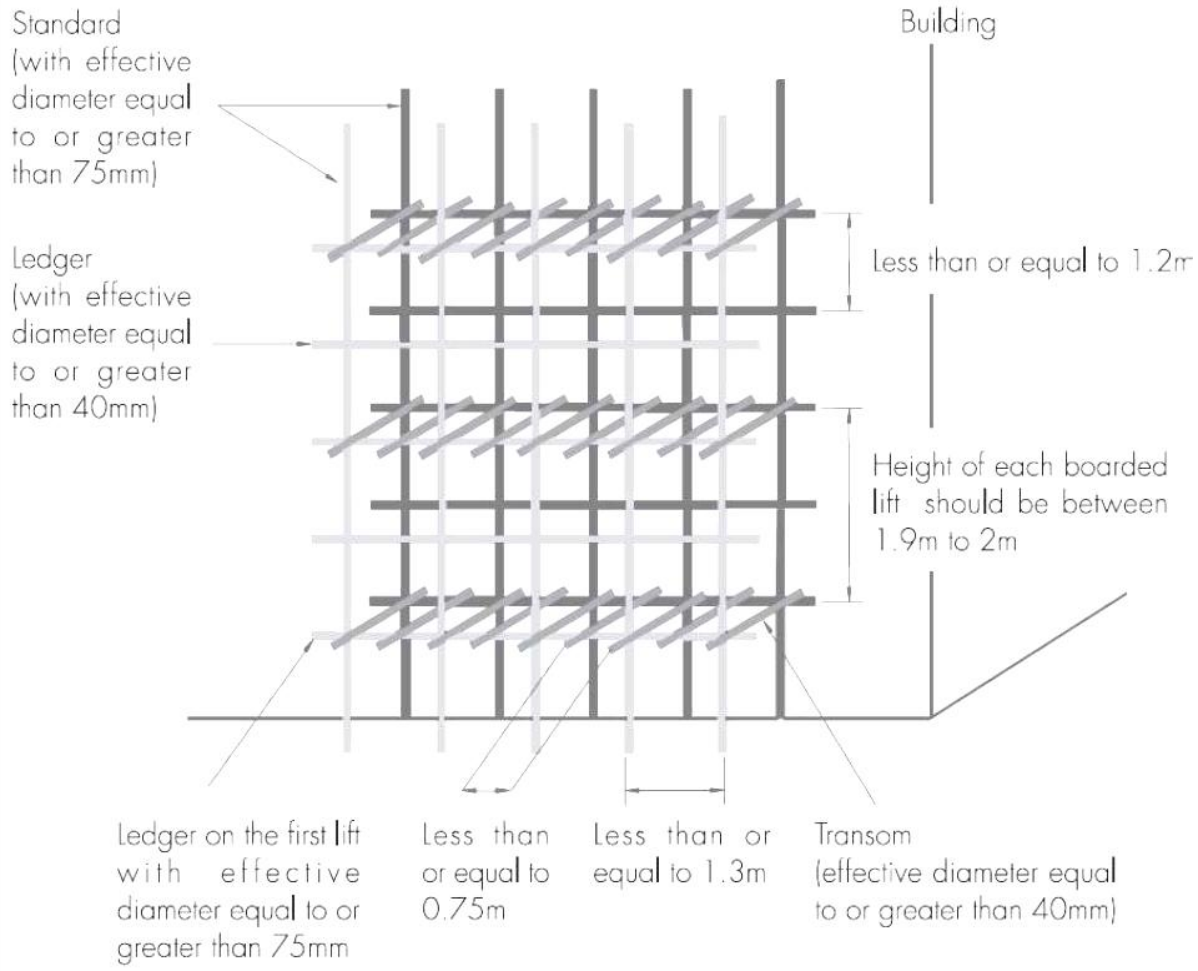
(a) General requirements

- These scaffolds are generally used in circumstances when it is not possible, not advisable and not cost-effective to erect a scaffold from the ground level. Examples are, the repairing of the water tower of air-conditioning unit installed outside the facade of a tall building; the water-proofing work of upper windows; or the minor maintenance, repair, renovation and decoration work on the facade of a similar tall building. These works are often very short in duration and with light loading on it. The usual form of the scaffold is a single lift truss-out scaffold and that it is supported by a scaffold structure such as a truss-out structure projecting from the facade of a building/structure and the whole scaffold is totally dependent upon the existing building/structure for support.
- The building that the truss-out scaffold is to be erected should be examined to ensure that it can stand the support of the scaffold. Strictest control should be exercised on the loads applied to the truss-out scaffold. Hence, the scaffold should be designed by professional engineer to cater for the vertical self-weight of the scaffold, its imposed load and the loads resulting from wind forces.
- Whenever there is an internal restraining scaffold for the truss out scaffold, it should be designed by professional engineer to cater for the resulting horizontal forces and be securely locked into the building to prevent inward and outward movement.

(b) Specific requirements

- The truss-out scaffold should be supported on balcony, sills or ledgers on the outside wall and is prohibited to rest on decorative structure of the building.
- Standards should be erected inside the building/structure and they should be tied up with ledgers being erected inside.
- Two ledgers forming the base of the working platform should then be tied up with the standards/ledgers erected inside the building/structure via the opening of the building/structure.
- Rakers should be erected to form the truss-out structure and the angle between the raker and the facade of the building/structure should not be greater than 30°.
- One end of the raker should be tied with the transoms/putlogs and the other end rested on the sills or ledgers, etc. or even on the floor inside the building/structure.
- Spacing between the two ledgers should not be greater than 1.2m.
- The requirements for the scaffolding materials such as the bamboo for standards, ledgers, rakers and transoms, etc. and the formation of working platform with guard-rails of the truss-out structure are the same as those mentioned above.
- For those load-bearing tying points of the scaffold, they should be tied up with steel wires of adequate strength.
- There should be a tight control on the loading of the scaffold during the execution of work on it. All the materials and tools should be placed at the inner side of the working platform on the scaffold (i.e. the side adjacent to the facade of the building/structure) to maintain the stability of the scaffold.
- For dismantling of the scaffold, the scaffolder should start the work from upper level to lower level, from exterior to interior and from non load-bearing parts to load-bearing parts.

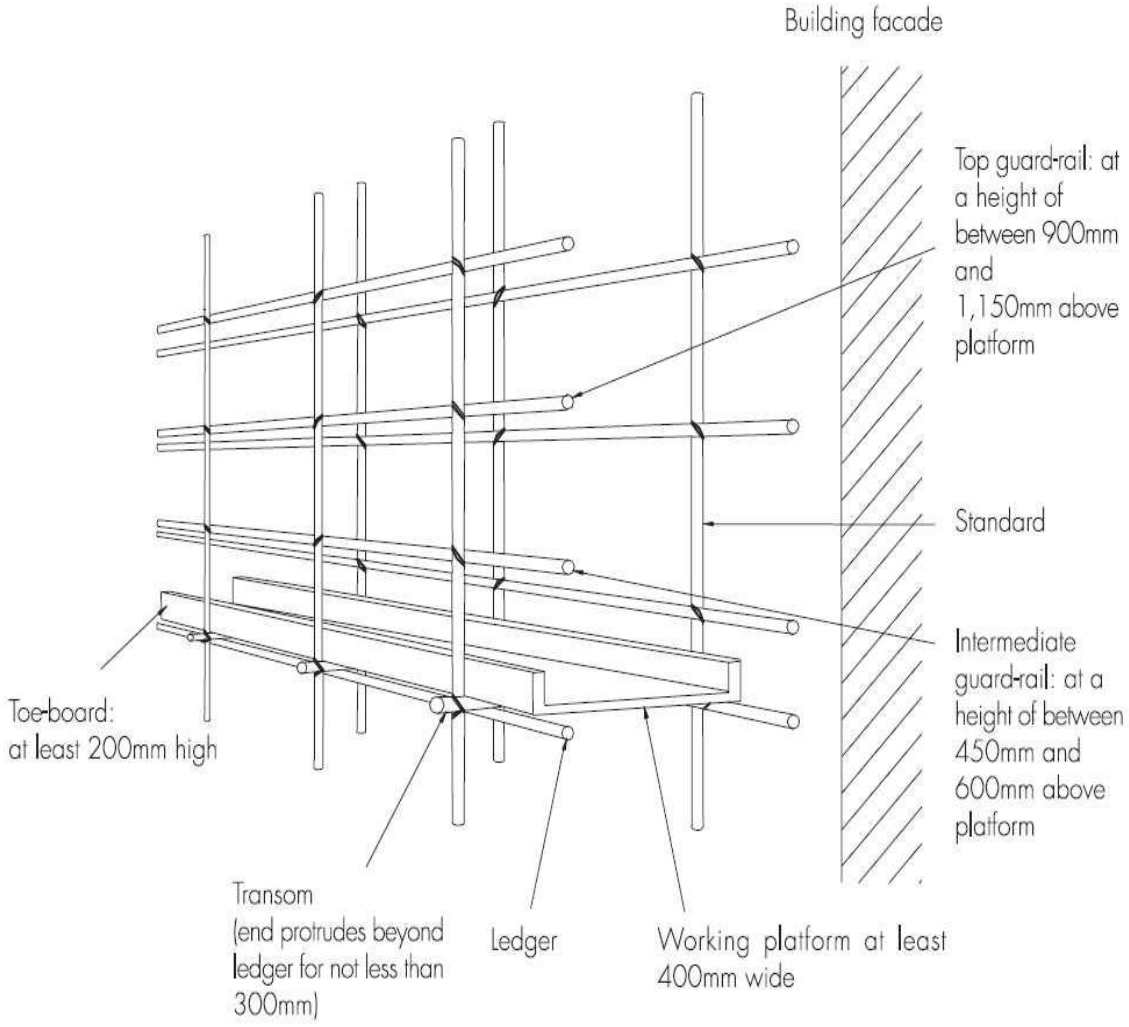
DOUBLE-ROW BAMBOO SCAFFOLD WITH RECOMMENDED ERECTION STANDARDS (NOT TO SCALE)



Note:

For all standards and the ledgers on the first lift of the scaffold, the wall thickness of these bamboo members should not be less than 10mm.

PROPER WORKING PLATFORM OF A DOUBLE-ROW BAMBOO SCAFFOLD
(NOT TO SCALE)

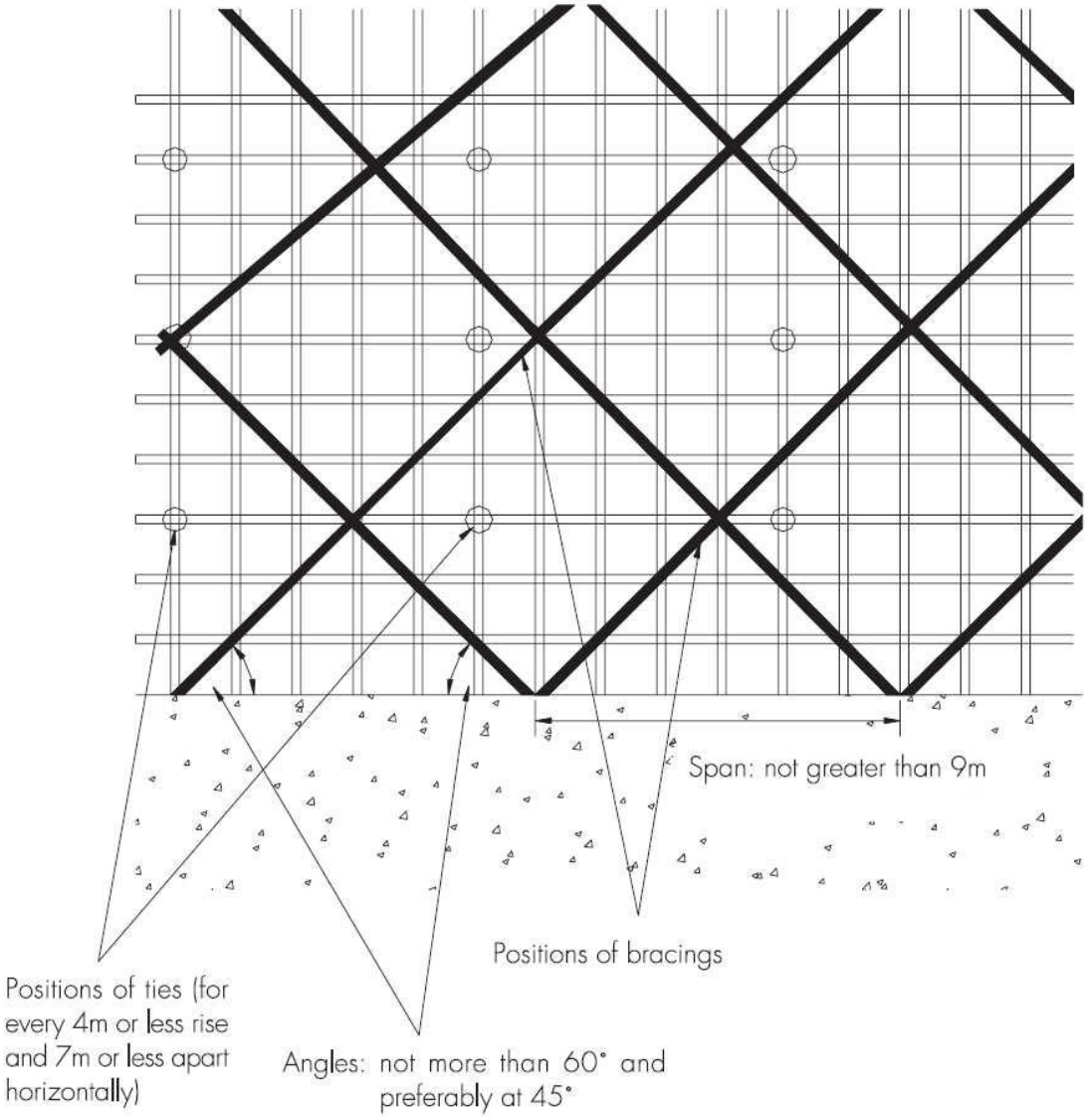


Note:

(i) Each scaffold board should be not less than 200mm in width and not less than 25mm in thickness or not less than 150mm in width when board exceeds 50mm in thickness.

(ii) Height of guard-rails shall not apply to a working platform on a bamboo scaffold if the platform is protected by not less than 2 horizontal bamboo members of the scaffold spaced at intervals between 750mm to 900mm.

POSITIONS OF TIES AND BRACINGS FOR BAMBOO SCAFFOLD
(FRONT ELEVATION - NOT TO SCALE)

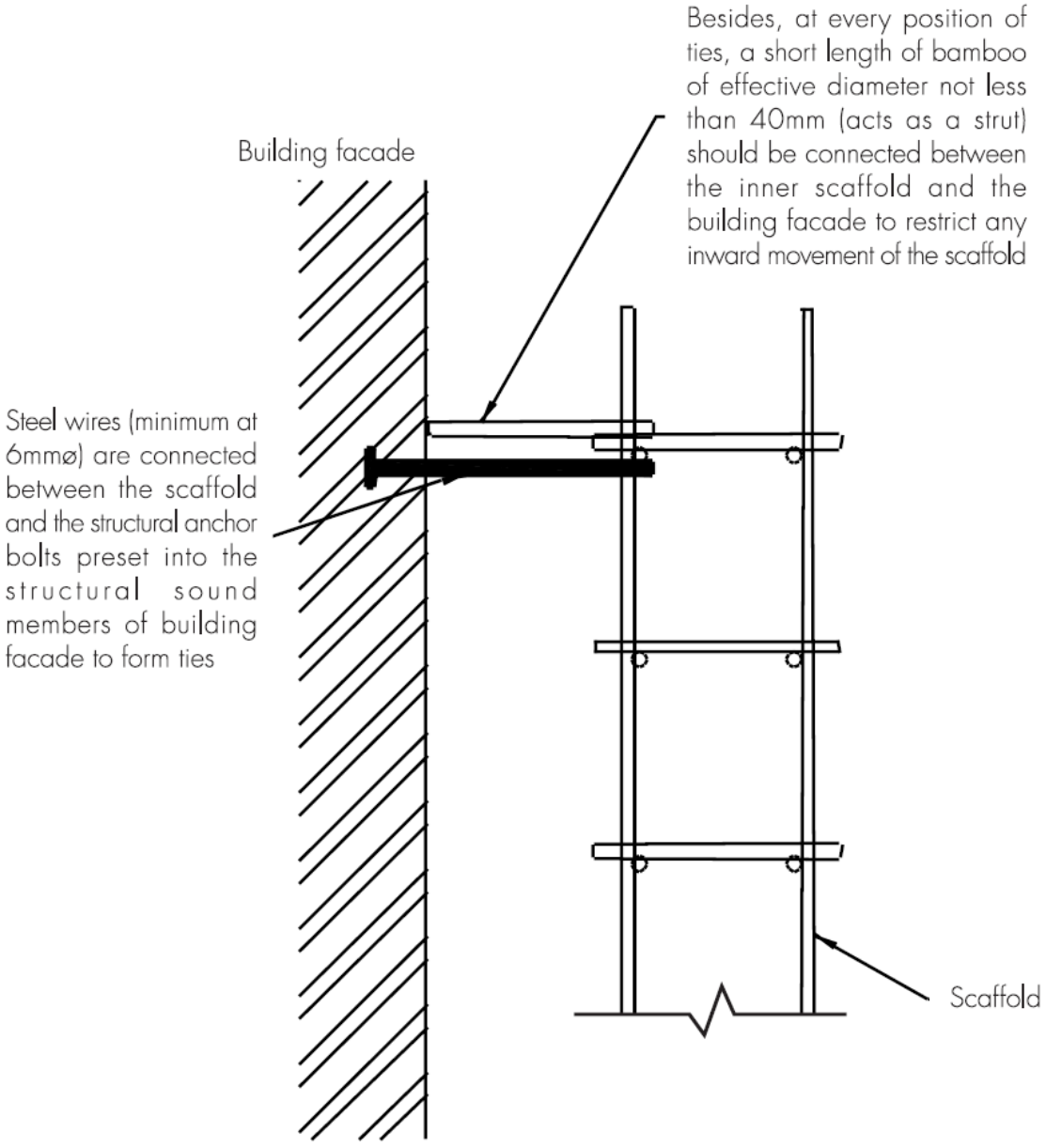


Note:

(i) Positions of transoms are not shown.

(ii) Ties should be fitted for bamboo scaffold of height greater than 7m.

DETAILS OF TIES/STRUTS ARRANGEMENT OF A DOUBLE-ROW BAMBOO SCAFFOLD (SIDE ELEVATION - NOT TO SCALE)

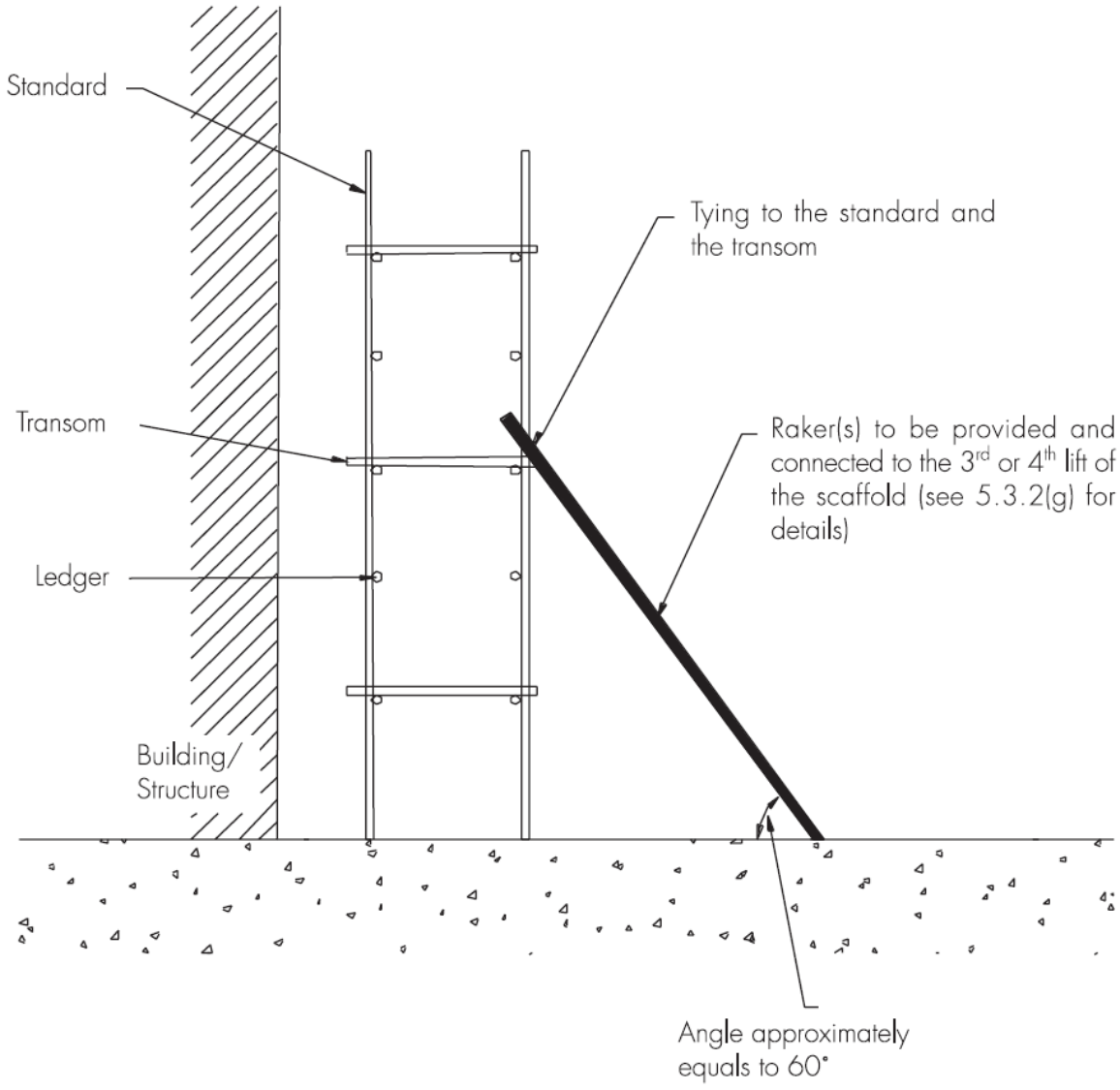


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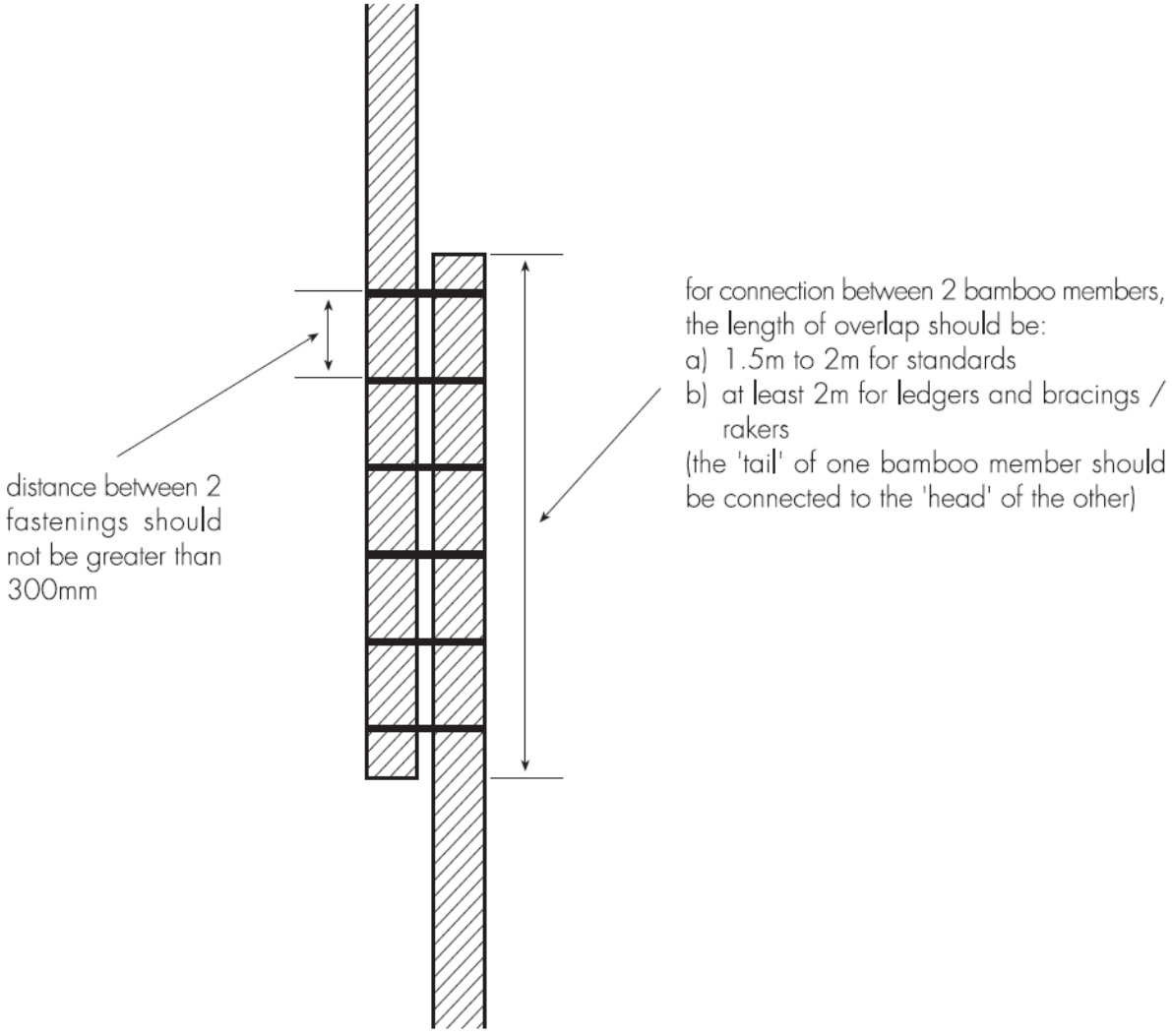
(i) For building under construction, structural anchors for the ties can be preset into the structural sound members of building facade.

(ii) For existing building, structural anchors can be provided by expansion type anchor bolts set into the structural sound members of building facade.

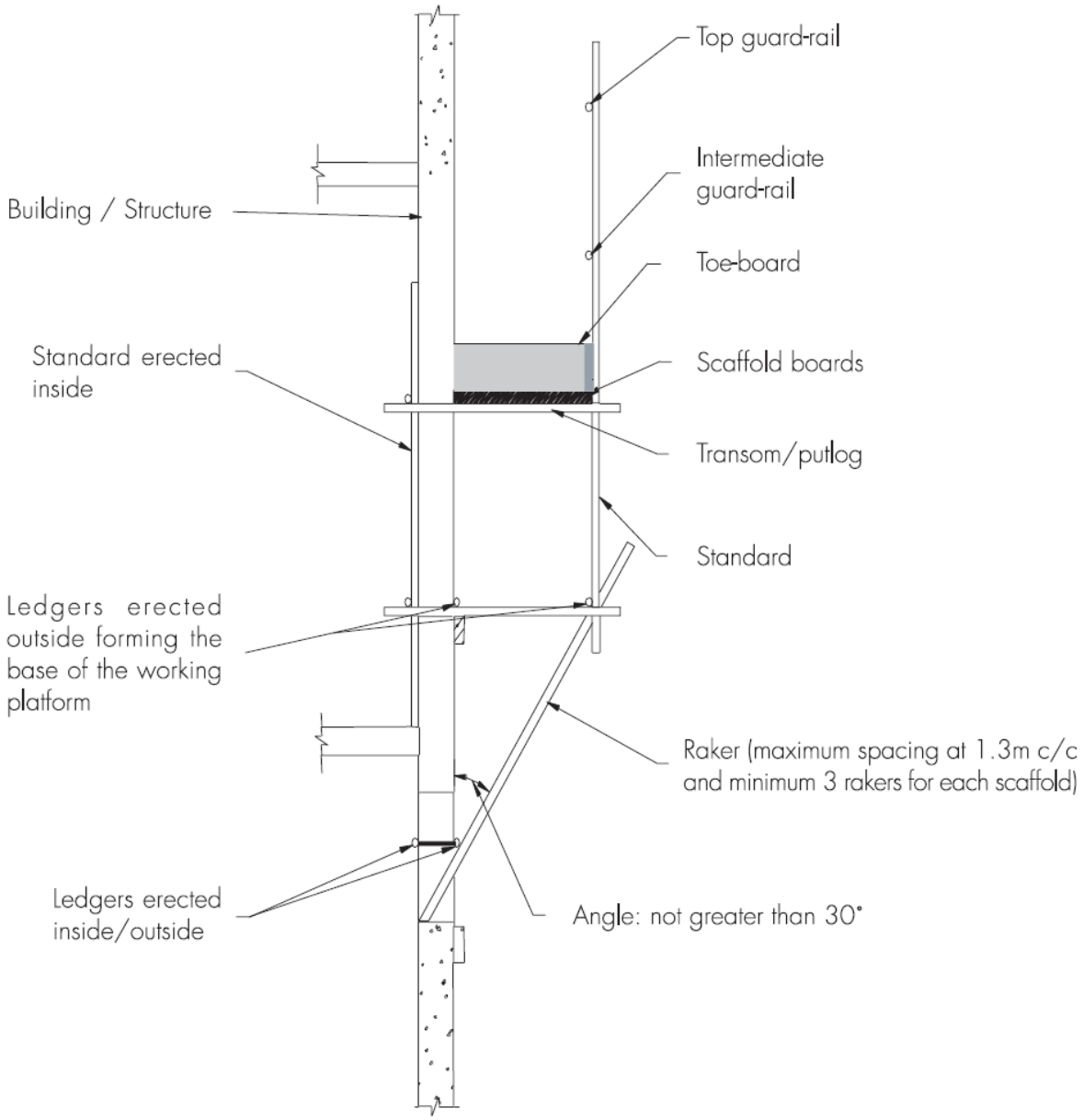
POSITION OF RAKERS FOR BAMBOO SCAFFOLD OF HEIGHT 7M OR BELOW (SIDE ELEVATION - NOT TO SCALE)



PROPER CONNECTION OF BAMBOO MEMBERS FOR BRACINGS / RAKERS, LEDGERS, STANDARDS USED IN THE ERECTION OF BAMBOO SCAFFOLD
(NOT TO SCALE)



SINGLE LIFT TYPE TRUSS-OUT BAMBOO SCAFFOLD
(SIDE ELEVATION – NOT TO SCALE)



Note:

(i) For the top guard-rail: at a height between 900mm and 1,150mm above platform.

(ii) For the intermediate guard-rail: at a height between 450mm and 600mm above platform.

2.4 Technical requirements for safety in bamboo scaffolding Materials

General requirements
(a) Sufficient material should be provided for and used in the construction of scaffolds.
(b) Scaffolding components should be of sound material, good construction, adequate strength and free from patent defects, and should be properly maintained.
(c) Timber (such as fir) so used should be of sound construction, adequate strength and free from patent defects.
(d) Boards and planks used in the construction of working platform should be straight grained and free from large knots, dry rot, wormholes and other dangerous defects. Where necessary, they should be protected against splitting.
(e) These boards and planks should be unpainted so that any defects are readily visible.

Specific requirements

(a) The effective diameter of bamboo members used as standards should not be less than 75mm and the wall thickness of these bamboo members should not be less than 10mm.
(b) The effective diameter of bamboo members used as ledgers on the first lift of the scaffold should not be less than 75mm and the wall thickness of these bamboo members should not be less than 10mm.
(c) For the rest of the ledgers, and all the transoms/putlogs, bracings and rakers of the same scaffold, the effective diameter of bamboo members used should not be less than 40mm.
(d) The effective diameter of a bamboo member refers to the smallest external diameter found along the bamboo member.
(e) Bamboo members used in the construction of scaffolds should be straight, sound and free from cracks, gnarls, irregular knots, dry rot, worm-eaten spots and other defects affecting the strength of the bamboo members.
(f) Bamboo of more than 3 years of growth should be used for scaffolding.

Support for bamboo scaffold

General requirements

- The ground or structure on which a scaffold is constructed should be solid, levelled and rammed to give a hard surface, and should be strong enough to keep the scaffold upright.
- The stability of the ground or supporting structure should be justified by recognized engineering principles. The soil should be compacted or consolidated and as far as practicable, water be drained off.

Specific requirements

- All standards of a scaffold should be adequately supported without risk of undue displacement. Points of contact between the standards and underlying works should comprise base plates connected to the feet of the standards, resting on distribution members if necessary.
- If the standards are supported by the ground, the ground should be treated to enhance even setting of the distribution members, and to ensure that the allowable bearing capacity of the ground will not be exceeded. There should be no cavities under the distribution members.
- On sloping supports, the standards should be effectively prevented from sliding. An appropriately shaped wedge should be inserted to the void between each standard's base plate and the sloping support to ensure tightness and verticality. To resist lateral loads, the base of the scaffold should further be adequately anchored to the sloping support.
- In situation where it is not practicable to provide a solid ground for foundation purposes, metal brackets or other means of suitable design should be used as support for each standard of the scaffold. These supports should be of adequate strength to hold the vertical and lateral loads imposed onto the scaffold and should be securely fixed onto the existing building/structure or the building/structure under construction.

3. Ladders & Platforms

PURPOSE

This minimum standard is established as a guide for the safe selection and safe use of ladders and working platforms at Lodha construction sites.

SCOPE

All the construction sites of Lodha has to comply to the minimum standard on ladder and work platforms.

ROLES

EHS Manager : To train staff and contractors on safe use of ladders and working platforms along with communication on minimum requirement for constructing safe ladder and platforms.

Project Manager : To provide required resources and communicate to all the contractors on minimum requirement for building and using safe ladders and working platforms. He shall take actions against any violations or non-compliances to the standard.

Project Site Team : To ensure that all the ladders and working platforms used at construction sites are safe for use and have been inspected and tagged by contractor. Only ladders and platforms inspected and tagged to be allowed for use by contractor.

Contractor : To bring or construct safe ladders and working platforms as per the minimum requirements and do not breach the requirements. In case of any non-compliances brought to notice by the Lodha staff shall be corrected immediately, before restarting the activity.

STANDARD

Ladders

Ladders forming part of a scaffold must be inspected at the same time as the scaffold and other ladders on site should be inspected monthly and tagged properly. Any defective ladder must be immediately taken out of use and preferably destroyed to prevent future use.

Ladders should be checked to ensure that:-

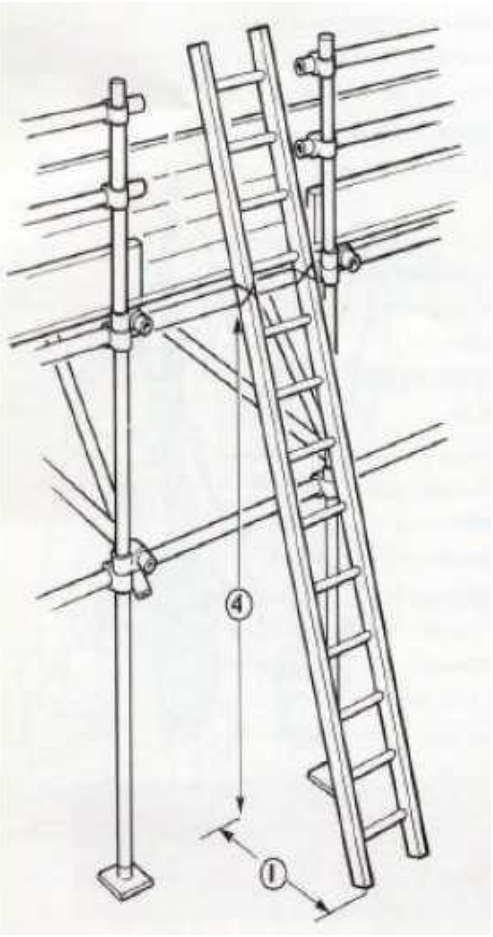
- They are evenly loaded on both styles.
- They are placed on level suitable ground which is capable of taking their load.
- They should be positioned at an angle of 1:4 (75%).
- They must be adequately secured/lashed by both style and rung in two locations, one each on opposite styles.
- The styles should be free from defects, splinters and twists.
- The rungs should not be more than 300mm apart and styles should not be more than 480mm intervals and they should be secure – non-rotating with no sign of damage.

NB. the wire tie should be below and not on top of the rung.

- Ladders must extend sufficiently above the stepping-off point unless other handholds are available.
- Where ladders extend 9m. or more vertically then intermediate landing/resting points are to be provided.
- In case of ladders been fabricated, should comply to standard, or else shall be discarded and destroyed, if found to be unsafe for use.



Typical ladder set ups.



Ladders must not be lashed together to provide extra length and are not to be used with the addition of a scaffold board as a horizontal access way. Ladders must be of suitable strength. On Lodha construction sites, light weight 'domestic' ladders are not to be used. Where it is necessary to work off a ladder then it must be secured or footed at all times while in use.

Working Platforms

Lodha construction sites should confirm to following;

- No working platform should be less than 600mm wide.
- Where a fall is possible all work platforms and access ways must be fitted with guard-rails and toe boards or similar means of protection which must be of suitable strength and secured.
- The top guard-rail must be at least 900mm to 1200mm above the level from which person is likely to fall.
- The toe board should be a minimum of 100mm to 150mm high.
- Between the toe board and top guard-rail there must not be an unprotected gap of 500mm or more. This may be overcome by the use of a second guard-rail, secured brick guards or other suitable barrier.
- The supporting structure must be of sufficient strength and stability and where necessary, tied to adjacent structures.
- The supporting structure must be founded on a level surface of adequate strength and stability to take the imposed load.
- The support structure must be erected in such a way and location to prevent accidental displacement.

- The working platform should have no gap that can cause injury to persons working on the platform or below and should be free from the risk of trips and slips. It must also be constructed so as to prevent persons from becoming trapped between the platform and adjacent structure.
- The width of the working platform must be of sufficient width for the free passage of persons and safe use of equipment and materials. The minimum width, where possible, is to be 600mm Although not stipulated in the regulations the following may be used as a guide:

a) 4 boards wide (863mm) with a passage of at least 2 boards (431mm) for safe access. This passage must be increased to 3 boards (635mm) if barrows are used.
b) 5 boards wide (1.066m) is considered to be the normal requirement for bricklaying purposes.
c) 6 boards wide (1.295m) if used by masons. Platforms of this width must be specially designed.

Note: A minimum width of 2 boards (431mm) is necessary when required for access by personnel only and a minimum of 3 boards wide (635mm.) for access of personnel and materials.

- Platforms and support structures must not be overloaded causing danger of collapse or deformation.
- Where materials could fall between the guard-rails and toe board the gap must be protected by brick guards or similar.

The following must also be adhered to:

- The gap between a scaffold platform and adjacent structure must be kept to the minimum. Where there is a risk of a fall between the scaffold and the structure, internal guard-rails and toe boards must be provided. Where this is a birdcage scaffold the maximum gap must not exceed 150mm.
- The platform must be constructed so that no gaps exist through which materials could fall onto persons below.
- Precautions must be taken to prevent boards from lifting in high winds.
- Scaffold boards must not extend beyond their end support by more than 4 times their thickness or less than 50mm.
- Scaffold boards must be in good condition and British Standard boards must be supported at centre no greater than:
  - ✓ 32mm. boards - 990mm.
  - ✓ 38mm. boards - 1.50m.
  - ✓ 50mm. boards - 2.59m.
  - ✓ Generally a 38mm board is supported every 1.2m.

  NB Non British Standard boards may require to be supported at closer centres.

4. Working in Riser Shafts

PURPOSE

This minimum Operating control procedure is established as a guide for the safe method of working at height and towards riser shaft.

SCOPE

All the building projects has shafts which pose falling hazards for workers in building construction. Hence the Operating control procedure is applicable to all the project sites, during construction phase for working inside the shafts.

ROLES

EHS Manager : To recommend the best fall protection measures for shafts and train and implement a system of ensuring and monitoring the fall protection measures.

Project Manager : To provide all the resources for fall protection and ensure the compliance to the Operating control procedure through contractor appointed for working inside the shafts.

Project Site Team : To ensure that all the shafts are installed with fall protection measures and in case of non-compliances, it is brought to the notice and immediate action is taken to avoid any accidents.

Contractor : To install the fall protection measures as mentioned in Operating control procedure and as may be prescribed by the EHS manager or project site team, from time to time.

OPERATING CONTROL PROCEDURE

INTRODUCTION

This memorandum refers to work in or over all shafts and other situations where there is a potential to fall more than one storey, i.e.,

- Riser shafts - with or without walls
- Lift shafts - with or without walls
- Tower crane voids through a building
- Work over atria.
- Demolition “well holes” for removal of a risings.
- Erection of safety nets, etc

Over the last 10 years some 25% of our fatal and life damaging accidents have occurred in shafts in building construction industry.

A Scaffolding and Demolition work

1. No scaffolders are to erect or remove a scaffold or covering in or over a shaft without the aid of a safety full body harness at all times. This is an absolute requirement and must be agreed with the contractor before work commences. A similar rule applies to all other trades where there is no guarded working platform, including demolition workers who may be forming “well holes” for the removal of arisings, or otherwise working in a situation where they could fall more than one storey.

2. No lone working is to be carried out in or over shafts.

3. No work will be carried out in or over shafts without the presence on site of a competent Lodha staff who is familiar with this memorandum and who will inspect the operation.

4. Scaffolds erected within shafts must be constructed in full compliance with legislation. This requires double handrails and toe-boards at each boarded lift where the gap between the scaffold and the wall is greater than 75mm. Where this is impossible to achieve, a fully detailed risk assessment and method statement (including sketch) must be agreed and enforced which includes the full time use of full body safety harnesses. Scaffolds must be braced or tied to the walls so there is no sway in any direction. A swaying scaffold can cause a worker to fall or trip even where the scaffold itself cannot overturn.
5. Because of the danger to scaffolders the practice of boarding over shafts and voids at every other floor level will be discontinued. Greater attention must be given to solidly fixed edge protection - double handrail and toe board.

B Lighting and guarding

1. Lighting in shafts must be carefully considered both during erection of scaffolds and for the ongoing work. 20 lux is required for erecting the scaffold, 200 lux for task operations. The safe means of providing this lighting must be arranged by the contractor before any work commences.

2. It is possible to walk under some shafts at ground level. In such cases physical barriers (not just tape) and warning signs must be erected. Where shafts form rubbish chutes or “well holes” for the removal of arisings, extensive measures must be taken to prevent splatter and protect other workers by warning signs and physical barriers.

3. Entrances to shafts must be well guarded and lit. Lift shafts and major risers should be provided with lockable temporary or permanent doors. Where scaffold barriers are used as a short term measure a minimum of 3 rails to a height of 1.5m, plus a toeboard, must be solidly fixed. Barricades of 40mm or bigger pipe railing of height of 1.2 – 1.5 m with intermediate guard rail at spacing not greater than 600mm and vertical post driven deep to provide rigid support is recommended. It should be painted with 300mm wide white and red tape. A minimum lighting level of 20 lux must be provided and maintained at the entrance to every shaft at every floor level whether or not any work is taking place.

4. Carpenters or others fixing doors to shafts must work off harnesses unless there is a platform inside.

C Working in the riser or shaft

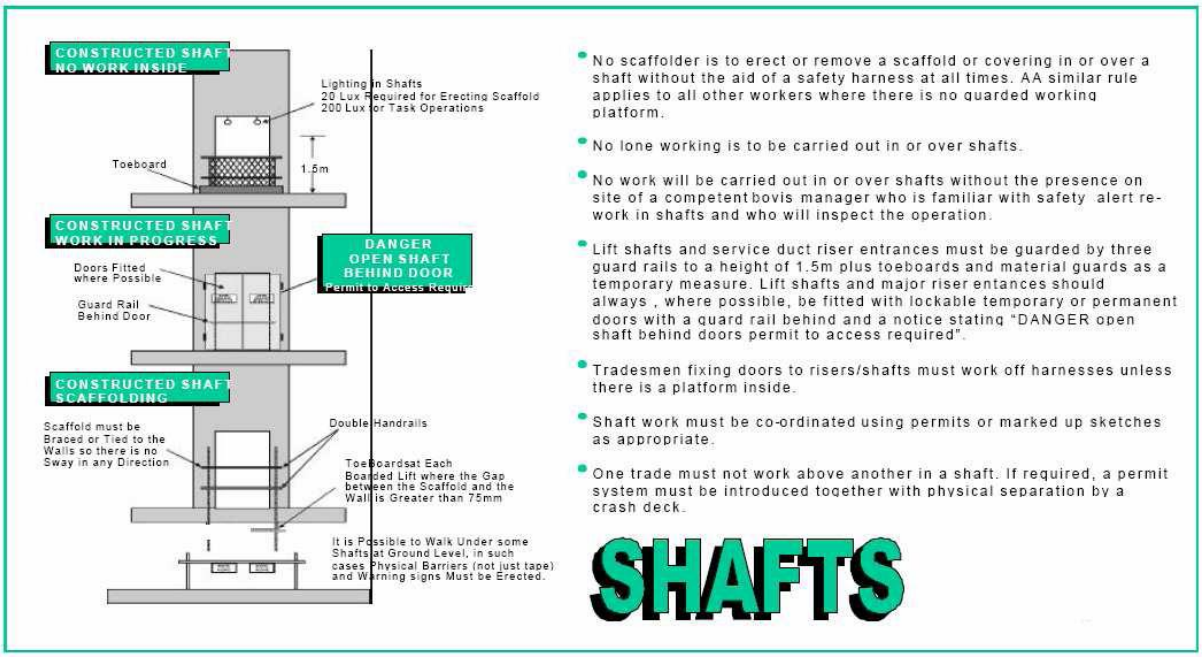
Serious accidents have occurred in service riser and lift shafts because risk assessments have not been undertaken and the work not planned. A risk assessment for working in riser shafts will clearly indicate the risk of either fall of person or material. An effective control measure to prevent an accident is the running of a permit to work / access in riser shafts. The effective control for the running of a permit to work/access in riser shafts will need to include:

1. Weekly co-ordination meeting to decide who will be working in the shaft and at what levels to ensure different trades or operatives are not working over each other.
2. A procedure must be established to prevent operatives working below each other unless the shaft is fitted with a substantial crash deck to provide safe separation.
3. The use of safety harnesses attached back to the structure or proven anchor points where there is a risk of falls of person.
4. Access points to the shaft must be secured, together with warning notices stating that a permit to work/access is required. Access below shafts at ground or basement level must be prevented.
5. The contractor working in the shaft will be responsible for the integrity of any edge protection provided.
6. The contractor's safe work method statement for the works must be approved by Lodha project manager before work commences. This is to include any temporary works/bracing and appropriate lifting equipment. A sketch of the access arrangements and entry guarding is required.

The permit to work/access system should be run by the lead services contractor i.e. the service contractor who has the most work to do in that shaft. This contractor must appoint an authorized person with deputy for issuing permits. These procedures and appointments must be in writing and all workers must be given specific training.

D Monitoring

1. Lodha Project Management site team must check daily work inside shafts to ensure good access and safe working practice in accordance with these procedures.
2. Permit procedures must be spot-checked.



5. Access Control System

PURPOSE

This minimum Operating control procedure is established as a guide for the effective control of non compliances at the access point of security gate. Some of the issues like PPE compliance, child labour entry, unauthorized entry, etc can be controlled with access control, rather than monitoring it at multilocations.

SCOPE

This Operating control procedure is applicable to all the projects where labours are staying in a labour camp within the project premises or outside the project premises.

ROLES

EHS Manager : To recommend most feasible options of having access control system for the project to ensure one point control system for the workers and staff.

Project Manager : To provide required resources for access control system and monitor the same through subordinates.

Project Site Team : To ensure that access control system is effectively in place at all the times and in case of any non-compliances, to be brought to the notice and immediate corrective actions are taken.

Contractor : To comply to access control system set by Lodha and as recommended by EHS manager and project site staff. In case of any non-compliances brought to the notices, should take immediate corrective and preventive actions as may be suggested by the project manager.

OPERATING CONTROL PROCEDURES

ID Card to Control Unauthorized Entry:

1. Contractor should issue ID cards to all the workers that arrive at the construction site.

2. The ID card should contain following details;

   - Name of Person with Photograph.
   - ii. Date of Birth, as per photoID submitted by worker to the contractor.
   - iii. Blood Group
   - iv. Permanent Address, as per photoID submitted by worker to the contractor.
   - v. Name of Contractor, along with contractor seal.
   - vi. Date of Issue of ID card.
   - vii. Space for 'Safety Inducted' seal.
   - viii. Date of validity of ID card.

3. Contractor should bring all the workers to EHS manager for safety induction and all the workers should undergo safety induction through 'Golden Safety Rules', and 'Worker Induction Presentation', in induction room.

4. On completion of induction, workers ID card will be stamped with 'Safety Inducted' stamp by the EHS manager and the ID card will be valid thereafter.

5. Any ID card without 'Safety Inducted' stamp shall be considered to be invalid and such person should not be allowed to enter the site premises by the security.

6. Any exit and entry shall be strictly monitored by the security guard and non-compliances should be immediately reported to EHS manager and project manager.

7. In case of temporary workers employed for only 1-2 days, temporary ID cards has to be issued by the contractor, which may not have photographs, but should have 'Safety Inducted' stamp on it, after undergoing induction.

8. ID cards of any person leaving the site should be collected at the security gate and should be handed back to the person while re-entering the site.

9. If a worker is permanently leaving the site, his card shall be submitted to the EHS manager, after collection at the security gate.

10. Contractor has to ensure that all the workers working at site should possess ID cards at the work location. No worker will be allowed to work in workplace unless have valid ID card, and in case of non-compliance, shall be penalized and worker will be removed from the workplace.

11. In case, if labour camp is located in the building basement or podium or any of the floor of the building, access control shall be provided by provision of entry door and deputation of security guard for controlling workers going in workplace.

Child Labour Control

1. No worker below age of 18 years should be allowed to work in the construction sites of Lodha and the responsibility lies with the contractor to have age proof of the worker before employing the worker.

2. In case of any doubtful case, contractor will be asked to submit the age proof of a worker and failure to it will lead to penalization as per penalty clause of Lodha.

3. All project site staff and contractor supervisors are required to monitor the compliances, as non-compliance can lead to legal obligations.

4. Security at the entry point should also monitor that no child labour or no infant is brought to the construction site. He should stop such workers and immediately inform it to the project manger and EHS manager.

PPE Control

1. Any entry to the project site or building should be through security post and hence layout for the project site along with layout of labour camp along with arrangement of security guard should be freezed with this in consideration.

2. All the workers moving towards the workplace should be checked for valid ID card along with mandatory PPE like safety helmet and safety belt for carpenters and fitters.

3. Any person without valid ID card and without mandatory PPE should not be allowed to enter the workplace and should be stopped at the security point and immediately informed to project manager and EHS manager.

4. In case of visitors, they have to be accompanied by one of the staff member and shall be issued with visitor helmet which should be violet in colour.

5. In case of visitor of contractor, contractor shall be responsible for arranging required PPE for the visitor at the security point.

6. Personal Protective Equipments

PURPOSE

This minimum Operating control procedure is established as a requirement for the provision of personal protective equipment against actual or potential exposure to hazards of process or environment encountered at all Lodha Construction Projects.

SCOPE

The Operating control procedure is applicable for PPE's used at all the construction projects of Lodha, either owned or contractor provided.

ROLES

EHS Manager : Train and motivate workers and staff on importance, use and care of all the PPE and to monitor the compliances at project site.

Project Manager : To provide required resources for the compliance to the Operating control procedure, to maintain minimum stock of the PPE's and to ensure that the compliance to PPE is maintained at the construction site by the contractor.

Project Site Team : To regularly monitor the compliance to PPE during site rounds and to ensure that all the contractor workmen in their area complies to the mandatory PPE at all times.

Contractor : To provide the PPE to the workers as specified in the Operating control procedure and as recommended by EHS manager and to submit the test certificate when demanded by the EHS manager. Contractor is also responsible for ensuring that all his workers abide by the PPE policy of Lodha and compliance is maintained, failure to which shall lead to penalization.

OPERATING CONTROL PROCEDURE

Responsibility to provide

(1) A worker is responsible for providing

- clothing needed for protection against the natural elements,

- clothing which are not loose and does not pose hazard to himself.

(2) An employer is responsible for providing safety helmet and safety shoes and safety jacket (where applicable) or a safety kit, at no cost to the staff as recommended by EHS manager.

(3) Contractor is responsible for providing safety helmet, safety belt full body harness and any activity related other PPE at or at no cost to the workers, but the quality of PPE to be as specified by EHS manager.

(4) If the personal protective equipment provided by the contractor causes allergenic or other adverse health effects, the contractor must provide appropriate alternate equipment or safe measures, but should not allow any worker to worker without protection.

(5) Nothing in this section precludes or alters an existing or future agreement between a worker or workers and an contractor to the effect that the contractor will be responsible for the provision either at or at no cost or some cost to the worker, of any or all of the items.

(6) Employer does not provide rain coat or gumboots with steel toe to the staff and has to be purchased by the staff himself, but will not allow any staff to work in the site without protection.

(7) Non-compliance by worker or staff will lead to penalization or disciplinary action, as may be recommended by EHS manager and as decided by the project manager.

Selection, use and maintenance

(1) Personal protective equipment must

- be selected and used in accordance with recognized standards, and provide effective protection,
- not in itself create a hazard to the wearer,
- be compatible, so that one item of personal protective equipment does not make another item ineffective, and
- be maintained in good working order and in a sanitary condition.

(2) If the use of personal protective equipment creates hazards equal to or greater than those its use is intended to prevent, alternative personal protective equipment must be used or other appropriate measures must be taken.

Workplace Evaluation

If an evaluation of workplace conditions is required to determine appropriate personal protective equipment, the evaluation, where practicable, must be done in consultation with the safety committee members or the site EHS manager, as applicable, and with the worker who will use the equipment.

Program

If personal protective equipment is required to protect against a chemical exposure or an oxygen deficient atmosphere the employer must implement an effective protective equipment program at the workplace which includes

- a statement of purpose and responsibilities,
- written procedures for selection, use, inspection, cleaning, maintenance and storage of protective equipment, when required,
- instruction and training in the correct use and maintenance of the equipment,
- for respiratory equipment, medical assessment of respirator wearers, when required,
- documentation when required, and
- program review.

Annual review

(1) The personal protective equipment program must be reviewed annually by the employer in consultation with the safety committee members or site EHS manager, as applicable.

(2) The annual review must

- assess exposure control measures to ensure their continued effectiveness,
- determine the need for further control,
- ensure the adequacy of instruction, and
- for respiratory protection, assess the adequacy of exposure monitoring data and assess the need for further monitoring, and ensure the adequacy of the fit test program.

Instruction

The employer must ensure that a worker who wears personal protective equipment is adequately instructed in the correct use, limitations and assigned maintenance duties for the equipment to be used.

Site Supervisor's responsibilities

The supervisor must ensure that appropriate personal protective equipment is

- available to workers,
- properly worn when required, and
- properly cleaned, inspected, maintained and stored.

Worker's responsibilities

(1) A worker who is required to use personal protective equipment must

- use the equipment in accordance with training and instruction,
- inspect the equipment before use,
- refrain from wearing protective equipment outside of the work area where it is required if to do so would constitute a hazard, and
- report any equipment malfunction to the supervisor or employer.

(2) A worker who is assigned responsibility for cleaning, maintaining or storing personal protective equipment must do so in accordance with training and instruction provided. Personal clothing and accessories

(1) The personal clothing of a worker must be of a type and in a condition which will not expose the worker to any unnecessary or avoidable hazards.

(2) If there is a danger of contact with moving parts of machinery or with electrically energized equipment, or if the work process presents similar hazards

- the clothing of the worker must fit closely about the body,
- dangling neckwear, bracelets, wristwatches, rings or similar articles must not be worn, except for medical alert bracelets which may be worn with transparent bands that hold the bracelets snugly to the skin, and
- cranial and facial hair must be confined, or worn at a length which will prevent it from being snagged or caught in the work process.

General

1. Proper PPE shall be made available by the respective contractors for the use of all workers exposed to hazards at site.

2. PPE shall be regularly maintained and kept in good condition with the provision of proper storage and/or cleaning facilities for PPE.

3. All workers shall be properly instructed in the need for and use, cleaning, and maintenance of PPE. They shall also be given proper fitting for PPE requiring special attention, such as respirators and eye protection, where required.

4. On a regular basis (in accordance with manufacturers standards and site conditions), supervisors are required to check PPE to see that it is in a serviceable condition.

5. The issuance of PPE shall be recorded with documents kept at site for inspection by the EHS manager or interested parties such as third-party auditors.

6. Head Protection

6.1 Safety hard hats or helmets shall be worn where there is a danger from impact and penetration from falling or flying objects or from limited electric shock. Safety helmets shall be worn by all persons at all times on site as an mandatory PPE. Safety hard hats shall have inner liner and should be comfortable for the user and should fit his or her head properly using chin strap.

7. Foot/Toe Protection

7.1 The wearing of sound footwear (leather uppers, resilient and rigid soles) is the minimum acceptable standard on site.

7.2 .n areas where there is a potential for foot/toe injuries, approved safety shoes/boots shall be worn. Safety shoes should meet the following standards: impact & compression; resistance; metatarsal protection; puncture resistance; electrical hazard resistance; and conductive.

7.3 Sandals, flip-flops, are not permitted at site for any staff.

8. Eye Protection

8.1 Safety glasses with side-shields, goggles, full face shields, welder's lens are the types of protection needed where machines or operations present a danger from flying objects, direct or reflected brightness, hazardous liquids, or injurious radiation.

8.2 Eye protection devices should fit comfortably (snugly, not interfere with movement) on the user's face.

9. Hearing Protection

9.1 Generally, approved hearing protectors (ear mufflers, disposable and non-disposable ear plugs) shall be made available to all personnel entering into noise exposed areas of more than 85 dBA. Work processes / equipment that generate such high noise levels at a typical construction site include: piling, grinding, concrete hacking/chipping, circular saw, concrete vibrator/poker, and compactor.

9.2 Hearing protectors should be of proper fit and of the correct type for the noise exposure.

10. Safety Belts/Harnesses

Safety belt full body harnesses shall be worn and properly secured to an approved fixing device where a person is exposed to an unprotected edge / opening where such a person can fall greater than two meters

Note "Approved" means approval by Authority and/or approval by recognized Testing / Certification Authority such as the CE, DGMS, ISI, etc.



Safety Helmet with Chin strap



Safety Eyeglasses



Ear Plugs



Safety Gloves



Safety Boots



Safety Nose Mask



Safety Reflective Jacket



Safety Belt Full Body Harness

7. PERSONAL PROTECTIVE EQUIPMENT (PPE)

Every contractor to provide his employees with suitable personal protective equipment who may be exposed to a risk to their health or safety that cannot be adequately controlled by other means which are equal or more effective.

Personal Protective Equipment will not be suitable unless:

- It is appropriate for the risk or risks involved and the conditions at the place where exposure to the risk may occur.
- It takes account of ergonomic requirements and the state of health of the person who may wear it.
- It is capable of fitting the wearer correctly.
- It is effective to prevent or adequately control the risks involved without increasing the overall risk.
- It is designed and manufactured to the applicable standard for that item of personal protective equipment.

All of the above apply equally to the self employed.

Employers are to assess the risk, put in place control measures with Personal Protective Equipment being the last resort of control.

Personal Protective Equipment Approved for Company Employees.

The details given below are as of current practice and shall be updated regularly in view of continually improving the safety standards for the protection and safety of employees.

Safety Helmets

KARAM make Shelmet meeting IS:2925:1984 requirements with adjustable knob and chin strap. Safety Helmets will be issued to all site personnel and should be worn at all times as it is part of mandatory PPE. The ratchet adjustment can be set to the correct head size by pushing the hand wheel in and turning it. The adjustment position is locked when the hand-wheel is released. Karam safety shelmets can be fitted with a variety of additional personal protective equipments such as:

- Helmet Mountable Ear Defenders

- Welding Screens
- Poly Carbonate Visors

The unique features of KARAM Safety Shelmets are:

- Triple corrugation of the shell giving it an increased impact resistant quality.
- The Shelmet is made of specially formulated polymer which gives it in increased strength.
- The four point attachment of the cradle within the shell has a unique angular placement to provide optimum shock absorption.
- The head band is made of non irritant and soft fabric to provide maximum comfort to the user.
- Helmet is provided with an adjustable chin strap for universal adjustment.
- Comes with both Ratchet type and Manual adjustment to suit most head sizes. Duly ISI Marked & DGMS Approved.
- The KARAM helmet is provided in a vast range of colours which are stabilized against Ultra Violet degradation through appropriate UV Stabilizers.

Protective Eye Wear

Where company employees are exposed to an impact risk the eye protection provided must be BS EN 166B Grade I impact goggles, i.e. KARAM or 3M make. Where company employees are exposed to a chemical risk the eye protection provided must be BS EN 166-3 - Chemical protection goggles, i.e. KARAM or 3M make. Where company employees are exposed to a radiation risk from welding or similar the eye protection must conform to BS 1542.

The employer shall ensure that each affected employee uses equipment with filter lenses that have a shade number appropriate for the work being performed for protection from injurious light radiation.

The following is a listing of appropriate shade numbers for various operations.

Fitter Lenses for Protection Against Radiant Energy

Operations	Electrode Size 1/32 in	Minimum (*) Arc Current	Protective Shade
Shielded metal arc welding	Less Than 3	Less Than 60	7
	3 - 5	60 - 160	8
	5 - 8	160 - 250	10
	More than 8	250 - 550	11
Gas metal arc welding and flux cored arc welding	Less Than 60		7
	60 - 160		10
	160 - 250		10
	250 - 500		10
Gas Tungsten arc welding	Less Than 50		8
	50 - 150		8
	150 - 500		10
Air carbon (Light)	less than 500		10
Arc cutting (Heavy)	500-1000		11
Plasma arc welding	Less Than 20		6
	20 - 100		8
	100 - 400		10
	400 - 800		11
Plasma arc (light)(**)	less than 300		8
cutting (medium)(**)	300-400		9

(heavy)(**)	400-800		10
Torch brazing			3
Torch soldering			2
Carbon arc welding			14
Gas Welding			
Light	Under 1/8	Under 3.2	4
Medium	1/8 to 1/2	3.2 to 12.7	5
Heavy	Over 1/2	Over 12.7	6
Oxygen Cutting			
Light	Under 1	Under 25	3
Medium	1 to 6	25 to 150	4
Heavy	Over 6	Over 150	5

Footnote(*) As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go to a lighter shade which gives sufficient view of the weld zone without going below the minimum. In oxy fuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light of the (spectrum) operation.

Footnote(**) These values apply where the actual arc is clearly seen. Experience has shown that lighter filters may be used when the arc is hidden by the work piece.

Ear Protection

Different models and types of ear muffs provide different standards of protection. Ear defenders should be chosen by comparing their noise attenuation characteristics at certain frequencies to the level of the offending noise at those same frequencies. Most types of ear protectors are capable of providing adequate protection against levels up to 95dB(A) and should therefore be suitable for general site workers.

Details of the ear protection necessary for specific operations must be stated in the noise assessments from contractors, out of which KARAM and 3M are leading brands in INDIA. Ear plugs should be IS 6229:1980 complied.

Respiratory Protection

Where control measures cannot contain dust, gases or vapours Respiratory Protective Equipment must be worn. Employers must use the assigned protection factors listed in Table 1 to select a respirator that meets or exceeds the required level of employee protection. When using a combination respirator (e.g., airline respirators with an air-purifying filter), employers must ensure that the assigned protection factor is appropriate to the mode of operation in which the respirator is being used.

Assigned Protection Factors

Type of respirator	Quarter mask	Half Mask	Full face piece	Helmet/ hood	Loose fitting Face piece
Air-Purifying Respirator	5	10	50	...	...
Powered Air-Purifying Respirator (PAPR)	...	50	1000	25/1000	25
Supplied-Air Respirator (SAR) or Airline Respirator					
Demand mode	...	10	50	...	...
Continuous flow mode	...	50	1000	25/1000	25
Pressure-demand or other positive-pressure mode	...	50	1000	...	...

Self-Contained Breathing Apparatus (SCBA)					
Demand mode	...	10	50	50	...
Pressure-demand or other positive-pressure mode (eg. Open / closed circuit)	...	...	10000	10000	...

Notes:

- Employers may select respirators assigned for use in higher workplace concentrations of a hazardous substance for use at lower concentrations of that substance, or when required respirator use is independent of concentration.
- The assigned protection factors in Table 1 are only effective when the employer implements a continuing, effective respirator program as required by this section (29 CFR 1910.134), including training, fit testing, maintenance, and use requirements.
- This APF category includes filtering facepieces, and half masks with elastomeric facepieces.
- The employer must have evidence provided by the respirator manufacturer that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater to receive an APF of 1,000. This level of performance can best be demonstrated by performing a WPF or SWPF study or equivalent testing. Absent such testing, all other PAPRs and SARs with helmets/hoods are to be treated as loose-fitting facepiece respirators, and receive an APF of 25.
- These APFs do not apply to respirators used solely for escape. For escape respirators used in association with specific substances covered by 29 CFR 1910 subpart Z, employers must refer to the appropriate substance-specific standards in that subpart. Escape respirators for other IDLH atmospheres are specified by 29 CFR 1910.134 (d)(2)(ii).

Nuisance Dust

For general nuisance dust protection

- Standard nose mask with 10micron pore size and IS 8522:1977 complied.

Foot Protection

Work on construction and demolition sites require safety footwear to protect the feet against a variety of hazards, particularly objects falling on them, or sharp object (eg nails) on the ground penetrating the sole of the foot. It should be IS 15298:2002 or DGMS or CE approved and should be Black in Colour

It is therefore Lodha policy that all, on site, wear foot protection that provides both toe and sole protection during the main construction works.. " Blackburn" boots should also comply with this standard for all personnel including visitors, i.e.

- heavy duty waterproof
- safety type with steel toe caps
- provided with pierce resistant protective mid soles.

Gloves

Gloves of various designs provide protection against a range of industrial hazards, including:

- cuts and abrasions
- extremes of temperature, hot and cold. This includes vibration white finger caused by operating pneumatic drills in cold weather.
- skin irritation and dermatitis - contact with toxic or corrosive liquids Contractor assessments must identify the hazard and choose suitable gloves to provide the necessary protection.

Body Protection

Contractors risk assessments must show that the legs and upper body are covered at all times to protect against general cuts, scratches and sunburn.

Types of clothing used for body protection include:

- overalls and aprons to protect against chemicals and other hazardous substances.
- wet weather clothing
- cold weather clothing
- clothing to protect against machinery ie chainsaws
- high visibility clothing for road railway and airport working
- life jackets and buoyancy aids for off shore working.

Contractors assessments must clearly identify the hazards and risks and provide suitable protective clothing.

Safety Harnesses

Safety Harnesses limit the distance of any fall and therefore reduce the risk of injury. It is essential they are worn in confined spaces to facilitate the rescue of an injured person. A full safety harness gives greater protection than a safety belt and in a fall the injury will be less, therefore, it is Lodha Policy for only safety harnesses to be worn as protection against falls.

Safety belt should be IS 3521:1999 or EN 361:2002 approved and should be full body harness only with 1.8m lanyard and auto snap spring hook. It should be provided and used by all the workers working above 2m height with hooking arrangements or life line provided. Lifelines, safety belts, and lanyards shall be only for employee safeguarding. Any lifeline, safety belt, or lanyard actually subjected to in-service loading, as distinguished from static load testing, shall be immediately removed from service and shall not be used again for employee safeguarding.

Lifeline shall be secured above the point of operation to an anchorage or structural member capable of supporting a minimum dead weight of 5,400 pounds. Lifelines used on rough operations, or in areas where the lifeline may be subjected to cutting or abrasion, shall be a minimum of 7/8 inch wire core manila rope. For all other lifeline applications, a minimum of 3/4 inch manila or equivalent, with a minimum breaking strength of 5,400 pounds, shall be used. Safety belt lanyard shall be a minimum of 1/2 inch nylon, or equivalent, with a maximum length to provide for a fall of no greater than 6 feet. The rope shall have a nominal breaking strength of 5,400 pounds. All safety belt and lanyard hardware, except rivets, shall be capable of withstanding a tensile loading of 4,000 pounds without cracking, breaking, or taking a permanent deformation.

SCHEDULE WHERE EYE PROTECTION IS REQUIRED.

Processes in which approved eye protectors are to be provided

1. The blasting or erosion of concrete by means of shot or other abrasive material.
2. The cleaning of buildings or structures by means of shot or other abrasive materials propelled by compressed air.
3. Cleaning by means of high pressure water jets.
4. The striking of masonry nails by means of a hammer or other hand tool or by means of a power driven portable tool.
5. Any work carried out with a hand held cartridge operated fixing tool, including the operation of loading or unloading live cartridges into such tools, and the handling of such tools for the purpose of maintenance repair or examination when loaded with a live cartridge.
6. The chipping of metal, and the chipping, knocking out, cutting out, cutting off of cold rivets, bolts, nuts, lugs, pins, collars, or similar articles from any structure or plant, by means of hammer, chisel, or similar hand tool, or by means of a power driven portable tool. */**
7. The chipping or scufing of plant, scale, slag, rust or other corrosion from the surface of metal and other hard materials by means of a hand tool or by means of a power tool. *
8. The use of a high speed metal cutting saw or an abrasive cutting off wheel or disc, which in either case is power driven.
9. The pouring of molten metal and associated work.

10. The operation, maintenance, dismantling or demolition of plant or any part of plant, that contains or has contained acids, alkalis, dangerous corrosive substances, or other substances which are similarly dangerous to the eyes.
11. The driving in or on of bolts, pins, collars or similar articles to any structure or plant by means of a hammer, chisel, punch or similar hand tool or by means of a power driven portable tool.
12. Injection by pressure of liquids or solutions into buildings or structures.
13. The breaking up of metal by means of a hammer, whether power driven or not.
14. The breaking, cutting, cutting into, dressing, carving or drilling by means of a power driven or hand held tool, glass, hard plastics, concrete, fired clay, plaster slag, stonework (whether natural or not) brickwork or block work, bricks, tiles or blocks.
15. The use of compressed air for removing swarf, dust, dirt or other particles.
16. The cutting of wire or metal strapping under tension.

Processes in which approved shields on approved fixed shields are required.

- Any process involving the use of an exposed electric arc or an exposed stream of plasma.

Processes in which approved eye protectors or approved shields or approved fixed shields are required.

1. The welding of metals by means of oxygen or any flammable or vapour process.
2. Any process involving the use of an instrument which produces light amplification by the stimulated emission of radiation.
3. Truing or dressing of an abrasive wheel.
4. The dry grinding of materials or articles by applying them by hand to a wheel, disc or hand saw.
5. The machining of metals, including any dry grinding process.
6. The welding of metals by an electric resistance process.

Additional Protection

- above require fixed shields between adjacent positions where persons are working.
- require protection for persons at risk although not employed in that process.

Hence PPE can be summarized as;

Sr. No	PPE	Details	Specifications	Remarks
1	Safety Helmet	Helmet with adjustable chin strap.	IS 2925 : 1984 or EN 397	Test certificate to be produced.
2	Safety Shoes	With steel toe and black in colour	IS 15298 : 2002 or EN ISO 20345 or EN 345	For monsoon gumboots with steel toe should be used.
3	Safety Belt	Full body harness with 1.8m lanyard and auto snap spring hook	IS 3521 : 1999 or EN 361 : 2002	For working above 2m height. Test certificate to be produced.
4	Dust Mask	< 10 micron pose size to avoid respirable particles	IS 8522 : 1977 or EN 149 : 2001 FFP2	For working in dusty atmosphere.
5	Ear Plugs	Disposable foam ear plugs.	IS 6229 : 1980 or EN 352 - 2	For working in high noise area above 85 dB(A)
6	Cotton Hand Gloves	Fast Grip Dotted Gloves	IS 6994 : 1973 BS EN 388:2003	For working with sharp objects
7	Electrical Hand Gloves	Seamless gloves for minimum working voltage of 11KV	IS 4770	For working on electrical panels
8	Face Shield	Polypropylene impact resistant shell with high strength nylon ratchet headgear	IS 8521 BS EN 166 or ANSO Z 87.1	For doing welding work in site premises
9	Safety Goggles	Plane goggles for grinding and chipping and dark goggles for gas cutting work.	IS 1179:1967 BS EN 166:2001	For Grinding, Chipping and gas cutting work in site premises.
10	Safety Hi- Vis Jacket	Green for Staff and Orange for contractors.	Reflective tape to	For projects where

			confirm EN471 Class 3.	implementation initiated as a mandatory PPE

8. Edge Protection

PURPOSE

This minimum Operating control procedure is established as a guide for the provision and maintenance of soundly constructed barricades or covers to prevent the fall of persons over the open sides or through the floor openings of a building to another level or into any substance which is likely to cause drowning or asphyxiation.

SCOPE

This minimum Operating control procedure addresses the falling hazards common in buildings under construction and include unprotected open sides of walls, staircases and landings, lift shaft openings, and elevated work platforms on scaffolds tied to building structures and independent tower scaffolds, including mobile ones.

ROLES

EHS Manager : Evaluate and suggest best edge barricading method to avoid fall hazard from the construction site. Edge barricading freezed for the site should be indicated in 'EHS Site Implementation Plan'.

Project Manager : To provide resources and appoint a fabrication contractor or edge barricading contractor, as finalized jointly with EHS Manager and approved by Head EHS.

Project Site Team : To ensure that all the area of falling hazard are protected with edge barricading. Regularly monitor the effectiveness of edge barricading during site rounds and take corrective actions, in case of any deviations.

Contractor : To start construction activity by implementing or erecting the recommended edge barricading methodology and ensure that it is always in place by daily monitoring. In case of any removal of edge barricading for assigned task, it should be immediately reinstated to safe position on completion of each day activity.

DEFINITION

"Barricade" means a self supporting (or fixed to any building structures) fence consisting of vertical and horizontal members and are considered temporary measures to prevent access onto a site or to prevent the fall of persons to another level.

OPERATING CONTROL PROCEDURE

1. Staircases under construction shall be provided with effective handrails/handholds.
2. Staircases and landings shall be barricaded with effective barriers.
3. Barricades shall be at least 1.2 metres above the ground or Platform with a top handrail and intermediate handrail at 600 mm where a person is liable to fall a distance of more than 2 meters. They shall be strong and rigid enough to withstand a 50kgf load when applied in any direction at right angles to the barricades.
4. Visual barriers such as reflective plastic tapes of red/white stripped or yellow/black stripped in colour shall not be used as edge protection to prevent falls of materials or persons. At best, visual barrier tapes can only serve as warning to unsuspecting persons of the danger of falling over or through building openings.
5. To enhance edge protection, material or equipment shall not be stored or placed so close to any edge of a floor or platform as to endanger persons below.

Materials/equipment shall not be placed 1.8 metres from any hoist way or floor openings or within 1 metre of exterior wall if the wall does not extend beyond the top of the stored material.

The Following Operating control procedure MUST be followed.

Cut outs up to 1500mm wide (any length) are to have structural mesh out of waste re-bards, cast across the cutouts fixed down with a 'Caution – Falling Hazard' notice in all relevant languages. Structural mesh, A 142 cast across opening. Mesh only to be cut as needed to allow services to pass. 1 square of mesh to be embedded into slab all the way around the hole.



Penetrations over 1500mm wide in any direction are to have a double handrail and toe board all round the Penetration. In some of the service ducts the barricading may be provided in following formats, as well, as may be decided and mentioned in 'EHS Site Implementation Plan'.





Maintenance of Edges & Cut outs

All edge protection and Penetration coverings must be inspected weekly for removal of coverings and immediately corrected where necessary. The inspection should be made by the contractor responsible for the maintenance with spot checks by Lodha staff.

A WRITTEN HANDOVER PROCEDURE must be implemented where a contractor leaves an area and ceases to be responsible for maintenance of all barricades. Ongoing maintenance must then be decided by management and clearly

defined in contract documents and in practice on site. Failure to define these responsibilities will lead to a lack of maintenance and dangerous situations arising which may lead to major incident. Hence in case of non compliance from the contractor responsible, it shall be done by appointing an barricading contractor and debiting the amount to the contractor. The bills of contractor showing non compliance shall not be processed unless compliances are made or reinstated.





9. Fall Protection Safety Net

PURPOSE

This minimum Operating control procedure is established as a guide for the provision and maintenance of soundly constructed safety net to prevent the fall of persons over the open sides or through the floor openings of a building to another level or into any substance which is likely to cause drowning or asphyxiation. It also protects the person and material fall from the top working floor.

SCOPE

This minimum Operating control procedure addresses the falling hazards common in buildings under construction and include secondary protection to falling material or person out of unprotected open edges at the periphery of the buildings.

ROLES

EHS Manager : To evaluate the hazardous areas where secondary protection in terms of safety net are required and guide contractor and project team on safety net installation methodology to be used at construction site.

Project Manager : To ensure the progress of work with secondary protection in terms of safety nets in place for fall containment. Also to ensure that contractor abides by the netting standard as communicated by EHS Manager.

Project Site Team : To ensure that safety net material is procured well in advance and net is in place before carrying out work at height and to ensure that safety net is maintained clear of debris.

Contractor : To install safety net as specified in contract terms and as specified by EHS Manager at construction site, as per prevailing hazards. Contractor shall also keep safety net clear of debris on regular basis to avoid damages to the safety net. Any damages to net out of contractors negligence shall be debited to his account.

OPERATING CONTROL PROCEDURE

Safety net to be installed in the building construction at Lodha Project sites is for secondary protection when primary protection fails. It is a fall restricting arrangement, which does not avoids fall of person or material, but it avoids or restricts the falling length or fall of person on the hard floor or fall of material on person working below. Hence it is considered to be a secondary protection for fall hazard.
Safety net for personal protection shall be made of 6 mm PP rope (as per IS:5175:1992) having breaking strength of 602 kgs and border rope of 12 mm PP rope having breaking strength of 2210 kgs. The mesh size shall be of 100 mm square. HDPE net for material protection shall be passing knotted of 15 filaments, of 10 mm mesh size. Tie cords are 2m long at four corners and 1m long at every 2m distance. The material net is fixed on top of personnel protection net to meet the requirements of IS: 11057:1984. The net to be used at construction sites shall be of size 4m x 6m for external use and may be customized for applications for internal ducting, etc.

Safety net is to be installed in two stages. First stage is the podium netting or primary peripheral netting which covers the building periphery to provide protection to workers on the ground floor from falling debris or objects. The primary netting remains permanent till the completion of the building construction activities.



Primary Peripheral Safety Net

Primary peripheral safety net shall be such as to cover the building periphery to atleast 6m exterior to building surface in case of buildings of 14 storeys. In case of buildings above 14 storey the primary net should cover the building periphery upto 10m exterior or till entrance to such buildings from the access road.

Secondary Peripheral Safety Net

Second stage net is to cover building periphery to provide protection to workers on the top most working platform. The type of secondary progressive peripheral net may depend on the height of the building and project. Secondary progressive peripheral net may be in any of the following forms;

1. Horizontal Progressive Net.
2. Inclined Progressive Net.
3. Vertical Progressive Net.

Horizontal or inclined progressive net should be installed by leaving 20 - 25mm U-hook into slab floor during casting of slab. It may also be installed by use of fabricated brackets for supporting 2" C-class MS pipe as per EHS Site Implementation Plan. Vertical progressive safety net should be installed by erection of platform across periphery of the building extended about 2m from the surface of the building. The installation of H-frame on the platform can support HDPE safety net to act as protective layer for person working at the top most level.



The vertical net shall be extended to cover the working surface as the construction work progresses. It should be erected after each four to six floors and then only below stage net should be dismantled to ensure that netting protection is always available and is also available for persons involved into netting work.

Safety net fixing methodology shall be decided by the construction management team along with the Manager EHS and freezed on approval from Head EHS. This should be detailed into 'EHS Site Implementation Plan' of project.

The material to be procured for safety net excluding safety net shall be part of the project cost and shall be used for another project after completion of one project. The cost of safety net and agency used for erection, dismantling and cleaning of safety net should be part of safety budget allocated to the project site.

10. Site Excavation

INTRODUCTION

The dangerous potential of excavations of all depths and strata formations is not readily accepted or recognised by many people engaged in excavation work. Consequently frequent collapses of excavations occur, resulting in 10% fatal accidents every year in construction industry worldwide.

SCOPE

This Operating control procedure is applicable to all the excavation activities at Lodha Construction sites. The best practices are shown and in case of any deviation, should be supported with risk assessment for such activities.

ROLES

EHS Manager : Study the excavation methodology to be used and guide project team and contractor on safe methodology to be used for the excavation.

Project Manager : Carry out the excavation in safe manner such that the activity does not affect any person or property damage incident.

Project Site Team : Stick to the approved excavation safe methodology and inform contractor to comply to the approved method statement. In case of any deviation, carry out hazard identification- risk-assessment for the activity and take all precautions up-front to avoid any incidents.

Contractor : Stick to the approved excavation safe methodology and inform contractor to comply to the approved method statement. In case of any deviation, carry out hazard-identification-risk assessment for the activity and take all precautions up-front to avoid any incidents.

OPERATING CONTROL PROCEDURE

Policy

It is the policy of Lodha that all excavation work will be undertaken in a safe and proper manner. All contractors are required to demonstrate forward planning of all excavation activity before work will be permitted to proceed. Where excavations are deep, adjacent to existing buildings, or in poor ground, detailed study must be made about the proposed method of support. Ground support systems may be designed by contractor and relevant drawings and calculations to be checked prior to work commencing.

Design and Planning
There remains a false impression among supervisors and operatives with many years experience that certain excavations will not, or could not, collapse. It is impossible to forecast the behaviour of earth as its whole condition can change in hours; for this reason the following items must be taken into account in the design and planning of excavation work:-

1. Nature of the soil, including the proximity of any made up ground.
2. Size of excavation.
3. Method of excavation.
4. Proximity of other structures, services, or sources of vibration.
5. Duration of work.
6. Well point dewatering systems.
7. Weather and moisture conditions.

Taking into account the above factors the appropriate method of support can be made:

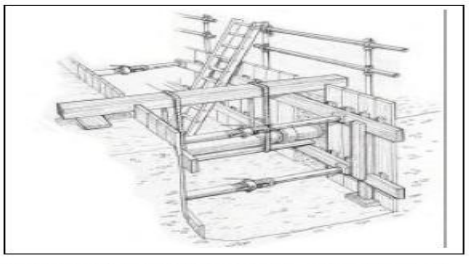
1. Battering back sides of excavation to a suitable angle.
2. Timber framing.
3. Horizontal sheeting.
4. Sheet piling.
5. Trench box
6. Drag box
7. Hydraulic shoring system.
8. Grouting or freezing system.

NB: Adequate supply of materials required in the support system must be on site before excavation work commences.

Excavation support systems

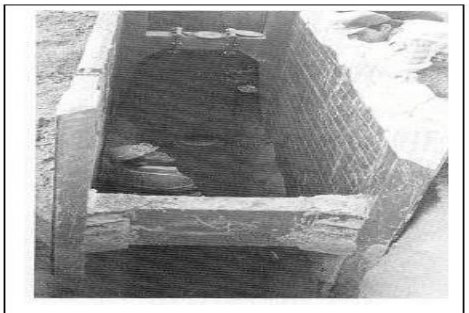


Waling/strut assembly.



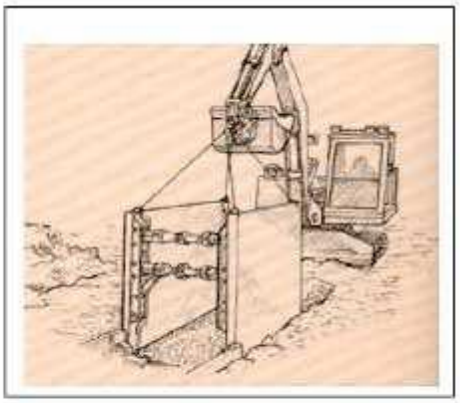
Close timber boarding and waling.







Box support system



Box support system

Buried Services

Procedures for locating buried services are as follows;

Permit to Excavate

The permit to excavate form must be completed prior to any excavation work commencing as per the EHS Site Implementation Plan.

Access/Egress

Suitable safe means of access/egress must be provided and maintained for those persons working within excavations. Consideration must be given to means of egress in case of flooding or other emergencies. Access ways crossing excavations must be properly constructed and comply with the width criteria appropriate to the work activities.

Ventilation

Whenever any dangerous dust or fumes are given off during an operation or process, a assessment must be undertaken and the necessary control measures adhered to. Regular atmospheric monitoring is required so as to ensure the atmosphere remains fit to breathe. The precautions for confined spaces to be considered for such works within excavations and compliances be made.

Excavation Edge Protection

Excavations, shafts or pits must be protected at the edges by guard-rails or barriers, or alternatively securely covered over. Equipment, material or spoil heaps should not be stored at the head of excavations causing possible falls into the excavation or a surcharge on the ground. The protection of excavations adjacent to public highways is of particular importance, such that bulk timbers and fencing must be provided to a minimum height of 2m. In addition, adequate lighting and warning notices must be provided.

Lorries and plant, i.e. dumpers being used in conjunction with the excavation work must be prevented from being driven into the excavation. This can be achieved by securing timber bulks set back from the side of an excavation.

Excavators

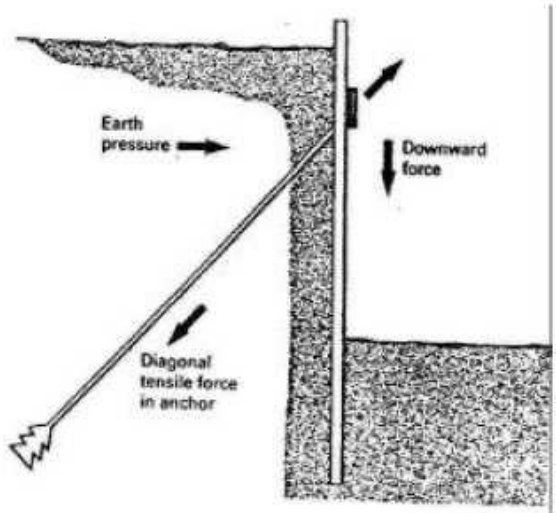
Mechanical excavators pose several problems when working adjacent to excavations. Vibration from excavators can induce instability to the surrounding strata; the selected shoring method must be capable of withstanding the additional loadings that may result from vibration movement.

Exhaust gases from excavators or any other combustion engine and other heavier than air gases i.e. L.P.G. in the vicinity, can descend into excavations thus causing health risks to those persons undertaking the work. Therefore, all such gases should be vented to the atmosphere or mechanical ventilation should be provided to prevent the atmosphere becoming contaminated.
Supervision and Inspections

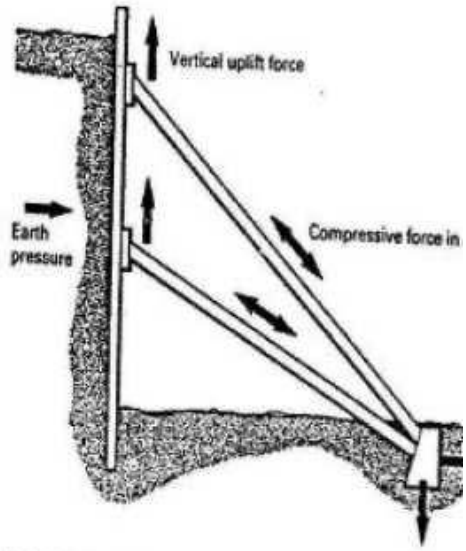
All excavation and support works must be carried out by trained persons under the supervision of a competent staff person.

All excavations must be inspected by a competent person:-

1. At the start of any shift, before any person carries out work.
2. After any event likely to have affected the strength or stability of the excavation.

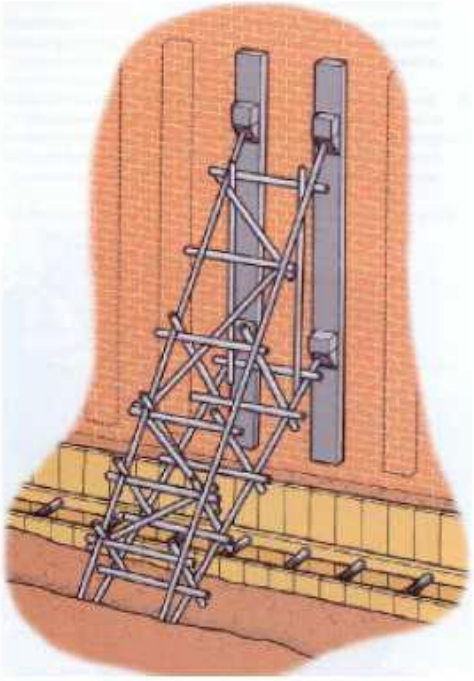


Use of ground anchors.

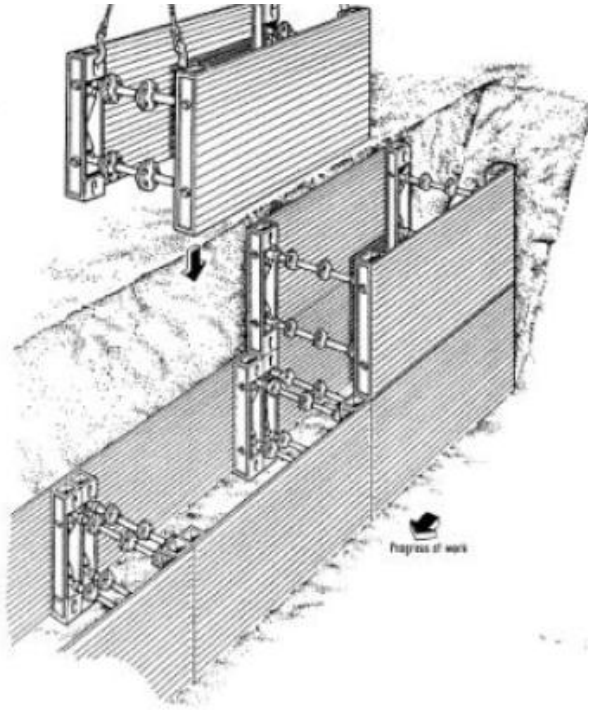


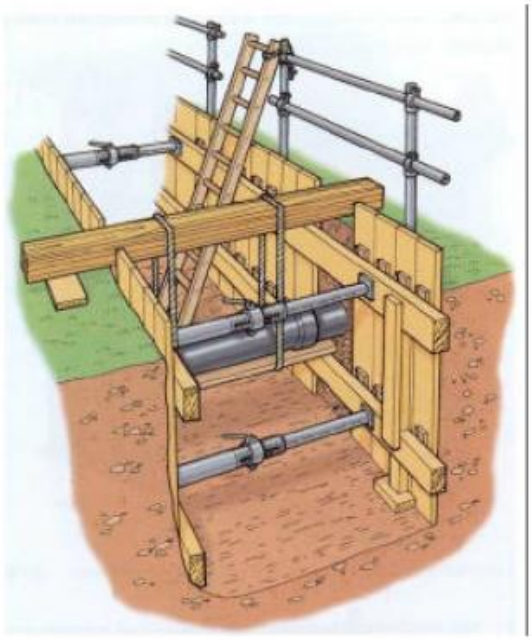
Raking support

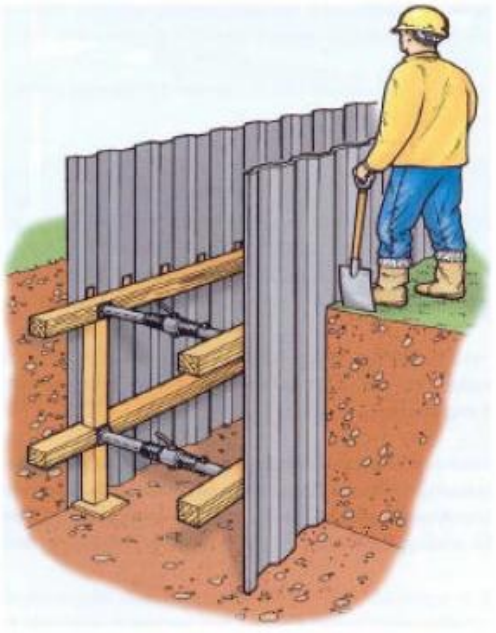












11. Labour Camp

PURPOSE

This minimum Operating control procedure is established as a guide for the erection and maintenance of soundly constructed worker's accommodation to ensure reasonable living conditions and the protection of life and properties of mostly out sate workers at site.

SCOPE

This minimum Operating control procedure only addresses worker's quarters / dormitories which are built exclusively to cater to the needs of mainly out state construction workers and may not be applicable to other temporary building structures such as site offices, stores, builder's sheds or any other sheds.

ROLES

1. EHS Manager : Monitor the health and hygienic conditions of labour camp and recommend corrective and preventive actions to the Project Manager and Contractor of the site.

2. Project Manager : Provide Material to the contractor for as may be specified in the contract terms of the contractor for setting up labour camp in space allocated by Lodha to the contractor.

3. Project Site Team : Encourage and motivate workers in adopting safe and hygienic practices in labour camp.

4. Contractor : To systematically construct a labour camp in the space provided by the company and keep track and record of workforce and their family staying in the labour camp. It is contractors responsibility to maintain the labour camp in good hygienic condition with all controls in place for well being of the workers.

MINIMUM STANDARD

1. Responsibilities of Qualified Person / Owner / Developer / Contractor

1.1 For worker's quarters, a qualified person shall be engaged to design and supervise the erection of the temporary structures.
1.2 The responsible person shall furnish the owner / developer / contractor who has engaged his / her service all the plans, designs, and calculations of the temporary structures, including fire safety works, together with his / her certificate of inspection and completion in accordance with the relevant legislation.
1.3 The owner / developer / contractor shall ensure that all the plans and certificates are at all times kept available for inspection at the site office by the relevant authorities.
1.4 The owner / developer / contractor shall ensure that such temporary structures are demolished before or upon completion of the building works relating to the permanent building(s) at site.

2. Planning & Construction

2.1 Worker's quarters shall be sited close to the boundary line adjacent to any public road or internal driveway that is accessible by any fire appliances.

2.2 If the quarters are sited adjacent to a common boundary not protected by a minimum 1- hour fire resistance board, it shall have a minimum setback of 4 metres from the common boundary.

2.3 If the facades of 2 adjacent buildings (e.g. between a worker's quarters and a site office or between 2 separate site quarters) facing each other are not protected by a minimum one-hour fire resistance board, a 4 metres separation distance shall apply.

2.4 The height of each storey of the worker's quarters shall not be less than 2.6 metres.

2.5 For worker's quarters constructed from non-combustible materials (e.g. fully steel structured) and with external corridors, the building shall not exceed 2 storey. Steel constructed quarters with internal corridors shall not exceed 2 storeys. If timber or other combustible materials are used, the building shall not exceed 1 storey.

2.6 Every room in the quarters shall have windows or openings having an aggregate of not less than 10% of the floor area of the room for natural ventilation.

2.7 Rooms, corridors, staircases of worker's quarters shall be adequately lighted.

2.8 Sanitary facilities shall be provided based on the number of workers at site. As a minimum, 1 each of water closet, wash basin, urinal, and bathroom shall be provided for every 25 workers at site.

2.9 A room space of not less than 10 cu. metres shall be provided for each worker in the quarters. (e.g. a typical 40 ft. container used as worker's quarters should not accommodate more than 8 workers)

2.10 Where containers are used as accommodation within the worker's quarters, the following requirements shall be met:

- B Construct a roof with good gradient to prevent accumulation of stagnant water
- B Seal all gaps when containers are stacked over each other

2.11 Each dormitory bedroom shall not exceed 120 sq. metres and occupant load shall be at least 3 sq.metres per worker subject to a maximum of 40 workers in each dormitory bedroom. If more than 20 workers are living in each dormitory bedroom, at least 2 exit door openings shall be provided at extreme ends of the bedroom facing the corridor.

2.12 Each dormitory bedroom within the worker's quarters shall be compartmented with minimum 1-hours fire rated compartment wall

2.13 Staircases and corridors shall generally have a minimum clear width of 1.2 metres.

2.14 Proper lightning conductors shall be installed.

3. Construction Materials

3.1 Worker's quarters may be constructed using timber, steel, GRP or any other non combustible materials which is most preferred. Metal containers of various sizes may also be converted to become accommodation space.

3.2 For timber constructed worker's quarters, if the longer dimension of the building (excluding the staircase) exceeds 20 metres, undisrupted non-combustible walls shall be provided for Compartmentation. The maximum length of the longer dimension of the Compartmentation shall not exceed 20 metres. A minimum half-an-hour fire resistance fire-doors are required to prevent spread of fire along the internal corridors.

4. Disposal of Refuse and Littering

4.1 At least 1 number of refuse bin or dustbins shall be provided for every 25 workers staying at the quarters to dispose their litter. Refuse bins shall be lined with plastic bags and shall have proper covers. The plastic bags shall be tied properly before being disposed daily into bulk container(s) provided within the worksite. Food waste shall always be

contained in plastic bags for disposal to prevent pest like flies and rats from breeding. Liquid wastes should be disposed via the sewerage system and not into drains which are for rain water runoffs only.

4.2 Open burning is strictly prohibited at construction site and labour camp.

5. Pest Control

5.1 Checks for mosquito breeding, including larviciding in all stagnant water within the worker's quarters premises, shall be carried out at least once a week.
5.2 Thermal fogging of worker's quarters premises shall be carried out at least once fortnightly.
5.3 Residual spraying of all interior and exterior walls of the quarters using approved insecticides shall be carried out at least once a month.

6. Means of Escape

6.1 If rooms on an upper floor are located such that the escape of workers is via an internal corridor, the following requirements must be met:

6.1.1 The worker's quarters shall not exceed 2 storey high
6.1.2 Internal corridor shall have a minimum width of 1.5 metres
6.1.3 At least 1 staircase is required if the 1-wat travel distance from the most remote point of the floor to the foot of the staircase on the ground floor level does not exceed 13 metres and 9 metres for steel constructed quarters and timber constructed quarters respectively.
6.1.4 If the travel distance in clause 6.1.3 is exceeded, at least 2 staircases shall be provided, one at each end of the worker's quarters, and the 2-way travel distance from the most remote point of the floor to the foot of either of the stair case shall not exceed 25 metres and 15 metres for steel constructed quarters and timber constructed quarters respectively.

6.2 If rooms on an upper floor are located such that the escape of workers is via an external corridor, the following requirements must be met:

6.2.1 The worker's quarters shall not exceed 2 storeys high if it is constructed from non combustible materials and for building structures of timber or other combustible materials, the maximum building height is 2 storeys.
6.2.2 Corridors and staircases shall have a minimum width of 1.0 metres.
6.2.3 At least 1 staircase is required if the 1-way travel distance from the most remote point of the floor to the foot of the staircase on the ground floor level does not exceed 19 metres and 13 metres for steel constructed quarters and timber constructed quarters respectively.
6.2.4 If the travel distance in clause 6.2.3 is exceeded, at least 2 staircases shall be provided, one at each end of the worker's quarters, and the 2-way travel distance from the most remote point of the floor to the foot of either of the staircases shall not exceed 30 metres and 20 metres for steel constructed quarters and timber constructed quarters respectively.

6.3 All staircases shall be unenclosed and have treads not less than 225 mm and risers not exceeding 175 mm. All open sides of the staircase and external corridor shall be provided with railings of minimum height 900 mm.

7. Cooking and Storage of Flammable Materials

7.1 Cooking facilities shall be located at least 5 metres away from any accommodation spaces in the worker's quarters. Otherwise, walls and floors of non-combustible construction having a minimum half-an-hour fire resistance shall be erected to separate accommodation and cooking areas within the worker's quarters.

7.2 All stores of highly flammable substances shall not be allowed in the worker's quarters and shall be located at least 5 metres away from such building

8. Fire Fighting Equipment

8.1 A fire point with 4 portable fire extinguishers of ABC rating each shall be provided at a designated location which is closest in labour camp periphery, by the contractor for any fire emergency.
8.2 A designated assembly point shall be provided in labour camp for emergency evacuation process during an emergency.
8.3 Workers to be trained in evacuation procedure and reaching assembly point to fight fire emergencies.





12. Signages

PURPOSE

This minimum Operating control procedure is established as a guide for the construction management team to display most common site specific cautionary and informatory signage.

SCOPE

This minimum Operating control procedure only addresses common signage to be displayed at the construction sites. However the construction management team has to ensure the display of site specific hazard communicating cautionary and informatory signage.

ROLES

1. EHS Manager : Evaluate and Identify the Signage required for the project site, jointly with Project Manager, and recommend any hazard specific signage that has not been covered in this Operating control procedure.

2. Project Manager : Develop the signage as per site procedure and display it at the construction sites, as per recommendation and joint evaluation with EHS Manager.

3. Project Site Team : Keep record of signage in their work zones and maintain them in good condition so that it lasts for longer duration.

4. Contractor : Wherever stated in contract terms, contractor will develop the signage as required by EHS Manager or else will be developed by Lodha and debited to the account of contractor.

MINIMUM STANDARD

1. All construction sites should have safety policy and golden safety rules displayed at the entrance point of the construction site near security check post.
2. The safety policy and golden rules and visitor instructions should be displayed in 4' x 6' board for easy visibility and effective communication to workers.
3. A board on emergency contact numbers should be displayed near all the site offices in A3 size print out.
4. Each site office of site engineers should display following information on A4 size paper prints;

- Safety Policy
- Golden Safety Rules
- Safety Performance Chart of Site.
- Emergency Contact Numbers.
- Emergency Evacuation Layout Plan
- Fire Fighting Team List
- First Aid Team List
- Rescue Team List
- First Aid Box Locations Chart
- Fire Extinguisher Location Chart

5. A display board should be placed at the entrance with following details

- Project Name and Address
- Consultant Name and Address
- Contractor Name and Address
- Designer and Architect Name and Address

6. Some of the common signages standardized for Lodha sites are as below on 1.5' x 2' board. These signages should be made ready before start of the project along with signage on EHS policy and golden safety rules.

7. Display shall also be made at the construction sites on various safety awareness posters available in market and / or through National Safety Council.

8. Various slogans on safety should be displayed at construction site in bilingual on signage board of 1'H x 3'W board, to motivate workers and staff on doing activities safely.

9. The visual display should be in a language known to majority of the people on the site. It may be displayed in more than one language also. The visual signage displayed above is indicative and does not restrict site team from displaying any information that is specific to the hazards identified at construction site.

Attachment – 2 EHS Formats

Document No: LG/EHS/F/02

EVALUATION OF LEGAL COMPLIANCE

Name of the Site: **Date:**

SL No	Reference Acts/(Clause / Section No)	Brief Description	Applicable Areas	Method of Compliance	Evaluation Frequency	Responsibility	Compliance Status (Yes / No)	Remarks

Signature
Function/Project Head:

Document no. LG/EHS/F/03

EHS OBJECTIVE(S) & PROGRAMME(S)

Function / Project :	**Date:**
Objective	
Target Date of Completion	
Performance indicator	

Programme (Action Plan)

Sr. No.	Planned Scheme/ activity	Responsibility	Resource Required	Target Date	Progress Remark

Signature (Proposer) **Date**	**Signature (MA)** **Date**

Monitoring & Review

Item	Status	Remark
Target (Achieved)		
Actual Date of Completion		
Performance indicator (Achieved)		

Comments by Proposer/function/project Head:

Comments by Management Appointee:

Signature (Proposer) **Date**	**Signature (MA)** **Date**

Document no. LG/EHS/F/04

TRAINING CALENDAR

FOR YEAR:

Sr. No.	COURSE TITLE	MONTH	VENUE	TARGET GROUP

Prepared By		Reviewd By		Approved By	
Signature		Signature		Signature	
Date		Date		Date	

MASTER LIST OF DOCUMENTS LG/EHS/F/06

(Updated as on date: DD / MM / YYYY)

Sr. No.	Document Number	Document Title	Issue Status	
			Issue no.	Issue Date

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SAFTY TRAINING / INDUCTION / TOOLBOX RECORD

DATE & TIME :
TRAINING TOPIC :
PROJECT / SITE / LOCATION :

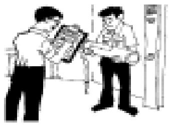
FORMAT NO : EHS/HO/001
REV. NO. : 0
DATE OF REV. : 10.05.2009

I have attended the training on above topic been conducted by safety department of Lodha Group and have fully understood and ensure to implement it at my work area to make the workplace more safer.

SR. NO.	NAME OF ASSOCIATE / PERSON	DESIGNATION	DEPARTMENT / CONTRACTOR	SIGNATURE

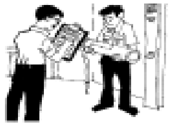
Name of Trainer :
Hours of Training :

Signature :



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DAILY / WEEKLY OBSERVATION REPORT



DATE & TIME :
OBSERVATIONS MADE BY :
PROJECT / SITE / LOCATION :

FORMAT NO : EHS/HO/002
REV. NO. : 0
DATE OF REV. : 01.05.2009

Sr. No.	Observation Made	Hazard Involved	Risk	Risk Level (H/M/L)	Recommended CAPA	Responsible Person	Target Date	Signature	Reminder			Completion Date
									1 Date	2 Date	3 Date	

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SAFETY VIOLATION MEMO

DATE & TIME :
VIOLATION OBSERVED BY :
PROJECT / SITE / LOCATION :

FORMAT NO : EHS/HO/003
REV. NO. : 0
DATE OF REV. : 01.05.2009

1 Incident Description :

2 Hazard and Risk Involved :

3 Level of Risk Involved (H/M/L) :

4 Contractor / Supervisor / Workmen / Staff Involved :

Name :
Designation :
Department / Contractor :
Days spent at site :

5 Comments of person violating safety rules :

6 Action Recommended By Safety Deparatment :

Penalty :
Counseling :
Training :
Disciplinary :

7 Action Taken By Project Department :

Penalty :
Counseling :
Training :
Disciplinary :

Issued By :
Site Engineer :
Signature & Date :

Accepted By :
HOD / Contractor :
Signature & Date :

CC : Safety Department; Project Manager; Site Project Head



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FIRE EXTINGUISHER RECORD



DATE & TIME :
LIST UPDATED BY : (Safety Associate)
PROJECT / SITE / LOCATION :

FORMAT NO : EHS/HO/004
REV. NO. : 0
DATE OF REV. : 01.05.2009

Sr. No.	Location of Fire Extinguisher	Identification Code	Installation / Refilling Date	Due Date	Accessible Location	Locking Pin in Place	Operational Pressure	Properly Mounted	Physical Damage	Proper Signage	Remark
1					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
2					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
3					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
4					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
5					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
6					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
7					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
8					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
9					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
10					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
11					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
12					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
13					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
14					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
15					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
16					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
17					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
18					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
19					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	
20					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	

Verified for Action By :
Site Engineer
Signature & Date :

Approved By :
Project Manager
Signature & Date :

CC : Safety Department; Project Manager; Site Project Head



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FIRST AID BOX RECORD



DATE & TIME :
LIST UPDATED BY : (Safety Associate)
PROJECT / SITE / LOCATION :

FORMAT NO : EHS/HO/005
REV. NO. : 0
DATE OF REV. : 01.05.2009

Sr. No.	Location of First Aid Box	Identification Code	Installation / Refilling Date	Responsible Person	Gauze	Cottol	Lint	Bandage (R & T)	Dettol / Sovlon	Potassium Permaganate	Paracetamol	Wooden Splint	Eye Glass	Eye Bandage	Tourniquest or esmarch
1					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
2					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
3					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
4					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
5					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
6					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
7					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
8					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
9					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
10					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
11					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
12					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
13					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
14					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
15					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
16					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
17					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
18					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
19					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
20					Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N

Verified for Action By :
Site Engineer
Signature & Date :

Approved By :
Project Manager
Signature & Date :

CC : Safety Department; Project Manager; Site Project Head



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EMERGENCY CONTACT NUMBERS



DATE & TIME :
LIST UPDATED BY :
PROJECT / SITE / LOCATION :

FORMAT NO : EHS/HO/008
REV. NO. : 0
DATE OF REV. : 01.05.2009

Sr. No.	Name of Person	Designation	Department	Contact No.	Remark
1	Police			100	Toll Free
2	Fire Brigade			101	Toll Free
3	Ambulance			102	Toll Free
4	Traffic Control Room			103	Toll Free
5		Project Manager	Construction Management		Mobile
6		Safety Officer	Construction Management		Mobile
7		Project Engineer	Construction Management		Mobile
8		HR Manager	Human Resource		Mobile
9					
10					
11					Nearest Hospital
					Nearest Fire St.

Verified By :
Safety Officer
Signature & Date :

Approved By :
Project Manager
Signature & Date :

CC : Safety Department; Project Manager; Site Project Head



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FIRE FIGHTING TEAM



DATE & TIME :
LIST UPDATED BY :
PROJECT / SITE / LOCATION :

FORMAT NO : EHS/HO/009
REV. NO. : 0
DATE OF REV. : 01.05.2009

Sr. No.	Name of Person	Designation	Department	Contact No.	Date of Training

Verified By :
Safety Officer
Signature & Date :

Approved By :
Project Manager
Signature & Date :

CC : Safety Department; Project Manager; Site Project Head



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FIRST AID TEAM

DATE & TIME :
LIST UPDATED BY :
PROJECT / SITE / LOCATION :

FORMAT NO : EHS/HO/010
REV. NO. : 0
DATE OF REV. : 01.05.2009

Sr. No.	Name of Person	Designation	Department	Contact No.	Date of Training

Verified By :
Safety Officer
Signature & Date :

Approved By :
Project Manager
Signature & Date :

CC : Safety Department; Project Manager; Site Project Head



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RESCUE TEAM

DATE & TIME :
LIST UPDATED BY :
PROJECT / SITE / LOCATION :

FORMAT NO : EHS/HO\003
REV. NO. : 0
DATE OF REV. : 01.05.2009

Sr. No.	Name of Person	Designation	Department	Contact No.	Date of Training

Verified By :
Safety Officer
Signature & Date :

Approved By :
Project Manager
Signature & Date :

CC : Safety Department; Project Manager; Site Project Head



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MOCK DRILL REPORT

DATE & TIME :
REPORT PREPARED BY :
PROJECT / SITE / LOCATION :

FORMAT NO : EHS/HO/012
REV. NO. : 0
DATE OF REV. : 01.05.2009

SR. NO	PARAMETER		OBSERVATIONS / DETAILS		
1	Nature of Emergency	:			
2	Location	:			
3	Conducted By	:			
4	Date & Time	:			
5	Number of Persons Involved	:			
6	No. of persons in Emergency	:			
7	Number of Persons Injured	:			
8	Number of Persons Evacuated	:			
9	Description of Emergency	:			
10	Site Emergency Declared By	:			
11	Emergency Declared By	:			
12	Ambulance Arrived At	:			
13	Emergency Controller Arrived At	:			
14	Site Controller Arrived At	:			
15	Rescue Team Arrived At	:			
16	Security Team Arrived At	:			
17	Investigation Carried Out By	:			
18	Probable Cause of Emergency	:			
19	Emergency Declared Called Off At	:			
20	Head Count at Assembly Points	:			
21	Feedback From Medical Center	:			
22	Performance of Security Team	:			
	Poor / Satisfactory / Good / V.Good / Excellent				
23	Performance of Fire Fighting Team	:			
	Poor / Satisfactory / Good / V.Good / Excellent				
24	Performance of Rescue Team	:			
	Poor / Satisfactory / Good / V.Good / Excellent				
25	Performance of Engineering Team	:			
	Poor / Satisfactory / Good / V.Good / Excellent				
26	Total Average Time of Response	:			
27	Overall Performance of Mock Drill	:			
	Poor / Satisfactory / Good / V.Good / Excellent				
28	Observations of Emergency Controller	:			
29	Observation of Safety Manager	:			
30	**Observation By**	:		**Reviewed By :**	
			SIGN		SIGN



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INCIDENT REPORTING



DATE & TIME :
INCIDENT REPORTED BY :
PROJECT / SITE / LOCATION :

FORMAT NO : EHS/HO/013
REV. NO. : 0
DATE OF REV. : 01.05.2009

1 Type of Incident :
Fatality / LTA Case : *Yes / No*
Medical Treatment Case : *Yes / No*
First Aid Case : *Yes / No*
Near Miss Case : *Yes / No*

2 Incident Details :
Person Involved / Injured :
Department / Contractor :
Designation :
Safety Inducted : *Yes / No*

3 Description of Incident :

4 Location of Incident :

5 Immediate Action Taken :

6 Witness of Incident :
Name :
Department / Contractor :
Designation :
Safety Inducted : *Yes / No*

7 Further Action Planned :

Form Filled By :
Site Engineer :
Signature & Date :

Approved By :
Project Manager
Signature & Date :

CC : Safety Department; Project Manager; Site Project Head

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INCIDENT REPORTING & INVESTIGATION

DATE & TIME :
INCIDENT REPORTED BY :
PROJECT / SITE / LOCATION :

FORMAT NO : EHS/HO/014
REV. NO. : 0
DATE OF REV. : 01.05.2009

Form A: Description

Name of the Person: ☐ Mr.
Job title: ☐ Permanent ☐ Temporary ☐ Contractor
Years in this job:
Name of Site Engineer: ☐ Mr.
Name of witness: ☐ Mr .

Date of occurrence : **, day of the week:**
Time: **Hrs**
Location of occurrence:

Description :

Type of incident:

- ☐ Slip / fall
- ☐ Caught in – on – between
- ☐ Struck against by – on
- ☐ Contact by chemical substance
- ☐ Burns – heat - cold
- ☐ Pinch
- ☐ Electrical
- ☐ Overexertion, strain, awkward posture
- ☐ Vehicle traffic
- ☐ Other (explain) _____

Part of body injured:

- ☐ None (Near miss)
- ☐ Face
- ☐ Eye
- ☐ Back
- ☐ Thorax
- ☐ Hand / arms
- ☐ Feet / legs
- ☐Other (explain)

(circle location)



Consequences:

- ☐ FATALITY
- ☐ LTA
- ☐ NLTA
- ☐ FA
- ☐ NM

Form B: Incident investigation

Identify possible determinants in each of the six categories

Machines:	**"Milieu"**	**Materials**
Manpower	**Methods**	**Management**

Accident

Immediate actions:

Further actions Investigated:

Form C: Incident Costing

Cost items	Rs	Remark
Administration costs (e.g. Safety Office /HR/Unit head involvement time)		
Cost of lost time, injured employee		
Cost of lost time, others		
Cost of replacement labour		
Cost of repair/replacement to damaged property		
Cost of damaged materials		
First aid / Hospitalisation charges		
Transportation cost		
Loss of production cost, if any.		
Other costs, not otherwise included		
TOTAL COST OF INCIDENT		

Form filled by:
Date of recording:
Incident Investigation Team :

Form D: Photograph

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Form E: Action Plan for Corrective and Preventive Actions (CAPA) to avoid Re-occurrence of Incidents

Sr. No.	Root Cause Identified	Corrective & Preventive Action Required	Responsible Person for Action	Target Date	Remark

Form F: Attachments to Incident Report



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SAFETY NET INSPECTION CHECKLIST

DATE & TIME :
INSPECTED BY :
PROJECT / SITE / LOCATION :

FORMAT NO : EHS/HO/015
REV. NO. : 0
DATE OF REV. : 01.05.2009

Sr. No.	Description	Y / N	Remark
A	NET SPECIFICATION		
1	6mm PP rope (IS 5175:1992) Used ?	Y / N	
2	Border rope of 12mm PP rope ?	Y / N	
3	Mesh size 4" used ?	Y / N	
4	HDPE net of 10 mm x 10 mm mesh size used ?	Y / N	
5	Net is clear of any objectionable material ?	Y / N	
6	Manufacturer Certificate of testing available ?	Y / N	
B	PERIPHERAL SAFETY NET AT FIRST LEVEL		
1	Peripheral Safety Net at Height not more than 15 m is provided ?	Y / N	
2	Width of horizontal not less than 2 m and upto 4 to 5 m ?	Y / N	
3	Height of net not more than 5 m from Ground ?	Y / N	
4	Net installed not lower than 10 m from working surface ?	Y / N	
5	Net is clear of any objectionable material ?	Y / N	
6	Access path to building is protected by safety net ?	Y / N	
7	Area on ground where work activities are in progress is covered with safety net ?	Y / N	
C	PERIPHERAL SAFETY NET AT SECOND LEVEL		
1	Peripheral safety net at second level progresses with rise in the floors ?	Y / N	
2	Safety net installed is not lower than 10 m from the top most working surface ?	Y / N	
3	Horizontal net is not less than 2 m width covering area outside the external wall ?	Y / N	
4	Vertical net is not less than 1.2 m above the top most working surface ?	Y / N	
5	Safety net installed covers all the peripheral area with no gaps from where there is chance of fall ?	Y / N	
6	Openings in the building like ducts are also covered with safety net during construction process ?	Y / N	
7	Safety net is clear of any objectionable material ?	Y / N	
8	Safety net is free from any wear or tear ?	Y / N	
D	STORAGE OF SAFETY NET		
1	Safety nets are stored under the shed to avoid weathering effect ?	Y / N	
2	Safety nets are stored above the ground level to avoid contact with moisture during monsoon ?	Y / N	
3	The area of storage is designated as no smoking zone ?	Y / N	
4	Fire extinguishers are provided close to area or storage ?	Y / N	
5	Safety net is properly stored by rolling and not folding process ?	Y / N	

Verified By :
Safety Officer
Signature & Date :

Approved By :
Project Manager
Signature & Date :

CC : Safety Department; Project Manager; Site Project Head



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TOWER CRANE INSPECTION



DATE & TIME :
INSPECTED BY :
PROJECT / SITE / LOCATION :

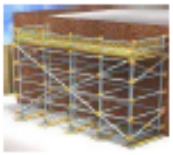
FORMAT NO : EHS/HO/016
REV. NO. : 0
DATE OF REV. : 01.05.2009

Sr. No.	Description	Y / N	Remark
1	Crane is clear of any overhead electrical lines ?	Y / N	
1	Crane is blocked and tied adequately to fixed structure and tower bolts properly torqued?	Y / N	
2	Crane is barricaded to keep accessible area within swing radius, free from unauthorized entry ?	Y / N	
3	Workers are protected from riding on loads ?	Y / N	
4	Load chart and other warnings are displayed for easy reference to the operator ?	Y / N	
5	There is portable fire extinguisher ABC Type in operator cabin ?	Y / N	
6	Functioning audible warning device is on board ?	Y / N	
7	Footwalks are capable taking load of worker and are provided with standard railings and toe board with anti skid surface?	Y / N	
8	Cab is equiped with lock and seat belt ?	Y / N	
9	Crane equiped with boom stop and jib boom stops ?	Y / N	
10	Exposed moving parts, including gears, shafts, and sprockets are properly guarded ?	Y / N	
11	Crane operator receiving signals from only one designated signal man ?	Y / N	
12	Signal man is in sight of the operator at all times during lifts and signal signage is displayed at site?	Y / N	
13	Main boom, jib boom, or boom extensions free of any evidence of cracks, corrosion, or other degradation?	Y / N	
14	Anemometer is provided on crane to know the wind speed to enable operator stop the operations in case of strong wind?	Y / N	
15	Safety devices are provided on the crane as under	Y / N	
	Load Indicator	Y / N	
	Hoist Speed Limit	Y / N	
	Slewing Limit Switch	Y / N	
	Trolley Limit Swithch	Y / N	
	Over Winding Warning Device	Y / N	
	Over Load Warning Device	Y / N	
	Hooks Safety Latch	Y / N	
	Warning Lights	Y / N	
16	Condition of wire rope is ok with no tint marks or damage signages.	Y / N	
17	Operator is medically fit and daily checklist is used by operator.	Y / N	
18	Tower crane is provided with lightening arrestor for working in monsoon period.	Y / N	
19	Tag line is used to prevent dangerous swing or spin of material when lifting or shifting by crane.	Y / N	
20	Test certificates in Form 12 are available with testing from third party authorized by IOF.	Y / N	

Verified By :
Safety Officer
Signature & Date :

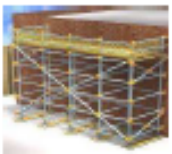
Approved By :
Project Manager
Signature & Date :

CC : Safety Department; Project Manager; Site Project Head



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SCAFFOLD INSPECTION RECORD



DATE & TIME :
LIST UPDATED BY :
PROJECT / SITE / LOCATION :

FORMAT NO : EHS/HO/017
REV. NO. : 0
DATE OF REV. : 01.05.2009

Sr. No.	Details to be Checked	Yes / No	Remark
1	Base plate is provided to the scaffold where it is on uneven surface, after providing proper base with wooden blocks.	Y / N	
2	Standards are erected properly and verticality is checked through plumb or spirit level.	Y / N	
3	Ledger and transomes are erected properly and horizontality is checked through spirit level.	Y / N	
4	Diagnols and cross bracings are provided properly and stability of scaffold structrure is checked by applying force.	Y / N	
5	Width to height ration of 1:4 is maintained for scaffold structure and if height is more than that, ties are used after every 2 m to fix to permanent structure.	Y / N	
6	Ladder is provided for access to the scaffold during erection and to reach the working platform height.	Y / N	
7	Working platform is provided with wooden or metal planks such that no gap greater than 1" is maintained on platform.	Y / N	
8	Gurar rails including hand rail and mid rail is provided along with toe guard to avoid fall of person or material.	Y / N	
9	Fall protection gear like full body safety harness is used and anchored by the workers with provision of life line, if required.	Y / N	
10	Scaffold is regularly checked by the site engineers and supervisors before allowing it to be used.	Y / N	
11	Scaffold is provided with locking pins or components tied properly in case of bamboo scaffold.	Y / N	
12	Combustible material and hot work are avoided in the area in case of bamboo scaffold.	Y / N	
13	Unauthorized access and movement of workers below and arround scaffold has been blocked by barricading.	Y / N	
14	Vehicle movement in and arround area has been blocked by barricading across the base of scaffold.	Y / N	
15	There is no overhead electrical cable within 3m radius of scaffold working platform.	Y / N	
16	Material stored on the scaffold is properly tied to avoit its free fall on persons working below.	Y / N	
17	Display of SWL that can be loaded on the scaffold.	Y / N	
18	Arrangement is made for shifting tools to working platform so that person climbing uses three point contact.	Y / N	

Verified By :
Safety Officer
Signature & Date :

Approved By :
Project Manager
Signature & Date :

CC : Safety Department; Project Manager; Site Project Head

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SITE SAFETY AUDIT REPORT

FORMAT NO : EHS/HO/019
REV. NO. : 0
DATE OF REV. : 01.05.2009

Name of Project :
Name of Building :

Date of Inspection :
Final Date of Compliance :

Building Floor	Edge Opening Barricading	Lift Outs		Staircase Landing Barricading	Cut-out Opening Covers	Electrical Compliance	PPE Compliance		Safety Net Compliance	Excavation Protection	Scaffolding Compliance	Life Line on shuttering level	Contractor bill Certification
		Mid Barricading	Front Barricading				Helmet	Safety Belt					
G													
1													
2													
3													
4													
5													
6													
7													
8													
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28													
29													
30													
Target Date for Compliance													

Inspection By

Sector Engineer :

Safety Associate/Manager :



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EXCAVATION INSPECTION CHECKLIST

DATE & TIME :
INSPECTED BY :
PROJECT / SITE / LOCATION :

FORMAT NO : EHS/HO/022
REV. NO. : 0
DATE OF REV. : 01.05.2009

Sr. No.	Description	Y / N	Remark
1	Soil condition has been studied before starting excavation.	Y / N	
1	U/g pipelines are checked by mechanical engg. ?	Y / N	**Sign :**
2	U/g electrical cables checked by electrical engg. ?	Y / N	**Sign :**
3	Weather condition requirements are met. ?	Y / N	
4	Safe access & egress arrangement is made ?	Y / N	
5	Proper stacking / gradient of excavated matetial ?	Y / N	
6	Proper slope is maintained in the pit ?	Y / N	
7	Soil erosion control by shoring if soil is loose or rainy condition ?	Y / N	
8	No parking of vehicles and/or equipment at or near edges ?	Y / N	
9	Proper illumination for night work is provided ?	Y / N	
10	Proper sign boards are displayed in the work area ?	Y / N	
11	Proper slope / access is maintained for equipment entry and exit ?	Y / N	
12	Hard barricading is provided around deep excavation ?	Y / N	
13	Soft barricading is provided around shallow excavation ?	Y / N	
14	Electrical cable is routed overhead in the area ?	Y / N	
15	Special care is taken for monsoon excavation activity like;	Y / N	
	Provision of dewatering pump ?	Y / N	
	Emergency Evaccuation arrangement ?	Y / N	
	Shoring of excavated pit ?	Y / N	
	Pest control in case of water pooling to avoid mosquito breading ?	Y / N	

Verified By :
Safety Officer
Signature & Date :

Approved By :
Project Manager
Signature & Date :

CC : Safety Department; Project Manager; Site Project Head



LODHA

SAFETY PERFORMANCE REOCRD



DATE & TIME :
PREPARED BY :
PROJECT / SITE / LOCATION :

FORMAT NO. : EHS/HO/ED
REV. NO. : 0
DATE OF REV. : 01.05.2009

SAFETY INDICATORS FOR 2009 (LODHA EMPLOYEE)

SITE :

S NO	PARTICULARS	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	YTD 2009
	SAFETY INDICATORS													
1	No. of person employed													#DIV/0!
2	Man hrs worked during the month													0
3	Total Number of fatalities													0
4	Total number of Lost Time Accidents (LTA)													0
5	Total Number of Non Lost time Accidents (NLTA).													0
6	Total Number of First aid cases (FA)													0
7	Total Number of Near Misses recorded (NM)													0
8	Lost man days due to accidents during the month													0
9	Lost man days due to accidents of the previous months													0
10	Frequency Rate of Lost Time Accidents - LTFI	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
11	Frequency Rate of Non Lost Time Accidents - LSFI	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
12	Frequency Rate of First Aid Cases - LSFI	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
13	Frequency Rate of Near Miss Incidents - LSFI	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
14	Incident Rate (LSIR)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
15	Severity rate (LSSR)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
16	Frequency Severity Rate (LSFSI)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
17	Number of Safety Walk Rounds													0
18	Number of Observations Made													0
19	Number of Observations Closed													0
20	Percentage of Observations Closed	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
21	Number of SWMS Prepared													0
22	Number of Violations Recorded													0
23	Number of Inspections Recorded													0
24	Number of Toolbox Talks Done													0
25	Number of Mock Drills Recorded													0
26	Number of Safety Committee Meetings Done													0
27	Number of days without Lost Time Accidents													0
28	Number of Training Done													0
29	Total Man Hrs on EHS training													0
30	Training Index	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

SAFETY INDICATORS FOR 2009 (SITE CONTRACTORS)

SITE :

S NO	PARTICULARS	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	YTD 2009
	SAFETY INDICATORS													
1	No. of person employed													#DIV/0!
2	Man hrs worked during the month													0
3	Total Number of fatalities													0
4	Total number of Lost Time Accidents (LTA)													0
5	Total Number of Non Lost time Accidents (NLTA).													0
6	Total Number of First aid cases (FA)													0
7	Total Number of Near Misses recorded (NM)													0
8	Lost man days due to accidents during the month													0
9	Lost man days due to accidents of the previous months													0
10	Frequency Rate of Lost Time Accidents - LTFI	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
11	Frequency Rate of Non Lost Time Accidents - LSFI	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
12	Frequency Rate of First Aid Cases - LSFI	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
13	Frequency Rate of Near Miss Incidents - LSFI	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
14	Incident Rate (LSIR)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
15	Severity rate (LSSR)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
16	Frequency Severity Rate (LSFSI)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
17	Number of Safety Walk Rounds													0
18	Number of Observations Made													0
19	Number of Observations Closed													0
20	Percentage of Observations Closed	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
21	Number of SWMS Prepared													0
22	Number of Violations Recorded													0
23	Number of Inspections Recorded													0
24	Number of Toolbox Talks Done													0
25	Number of Mock Drills Recorded													0
26	Number of Safety Committee Meetings Done													0
27	Number of days without Lost Time Accidents													0
28	Number of Training Done													0
29	Total Man Hrs on EHS training													0
30	Training Index	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

DETAILS OF THE ACCIDENTS AND INCIDENTS AT PLANT DURING THE YEAR

S NO	Area where Accident / Incident Took Place	LTA / NLTA / FA / NM	LODHA Employee / Contractor	Date of Incident	Brief Description of the Incident and Corrective action planned



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SAFETY COMMITTEE MEETING MOM

DATE & TIME :
MOM PREPARED BY :
PROJECT / SITE / LOCATION :

FORMAT NO : EHS/HO/031
REV. NO. : 0
DATE OF REV. : 01.05.2009

MEMBERS PRESENT	STAFF	
	CONTRACTOR	

PREVIOUS MEETING ACTION POINTS				
Sr. No.	Discussion / Topic	Target Date	Responsibility	Status
1				
2				
3				
4				
5				

ACTIOM POINTS DECIDED				
Sr. No.	Discussion / Topic	Issue Raised By	Target Date	Responsibility
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Cc : Project Manager; Safety Committee Members

LODHA

LODHA PROJECT SAFETY AUDIT SHEET

Project Name :	**Date :**	**Format No. :**	EHS/HO/038
Site Address :	**Project Manager :**	**Revision No. :**	0
Building Name :	**Auditor :**	**Revision Date :**	8/1/2010
Building Incharge :			

Entry of data
Only add data in orange and yellow cells :
For each question put appropriate number in orange column, based on number of compliance and appropriate number of non compliance observed during auditing process for each of the site.
For each question put a '1' in the appropriate yellow column, and only one entry per row. If the question is not understood or is not relevant leave blank.The spreadsheet calculates your compliance as a percentage. The figures in orange columns will help deciding the percentage of compliance for each of the site.

		No of Compliance Observed	No. of Non Compliance Observed	100 % Compliant	75% Compliant	50% Compliant	25% Compliant	Non Compliant	Non Applicable
1. Access Control Safety									
1.1	Restriction to unauthorised entry at site through valid ID card and safety induction.								
1.2	Compliance to PPE's Safety Helmet, Safety Shoes, Safety Belt, etc. is ensured at Gate.								
1.3	Visitor induction on safety and issue of helmets is ensured at Gate.								
1.4	Signage at gate to include golden safety rules, safety policy, emergency contacts, visitor instructions & site layout.								
1.5	Emergency equipments like fire extinguisher, first aid box, stretcher provided at Gate.								
1.6	Security team is trained in fire fighting & first aid and aware of emergency plan.								
1.7	Log book is maintained on all personal and vehicle entries at site from Gate.								
1.8	All equipments or materials transferred from or into site to be entered in log book.								
1.9	Assembly point is provided at the gate to ensure head counting process.								
1.10	Photography is prohibited in area without permission.								
				0	0	0	0	0	0
									#DIV/0!
									#DIV/0!

		No of Compliance Observed	No. of Non Compliance Observed	100 % Compliant	75% Compliant	50% Compliant	25% Compliant	Non Compliant	Non Applicable
2. Excavation Safety									
2.1	Excavation below 1.5 m depth are protected with hard barricading.								
2.2	Safe access is provided to excavated area with provision of emergency evacuation.								
2.3	Cautionary signage are displayed - "Caution-Deep Excavation, Keep Away".								
2.4	Excavation is protected from collapse through shoring or maintaining gradient.								
2.5	Excavated material is stacked as least 1.5m from edge of excavation with gradient.								
2.6	Underground utilities are checked by concerned engineers before excavation.								
2.7	Special care is taken for avoiding erosion during monsoon period.								
2.8	Equipments & vehicles are parked atleast 6m from excavated edge.								
2.9	Proper illumination is provided for night work and vehicle movement in night.								
2.10	Excavation activity is being carried out under supervision.								
				0	0	0	0	0	0
									#DIV/0!
									#DIV/0!

		No of Compliance Observed	No. of Non Compliance Observed	100 % Compliant	75% Compliant	50% Compliant	25% Compliant	Non Compliant	Non Applicable
3. Working at Height									
3.1	Safe Access and egress is provided for workplace.								
3.2	Adequate edge protection is in place at all the floors.								
3.3	Podium level primary netting is in place to cover entire periphery, if building is above 3 floors.								
3.4	Progressive secondary netting is in place, if building is above 5 floors.								
3.5	System of weekly cleaning of debree on safety net is in place and nets are observed to be clear of debris.								
3.6	Full body harness is mandatory for all who work at height above 2m and all who work on top two floors at shuttering and deshuttering level.								
3.7	Lift shafts and service shafts & other openings are hard barricaded with front barricading on each floor and mid barricading on alternate floors.								
3.8	All scaffolds are of sound construction with toe guard, mid rail, top rail, both side cross bracings, locking pins, access ladders, complete platform, etc.								
3.9	Hanging scaffold of more than 16' 4" is supported to existing building or fixed structure at alternate floors with pipe clamping method.								
3.10	Provision of life line is made where workers are required to work at height or at edges.								
				0	0	0	0	0	0
									#DIV/0!
									#DIV/0!

		No of Compliance Observed	No. of Non Compliance Observed	100 % Compliant	75% Compliant	50% Compliant	25% Compliant	Not Compliant	Not Applicable	
4. Electrical Safety										
4.1	All electrical connections are taken from MLDB & MCB with provision of electrical panels on each floor.									
4.2	All cables in use are covered cable with 3 core wire.									
4.3	All cable joints are properly insulated with insulation tape.									
4.4	All cable are routed overhead atleast 2m.									
4.5	All connections from sockets are through plug-top.									
4.6	Earthing is provided to all distribution boards and equipments like lower crane, hoists, etc. with separate earthing pits where required.									
4.7	Portable electrical equipments are inspected monthly internally.									
4.8	Electrical panels are secured and covered by locking arrangement or LOTO procedure. Weather protection is provided to all the distribution boxes.									
4.9	Certified electricians are available at site for installation and monitoring.									
4.10	Regular inspection and monitoring is done on electrical installations.									
				0	0	0	0	0	0	#DIV/0!
										#DIV/0!
		No of Compliance Observed	No. of Non Compliance Observed	100 % Compliant	75% Compliant	50% Compliant	25% Compliant	Not Compliant	Not Applicable	
5. Equipment Safety										
5.1	All equipments are operated by a competent operators with license and / or experience.									
5.2	Equipments and plants are inspected by competent person internally on monthly basis.									
5.3	All equipments and plants are inspected by competent person externally as per CMM schedule.									
5.4	All hoisting equipments are inspected and certified by TPI in Form 12.									
5.5	All lifting tools and tackles are tested and certified for SWL by TPI in Form 12.									
5.6	SWL of all equipments along with testing date and due date are displayed on the equipments.									
5.7	Safe distance to equipment is maintained to minimum 10' upto 50KV line and 4" for each addition of 10KV.									
5.8	All equipments are parked in designated location.									
5.9	Any maintenance to equipment is carried out with due care to avoid flammable waste generation and spillage control.									
5.10	Installation and erection of the equipments is carried out in strict supervision with safe procedure as described in CMM.									
				0	0	0	0	0	0	#DIV/0!
										#DIV/0!
		No of Compliance Observed	No. of Non Compliance Observed	100 % Compliant	75% Compliant	50% Compliant	25% Compliant	Not Compliant	Not Applicable	
6. Safety Management System										
6.1	All staff and workers are included on safety and records are maintained with indication on the ID cards of workers.									
6.2	Regular tool box talk is conducted at site on weekly basis to cover all the workflow of construction site.									
6.3	Regular safety training programs are conducted at site as per monthly training schedules.									
6.4	Incident reporting and investigation is done for all near miss incidents by the site team.									
6.5	Daily observations are recorded and are closed by the site in a time frame.									
6.6	Risk assessment or safe work method statement is prepared to identify hazards and mitigate it before starting it.									
6.7	Safety meetings are done on monthly basis among staff and contractors to address safety issues as an collective efforts.									
6.8	Mock drills are conducted as per emergency preparedness plan and emergency evacuation plan.									
6.9	Behaviour bot like safety observations by construction management staff is done and unsafe situation is mitigated, to have larger involvement.									
6.10	Motivational activities are done to bring more awareness with involvement and participation from all.									
6.11	Bills of all the contractors are certified through Safety Checklist MHS-HO-034, and payment is processed according to compliance to safety.									
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										#DIV/0!

		No of Compliance Observed	No. of Non Compliance Observed	100 % Compliant	75% Compliant	50% Compliant	25% Compliant	Non Compliant	Not Applicable
7. Safety Alert 001									
7.1	Access Control - Entry to site is restricted and entry is allowed strictly subject to wearing of helmet, safety belt and possession of valid ID card by every worker.								
7.2	Safety Net - Peripheral safety net is mandatory to start any work at height in the building after 3 floors.								
7.3	PPE - Safety helmet and safety belt to be used strictly. If it is revealed that compliance is not there, it will be procured and given to contractor and resulting cost will be recovered from concerned contractor.								
7.4	Safety Audit - All buildings under construction to be audited and rechecked for safety hazards, along with site engineers and contractor representatives, for necessary action in time bound manner. Building which are highly unsafe will be debarred from continuing activities till safety arrangements are made.								
7.5	Support team for Safety - Four members to be earmarked under safety associates for continual monitoring and updating of safety level in each building.								
				0	0	0	0	0	0
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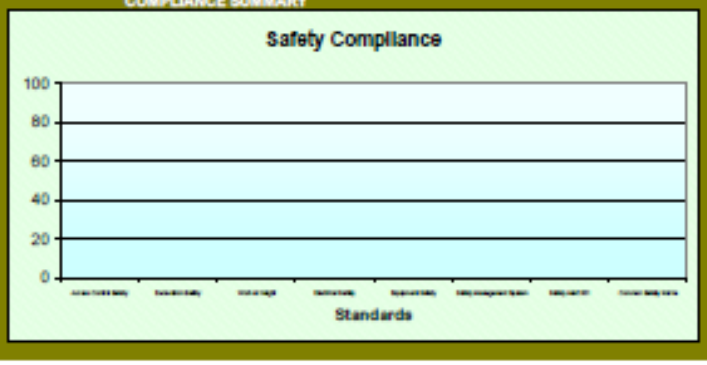
		No of Compliance Observed	No. of Non Compliance Observed	100 % Compliant	75% Compliant	50% Compliant	25% Compliant	Non Compliant	Not Applicable
8. Common Safety Norms									
8.1	All Openings are barricaded								
8.2	Combustible material are not stored inside the building								
8.3	All temporary connections are through armored cables.								
8.4	Debris are cleared from all the floors through garbage chute.								
8.5	All openings vertical or horizontal are barricaded.								
8.6	Safety net is placed not below 2 levels where work is going on.								
8.7	Each floor has electrical panel board with ELCB & MCB.								
8.8	Plug tops are on all the open sections.								
8.9	Electrical panel is secured and covered and is under lock & key.								
8.10	No cables are lying on the floor.								
8.11	Fire extinguishers are provided as per standard norms.								
8.12	Safety belt full body and harness are used.								
8.13	Access control is maintained and monitored								
8.14	Safety nets are cleared on weekly basis.								
8.15	Overloading of the slabs is monitored (250kg per sq. ft)								
8.16	Utility cut outs to be reinforced.								
				0	0	0	0	0	0
									#DIV/0!
									#DIV/0!
OVERLL AUDIT SCORE									#DIV/0!

OTHER COMMENTS OF AUDITOR

COMPLIANCE SUMMARY

Access Control Safety	#####
Excavation Safety	#####
Work at Height	#####
Electrical Safety	#####
Equipment Safety	#####
Safety Management System	#####
Safety Alert 001	#####
Common Safety Norms	#####

Scoring System :
100 % - Excellently Managed Site.
80 % and Above - Well Managed Site
60% to 80 % - Manageable site to improve
40% to 60 % - Risky site for operations.
20% to 40 % - Highly risky site for operation.
0% to 20 % - Site out of control.



LODHA
BUILDING A BETTER LIFE

PASSENGER HOIST INSPECTION RECORD

DATE & TIME :
LIST UPDATED BY :
PROJECT / SITE / LOCATION :

FORMAT NO : EHS/HO/038
REV. NO. : 0
DATE OF REV. : 18.06.2010

Sr. No.	Details to be Checked	Yes / No	Remark
1	Is verticality of the mast maintained.	Y / N	
2	Proper anchoring provided to the mast with supporting structure.	Y / N	
3	Overload limit switch is funtional	Y / N	
4	Upper Limit switch & Lower Limit switch is functional	Y / N	
5	Guard rails provided for all landing platform	Y / N	
6	Emergency stop button is provided & functional.	Y / N	
7	Is proper earthing provided to hoist machine & hoist body.	Y / N	
8	Is the hoist brake proper and in working condition.	Y / N	
9	Is the hoist protected with unauthorised operation by Lock Out Tag Out.	Y / N	
10	All the floors are given proper numbering.	Y / N	
11	Hoist Cabin Doors are provided with interlocks and is functional.	Y / N	
12	Provided proper access from and to the landing platfrom for safe movement.	Y / N	
11	Rotating parts of hoist is properly guarded.	Y / N	
12	Operator checks the functioning of interlocks and limit switches daily.	Y / N	
13	Ground level entry to hoist area is restricted with proper gate with interlock.	Y / N	
14	Holest inspected by Third Party and load tested.	Y / N	
15	SWL & Safety instructions displayed in hoist cabin.	Y / N	
		Y / N	

Verified By :
Safety Officer

Approved By :
Project Manager

Signature & Date :

Signature & Date :

CC : Safety Department; Project Manager; Site Project Head