LOD

LODHA Acme Housing Manpada

Acme Ozone Sales Gallary

Contract Ref: 4630027499
Material Approval Submittal
MAS No: 03

Contractor: G Engineers
To LODHA Group:

Date: 02.03.2022

☐ Architectural ☐ Structural ☐ HVAC ☐ Electrical ☐ Plumbing ☐ Facade Others (.....)

Discipline

MATERIAL DETAILS (One Item Only Per Form)
Item description :- UPVC PRESSURE PIPES & FITTINGS

Name of material :- UPVC PRESSURE PIPES & FITTINGS

Remarks ☐ As per specifications ☐ Alternate submission

- Attach all relevant technical literature marked to identify relevant descriptions, current test certificate, samples etc.
- Highlight any element of contractual non-compliance in this submittal

Drawing Ref: -
Specification Ref: - **20 MM TO 50 MM**
BOQ Ref: - **1.01, 1 & 1.01.2**
Indian/International Standards Ref: - **IS : 4985**

Planned Date for applicable submittal for: -
1. O & M Manual
2. Training Manual
3. Specified /recommended spare parts
4. Warranties and Guarantees

Date:

Manufacturer / Supplier
Company Name: - **SUPREME**
Address: **612 Raheja Chamber, Nariman Point, Mumbai - 400021**

Local Agent:

Locally Manufactured :
Production Period :
Delivery Ex-works :
Total Delivery Time :
Total Delivery Time :

For G ENGINEERS
Proprietor

Programme: -
Date required on Site: -
Expected date of arrival on Site: -

Contractor's Authorized Signature

LODHA Engineer's Comments ☐ sign ☐ . Mgmt (Civil). Cor ☐ gmt (MEP) Con. M ☐ nt (Facade) QA/QC ☐

Name/ Signature/ Date	Name/ Signature/ Date	Name/ Signature/ Date	Name/ Signature/ Date	Name/ Signature/ Date
QE	CM	Commercial/Contracts	Store	Co-Ordination

Consultant's Comments.

Name/ Signature/ Date	Name/ Signature/ Date
Architect	RCC Consultant

Status	Code 1	Code 2	Code 3	Code 4
	Work may proceed	Conditionally approved. Work may proceed and resubmit incorporating comments indicated	Revise & Resubmit. Work may not proceed	For information and records only. Work may proceed.

Vice President **Date: -**

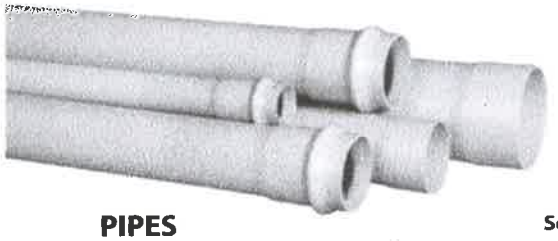
CC: VP (QA/QC), VP (Purchase)

Code 1 – Work may proceed
Code 2 – Conditionally approved. Work may proceed and resubmit incorporating comments
Code 3 – Revise & Resubmit. Work may not proceed
Code 4 – For information and records only. Work may proceed

S.No	Details of Materials / Equipment	Manufacturer's Name
10	SFRC Covers	-L.K.Conkk -K.K. Plastics -Jain -Pragati
11	RCC pipes	-Jain Spun Pipes -Indian Hume Pipes -Pranali -Pragati
12	DWC HDPE (double wall Corrugated)Pipes	-Rex -Duraline -GEMINI
13	GI / M.S Pipes (IS : 1239 and IS : 3589)	-AST pipes -Jindal -Tata Steel -Zenith
14	GI pipes fittings	-Jainsons (JSI) -Unik -Zoloto-m -VS
15	GI pipe sealent	-Henkel - LOCTITE 55
16	Pipe clamp & supports	-Diamond (Hira technologies Pvt.ltd.) -Hitech Supports & Hangers Pvt. Ltd
17	D. I. Pipes & fittings	-Electro Steel -Jindal -Kejriwal castings
18	DI Valves and Fittings	-Kartar Valves and Fittings -Sir Valves -Kejriwal castings -AVK India
19	uPVC Pipes & fittings including multi floor trap, P trap etc.	-Astral -Ashirwad -Ajay -Supreme
20	CPVC pipe	-Astral -Ashirwad -Ajay -Supreme
21	UPVC Pressure pipes	-Astral -Ashirwad -Ajay -Supreme
22	Pex Pipe	-Giacomini -Cosmoplast
23	HDPE – Indian	-Jain PE -Darshan pipes -Sangir -Time technoplast
24	PVC - SWR Low noise silent pipes	-Ashirwad -Supreme

THE SYSTEM

Supreme offers an exhaustive range of uPVC pressure pipes and fittings. Pressure pipes are manufactured as per IS 4985: 2000 standards and are available in 20 to 450mm sizes in different pressure classes. Pipes with both types of joints, i.e., solvent cement type and rubber seal type are available. Varieties of moulded fittings and wide range of handmade fittings are also available. Moulded fittings are manufactured as per IS:7834 and fabricated fittings are manufactured as per IS:10124 and company standards. These pipes and fittings are used for a variety of applications like, in irrigation, water supply, industrial process lines, swimming pools, firefighting mains etc. These pipes are superior to CI, DI or RCC pipes in terms of being light in weight, easy and quicker installation, excellent corrosion and chemical resistance propeties, high flow rates, long life and economy. These pipes have approval of MJP.



FEATURES AND BENEFITS

Odorless and hygienic - These pipes are an excellent choice for carrying potable water as they do not allow contamination.

High corrosion resistance - Being immune to chemical, electrolytic and galvanic action, these pipes are free from corrosion which ensures a much longer and useful life.

High chemical resistance - Pipes offer excellent resistance to acids, oxidizing agents, alkalis, oils and domestic effluents.

Smooth bore - Pipes have a mirror smooth inner surface and hence better flow characteristics in comparison to AC, CI and GI pipes.

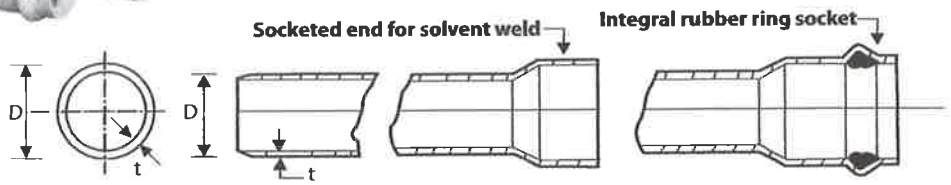
Self extinguishing quality - This feature eliminates the need for fire resistant coatings.

Maintenance free - Corrosion resistance property of the PVC pipes eliminates the need for repeated painting or coating like in the case of GI pipes.

Long lasting - As these pipes are free from weaknesses caused by scale formation, rusting, weathering and chemical action, they have a much longer effecitive life.

Economical - Despite being superior to conventional pipes, Supreme PVC pipes are very light in weight and last much longer than older piping systems offering a great economy in handling, transportation, installation and replacement.

PIPES



Dimensions of uPVC Pressure Pipes as per IS:4985-2000

Nominal outside diameter (D)	Tolerance on outside diameter	Wall thickness (t) mm													
		Class 1(PN) 2.5 kgf/cm²		Class 2(PN) 4 kgf/cm²		Class 3(PN) 6 kgf/cm²		Class 4(PN) 8 kgf/cm²		Class 5(PN) 10 kgf/cm²		Class 6(PN) 12.5 kgf/cm²		Plumbing pipes	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
20	+0.3	-	-	-	-	-	-	-	-	1.1	1.5	1.4	1.8	2.8	3.3
25	+0.3	-	-	-	-	-	-	1.2	1.6	1.4	1.8	1.7	2.1	2.9	3.4
32	+0.3	-	-	-	-	-	-	1.5	1.9	1.8	2.2	2.2	2.7	3.4	3.9
40	+0.3	-	-	-	-	1.4	1.8	1.8	2.2	2.2	2.7	2.8	3.3	3.6	4.2
50	+0.3	-	-	-	-	1.7	2.1	2.3	2.8	2.8	3.3	3.4	4.0	3.7	4.3
63	+0.3	-	-	1.5	1.9	2.2	2.7	2.8	3.3	3.5	4.1	4.3	5.0		
75	+0.3	-	-	1.8	2.2	2.6	3.1	3.4	4.0	4.2	4.9	5.1	5.9		
90	+0.3	1.3	1.7	2.1	2.6	3.1	3.7	4.0	4.6	5.0	5.7	6.1	7.1		
110	+0.4	1.6	2.0	2.5	3.0	3.7	4.3	4.9	5.6	6.1	7.1	7.5	8.7		
125	+0.4	-	-	2.9	3.4	4.3	5.0	-	-	-	-	-	-		
140	+0.5	2.0	2.4	3.2	3.8	4.8	5.5	6.3	7.3	7.7	8.9	9.5	11.0		
160	+0.5	2.3	2.8	3.7	4.3	5.4	6.2	7.2	8.3	8.8	10.2	10.9	12.6		
180	+0.6	2.6	3.1	4.2	4.9	6.1	7.1	8.0	9.2	9.9	11.4	12.2	14.1		
200	+0.6	2.9	3.4	4.6	5.3	6.8	7.9	8.9	10.3	11.0	12.7	13.6	15.7		
225	+0.7	3.3	3.9	5.2	6.0	7.6	8.8	10.0	11.5	12.4	14.3	15.3	17.6		
250	+0.8	3.6	4.2	5.7	6.5	8.5	9.8	11.2	12.9	13.8	15.9	17.0	19.6		
280	+0.9	4.1	4.8	6.4	7.4	9.5	11.0	12.5	14.4	15.4	17.8	-	-		
315	+1.0	4.6	5.3	7.2	8.3	10.7	12.4	14.0	16.1	17.3	19.9	-	-		
355	+1.1	5.1	5.9	8.1	9.4	12.0	13.8	15.8	18.2	-	-	-	-		
400	+1.2	5.8	6.7	9.1	10.5	13.5	15.6	-	-	-	-	-	-		
450	+1.4	6.5	7.5	10.3	11.9	15.2	17.5	-	-	-	-	-	-		

Note: 1) Pipes are offered in Light Grey (LG) and/or Dark Grey (DG) colours in standard lengths of 6m. Pipes are offered plain or socketed, based on diameter and class of pipe. 2) Ringtight pipes with integral rubber ring socket (Elastomeric joint) are available from 63mm to 315mm in 4, 6 and 10 kgf/cm² pressure class. 3) Prefix "PN" indicates Nominal Pressure, i.e., working pressure.

Drainage Pipe material shall be as follows:

Building height (< 30 m)

Service	Down take	Toilet Internal	Stilt/building external
Soil	uPVC, SWR Type-B, IS 13592 Fittings IS 14735 Refer Note :2	Buried: uPVC, up to 65mm - SWR, IS 4985, class-3 with fittings IS 7834 Buried: Above 65 mm -IS 13592, Type-B with Fittings IS 14735 Exposed: Low noise ,Refer Note:1	Buried: Solid wall/Foam core brown pipes as per IS 15328, SDR 34 , SN 8 Exposed: CI LA class , IS 1536
Waste	uPVC, SWR Type-B, IS 13592 Fittings IS 14735 Refer Note :2	uPVC, up to 65mm - SWR, IS 4985, class-3 with fittings IS 7834 Above 65 mm - IS 13592, Type-B with Fittings IS 14735	Buried: Solid wall/Foam core brown pies as per IS 15328, SDR 34 , SN 8 Exposed: CI LA class , IS 1536
Vent	uPVC,Type-A, IS 13592 Fittings IS 14735	uPVC, SWR, Type-A, IS 13592 Fittings: IS 14735	uPVC, SWR, Type-A, IS 13592 encased Fittings: IS 14735
Rainwater	uPVC, Type-B, IS 13592 Fittings IS 14735 Refer Note :2	uPVC, up to 65mm - SWR, IS 4985, class-3 with fittings IS 7834 Above 65 mm - IS 13592, Type-B with Fittings IS 14735	Buried: HDPE Double wall corrugated SN 8 brown as per ISO 21138-3 Exposed: CI LA class , IS 1536
Note:1	Under slung soil pipes to be Low noise PP Pipes (Silent poly-propylene), for noise rating refer specifications.		
Note:2	Velocity breakers to be provided as applicable		

Drainage Building height (above 30 m to below 70 m)

Service	Down take	Toilet Internal	Stilt/building external
Soil	uPVC, IS 4985, class-3 Fittings as per IS 7834 Refer Note :2	Buried: uPVC, up to 65mm - SWR, IS 4985, class-3 with fittings IS 7834 Buried: Above 65 mm -IS 13592, Type-B with Fittings IS 14735 Exposed: Low noise ,Refer Note:1	Buried: Solid wall/Foam core brown pipes as per IS 15328, SDR 34 , SN 8 Exposed: CI LA class , IS 1536
Waste	uPVC, IS 4985, class-3 Fittings as per IS 7834 Refer Note :2	uPVC, up to 65mm - SWR, IS 4985, class-3 with fittings IS 7834 Above 65 mm - IS 13592, Type-B with fittings IS 14735	Buried: Solid wall/Foam core brown pies as per IS 15328, SDR 34 , SN 8 Exposed: CI LA class , IS 1536
Vent	uPVC, SWR, Type-A, IS 13592 Fittings: IS 14735	uPVC, SWR, Type-A, IS 13592 Fittings: IS 14735	uPVC, SWR, Type-A, IS 13592 encased Fittings: IS 14735
Rainwater	uPVC, IS 4985, class-3 Fittings as per IS 7834 Refer Note :2	uPVC, up to 65mm - SWR, IS 4985, class-3 with fittings IS 7834 Above 65 mm - IS 13592, Type-B with fittings IS 14735	Buried: HDPE Double wall corrugated SN 8 brown as per ISO 21138-3 Exposed: CI LA class , IS 1536
Note:1	Under slung soil pipes to be Low noise PP Pipes (Silent poly-propylene), for noise rating refer specifications.		
Note:2	Velocity breakers to be provided as applicable		

shall include allowance for thermal expansion in accordance with the manufacturer's recommendations. All expansion units shall be anchored.

Access shall be provided by means of an integrally moulded door in an access fitting with an externally fitted rubber seal and secured with two galvanised bolts and nuts, or alternatively by a two-piece clamp type door fitted into the pipe run. Access shall be installed on all vertical foul drainage pipes at the specified height above each finished floor level, to centre line of the access door and horizontally in accordance with the Building Regulations and BS EN 12056-2.

B) uPVC Pipes (Internal toilet)

Providing & fixing uPVC soil and waste pipe work comprising uPVC pipe conforming to IS :4985-2000 up to pipe sizes 65 mm and IS : 13592 - Type B for sizes above 65 mm of required class as specified including fittings (moulded as well as fabricated) like elbows, bends, reducers, threaded tail pieces, caps and other specials. Chasing, cutting and making good the walls, complete in all respects including testing of complete installation. All under slung soil pipes to be low noise PP Pipes (Silent poly-propylene).

Pipes may be laid/ fixed in sunken floors, under slung from ceiling. The pipes laid in sunken floor shall be encased with 75 mm thick cement concrete (1:2:4) all around. Pipes fixed on MS structural supports shall be fixed with U-clamps made from 10 mm dia MS bar complete with necessary threading nuts and washers (MS Structural Work to be included in the rate). The installation shall be complete in all respects including cutting chases / holes in walls, slabs and making good the same as per specifications.

Providing GI pipe sleeves of suitable higher size wherever pipes crossing a fire rated wall / floor slab and sealing of space around pipe and pipe sleeve with glass wool in between and fire proof sealant at either end to the satisfaction of the Project Manager / Consultants and making good the same after pipes have been duly laid and testing.

C) uPVC PIPES AND FITTINGS

The pipes shall be round and shall be supplied in straight lengths with socketed ends. The internal and external surfaces of pipes shall be smooth, clean, and free from grooving and other defects. The ends shall be cleanly cut and square with the axis of the pipe. The pipes shall be designed by external diameter.

Fittings shall be of the same make as that of pipes, injection moulded and shall conform to Indian Standard.

D) Laying , Jointing

The pipes shall be laid in uniform slope and proper levels. All vertical pipes shall be truly vertical fixed by means of stout clamps in two sections, bolted together, built into the walls, wedged and neatly jointed. The branch pipes shall be connected to the stack at the same angle as that of fittings. All connections between soil, waste and ventilating pipes and branch pipes shall be made by using pipe fittings with inspection doors for cleaning. Pipes shall be fixed in a manner as to provide easy accessibility for repair and maintenance and shall not cause obstruction in shafts. Where the horizontal run off the pipe is long or where the pipes cross over building expansion joints etc. suitable allowance shall be provided for any movements in the pipes by means of expansion joint etc. such that any such movement does not damage the installation in any way.

Provision shall be made for the effect of thermal movement by not gripping or disturbing the pipe at supports between the anchors for suspended pipes. The supports shall allow the repeated movements to take place without abrasion.

BILL OF QUANTITIES

SR. No.	ITEM DESCRIPTION	HSN/SAC Code	UNIT	QTY	RATE	AMOUNT
1	**vendor for acme infra plumbing work** vendor required for acme ozone infra plumbing works					
1.01	**DRAINAGE INSTALLATIONS** Include for the supply, complete installation, Testing & Commissioning as detailed in the specifications and on the Drawings and to the complete satisfaction and approval of the Engineer and all concerned Statutory Authorities and under the following sections. To be read in conjuction with the drawings no : P - 002 for the details.					
1.01.1	Pipe work of waste, soil, condensate, vent, rainwater etc including fittings, bends, elbows, rodding eyes, protection barriers, supports, accessories, expansion/contraction joints etc., complete Waste Pipes Inside the Toilet of Indian make (Indian PVC (SWR) Type as per Relevant IS standards IS13592 40 mm dia pipe	995462	NOS	16,000	220,00	3.520,00
1.01.2	50 mm dia pipe	995462	NOS	25,000	260,00	6.500,00
1.01.3	75 mm dia pipe	995462	NOS	19,000	610,00	11.590,00
1.01.4	Soil Pipe Inside the Toilet Indian make (Low noise Indian PVC (SWR) Type as per Relevant IS standards IS13592, IS14735(2-4 LPS@20-26 dB respectively)). 110 mm dia Soil pipe	995462	NOS	11,000	1.270,00	13.970,00
1.01.5	Condensate Drain pipe of UPVC Class 5 in accordance to IS 4985 with 6 mm thick nitrile rubber insulation. Refer technical specification for installation of piping. (Note: 9mm Thk for Exposed piping) 25mm Dia	995462	NOS	196,000	180,00	35.280,00