Flooring Policy

OBJECTIVES AND BENEFITS

1. Standardize flooring material selection process in key common areas, Occupier-oriented non-key common areas, back-of-house common areas and low interaction areas inside unit across Lodha projects.

   Benefit: *Consistent material selection for similar areas across projects will allow for scale benefits and simplification of design and procurement process*

2. Establish guidelines for supply and usage of flooring material: standard supply sizes, wastage norms to be included in contracts and reconciliation policy.
   Benefit: Standard per-cut sizes of flooring material will simplify design and procurement process. Supply of Pre-Cut sizes at sites will reduce design wastage at site due to lower need of cutting. Supply of Pre-Cut sizes will simplify reconciliation process as issued quantity to contractor will be free of any design wastage. Any wastage during execution of contract by contractor will be on account of handling only.

3. Define technical specifications for commonly used flooring material
   Benefit: Common understanding of technical specification across Design, Purchase, Contracts and contractors

The policy applies to any space that uses natural or manufactured flooring material or equivalents. The policy will not apply to areas that are handed over as bare shells (e.g. toilets, pantries in Supremus, Excellus and select residential units.

KEY POLICY IMPLICATION

Department	Activity	Implications
Design	Room sizes	• Going forward, to enable lower design wastage of flooring materials, Design to try and keep room sizes for flooring to be in multiples of 150 mm (where possible)
	Material selection	• For Common areas, back-of-house areas and low interaction areas, selection of flooring materials for every project to be as per this policy instead of current selection process (project-by-project decision) • For high interaction area within the flats/office, material selection continued to be decided by project architect; to be in line with overall budget as defined by Cost management
	Flooring drawings	• Standard cut sizes as defined in policy for Agglomerate marble (4'X2'), vitrified tiles, ceramic tiles and Kota stones to be used to prepare flooring drawing., Natural stone size per piece to be upto 6 sqft- instead of current practice where flooring pattern sizes vary across projects • Flooring drawing to be prepared (including calculated design wastage in conjunction with CMD) and made available to contracts team prior to flooring contract award instead of current practice where sometime flooring contract is awarded without flooring drawing
	Flooring area statement	• Detailed area statement for each area within a building to be prepared clearly estimating total flooring, skirting and DADO area

Purchase	Material procurement	• All flooring items to be procured only in pre-cut sizes to minimize need for cutting at site ***(Feasibility for getting pre cut Natural Marble under exploration-To be updated)*** instead of current practice of procuring in slab form and cutting on-site.
	Updating material budget	• Procurement to update Cost Management team with annual price range for standard flooring materials to be used in low interaction areas
Contracts	Tender process	• During contract tendering and negotiations, flooring drawings to be shared with the contractor (including design waste calculated by CMD team) to ensure that contractor is able to estimate and understand implications of wastage norms and penalty clauses being set in contracts
	Standardize wastage norms in flooring tenders	• Wastage norms and clauses to be standardize across flooring contracts; with pre-cut and reduced size of material, only handling wastage and small design waste (estimated from drawings) need to be given to contractor.
	Enforcement of contract	• Contractor to submit the reconciliation report along with each bill • In case of exceeding wastage norms penalty to be enforced strictly on the contractor
Construction management	Issue of material	• Stores to able to quantify net material issues to contractor (total material issues to contractor-total material returned back in perfect condition) to aid reconciliation process
	Material Reconciliation report	• Reconciliation report to be prepared for each flooring material category at all the sites before submission of final contractor bills • Reconciliation report to be checked and approved by the project manager
Cost Management	Quantity attachment	• Detailed area statement for each area within a building to be prepared clearly estimating total flooring, skirting and DADO area • Total Material quantity to be attached should include wastage only as per standard wastage norm for respective materials
	Budget preparation	• Ensure that updated annual price range for flooring materials (to be used in low interaction areas) as provided by Purchase is used to prepare project budgets/attachments

Area classification-Category Definitions*

Key Common Areas:

1. Sample Flat & Sales / Corporate Office (including any adjacent outdoor areas)
2. Main entrance lobby
3. Club house (& other amenities of such nature eg. temple, business centre, restaurant) (including any adjacent outdoor areas)
4. Any other vital public area (eg. Theatre at Geeta)
5. Ornamental Staircase (eg. From L1 to L2 at Lodha Excelus, Apollo Mills)

Occupier-oriented Non-Key Common Areas:

1. Level / area where drop-off to main entrance lobby occurs
2. Landscape areas other than those covered under 'Key Common Areas'
3. Occupier Lift lobby on each floor
4. Passage from Occupier Lift Lobby to units on each floor
5. Common Toilet (primarily meant for passenger use)
6. Society-cum-FM office
7. Mail room/Mail box

Back-of-house Common Areas (areas where occupiers/their guests are unlikely to come frequently):

1. Common Staircases (including landing) (excluding any ornamental staircase)
2. Refuge Area
3. Service Lift lobby and adjacent passage thereto
4. All parking areas (eg. podium, stilt, basement etc.) (this does not include the level / area where drop-off to main entrance lobby occurs)
5. Parking lift lobby and adjacent passage thereto
6. Service floor / area / room
7. Driver's room
8. Security-cum-BMS room
9. Staff changing room
10. Common Toilet (primarily meant for service use)
11. Any other areas forming part of the service core

Low interaction areas within residential flats:**

1. Kitchen dado under the counter
2. Servants room
3. Servants toilet
4. Store room
5. Utility area

The above is the list indicating the types of areas which fall in each category and if any areas are not specifically covered above, the Design team will have to make a call into which of the aforesaid 4 categories do they fall into.

*As per Common Area-Category Definition document dated 9.6.11

**As per work done earlier on flooring standardization

1. Flooring policy for key common areas:

For Key Common Areas, agglomerated marble would be a ruled out option. While there is no restriction on flooring material selection for these areas (could be indicative budget guidelines), vitrified tiles (800mm x 800mm) would be a recommended alternative wherever agglomerated marble has been previously chosen. For projects where agglomerate marble is being used, the alternative should be considered in such areas where works has not yet commenced prior to date of circulation of this policy.

Key Common Areas (except in Casa Projects) shall be designed by the Interior Design team and executed by the CM-Interior team

2. Flooring policy for Occupier-oriented Non-Key Common Areas:

For all 'Occupier-oriented Non-Key Common Areas' in all segments 800mmX800mm Vitrified tiles would be a recommended option. Design would be free to choose any material which is less than its costs in terms of CTC (including wastage, laying etc.). Agglomerated marble would be a ruled out option viz. negative list. In following segments (Excelus, Supremus, Luxury Resi, Hi-end Resi) more expensive materials like natural marble may be selected by design for the Occupier-oriented Non-Key Common Areas (however prescribed size of natural stones cannot exceed 6 sq. ft. per piece. Of this at least one dimension should be 600 mm or lesser)

Occupier-oriented Non-Key common areas shall be designed by the Project Design group and executed by the CM team.

*As per Common Area-Category Definition document dated 9.6.11

3. Flooring policy for Back-of-house Areas (areas where occupiers/their guests are unlikely to come frequently):

For all back-of-house areas, flooring material selection to be done as per table below:

Flooring Standardization in Back-of-house areas					
Back-of-house areas flooring finishes/Segment	**Residential (Affordable/Aspirational/High End/Luxury) and Commercial**				
	1st Preference		**2nd Preference**		**Approximate Price target Rs/SFT***
	Material Type	**Size/Specification**	**Material Type**	**Size**	
Common Staircases including landing (excluding any ornamental staircase)	Pre-cast staircase with clean raw concrete finish (treads with appropriate nosing and grooves)	As per Staircase policy (Policy No. 38 Revision 4)	Treads: Pre-cast cement treads with nosing and grooving Risers: Raw concrete Landing/Midlanding: Cement Tiles	As per Staircase policy (Policy No. 38 Revision 4)	Pre-cast staircase: TBD Pre-cast treads: TBD Risers: TBD Cement Tiles: TBD
Refuge areas	2nd class Ceramic Tiles	TBD (proposed: 1'X1')	Wastage Stone (from building flooring work)	crazy pattern	Ceramic Tiles: Rs.31-35 per sqft
Service lift Lobby and adjacent passage thereto	2nd class Ceramic Tiles	TBD (proposed: 1'X1')	Wastage Stone (from building flooring work)	crazy pattern	Ceramic Tiles: Rs.31-35 per sqft
Parking lift lobby and adjacent passage thereto	2nd class Ceramic Tiles	TBD (proposed: 1'X1')	Wastage Stone (from building flooring work)	crazy pattern	Ceramic Tiles: Rs.31-35 per sqft
All parking areas (e.g. podium, stilt, basement) except level/area where drop off tp main entrance lobby occurs)	Cement Tiles	TBD (proposed: 18"X18")	Chequered Tiles/Wastage of sufficient strength/Epoxy paint over concrete (to be considered if cost effective)	NA	TBD
Service Floor/Area/ room (including entry)	Wastage stone (from building flooring works)	crazy pattern	2nd class Ceramic Tiles	TBD (proposed: 1'X1')	Ceramic Tiles: Rs.31-35 per sqft
Drivers room	Wastage stone (from building flooring works)	crazy pattern	2nd class Ceramic Tiles	TBD (proposed: 1'X1')	Ceramic Tiles: Rs.31-35 per sqft
Security and BMS room	Wastage stone (from building flooring works)	crazy pattern	2nd class Ceramic Tiles	TBD (proposed: 1'X1')	Ceramic Tiles: Rs.31-35 per sqft
Staff changing room	Wastage stone (from building flooring works)	crazy pattern	2nd class Ceramic Tiles	TBD (proposed: 1'X1')	Ceramic Tiles: Rs.31-35 per sqft
Common Toilet ((primarily meant for service use)	Wastage stone (from building flooring works)	crazy pattern	2nd class Ceramic Tiles	TBD (proposed: 1'X1')	Ceramic Tiles: Rs.31-35 per sqft
Any other areas forming part of the service core	Any of the 4 preferred materials above (2nd quality ceramic/wastage stone/cement tiles/pre-cast raw concrete) based on material characteristics being suited to the use of the said area				As per selection

**The budgeted rates will be subject to annual price revision to account for rate inflation; rates indicated includes VAT; excludes Octroi*

Back-of-house areas shall be designed by the Project Design group and executed by the CM team. Design can give both preferences and decision on actual usage can be made on site level, based on availability/site conditions. In cases where there is a choice between Wastage Stone and 2nd class Ceramic tiles, Project Managers should plan for usage of full extent of wastage stone available and order 2nd class Ceramic tiles only for the balance areas.

*As per finishing of back-of-house common areas policy dated 9.6.11

4. Flooring policy for Low customer interaction areas within flats:

For all low interaction areas, flooring material selection to be done as per table below:

Flooring Standardization in low interaction areas										
Segment/Low interaction area	**Affordable**		**Aspirational**		**High End**		**Luxury**		**Approximate Price target Rs/SFT***	**Remarks**
	Material Type	**Size**	**Material Type**	**Size**	**Material Type**	**Size**	**Material Type**	**Size**		
Kitchen Dado under the counter	Non Branded Tiles (equivalent to Gujrat Tiles)	300mm X 300 mm	Non Branded Tiles (equivalent to Gujrat Tiles)	300mm X 300 mm	Non Branded Tiles (equivalent to Gujrat Tiles)	300mm X 300 mm	Non Branded Tiles (equivalent to Gujrat Tiles)	300mm X 300 mm	17.50 - 20.00	Price for Size - 300mm x 300mm
Servants room	Ceramic	1'x1'	Ceramic	1'x1'	Vitrified (SS)/ceramic	2' x 2'/1' x 1'	Vitrified (SS)/ceramic	2' x 2'/1' x 1'	Ceramic :31.00 - 35.00 Vitrified Tiles: 34.50 - 37.00	
Servants Toilet	Ceramic	1'x1'	Ceramic	1'x1'	Ceramic	1'x1'	Ceramic	1'x1'	31.00 - 35.00	
Terrace w/o amenities	China Mosaic	-	China Mosaic	-	China Mosaic	-	China Mosaic	-	5175 - 5225	Rate per MT
Store Room	Ceramic	1'x1'	Ceramic	1'x1'	Ceramic	1'x1'	Ceramic	1'x1'	31.00 - 35.00	
Utility Areas	Ceramic	1'x1'	Ceramic	1'x1'	Ceramic	1'x1'	Ceramic	1'x1'	31.00 - 35.00	

**The budgeted rates will be subject to annual price revision to account for rate inflation; rates indicated includes VAT; excludes Octroi*

Low interaction areas shall be designed by the Project Design group and executed by the CM team.

*As per previous draft on standardization of low customer interaction areas dated 7.1.11

Guidelines for supply and installation of flooring materials

Objective: To further minimize wastage in flooring work, clearly define standard sizes for material supply, allowable wastage limits for flooring contractors at sites (target to ensure all flooring material supplied to site in pre-cut sizes such that wastage by contractor is primarily on account of handling) , wastage measurement formula and material reconciliation policy for flooring material

Benefit: Wastage norms at site (in scope of contractor) can be reduced as supply of flooring material in pre-cut sizes will reduce design/cutting wastage that happens due to procurement of material in larger slab form.

Standard sizes for material supply and allowable wastage norms for contractors

Flooring Material	Standard sizes (to be supplied at site)	Allowable wastage limit for contractors
Imported Natural Marble	Upto 6 sqft Pre-cut feasability in progress	Feasibility of procuring pre-cut marble being explored – will be updated.
Agglomerate Marble	1200mmX600mm-Precut	7% (in recent Dombivli contract where design wastage was 1.5%)
Granite	Pre-cut as per project	4.50%
Kota stone	22"X22"-Precut	4.50%
Indian stone	Pre-cut as per project	4.50%
Vitrified Tiles	600mmX600mm	4.50%
Ceramic Tiles	300mmX300mm	4.50%
Wooden Flooring-Laminate	190mmX1200mm	0%
Wooden Flooring-Deck (Tile form)	300mmX300mm	0%
Wooden Flooring-Deck (Plank form)	95mmX600-1800mm	0%

Wastage calculation formula: (Net quantity issued to contractor by stores-Total laid quantity)/Total quantity issued to contractor by stores)

Net quantity issued to contractor= Total quantity issues – Total quantity returned back to stores without any damage
Total laid quantity=total flooring area +Total skirting area + Total dado area

Reconciliation policy for flooring material – FLO (where we supply material)

1) Every third bill and final bill from flooring contractor should be accompanied by flooring material reconciliation report approved by respective Project Manager

2) For sales office + sample flats where time takes precedence over cost and hence, reconciliation may only be with final bill as well as aforesaid wastage norms maybe exceeded (determined by design and procurement)
3) For key common areas every final bill should be accompanied by floor material reconciliation report approved by respective Project Manager.
4) Reconciliation report should capture following details for each flooring material in scope of contractor: Net quantity issued to contractor by stores (easy to determine as all material including marbles supplied at site in pre-cut sizes), Total laid quantity, Estimated wastage percentage, Allowable wastage percentage, Excess wastage quantity to be debited to contractor, material rate per sqft to be considered for debit*, total amount to be debited

** material rate per sqft to be considered for debit=actual price of material + 15% of material cost towards incidental charges*

Material specifications by category

Below mentioned are standard flooring specifications to be followed for all the major material categories which are being used.

3.1 Natural Marble

Thickness - 16mm & 20mm (for some imported materials)

Slab Size – Depending on availability (current procurement practice)

Cut Size- Upto 6 sqft with one dimension less than 600mm (procurement feasibility in progress)

No IS standard defined, main check for aesthetics and absence of cracks

3.2 Agglomerate Marble

Thickness - 12mm (for cladding) & 14mm (for flooring) (16 mm thickness not to be used any more. HOD approval required in case usage is imperative)

Precut slab size – 2' x 4' (all material to be procured in this pre-cut size from the suppliers)

Water Absorption - Less than 0.2%

Linear Coefficient of Thermal Expansion - Less than 15

Surface Hardness - 3 - 4 Mohr scale

Density - 2.5 Gm / Cu Cm

Compressive Strength - More than 100 Mpa

Flexural Strength - 150-250 Kgs / Sqcm

Glossiness - Greater than 70%

As per EN 99, EN 103, ASTM C97, ASTM C170, EN 100, EN 102

3.3 Vitrified Tiles

Size – 600mm x 600mm (use of 900mm x 900mm to be stopped completely)

Thk - 9.2mm/ 10.00 mm (+/- 0.2mm)

Finish - Glossy

Type - Soluble Salt/double charged (only in high-end/luxury projects)

Requirement as per IS 13006, 10545

Deviation in length & width - Max ± 0.6%

Deviation in thickness - Max ± 5%

Surface Flatness (curvature & warpage) - ± 0.5 %

Shade Variation - No deviation

Water Absorption - < 0.5%

Mohr's Hardness - > 6

3.4 Ceramic tiles

Size: 300mm x 300mm

Thickness: 8.2 mm

Finish: Glossy/Satin

Type of tile: Ceramic

Requirement as per IS 15622,13630,13711,13712

Deviation in length & width - ± 1 mm

Deviation in thickness - ± 0.5 mm

Surface Flatness (curvature & warpage) - ± 0.2 mm

Shade Variation - No deviation

Water Absorption - ≥ 10%

Mohr's Hardness - 3 Min

3.5 Wooden Flooring (laminated)

Grade - AC3

Plank Size - 190mm x 4' long

HDF Density - More than 850 Kgs/Cumtr

Thk - 8mm to 8.3mm

Abrasion Resistance - equal or greater than 6000

Resistance to cigarette burns - No visible change

Resistance to staining - No visible stain

3.6 Wooden Flooring (Deck: Tile form)

Type - Tile Form with pvc net at the bottom

Size - 300 x 300 mm

Pattern - Four strips in each tile without groove (Each strip 70mm wide x 18mm thk with a clear gap of 6mm between two strips)

Height of PVC net - 15mm

Total Thk - 33mm includes of plastic netting

Wood species - IPE (Brazilian Walnut) OR Green heart

3.7 Wooden Flooring (Deck: Plank form)

Type - Plank Form with SAL wood batted at the bottom

Size of plank - 95mm wide x 18mm thk

Pattern - In long form without groove (Length of plank may vary from 2' to 6')

Wood species - IPE (Brazilian Walnut) OR Green heart

Mainly quality check from aesthetic point of view and on physical dimensions