

# Distribution of Houses by Predominant Materials of Roof and Wall and Level of Damage Risk

**Table No. : MH 22**

**State : MAHARASHTRA**

**MUMBAI SUBURBAN**

Wall / Roof		Census Houses		Level of Risk under								Flood Prone Area in %
		No. of Houses	%	EQ Zone				Wind Velocity m/s				
				V	IV	III	II	55 & 50	47	44 & 39	33	
				Area in %				Area in %				
						100				100		
WALL												
A1 - Mud & Unburnt Brick Wall	Rural		-									
	Urban	55,516	2.1									
	Total	55,516	2.1			M				M		
A2 - Stone Wall not packed with mortar	Rural		-									
	Urban	47,183	1.8									
	Total	47,183	1.8			M				L		
Total - Category - A		102,699	3.8									
B - Burnt Bricks Wall & Stone wall packed with mortar	Rural		-									
	Urban	1,872,032	70.0									
	Total	1,872,032	70.0			L				L		
Total - Category - B		1,872,032	70.0									
C1 - Concrete Wall	Rural		-									
	Urban	561,155	21.0									
	Total	561,155	21.0			VL				VL		
C2 - Wood wall	Rural		-									
	Urban	10,101	0.4									
	Total	10,101	0.4			VL				M		
Total - Category - C		571,256	21.4									
X - Other Materials	Rural		-									
	Urban	129,045	4.8									
	Total	129,045	4.8			VL				M		
Total - Category - X		129,045	4.8									
TOTAL HOUSES*		2,675,032										

<b>ROOF</b>												
<b>R1 - Light Weight Sloping Roof</b>	Rural		-									
	Urban	1,154,063	43.1									
	<b>Total</b>	<b>1,154,063</b>	<b>43.1</b>			L				H		
<b>R2 - Heavy Weight Sloping Roof</b>	Rural		-									
	Urban	250,972	9.4									
	<b>Total</b>	<b>250,972</b>	<b>9.4</b>			L				L		
<b>R3 - Flat Roof</b>	Rural		-									
	Urban	1,269,997	47.5									
	<b>Total</b>	<b>1,269,997</b>	<b>47.5</b>	<i>Damage Risk as per that for the Wall supporting it</i>								
<b>TOTAL HOUSES*</b>		<b>2,675,032</b>										

**Probable Maximum Precipitation at a Station of the district in one day for arial extent of 1000 sqm. 1010 mm**

**Housing Category : Wall Types**

- Category - A :** Buildings in field-stone, rural structures, unburnt brick houses, clay houses
- Category - B :** Ordinary brick building; buildings of the large block & prefabricated type, half-timbered structures, building in natural hewn stone
- Category - C :** Reinforced building, well built wooden structures
- Category - X :** Other materials not covered in A,B,C. These are generally light.

- Notes :** 1. Flood prone area includes that protected area which may have more severe damage under failure of protection works. In some other areas the local damage may be severe under heavy rains and choked drainage.
2. Damage Risk for wall types is indicated assuming heavy flat roof in categories A, B and C (Reinforced Concrete) building
3. Source of Housing Data : Census of Housing, GOI, 2011

**Housing Category : Roof Type**

- Category - R1 -** Light Weight (Grass, Thatch, Bamboo, Wood, Mud, Plastic, Polythene, GI Metal, Asbestos Sheets, Other Materials)
- Category - R2 -** Heavy Weight (Tiles, Stone/Slate)
- Category - R3 -** Flat Roof (Brick, Concrete)

- EQ Zone V : Very High Damage Risk Zone (MSK > IX)
- EQ Zone IV : High Damage Risk Zone (MSK VIII)
- EQ Zone III : Moderate Damage Risk Zone (MSK VII)
- EQ Zone II : Low Damage Risk Zone (MSK < VI)
- Level of Risk : VH = Very High; H = High;

M = Moderate; L = Low; VL = Very Low

\* Total No. of Houses excluding Vacant/Locked Houses