

**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			
<b>WALL</b>													
<b>A1 - Mud &amp; Unburnt Brick Wall</b>	Rural		-										
	Urban	55,516	2.1										
	<b>Total</b>	<b>55,516</b>	<b>2.1</b>				<i>M</i>				<i>M</i>		
<b>A2 - Stone Wall not packed with mortar</b>	Rural		-										
	Urban	47,183	1.8										
	<b>Total</b>	<b>47,183</b>	<b>1.8</b>				<i>M</i>				<i>L</i>		
<b>Total - Category - A</b>		<b>102,699</b>	<b>3.8</b>										
<b>B - Burnt Bricks Wall &amp; Stone wall packed with mortar</b>	Rural		-										
	Urban	1,872,032	70.0										
	<b>Total</b>	<b>1,872,032</b>	<b>70.0</b>				<i>L</i>				<i>L</i>		
<b>Total - Category - B</b>		<b>1,872,032</b>	<b>70.0</b>										
<b>C1 - Concrete Wall</b>	Rural		-										
	Urban	561,155	21.0										
	<b>Total</b>	<b>561,155</b>	<b>21.0</b>				<i>VL</i>				<i>VL</i>		
<b>C2 - Wood wall</b>	Rural		-										
	Urban	10,101	0.4										
	<b>Total</b>	<b>10,101</b>	<b>0.4</b>				<i>VL</i>				<i>M</i>		
<b>Total - Category - C</b>		<b>571,256</b>	<b>21.4</b>										
<b>X - Other Materials</b>	Rural		-										
	Urban	129,045	4.8										
	<b>Total</b>	<b>129,045</b>	<b>4.8</b>				<i>VL</i>				<i>M</i>		
<b>Total - Category - X</b>		<b>129,045</b>	<b>4.8</b>										
<b>TOTAL HOUSES*</b>		<b>2,675,032</b>											

<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>				<i>L</i>				<i>H</i>		
<b>R2 - Heavy Weight Sloping Roof</b>	Rural		-										
	Urban	250,972	9.4										
	<b>Total</b>	<b>250,972</b>	<b>9.4</b>				<i>L</i>				<i>L</i>		
<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