

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

Table No. : MP 37

State : MADHYA PRADESH

MANDLA

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 %						
						19.1	80.9			100				
WALL														
A1 - Mud & Unburnt Brick Wall	Rural	217,353	71.3											
	Urban	11,680	3.8											
	Total	229,033	75.1					<i>M</i>	<i>L</i>			<i>M</i>		
A2 - Stone Wall not packed with mortar	Rural	519	0.2											
	Urban	190	0.1											
	Total	709	0.3					<i>M</i>	<i>L</i>			<i>L</i>		
Total - Category - A		229,742	75.3											
B - Burnt Bricks Wall & Stone wall packed with mortar	Rural	42,220	13.8											
	Urban	20,176	6.6											
	Total	62,396	20.4					<i>L</i>	<i>VL</i>			<i>L</i>		
Total - Category - B		62,396	20.5											
C1 - Concrete Wall	Rural	444	0.1											
	Urban	326	0.1											
	Total	770	0.2					<i>VL</i>	<i>VL</i>			<i>VL</i>		
C2 - Wood wall	Rural	4,265	1.4											
	Urban	188	0.1											
	Total	4,453	1.5					<i>VL</i>	<i>VL</i>			<i>M</i>		
Total - Category - C		5,223	1.7											
X - Other Materials	Rural	6,322	2.1											
	Urban	1,344	0.4											
	Total	7,666	2.5					<i>VL</i>	<i>VL</i>			<i>M</i>		
Total - Category - X		7,666	2.5											
TOTAL HOUSES*		305,027												

ROOF													
R1 - Light Weight Sloping Roof	Rural	40,388	13.2										
	Urban	4,583	1.5										
	Total	44,971	14.7					<i>L</i>	<i>VL</i>			<i>H</i>	
R2 - Heavy Weight Sloping Roof	Rural	212,203	69.6										
	Urban	13,251	4.3										
	Total	225,454	73.9					<i>L</i>	<i>VL</i>			<i>L</i>	
R3 - Flat Roof	Rural	18,532	6.1										
	Urban	16,070	5.3										
	Total	34,602	11.4	Damage Risk as per that for the Wall supporting it									
TOTAL HOUSES*		305,027											

Probable Maximum Precipitation at a Station of the district in one day for arial extent of 1000 sqm. 448 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