

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

**Table No. : MP 31**

**State : MADHYA PRADESH**

**HARDA**

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	35,102	25.9									
	Urban	4,792	3.5									
	Total	39,894	29.4			M				M		
A2 - Stone Wall not packed with mortar	Rural	460	0.3									
	Urban	116	0.1									
	Total	576	0.4			M				L		
Total - Category - A		40,470	29.9									
B - Burnt Bricks Wall & Stone wall packed with mortar	Rural	50,825	37.5									
	Urban	21,357	15.8									
	Total	72,182	53.3			L				L		
Total - Category - B		72,182	53.3									
C1 - Concrete Wall	Rural	1,161	0.9									
	Urban	321	0.2									
	Total	1,482	1.1			VL				VL		
C2 - Wood wall	Rural	1,388	1.0									
	Urban	101	0.1									
	Total	1,489	1.1			VL				M		
Total - Category - C		2,971	2.2									
X - Other Materials	Rural	18,232	13.5									
	Urban	1,563	1.2									
	Total	19,795	14.7			VL				M		
Total - Category - X		19,795	14.6									
TOTAL HOUSES*		135,418										

ROOF												
R1 - Light Weight Sloping Roof	Rural	36,810	27.2									
	Urban	9,213	6.8									
	Total	46,023	34.0			L				H		
R2 - Heavy Weight Sloping Roof	Rural	57,619	42.5									
	Urban	5,693	4.2									
	Total	63,312	46.7			L				L		
R3 - Flat Roof	Rural	12,739	9.4									
	Urban	13,344	9.9									
	Total	26,083	19.3	Damage Risk as per that for the Wall supporting it								
TOTAL HOUSES*		135,418										

Probable Maximum Precipitation at a Station of the district in one day for arial extent of 1000 sqm. **435 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