

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

### MADHYA PRADESH

Wall / Roof		Census Houses		Level of Risk under									
		No. of Houses	%	EQ Zone				Wind Velocity m/s				Flood Prone Area in %	
				V	IV	III	II	55 & 50	47	44 & 39	33		
				Area in %				Area in %					
<b>STATE - MADHYA PRADESH</b>								34.6	65.4		46.4	53.6	
<b>WALL</b>													
<b>A1 - Mud &amp; Unburnt Brick Wall</b>	Rural	7,269,030	41.7										
	Urban	844,994	4.8										
	<b>Total</b>	<b>8,114,024</b>	<b>46.5</b>					M	L		H	M	
<b>A2 - Stone Wall not packed with mortar</b>	Rural	418,391	2.4										
	Urban	69,119	0.4										
	<b>Total</b>	<b>487,510</b>	<b>2.8</b>					M	L		M	L	
<b>Total - Category - A</b>		<b>8,601,534</b>	<b>49.4</b>										
<b>B - Burnt Bricks Wall &amp; Stone wall packed with mortar</b>	Rural	4,329,335	24.8										
	Urban	3,387,463	19.4										
	<b>Total</b>	<b>7,716,798</b>	<b>44.2</b>					L	VL		M	L	
<b>Total - Category - B</b>		<b>7,716,798</b>	<b>44.3</b>										
<b>C1 - Concrete Wall</b>	Rural	60,201	0.3										
	Urban	119,018	0.7										
	<b>Total</b>	<b>179,219</b>	<b>1.0</b>					VL	VL		VL	VL	
<b>C2 - Wood wall</b>	Rural	126,260	0.7										
	Urban	17,964	0.1										
	<b>Total</b>	<b>144,224</b>	<b>0.8</b>					VL	VL		H	M	
<b>Total - Category - C</b>		<b>323,443</b>	<b>1.9</b>										
<b>X - Other Materials</b>	Rural	662,463	3.8										
	Urban	123,231	0.7										
	<b>Total</b>	<b>785,694</b>	<b>4.5</b>					VL	VL		H	M	
<b>Total - Category - X</b>		<b>785,694</b>	<b>4.5</b>										
<b>TOTAL HOUSES*</b>		<b>17,427,469</b>											

<b>ROOF</b>												
<b>R1 - Light Weight Sloping Roof</b>	Rural	2,612,332	15.0									
	Urban	993,870	5.7									
	<b>Total</b>	<b>3,606,202</b>	<b>20.7</b>					L	VL		VH	H
<b>R2 - Heavy Weight Sloping Roof</b>	Rural	8,957,268	51.4									
	Urban	1,379,878	7.9									
	<b>Total</b>	<b>10,337,146</b>	<b>59.3</b>					L	VL		M	L
<b>R3 - Flat Roof</b>	Rural	1,296,080	7.4									
	Urban	2,188,041	12.6									
	<b>Total</b>	<b>3,484,121</b>	<b>20.0</b>	Damage Risk as per that for the Wall supporting it								
<b>TOTAL HOUSES*</b>		<b>17,427,469</b>										

#### 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