

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

**Table No. : BH 11**

**State : BIHAR**

**MADHEPURA**

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 %					
				54.8	45.2				100			26.7	
<b>WALL</b>													
<b>A1 - Mud &amp; Unburnt Brick Wall</b>	Rural	28,198	5.6										
	Urban	1,325	0.3										
	<b>Total</b>	<b>29,523</b>	<b>5.9</b>	VH	H				H			VH	
<b>A2 - Stone Wall not packed with mortar</b>	Rural	1,672	0.3										
	Urban	142	-										
	<b>Total</b>	<b>1,814</b>	<b>0.3</b>	VH	H				M			VH	
<b>Total - Category - A</b>		<b>31,337</b>	<b>6.2</b>										
<b>B - Burnt Bricks Wall &amp; Stone wall packed with mortar</b>	Rural	130,137	25.8										
	Urban	11,775	2.3										
	<b>Total</b>	<b>141,912</b>	<b>28.1</b>	H	M				M			H/M	
<b>Total - Category - B</b>		<b>141,912</b>	<b>28.2</b>										
<b>C1 - Concrete Wall</b>	Rural	1,273	0.3										
	Urban	117	-										
	<b>Total</b>	<b>1,390</b>	<b>0.3</b>	M	L				VL			L/ VL	
<b>C2 - Wood wall</b>	Rural	1,322	0.3										
	Urban	105	-										
	<b>Total</b>	<b>1,427</b>	<b>0.3</b>	M	L				H			H	
<b>Total - Category - C</b>		<b>2,817</b>	<b>0.6</b>										
<b>X - Other Materials</b>	Rural	318,553	63.3										
	Urban	8,864	1.8										
	<b>Total</b>	<b>327,417</b>	<b>65.1</b>	M	VL				H			VH	
<b>Total - Category - X</b>		<b>327,417</b>	<b>65.0</b>										
<b>TOTAL HOUSES*</b>		<b>503,483</b>											

ROOF												
<b>R1 - Light Weight Sloping Roof</b>	Rural	352,517	70.0									
	Urban	9,707	1.9									
	<b>Total</b>	<b>362,224</b>	<b>71.9</b>	M	M				VH			VH
<b>R2 - Heavy Weight Sloping Roof</b>	Rural	71,115	14.1									
	Urban	4,709	0.9									
	<b>Total</b>	<b>75,824</b>	<b>15.0</b>	H	M				M			H
<b>R3 - Flat Roof</b>	Rural	57,523	11.4									
	Urban	7,912	1.6									
	<b>Total</b>	<b>65,435</b>	<b>13.0</b>	Damage Risk as per that for the Wall supporting it								
<b>TOTAL HOUSES*</b>		<b>503,483</b>										

Probable Maximum Precipitation at a Station of the district in one day for arial extent of 1000 sqm. 729 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