

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

**Table No. : BH 15**

**State : BIHAR**

**GOPALGANJ**

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			3.4
WALL													
A1 - Mud & Unburnt Brick Wall	Rural	25,578	4.7										
	Urban	2,246	0.4										
	Total	27,824	5.1		H				H				VH
A2 - Stone Wall not packed with mortar	Rural	7,084	1.3										
	Urban	513	0.1										
	Total	7,597	1.4		H				M				VH
Total - Category - A		35,421	6.6										
B - Burnt Bricks Wall & Stone wall packed with mortar	Rural	340,483	63.0										
	Urban	27,750	5.1										
	Total	368,233	68.1		M				M				H/M
Total - Category - B		368,233	68.2										
C1 - Concrete Wall	Rural	2,511	0.5										
	Urban	207	-										
	Total	2,718	0.5		L				VL				L/VL
C2 - Wood wall	Rural	3,124	0.6										
	Urban	172	-										
	Total	3,296	0.6		L				H				H
Total - Category - C		6,014	1.1										
X - Other Materials	Rural	126,337	23.4										
	Urban	4,091	0.8										
	Total	130,428	24.2		VL				H				VH
Total - Category - X		130,428	24.1										
TOTAL HOUSES*		540,096											

<b>ROOF</b>												
<b>R1 - Light Weight Sloping Roof</b>	Rural	215,436	39.9									
	Urban	10,185	1.9									
	<b>Total</b>	<b>225,621</b>	<b>41.8</b>		M				VH			VH
<b>R2 - Heavy Weight Sloping Roof</b>	Rural	32,668	6.0									
	Urban	1,883	0.3									
	<b>Total</b>	<b>34,551</b>	<b>6.3</b>		M				M			H
<b>R3 - Flat Roof</b>	Rural	257,013	47.6									
	Urban	22,911	4.2									
	<b>Total</b>	<b>279,924</b>	<b>51.8</b>	<i>Damage Risk as per that for the Wall supporting it</i>								
<b>TOTAL HOUSES*</b>		<b>540,096</b>										

Probable Maximum Precipitation at a Station of the district in one day for arial extent of 1000 sqm. **523 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