

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

Table No. : BH 27

State : BIHAR

NALANDA

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 %				
				95.1	4.9			97.3	2.7			46.9
WALL												
A1 - Mud & Unburnt Brick Wall	Rural	148,454	25.4									
	Urban	13,417	2.3									
	Total	161,871	27.7		H	M			H	M		VH
A2 - Stone Wall not packed with mortar	Rural	9,147	1.6									
	Urban	1,975	0.3									
	Total	11,122	1.9		H	M			M	L		VH
Total - Category - A		172,993	29.6									
B - Burnt Bricks Wall & Stone wall packed with mortar	Rural	295,723	50.6									
	Urban	73,749	12.6									
	Total	369,472	63.2		M	L			M	L		H/M
Total - Category - B		369,472	63.2									
C1 - Concrete Wall	Rural	4,014	0.7									
	Urban	3,098	0.5									
	Total	7,112	1.2		L	VL			VL	VL		L/ VL
C2 - Wood wall	Rural	1,184	0.2									
	Urban	194	-									
	Total	1,378	0.2		L	VL			H	M		H
Total - Category - C		8,490	1.5									
X - Other Materials	Rural	30,217	5.2									
	Urban	3,122	0.5									
	Total	33,339	5.7		VL	VL			H	M		VH
Total - Category - X		33,339	5.7									
TOTAL HOUSES*		584,294										

ROOF												
R1 - Light Weight Sloping Roof	Rural	138,252	23.7									
	Urban	14,845	2.5									
	Total	153,097	26.2		M	L			VH	H		VH
R2 - Heavy Weight Sloping Roof	Rural	75,294	12.9									
	Urban	12,541	2.1									
	Total	87,835	15.0		M	L			M	L		H
R3 - Flat Roof	Rural	275,193	47.1									
	Urban	68,169	11.7									
	Total	343,362	58.8		Damage Risk as per that for the Wall supporting it							
TOTAL HOUSES*		584,294										

Probable Maximum Precipitation at a Station of the district in one day for arial extent of 1000 sqm. 588 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