

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

**Table No. : GJ 21**

**State : GUJARAT**

**BHARUCH**

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 %				
						100				100		14.9
WALL												
A1 - Mud & Unburnt Brick Wall	Rural	76,368	18.7									
	Urban	14,816	3.6									
	Total	91,184	22.3			M				M		VH
A2 - Stone Wall not packed with mortar	Rural	1,497	0.4									
	Urban	391	0.1									
	Total	1,888	0.5			M				L		VH
Total - Category - A		93,072	22.8									
B - Burnt Bricks Wall & Stone wall packed with mortar	Rural	131,914	32.4									
	Urban	122,140	30.0									
	Total	254,054	62.4			L				L		H/M
Total - Category - B		254,054	62.3									
C1 - Concrete Wall	Rural	6,262	1.5									
	Urban	9,608	2.4									
	Total	15,870	3.9			VL				VL		L/VL
C2 - Wood wall	Rural	1,180	0.3									
	Urban	525	0.1									
	Total	1,705	0.4			VL				M		H
Total - Category - C		17,575	4.3									
X - Other Materials	Rural	40,512	9.9									
	Urban	2,450	0.6									
	Total	42,962	10.5			VL				M		VH
Total - Category - X		42,962	10.5									
TOTAL HOUSES*		407,663										

ROOF												
R1 - Light Weight Sloping Roof	Rural	92,963	22.8									
	Urban	37,453	9.2									
	Total	130,416	32.0			L				H		VH
R2 - Heavy Weight Sloping Roof	Rural	116,587	28.6									
	Urban	15,417	3.8									
	Total	132,004	32.4			L				L		H
R3 - Flat Roof	Rural	48,183	11.8									
	Urban	97,060	23.8									
	Total	145,243	35.6	Damage Risk as per that for the Wall supporting it								
TOTAL HOUSES*		407,663										

Probable Maximum Precipitation at a Station of the district in one day for areal extent of 1000 sq.km. is **832 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