

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

Table No. : GJ 08

State : GUJARAT

SURENDRANAGAR

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 %				
					12.3	87.7			6.5	22.2	71.3	.2
WALL												
A1 - Mud & Unburnt Brick Wall	Rural	66,760	15.3									
	Urban	7,690	1.8									
	Total	74,450	17.1		<i>H</i>	<i>M</i>			<i>VH</i>	<i>H</i>	<i>M</i>	<i>VH</i>
A2 - Stone Wall not packed with mortar	Rural	41,410	9.5									
	Urban	7,422	1.7									
	Total	48,832	11.2		<i>H</i>	<i>M</i>			<i>H</i>	<i>M</i>	<i>L</i>	<i>VH</i>
Total - Category - A		123,282	28.2									
B - Burnt Bricks Wall & Stone wall packed with mortar	Rural	181,853	41.6									
	Urban	117,422	26.9									
	Total	299,275	68.5		<i>M</i>	<i>L</i>			<i>H</i>	<i>M</i>	<i>L</i>	<i>H/M</i>
Total - Category - B		299,275	68.4									
C1 - Concrete Wall	Rural	2,744	0.6									
	Urban	2,372	0.5									
	Total	5,116	1.1		<i>L</i>	<i>VL</i>			<i>L</i>	<i>VL</i>	<i>VL</i>	<i>L/ VL</i>
C2 - Wood wall	Rural	1,384	0.3									
	Urban	505	0.1									
	Total	1,889	0.4		<i>L</i>	<i>VL</i>			<i>VH</i>	<i>H</i>	<i>M</i>	<i>H</i>
Total - Category - C		7,005	1.6									
X - Other Materials	Rural	5,641	1.3									
	Urban	2,085	0.5									
	Total	7,726	1.8		<i>VL</i>	<i>VL</i>			<i>VH</i>	<i>H</i>	<i>M</i>	<i>VH</i>
Total - Category - X		7,726	1.8									
TOTAL HOUSES*		437,288										

ROOF													
R1 - Light Weight Sloping Roof	Rural	22,366	5.1									<i>VH</i>	
	Urban	11,956	2.7										
	Total	34,322	7.8			<i>M</i>	<i>L</i>			<i>VH</i>	<i>VH</i>	<i>H</i>	
R2 - Heavy Weight Sloping Roof	Rural	191,480	43.8									<i>H</i>	
	Urban	34,602	7.9										
	Total	226,082	51.7			<i>M</i>	<i>L</i>			<i>H</i>	<i>M</i>	<i>L</i>	
R3 - Flat Roof	Rural	85,946	19.7									<i>H</i>	
	Urban	90,938	20.8										
	Total	176,884	40.5	<i>Damage Risk as per that for the Wall supporting it</i>									
TOTAL HOUSES*		437,288											

Probable Maximum Precipitation at a Station of the district in one day for arial extent of 1000 sq.km. is 552 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