

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

## GOA

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 %				
STATE - GOA						100				100		
WALL												
A1 - Mud & Unburnt Brick Wall	Rural	24,948	5.6									
	Urban	18,157	4.1									
	Total	43,105	9.7			M				M		
A2 - Stone Wall not packed with mortar	Rural	24,150	5.4									
	Urban	25,825	5.8									
	Total	49,975	11.2			M				L		
Total - Category - A		93,080	21.0									
B - Burnt Bricks Wall & Stone wall packed with mortar	Rural	98,974	22.3									
	Urban	185,363	41.8									
	Total	284,337	64.1			L				L		
Total - Category - B		284,337	64.2									
C1 - Concrete Wall	Rural	6,446	1.5									
	Urban	33,864	7.6									
	Total	40,310	9.1			VL				VL		
C2 - Wood wall	Rural	2,201	0.5									
	Urban	2,785	0.6									
	Total	4,986	1.1			VL				M		
Total - Category - C		45,296	10.2									
X - Other Materials	Rural	10,461	2.4									
	Urban	9,979	2.3									
	Total	20,440	4.7			VL				M		
Total - Category - X		20,440	4.6									
TOTAL HOUSES*		443,153										

ROOF												
R1 - Light Weight Sloping Roof	Rural	22,333	5.0									
	Urban	33,492	7.6									
	Total	55,825	12.6			L				H		
R2 - Heavy Weight Sloping Roof	Rural	109,823	24.8									
	Urban	115,147	26.0									
	Total	224,970	50.8			L				L		
R3 - Flat Roof	Rural	35,024	7.9									
	Urban	127,334	28.7									
	Total	162,358	36.6	Damage Risk as per that for the Wall supporting it								
TOTAL HOUSES*		443,153										

### 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