

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

### GOA

Wall / Roof		Census Houses		Level of Risk under								
		No. of Houses	%	EQ Zone				Wind Velocity m/s			Flood Prone Area	
				V	IV	III	II	55 & 50	47	44 & 39		
				Area in %				Area in %				
<b>STATE - GOA</b>								100			100	
<b>WALL</b>												
<b>A1 - Mud &amp; Unburnt Brick Wall</b>	Rural	24,948	5.6									
	Urban	18,157	4.1									
	<b>Total</b>	<b>43,105</b>	<b>9.7</b>					<i>M</i>			<i>M</i>	
<b>A2 - Stone Wall not packed with mortar</b>	Rural	24,150	5.4									
	Urban	25,825	5.8									
	<b>Total</b>	<b>49,975</b>	<b>11.2</b>					<i>M</i>			<i>L</i>	
<b>Total - Category - A</b>		<b>93,080</b>	<b>21.0</b>									
<b>B - Burnt Bricks Wall &amp; Stone wall packed with mortar</b>	Rural	98,974	22.3									
	Urban	185,363	41.8									
	<b>Total</b>	<b>284,337</b>	<b>64.1</b>					<i>L</i>			<i>L</i>	
<b>Total - Category - B</b>		<b>284,337</b>	<b>64.2</b>									
<b>C1 - Concrete Wall</b>	Rural	6,446	1.5									
	Urban	33,864	7.6									
	<b>Total</b>	<b>40,310</b>	<b>9.1</b>					<i>VL</i>			<i>VL</i>	
<b>C2 - Wood wall</b>	Rural	2,201	0.5									
	Urban	2,785	0.6									
	<b>Total</b>	<b>4,986</b>	<b>1.1</b>					<i>VL</i>			<i>M</i>	
<b>Total - Category - C</b>		<b>45,296</b>	<b>10.2</b>									
<b>X - Other Materials</b>	Rural	10,461	2.4									
	Urban	9,979	2.3									
	<b>Total</b>	<b>20,440</b>	<b>4.7</b>					<i>VL</i>			<i>M</i>	
<b>Total - Category - X</b>		<b>20,440</b>	<b>4.6</b>									
<b>TOTAL HOUSES*</b>		<b>443,153</b>										

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

#### 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