

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

**Table No. : RJ 03**

**State : RAJASTHAN**

**BIKANER**

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 %															
<b>WALL</b>															
<b>A1 - Mud &amp; Unburnt Brick Wall</b>	Rural	94,815	20.9												
	Urban	7,183	1.6												
	<b>Total</b>	<b>101,998</b>	<b>22.5</b>					<i>M</i>	<i>L</i>		<i>H</i>				
<b>A2 - Stone Wall not packed with mortar</b>	Rural	3,171	0.7												
	Urban	1,785	0.4												
	<b>Total</b>	<b>4,956</b>	<b>1.1</b>					<i>M</i>	<i>L</i>		<i>M</i>				
<b>Total - Category - A</b>		<b>106,954</b>	<b>23.6</b>												
<b>B - Burnt Bricks Wall &amp; Stone wall packed with mortar</b>	Rural	158,139	34.9												
	Urban	153,458	33.9												
	<b>Total</b>	<b>311,597</b>	<b>68.8</b>					<i>L</i>	<i>VL</i>		<i>M</i>				
<b>Total - Category - B</b>		<b>311,597</b>	<b>68.8</b>												
<b>C1 - Concrete Wall</b>	Rural	442	0.1												
	Urban	497	0.1												
	<b>Total</b>	<b>939</b>	<b>0.2</b>					<i>VL</i>	<i>VL</i>		<i>VL</i>				
<b>C2 - Wood wall</b>	Rural	2,425	0.5												
	Urban	145	-												
	<b>Total</b>	<b>2,570</b>	<b>0.5</b>					<i>VL</i>	<i>VL</i>		<i>H</i>				
<b>Total - Category - C</b>		<b>3,509</b>	<b>0.8</b>												
<b>X - Other Materials</b>	Rural	28,387	6.3												
	Urban	2,598	0.6												
	<b>Total</b>	<b>30,985</b>	<b>6.9</b>					<i>VL</i>	<i>VL</i>		<i>H</i>				
<b>Total - Category - X</b>		<b>30,985</b>	<b>6.8</b>												
<b>TOTAL HOUSES*</b>		<b>453,045</b>													

ROOF												
<b>R1 - Light Weight Sloping Roof</b>	Rural	126,384	27.9									
	Urban	10,223	2.3									
	<b>Total</b>	<b>136,607</b>	<b>30.2</b>					<i>L</i>	<i>VL</i>		<i>VH</i>	
<b>R2 - Heavy Weight Sloping Roof</b>	Rural	136,905	30.2									
	Urban	142,347	31.4									
	<b>Total</b>	<b>279,252</b>	<b>61.6</b>					<i>L</i>	<i>VL</i>		<i>M</i>	
<b>R3 - Flat Roof</b>	Rural	24,090	5.3									
	Urban	13,096	2.9									
	<b>Total</b>	<b>37,186</b>	<b>8.2</b>	<i>Damage Risk as per that for the Wall supporting it</i>								
<b>TOTAL HOUSES*</b>		<b>453,045</b>										

**Probable Maximum Precipitation at a Station of the district in 24 hrs is 320 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