

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

**Table No. : HP 05**

**State : HIMACHAL PRADESH**

**MANDI**

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 %					
				93.6	6.4						100		
<b>WALL</b>													
<b>A1 - Mud &amp; Unburnt Brick Wall</b>	Rural	57,119	13.6										
	Urban	1,856	0.4										
	<b>Total</b>	<b>58,975</b>	<b>14.0</b>	VH	H							M	
<b>A2 - Stone Wall not packed with mortar</b>	Rural	88,521	21.1										
	Urban	904	0.2										
	<b>Total</b>	<b>89,425</b>	<b>21.3</b>	VH	H							L	
<b>Total - Category - A</b>		<b>148,400</b>	<b>35.4</b>										
<b>B - Burnt Bricks Wall &amp; Stone wall packed with mortar</b>	Rural	235,665	56.3										
	Urban	22,383	5.3										
	<b>Total</b>	<b>258,048</b>	<b>61.6</b>	H	M							L	
<b>Total - Category - B</b>		<b>258,048</b>	<b>61.6</b>										
<b>C1 - Concrete Wall</b>	Rural	3,292	0.8										
	Urban	326	0.1										
	<b>Total</b>	<b>3,618</b>	<b>0.9</b>	M	L							VL	
<b>C2 - Wood wall</b>	Rural	4,902	1.2										
	Urban	159	-										
	<b>Total</b>	<b>5,061</b>	<b>1.2</b>	M	L							M	
<b>Total - Category - C</b>		<b>8,679</b>	<b>2.1</b>										
<b>X - Other Materials</b>	Rural	3,221	0.8										
	Urban	491	0.1										
	<b>Total</b>	<b>3,712</b>	<b>0.9</b>	M	VL							M	
<b>Total - Category - X</b>		<b>3,712</b>	<b>0.9</b>										
<b>TOTAL HOUSES*</b>		<b>418,839</b>											

<b>ROOF</b>													
<b>R1 - Light Weight Sloping Roof</b>	Rural	30,190	7.2										
	Urban	4,087	1.0										
	<b>Total</b>	<b>34,277</b>	<b>8.2</b>	M	M							H	
<b>R2 - Heavy Weight Sloping Roof</b>	Rural	249,588	59.6										
	Urban	3,283	0.8										
	<b>Total</b>	<b>252,871</b>	<b>60.4</b>	H	M							L	
<b>R3 - Flat Roof</b>	Rural	112,942	27.0										
	Urban	18,749	4.5										
	<b>Total</b>	<b>131,691</b>	<b>31.5</b>	Damage Risk as per that for the Wall supporting it									
<b>TOTAL HOUSES*</b>		<b>418,839</b>											

Probable Maximum Precipitation at a Station of the district in 24 hrs is 600 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