

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

**Table No. : UK 11**

**State : UTTARAKHAND**

**NAINITAL**

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 %				
				100				15.7		84.3		10.4
<b>WALL</b>												
<b>A1 - Mud &amp; Unburnt Brick Wall</b>	Rural	10,458	3.8									
	Urban	2,913	1.1									
	<b>Total</b>	<b>13,371</b>	<b>4.9</b>		<i>H</i>			<i>VH</i>		<i>M</i>		<i>VH</i>
<b>A2 - Stone Wall not packed with mortar</b>	Rural	17,812	6.5									
	Urban	1,044	0.4									
	<b>Total</b>	<b>18,856</b>	<b>6.9</b>		<i>H</i>			<i>H</i>		<i>L</i>		<i>VH</i>
<b>Total - Category - A</b>		<b>32,227</b>	<b>11.8</b>									
<b>B - Burnt Bricks Wall &amp; Stone wall packed with mortar</b>	Rural	129,745	47.6									
	Urban	82,575	30.3									
	<b>Total</b>	<b>212,320</b>	<b>77.9</b>		<i>M</i>			<i>H</i>		<i>L</i>		<i>H/M</i>
<b>Total - Category - B</b>		<b>212,320</b>	<b>77.8</b>									
<b>C1 - Concrete Wall</b>	Rural	3,358	1.2									
	Urban	5,082	1.9									
	<b>Total</b>	<b>8,440</b>	<b>3.1</b>		<i>L</i>			<i>L</i>		<i>VL</i>		<i>L/ VL</i>
<b>C2 - Wood wall</b>	Rural	1,722	0.6									
	Urban	570	0.2									
	<b>Total</b>	<b>2,292</b>	<b>0.8</b>		<i>L</i>			<i>VH</i>		<i>M</i>		<i>H</i>
<b>Total - Category - C</b>		<b>10,732</b>	<b>3.9</b>									
<b>X - Other Materials</b>	Rural	14,207	5.2									
	Urban	3,322	1.2									
	<b>Total</b>	<b>17,529</b>	<b>6.4</b>		<i>VL</i>			<i>VH</i>		<i>M</i>		<i>VH</i>
<b>Total - Category - X</b>		<b>17,529</b>	<b>6.4</b>									
<b>TOTAL HOUSES*</b>		<b>272,808</b>										

ROOF												
<b>R1 - Light Weight Sloping Roof</b>	Rural	54,781	20.1									
	Urban	19,368	7.1									
	<b>Total</b>	<b>74,149</b>	<b>27.2</b>		<i>M</i>			<i>VH</i>		<i>H</i>		<i>VH</i>
<b>R2 - Heavy Weight Sloping Roof</b>	Rural	32,811	12.0									
	Urban	1,699	0.6									
	<b>Total</b>	<b>34,510</b>	<b>12.6</b>		<i>M</i>			<i>H</i>		<i>L</i>		<i>H</i>
<b>R3 - Flat Roof</b>	Rural	89,710	32.9									
	Urban	74,439	27.3									
	<b>Total</b>	<b>164,149</b>	<b>60.2</b>	Damage Risk as per that for the Wall supporting it								
<b>TOTAL HOUSES*</b>		<b>272,808</b>										

Probable Maximum Precipitation at a Station of the district in one day for arial extent of 1000 sqm. 525 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