

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

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

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