

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

UTTARAKHAND

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 %						
STATE - UTTARAKHAND				39.4	60.6			9.1		90.9		1.6		
WALL														
A1 - Mud & Unburnt Brick Wall	Rural	106,593	3.5											
	Urban	23,208	0.8											
	Total	129,801	4.3	VH	H			VH		M		VH		
A2 - Stone Wall not packed with mortar	Rural	401,676	13.3											
	Urban	14,518	0.5											
	Total	416,194	13.8	VH	H			H		L		VH		
Total - Category - A		545,995	18.0											
B - Burnt Bricks Wall & Stone wall packed with mortar	Rural	1,605,627	53.0											
	Urban	701,235	23.1											
	Total	2,306,862	76.1	H	M			H		L		H/M		
Total - Category - B		2,306,862	76.1											
C1 - Concrete Wall	Rural	28,041	0.9											
	Urban	22,547	0.7											
	Total	50,588	1.6	M	L			L		VL		L/ VL		
C2 - Wood wall	Rural	25,769	0.9											
	Urban	3,767	0.1											
	Total	29,536	1.0	M	L			VH		M		H		
Total - Category - C		80,124	2.6											
X - Other Materials	Rural	76,813	2.5											
	Urban	20,123	0.7											
	Total	96,936	3.2	M	VL			VH		M		VH		
Total - Category - X		96,936	3.2											
TOTAL HOUSES*		3,029,917												

ROOF												
R1 - Light Weight Sloping Roof	Rural	355,538	11.7									
	Urban	120,303	4.0									
	Total	475,841	15.7	M	M			VH		H		VH
R2 - Heavy Weight Sloping Roof	Rural	755,310	24.9									
	Urban	21,263	0.7									
	Total	776,573	25.6	H	M			H		L		H
R3 - Flat Roof	Rural	1,133,671	37.4									
	Urban	643,832	21.2									
	Total	1,777,503	58.6	Damage Risk as per that for the Wall supporting it								
TOTAL HOUSES*		3,029,917										

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