

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

Table No. : UK 06

State : UTTARAKHAND

GARHWAL

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 %					
				6.0	94.0			1.3		98.7			
WALL													
A1 - Mud & Unburnt Brick Wall	Rural	5,717	2.1										
	Urban	908	0.3										
	Total	6,625	2.4	VH	H			VH		M			
A2 - Stone Wall not packed with mortar	Rural	79,335	28.7										
	Urban	1,502	0.5										
	Total	80,837	29.2	VH	H			H		L			
Total - Category - A		87,462	31.7										
B - Burnt Bricks Wall & Stone wall packed with mortar	Rural	152,459	55.2										
	Urban	28,914	10.5										
	Total	181,373	65.7	H	M			H		L			
Total - Category - B		181,373	65.6										
C1 - Concrete Wall	Rural	1,511	0.5										
	Urban	1,001	0.4										
	Total	2,512	0.9	M	L			L		VL			
C2 - Wood wall	Rural	882	0.3										
	Urban	271	0.1										
	Total	1,153	0.4	M	L			VH		M			
Total - Category - C		3,665	1.3										
X - Other Materials	Rural	2,972	1.1										
	Urban	820	0.3										
	Total	3,792	1.4	M	VL			VH		M			
Total - Category - X		3,792	1.4										
TOTAL HOUSES*		276,292											

ROOF												
R1 - Light Weight Sloping Roof	Rural	14,655	5.3									
	Urban	4,827	1.7									
	Total	19,482	7.0	M	M			VH		H		
R2 - Heavy Weight Sloping Roof	Rural	134,263	48.6									
	Urban	927	0.3									
	Total	135,190	48.9	H	M			H		L		
R3 - Flat Roof	Rural	93,958	34.0									
	Urban	27,662	10.0									
	Total	121,620	44.0	Damage Risk as per that for the Wall supporting it								
TOTAL HOUSES*		276,292										

Probable Maximum Precipitation at a Station of the district in one day for arial extent of 1000 sqm. 409 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