

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

**Table No. : HR 03**

**State : HARYANA**

**YAMUNANAGAR**

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				91.3		8.7		35.9		
WALL															
A1 - Mud & Unburnt Brick Wall	Rural	12,458	3.8												
	Urban	3,754	1.1												
	Total	16,212	4.9		H			VH		M			VH		
A2 - Stone Wall not packed with mortar	Rural	1,465	0.4												
	Urban	1,551	0.5												
	Total	3,016	0.9		H			H		L			VH		
Total - Category - A		19,228	5.8												
B - Burnt Bricks Wall & Stone wall packed with mortar	Rural	179,011	54.0												
	Urban	117,573	35.5												
	Total	296,584	89.5		M			H		L			H/M		
Total - Category - B		296,584	89.5												
C1 - Concrete Wall	Rural	3,971	1.2												
	Urban	4,543	1.4												
	Total	8,514	2.6		L			L		VL			L/VL		
C2 - Wood wall	Rural	192	0.1												
	Urban	193	0.1												
	Total	385	0.2		L			VH		M			H		
Total - Category - C		8,899	2.7												
X - Other Materials	Rural	5,471	1.7												
	Urban	1,368	0.4												
	Total	6,839	2.1		VL			VH		M			VH		
Total - Category - X		6,839	2.1												
TOTAL HOUSES*		331,550													
ROOF															
R1 - Light Weight Sloping Roof	Rural	61,824	18.6												
	Urban	14,029	4.2												
	Total	75,853	22.8		M			VH		H			VH		
R2 - Heavy Weight Sloping Roof	Rural	19,403	5.9												
	Urban	5,297	1.6												
	Total	24,700	7.5		M			H		L			H		
R3 - Flat Roof	Rural	121,341	36.6												
	Urban	109,656	33.1												
	Total	230,997	69.7	Damage Risk as per that for the Wall supporting it											
TOTAL HOUSES*		331,550													

**Probable Maximum Precipitation at a Station of the district in 24 hrs is 520 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