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

Table No. : PN 12 **State : PUNJAB** **BATHINDA**

Wall / Roof		No. of Houses	%	EQ Zone V	EQ Zone IV	EQ Zone III	EQ Zone II	Wind Velocity 55 & 50	Wind Velocity 47	Wind Velocity 44 & 39	Wind Velocity 33	Flood Prone Area in %
				Area in %				Area in %				
						98.3	1.7	3.8	96.2			27.5
WALL												
A1 - Mud &	Rural	10,265	3.1									
Unburnt Brick Wall	Urban	3,258	1.0									
	Total	**13,523**	**4.1**			M	L	VH	H			VH
A2 - Stone Wall	Rural	1,888	0.6									
not packed with mortar	Urban	920	0.3									
	Total	**2,808**	**0.9**			M	L	H	M			VH
Total - Category - A		**16,331**	**5.0**									
B - Burnt Bricks Wall	Rural	184,896	56.6									
& Stone wall packed	Urban	110,235	33.7									
with mortar	**Total**	**295,131**	**90.3**			L	VL	H	M			H/M
Total - Category - B		**295,131**	**90.3**									
C1 - Concrete Wall	Rural	5,059	1.5									
	Urban	6,232	1.9									
	Total	**11,291**	**3.4**			VL	VL	L	VL			L/VL
C2 - Wood wall	Rural	169	0.1									
	Urban	105	-									
	Total	**274**	**0.1**			VL	VL	VH	H			H
Total - Category - C		**11,565**	**3.5**									
X - Other Materials	Rural	2,717	0.8									
	Urban	1,171	0.4									
	Total	**3,888**	**1.2**			VL	VL	VH	H			VH
Total - Category - X		**3,888**	**1.2**									
TOTAL HOUSES*		**326,915**										
ROOF												
R1 - Light Weight	Rural	24,527	7.5									
Sloping Roof	Urban	7,615	2.3									
	Total	**32,142**	**9.8**			L	VL	VH	VH			VH
R2 - Heavy Weight	Rural	27,460	8.4									
Sloping Roof	Urban	4,072	1.2									
	Total	**31,532**	**9.6**			L	VL	H	M			H
R3 - Flat Roof	Rural	153,007	46.8									
	Urban	110,234	33.7									
	Total	**263,241**	**80.5**	*Damage Risk as per that for the Wall supporting it*								
TOTAL HOUSES*		**326,915**										

Probable Maximum Precipitation at a Station of the district in 24 hrs is 400 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 chocked 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