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

Table No. : BH 05　　　　**State : BIHAR**　　　　　　　**MADHUBANI**

Wall / Roof		No. of Houses	%	V	IV	III	II	55 & 50	47	44 & 39	33	Flood Prone Area in %
		Census Houses		**EQ Zone**				**Wind Velocity m/s**				
				Area in %				Area in %				
				100					100			48.5
WALL												
A1 - Mud &	Rural	107,153	10.0									
Unburnt Brick Wall	Urban	2,875	0.3									
	Total	110,028	10.3	VH					H			VH
A2 - Stone Wall	Rural	6,917	0.6									
not packed with mortar	Urban	412	-									
	Total	7,329	0.6	VH					M			VH
Total - Category - A		117,357	11.0									
B - Burnt Bricks Wall	Rural	447,907	41.9									
& Stone wall packed	Urban	26,621	2.5									
with mortar	Total	474,528	44.4	H					M			H/M
Total - Category - B		474,528	44.4									
C1 - Concrete Wall	Rural	5,219	0.5									
	Urban	396	-									
	Total	5,615	0.5	M					VL			L/VL
C2 - Wood wall	Rural	4,361	0.4									
	Urban	159	-									
	Total	4,520	0.4	M					H			H
Total - Category - C		10,135	0.9									
X - Other Materials	Rural	457,747	42.8									
	Urban	8,528	0.8									
	Total	466,275	43.6	M					H			VH
Total - Category - X		466,275	43.6									
TOTAL HOUSES*		**1,068,295**										
ROOF												
R1 - Light Weight	Rural	660,518	61.8									
Sloping Roof	Urban	15,829	1.5									
	Total	676,347	63.3	M					VH			VH
R2 - Heavy Weight	Rural	152,409	14.3									
Sloping Roof	Urban	4,948	0.5									
	Total	157,357	14.8	H					M			H
R3 - Flat Roof	Rural	216,377	20.3									
	Urban	18,214	1.7									
	Total	234,591	22.0	*Damage Risk as per that for the Wall supporting it*								
TOTAL HOUSES*		**1,068,295**										

Probable Maximum Precipitation at a Station of the district in one day for arial extent of 1000 sqm.　591 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