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

Table No. : MP 06 **State : MADHYA PRADESH** **SHIVPURI**

Wall / Roof		Census Houses		EQ Zone				Wind Velocity m/s				Flood Prone Area in %
		No. of Houses	%	V	IV	III	II	55 & 50	47	44 & 39	33	
				Area in %				Area in %				
							100		100			
WALL												
A1 - Mud &	Rural	101,341	24.5									
Unburnt Brick Wall	Urban	9,245	2.2									
	Total	**110,586**	**26.7**				L		H			
A2 - Stone Wall	Rural	62,928	15.2									
not packed with mortar	Urban	4,495	1.1									
	Total	**67,423**	**16.3**				L		M			
Total - Category - A		**178,009**	**43.1**									
B - Burnt Bricks Wall	Rural	171,854	41.6									
& Stone wall packed	Urban	46,672	11.3									
with mortar	*Total*	**218,526**	**52.9**				VL		M			
Total - Category - B		**218,526**	**52.9**									
C1 - Concrete Wall	Rural	394	0.1									
	Urban	260	0.1									
	Total	**654**	**0.2**				VL		VL			
C2 - Wood wall	Rural	2,978	0.7									
	Urban	214	0.1									
	Total	**3,192**	**0.8**				VL		H			
Total - Category - C		**3,846**	**0.9**									
X - Other Materials	Rural	11,860	2.9									
	Urban	724	0.2									
	Total	**12,584**	**3.1**				VL		H			
Total - Category - X		**12,584**	**3.0**									
TOTAL HOUSES*		**412,965**										
ROOF												
R1 - Light Weight	Rural	53,729	13.0									
Sloping Roof	Urban	4,571	1.1									
	Total	**58,300**	**14.1**				VL		VH			
R2 - Heavy Weight	Rural	278,505	67.4									
Sloping Roof	Urban	41,991	10.2									
	Total	**320,496**	**77.6**				VL		M			
R3 - Flat Roof	Rural	19,121	4.6									
	Urban	15,048	3.6									
	Total	**34,169**	**8.2**	*Damage Risk as per that for the Wall supporting it*								
TOTAL HOUSES*		**412,965**										

Probable Maximum Precipitation at a Station of the district in one day for arial extent of 1000 sqm. 567 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