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

Table No. : BH 35 **State : BIHAR** **NAWADA**

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 %				
					35.3	64.7			4.3	95.7		17.2
WALL												
A1 - Mud &	Rural	161,717	39.4									
Unburnt Brick Wall	Urban	5,828	1.4									
	Total	**167,545**	**40.8**		*H*	*M*			*H*	*M*		*VH*
A2 - Stone Wall	Rural	4,052	1.0									
not packed with mortar	Urban	581	0.1									
	Total	**4,633**	**1.1**		*H*	*M*			*M*	*L*		*VH*
Total - Category - A		**172,178**	**42.0**									
B - Burnt Bricks Wall	Rural	179,588	43.8									
& Stone wall packed	Urban	34,138	8.3									
with mortar	*Total*	**213,726**	**52.1**		*M*	*L*			*M*	*L*		*H/M*
Total - Category - B		**213,726**	**52.1**									
C1 - Concrete Wall	Rural	3,628	0.9									
	Urban	629	0.2									
	Total	**4,257**	**1.1**		*L*	*VL*			*VL*	*VL*		*L/VL*
C2 - Wood wall	Rural	739	0.2									
	Urban	96	-									
	Total	**835**	**0.2**		*L*	*VL*			*H*	*M*		*H*
Total - Category - C		**5,092**	**1.2**									
X - Other Materials	Rural	17,661	4.3									
	Urban	1,298	0.3									
	Total	**18,959**	**4.6**		*VL*	*VL*			*H*	*M*		*VH*
Total - Category - X		**18,959**	**4.6**									
TOTAL HOUSES*		**409,955**										
ROOF												
R1 - Light Weight	Rural	96,535	23.5									
Sloping Roof	Urban	5,664	1.4									
	Total	**102,199**	**24.9**		*M*	*L*			*VH*	*H*		*VH*
R2 - Heavy Weight	Rural	130,114	31.7									
Sloping Roof	Urban	5,946	1.5									
	Total	**136,060**	**33.2**		*M*	*L*			*M*	*L*		*H*
R3 - Flat Roof	Rural	140,736	34.3									
	Urban	30,960	7.6									
	Total	**171,696**	**41.9**	*Damage Risk as per that for the Wall supporting it*								
TOTAL HOUSES*		**409,955**										

Probable Maximum Precipitation at a Station of the district in one day for arial extent of 1000 sqm.   578 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