

21. METAL BUILDING SYSTEMS (MBS)

General Description

- Examples are warehouses, industrial facilities, small arenas
- Metal panel walls and standing seam roof
- Nearly always have a gable roof and relatively tall walls
- Large overhead doors
- Large-span single bay rigid frames
- Z or C-shaped purlin span between rigid frames
- Girts provided intermediate support of wall panels on tall walls
- Lateral loads resisted by x-bracing in direction parallel to ridge
- Relatively weak end-wall frame

Table 21

DOD*	Damage description	EXP	LB	UB
1	No visible damage	67	54	83
2	Inward or outward collapse of overhead doors	89	75	108
3	Metal wall and roof panels pulled off of the structure	95	78	120
4	Buckling of purlin	117	96	135
5	Column anchorage failed	118	95	138
6	Failure of x-braces in lateral load resisting system	138	118	158
7	Progressive collapse of rigid frames	143	120	168
8	Total destruction of building	155	132	178

* DOD is degree of damage

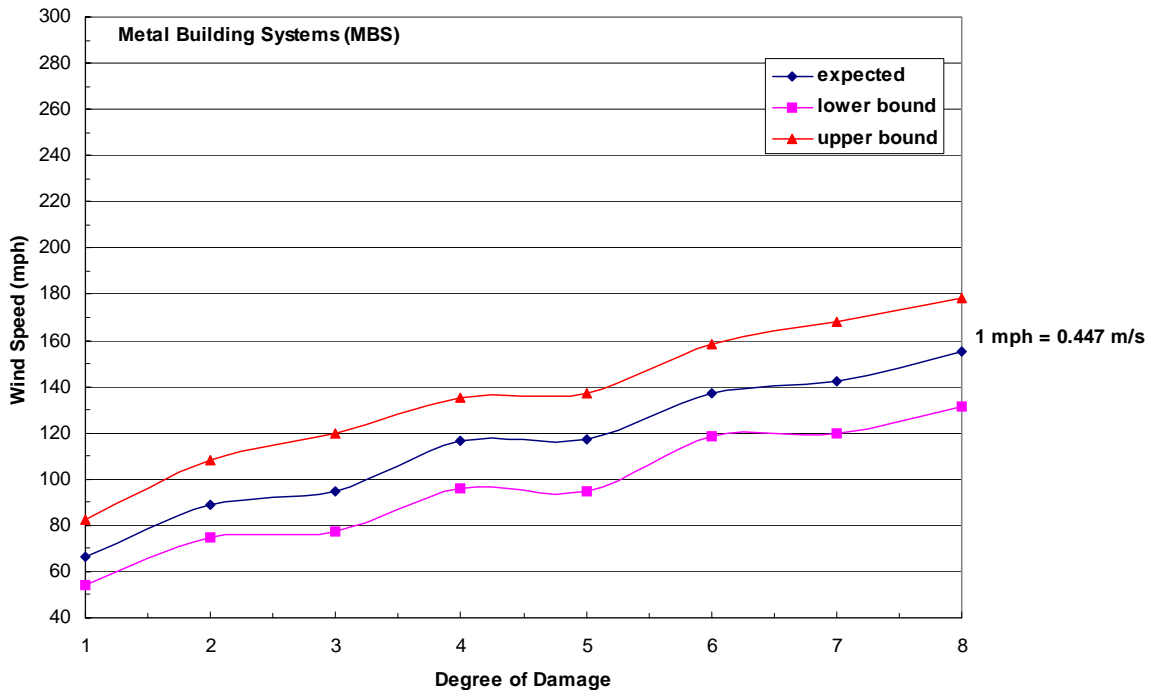


Figure 21. Wind Speed vs. Degree of Damage