

Type of Construction Comparison

Feature	Type IVA	Type IVB	Type IVC
Description of new Type IV types	100 % Noncombustible (NC) protection on all surfaces of Mass Timber (MT)	100% NC protection on all surfaces of mass timber (MT) except for limited exposed mass timber (MT) elements	100% exposed mass timber (MT) except: shafts, concealed spaces, and outside of exterior walls.
Permitted Materials			
structural building elements	MT or NC	MT or NC	MT or NC
Nonloadbearing Exterior Walls	MT or NC	MT or NC	MT, NC
Nonloadbearing Interior Walls	MT or NC	MT or NC	MT, NC
Shaft and Exit Enclosures			
Highrise* to 12 stories or 180 feet:	NC or MT protected with 2 (or 3 when 3 hr FRR) layers of 5/8" type X;	NC or MT protected with 2 layers of 5/8" type X gypsum or equiv each side of enclosure;	NC or MT protected with one layer of 5/8" type X gypsum each side of shaft or enclosure.
Above 12 stories or 180 feet: <small>*see IBC definition of highrise</small>	NC	NC	Not Permitted
Interior Protection			
Req'd 3 hr FRR	3 layers of 5/8" type X gypsum	SAME AS TYPE IV-A FOR PROTECTED MT.	All MT is allowed to be exposed except for 1 layer of 5/8" type x on outside surfaces of exterior walls, inside and outside of shafts and exit enclosures, and in concealed spaces.
Req'd 2 hr FRR	2 layers of 5/8" type X gypsum	Limited exposed MT elements must have same FRR but done by Calculated FRR of Section 722 (exposed MT is oversized to meet FRR of table 601).	
Req'd 1 hr FRR	1 layer of 5/8" type X gypsum		
Exterior Protection			
	Minimum of 1 layer of 5/8" type X gypsum	Minimum of 1 layer of 5/8" type X gypsum	Minimum of 1 layer of 5/8" type X gypsum

Floor Surface	1 inch of NC protection	1 inch of NC protection	No protection required
Roof	No NC protection on exterior roof surface, 2 layers of 5/8" type X gypsum on interior roof surfaces.	No NC protection on exterior roof surface, 2 layers of 5/8" type X gypsum on inside of roof deck.	No protection on roof surface or inside of roof deck is required (unless concealed space).
Concealed Spaces	No exposed MT in concealed spaces. NC protection in concealed spaces.	No exposed MT in concealed spaces. NC protection in concealed spaces.	No exposed MT in concealed spaces. One layer of 5/8" type x gypsum NC protection in concealed spaces.
Table 601, FRR			
Primary frame or bearing Wall: Floors: Roof:	3 hr FRR; 2 hr FRR; 1.5 hr FRR;	2 hr FRR; 2 hr FRR; 1 hr FRR;	2 hr FRR; 2 hr FRR; 1 hr FRR;
Fire Resistance Rating trade off	NO FRR reduction for sprinkler in 4.3.2.1	NO FRR reduction for sprinkler in 4.3.2.1	NO FRR reduction for sprinkler in 4.3.2.1