

Table 208-11A Earthquake-Force-Resisting Structural Systems of Concrete

Basic Seismic-Force Resisting System	R	Ω_0	System Limitation and Building Height Limitation by Seismic Zone, m	
			Zone 2	Zone 4
A. Bearing Wall Systems				
• Special reinforced concrete shear walls	4.5	2.8	NL	50
• Ordinary reinforced concrete shear walls	4.5	2.8	NL	NP
B. Building Frame Systems				
• Special reinforced concrete shear walls or braced frames	5.5	2.8	NL	75
• Ordinary reinforced concrete shear walls or braced frames	5.6	2.2	NL	NP
• Intermediate precast shear walls or braced frames	5.5	2.8		
C. Moment-Resisting Frame Systems				
• Special reinforced concrete moment frames	8.5	2.8	NL	NL
• Intermediate reinforced concrete moment frames	5.5	2.8	NL	NP
• Ordinary reinforced concrete moment frames	3.5	2.8	NL	NP
D. Dual Systems				
• Special reinforced concrete shear walls	8.5	2.8	NL	NL
• Ordinary reinforced concrete shear walls	6.5	2.8	NP	NP
E. Dual System with Intermediate Moment Frames				
• Special reinforced concrete shear walls	6.5	2.8	NL	50
• Ordinary reinforced concrete shear walls	4.2	2.8	NL	50
• Shear wall frame interactive system with ordinary reinforced concrete moment frames and ordinary reinforced concrete shear walls	4.2	2.8	NP	NP
F. Cantilevered Column Building Systems				
• Cantilevered column elements	2.2	2.0	NL	10
G. Shear Wall- Frame Interaction Systems				
	5.5	2.8	NL	50

Table 208-11B Earthquake-Force-Resisting Structural Systems of Steel

Basic Seismic-Force Resisting System	R	Ω_0	System Limitation and Building Height Limitation by Seismic Zone, in	
			Zone 2	Zone 4
A. Bearing Wall Systems				
• Light steel-framed bearing walls with tension-only bracing	2.8	2.2	NL	20
• Braced frames where bracing carries gravity load	4.4	2.2	NL	20
• Light framed walls sheathed with wood structural panels rated for shear resistance or steel sheets	4.5	2.8	NL	20
• Light-framed walls with shear panels of all other light materials	4.5	2.8	NL	20
• Light-framed wall systems using flat strap bracing	2.8	2.2	NL	NP
B. Building Frame Systems				
• Steel eccentrically braced frames (EBF), moment-resisting connections at columns away from links	8.5	2.8	NL	30
• Steel eccentrically braced frames (EBF), non moment-resisting connections at columns away from links	6.0	2.2	NL	20
• Special concentrically braced frames (SCBF)	6.0	2.2	NL	30
• Ordinary concentrically braced frames (OCBF)	3.2	2.2	NL	NP
• Light-framed walls sheathed with wood structural panels / sheet steel panels	6.5	2.8	NL	20
• Light frame walls with shear panels of all other materials	2.5	2.8	NL	NP
• Buckling-restrained braced frames (BRBF), non moment-resisting beam-column connection	7	2.8	NL	30
• Buckling-restrained braced frames, moment-resisting beam-column connections	8	2.8	NL	30
• Special steel plate shear walls (SPSW)	7	2.8	NL	30
C. Moment-Resisting Frame Systems				
• Special moment-resisting frame (SMRF)	8.0	3	NL	NP
• Intermediate steel moment frames (IMF)	4.5	3	NL	NP
• Ordinary moment frames (OMF)	3.5	3	NL	NP
• Special truss moment frames (STMF)	6.5	3	NL	NP
• Special composite steel and concrete moment frames	8	3	NL	NP
• Intermediate composite moment frames	5	3	NL	NP
• Composite partially restrained moment frames	6	3	48	NP
• Ordinary composite moment frames	3	3	NP	NP
D. Dual Systems with Special Moment Frames				
• Steel eccentrically braced frames	8	2.8	NL	NP
• Special steel concentrically braced frames	7	2.8	NL	NP
• Composite steel and concrete eccentrically braced frame	8	2.8	NL	NP

Table 208-11B(cont'd) Earthquake-Force-Resisting Structural Systems of Steel

Basic Seismic-Force Resisting System	R	Ω_0	System Limitation and Building Height Limitation by Seismic Zone, m	
			Zone 2	Zone 4
• Composite steel and concrete concentrically braced frame	6	2.8	NL	NL
• Composite steel plate shear walls	7.5	2.8	NL	NL
• Buckling-restrained braced frame	8	2.8	NL	NL
• Special steel plate shear walls	8	2.8	NL	NL
• Masonry shear wall with steel OMRF	4.2	2.8	NL	50
• Steel EBF with steel SMRF	8.5	2.8	NL	NL
• Steel EBF with steel OMRF	4.2	2.8	NL	50
• Special concentrically braced frames with steel SMRF	7.5	2.8	NL	NL
• Special concentrically braced frames with steel OMRF	4.2	2.8	NL	50
E. Dual System with Intermediate Moment Frames				
• Special steel concentrically braced frame	6	2.8	NL	NP
• Composite steel and concrete concentrically braced frame	5.5	2.8	NL	NP
• Ordinary composite braced frame	3.5	2.8	NL	NP
• Ordinary composite reinforced concrete shear walls with steel elements	5	2.8	NL	NP
F. Cantilevered Column Building Systems				
• Special steel moment frames	2.2	2.0	10	10
• Intermediate steel moment frames	1.2	2.0	10	NP
• Ordinary steel moment frames	1.0	2.0	10	NP
• Cantilevered column elements	2.2	2.0	NL	10
G. Steel Systems not Specifically Detailed for Seismic Resistance, Excluding Cantilever Systems				
	3	3	NL	NP

Table 208-11C Earthquake-Force-Resisting Structural Systems of Masonry

Basic Seismic-Force Resisting System	R	Ω_0	System Limitation and Building Height Limitation by Seismic Zone, m	
			Zone 2	Zone 4
A. Bearing Wall Systems				
• Masonry shear walls	4.5	2.8	NL	50
B. Building Frame Systems				
• Masonry shear walls	5.5	2.8	NL	50
C. Moment-Resisting Frame Systems				
• Masonry moment-resisting wall frames (MMRWF)	6.5	2.8	NL	50
D. Dual Systems				
• Masonry shear walls with SMRF	5.5	2.8	NL	50
• Masonry shear walls with steel OMRF	4.2	2.8	NL	50
• Masonry shear walls with concrete IMRF	4.2	2.8	NL	NP
• Masonry shear walls with masonry MMRWF	6.0	2.8	NL	50

Table 208-11D Earthquake-Force-Resisting Structural Systems of Wood

Basic Seismic-Force Resisting System	R	Ω_0	System Limitation and Building Height Limitation by Seismic Zone (meters)	
			Zone 2	Zone 4
A. Bearing Wall Systems				
<ul style="list-style-type: none"> Light-framed walls with shear panels: wood structural panel walls for structures three stories or less 	5.5	2.8	NL	20
<ul style="list-style-type: none"> Heavy timber braced frames where bracing carries gravity load 	2.8	2.2	NL	20
<ul style="list-style-type: none"> Light-framed walls with wood shear panels walls for structures three stories or less 	NA	NA		
<ul style="list-style-type: none"> All other light framed walls 	NA	NA		
<ul style="list-style-type: none"> Heavy timber-braced frames where bracing carries gravity load 	2.8	2.2	NL	20
B. Building Frame Systems				
<ul style="list-style-type: none"> Light-framed walls with shear panels: wood structural panel walls for structures three stories or less 	6.5	2.8	NL	20
<ul style="list-style-type: none"> Ordinary heavy timber-braced frames 	5.6	2.2	NL	20