

9 ft. Nominal Heights: Allowable Loads

Strong Frame™ Ordinary Moment Frame – 9 ft. Nominal Heights

Model No.	Clear Opening Width, W1	Outside Frame Width, W2	Allowable ASD Shear Load V (lbs) ¹		Maximum Total Gravity Load, W _{Max} ³ (lbs)	Drift at Allow Shear Load V (in.)	Shear Reaction Factor, X ⁴	Maximum Column Reactions ⁴			Top Plate to Nailer Connection		Total Frame Weight (lbs)
			Maximum Shear ²	Minimum Shear ³				Tension ⁵ (lbs)	Shear due to w + V (lbs)	Shear due to W _{Max} + V (lbs)	16d Option ⁶	¼" x 3½" SDS Screw Option ⁶	
OMF69-8x9	8'-2"	9'-8"	3625	3360	36500	0.60	0.060	3480	2240	3870	17	9	810
OMF612-8x9	8'-2"	9'-8"	4260	3855	40000	0.60	0.038	4090	2400	3450	19	9	842
OMF99-8x9	8'-2"	10'-2"	7625	7410	31500	0.60	0.097	7140	4520	6760	34	15	883
OMF912-8x9	8'-2"	10'-2"	10015	9630	40000	0.60	0.074	9375	5550	7775	45	19	916
OMF129-8x9	8'-2"	10'-8"	10225	10035	28500	0.60	0.114	9300	5970	8265	46	19	885
OMF1212-8x9	8'-2"	10'-8"	14365	14100	36000	0.60	0.095	13060	7900	10470	64	27	917
OMF1512-8x9	8'-2"	11'-2"	19270	19130	22500	0.60	0.113	17070	10510	12110	86	36	936
OMF69-10x9	10'-2"	11'-8"	3465	3270	30500	0.60	0.082	2720	2450	4135	16	11	868
OMF612-10x9	10'-2"	11'-8"	4160	3855	40000	0.60	0.053	3265	2545	4050	19	11	907
OMF99-10x9	10'-2"	12'-2"	6995	6850	25500	0.60	0.125	5375	4610	6615	32	13	942
OMF912-10x9	10'-2"	12'-2"	9550	9240	40000	0.60	0.098	7335	5650	8540	43	18	981
OMF129-10x9	10'-2"	12'-8"	9140	9005	24000	0.60	0.144	6855	5885	7960	41	17	943
OMF1212-10x9	10'-2"	12'-8"	13445	13210	34500	0.60	0.122	10085	7835	10815	60	25	982
OMF1512-10x9	10'-2"	13'-2"	17655	17560	20000	0.60	0.142	12960	10155	11620	79	33	1000
OMF69-12x9	12'-4"	13'-10"	3295	3160	26000	0.60	0.107	2155	2820	4360	15	13	932
OMF612-12x9	12'-4"	13'-10"	4045	3895	28000	0.60	0.072	2645	2775	3965	18	13	977
OMF99-12x9	12'-4"	14'-4"	6385	6290	22000	0.60	0.156	4105	4855	6575	29	13	1006
OMF912-12x9	12'-4"	14'-4"	9055	8845	34000	0.60	0.126	5825	5870	8705	41	17	1051
OMF129-12x9	12'-4"	14'-10"	8155	8070	20500	0.60	0.176	5140	5990	7645	37	15	1007
OMF1212-12x9	12'-4"	14'-10"	12500	12395	22500	0.60	0.153	7880	7915	9640	56	23	1052
OMF1512-12x9	12'-4"	15'-4"	16085	16020	18500	0.60	0.174	9955	9970	11230	72	30	1071
OMF69-16x9	16'-4"	17'-10"	3000	2990	16000	0.60	0.157	1505	4165	4005	17	17	1050
OMF612-16x9	16'-4"	17'-10"	3840	3840	15500	0.60	0.110	1925	3570	3625	18	17	1107
OMF99-16x9	16'-4"	18'-4"	5465	5465	13500	0.60	0.215	2705	6270	5635	25	17	1124
OMF912-16x9	16'-4"	18'-4"	8215	8215	11500	0.60	0.180	4065	6610	6180	37	17	1181
OMF129-16x9	16'-4"	18'-10"	6740	6740	12000	0.60	0.236	3280	7230	6200	30	17	1125
OMF1212-16x9	16'-4"	18'-10"	10985	10985	8000	0.60	0.211	5350	8460	7180	49	21	1182
OMF1512-16x9	16'-4"	19'-4"	11445	11445	8000	0.50	0.234	5495	9060	7595	51	22	1200

- Allowable shear loads are applicable to Seismic Designs utilizing R = 3.5 and Wind Designs.
- Maximum shear is allowable horizontal shear force, V, applied in combination with allowable stress design uniform gravity loads, w = 800-plf dead load, 400-plf floor live load, and 400-plf roof live load. Where vertical loads exceed these values, use minimum shear loads.
- Minimum shear is allowable horizontal shear force, V, applied in combination with maximum total gravity load, W_{Max}, which may be applied as a single point load, P=W_{Max}, at mid-span or as a uniform distributed load, w_{Max} = W_{Max}/L_{beam}.
- Maximum horizontal column shear reactions occur at the compression column and can be solved by the equations:

Compression Column: V = Design Frame Shear (lbs)
 $R_H = \frac{V}{2} + X(P)$
 or
 $R_H = \frac{V}{2} + X(\frac{2}{3}wL)$

Tension Column
 $R_H = \frac{V}{2}$

Note: Designer to determine governing load combinations based on the applicable building code.
- Tension reactions are for lateral shear and neglect resisting vertical load. Reduced tension forces may be calculated by the Designer by statics. T = (Vh-M_R)/L, where M_R = resisting moment due to Dead Load. L = column centerline dimension, h = H1 - 6 (steel column height).
- Fastening is minimum nailing or Simpson Strong-Tie® Strong-Drive® (SDS) screws to achieve the full allowable shear load. For seismic designs, designer shall evaluate if top plate to nailer connection is required to be designed as a collector for overstrength force levels and increase fastening as required for E_m level loading. Top plate splice, as required, by Designer.
- Drift at allowable shear is applicable to either vertical load case (uniform load, w, or maximum total load, W_{Max})
- Shear loads include seismic load combinations using S_{DS} = 1.0 for vertical acceleration effects. For seismic designs where S_{DS} > 1.0 factor dead load by the factor (1.0+ .14S_{DS}) to account for vertical acceleration effects, E_v, per code.
- Vertical beam deflections due to unfactored ASD gravity load do not exceed the following:

Dead load	L/480
Floor live load	L/600
Dead load + floor live load	L/360
W _{MAX} (Point Load)	L/300
- See page 21 and 25 for anchorage solutions.