

Design sections for risk category II, III, and IV-model SMFs

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Table. 1-1 Section sizes for SMFs designed with AISC 341-16 SCWB moment ratio equation (continued)

Story	Ext. Column		Int. Column		Beam
	Section	Db. Plate (mm)	Section	Db. Plate (mm)	
3-II+					
3	W14X132	8.0	W14X145	34.0	W18X50
2	W14X132	14.0	W14X145	44.0	W21X62
1	W14X132	14.0	W14X145	44.0	W21X62
Period	$T_1 = 1.279 \text{ sec}$				
3-III					
3	W14X145	5.0	W14X211	18.0	W18X50
2	W14X145	24.0	W14X211	52.0	W24X84
1	W14X145	24.0	W14X211	52.0	W24X84
Period	$T_1 = 1.030 \text{ sec}$				
3-IV					
3	W14X257	0.0	W24X250	0.0	W18X50
2	W14X257	12.0	W24X250	36.0	W30X108
1	W14X257	12.0	W24X250	36.0	W30X108
Period	$T_1 = 0.687 \text{ sec}$				
6-II					
5/6	W24X76	6.5	W14X132	36.0	W18X50
3/4	W24X94	6.5	W14X159	40.0	W21X62
1/2	W24X146	6.5	W14X211	42.0	W24X76
Period	$T_1 = 2.089 \text{ sec}$				
6-III					
5/6	W24X76	10.0	W24X94	30.0	W18X60
3/4	W24X94	12.0	W24X146	32.0	W24X76
1/2	W24X146	14.0	W24X176	40.0	W24X94
Period	$T_1 = 1.682 \text{ sec}$				
6-IV					
5/6	W24X131	16.0	W24X162	42.0	W24X94
3/4	W24X146	20.0	W24X250	40.0	W30X116
1/2	W24X192	18.0	W24X306	40.0	W33X130
Period	$T_1 = 1.134 \text{ sec}$				
9-II					
9	W24X76	6.5	W24X76	24.0	W18X50
7/8	W24X76	6.5	W24X76	24.0	W18X50
5/6	W24X84	8.0	W24X131	24.0	W21X62
3/4	W24X131	6.5	W24X146	26.0	W21X68
1/2	W24X207	0.0	W24X162	28.0	W24X76
Period	$T_1 = 2.931 \text{ sec}$				
9-III					
9	W24X84	10.0	W24X131	26.0	W21X62
7/8	W24X84	8.0	W24X131	24.0	W21X62
5/6	W24X103	8.0	W24X162	28.0	W24X84
3/4	W24X131	16.0	W24X192	38.0	W24X94
1/2	W24X192	8.0	W24X207	32.0	W27X94
Period	$T_1 = 2.384 \text{ sec}$				

Table. 1-1 Section sizes for SMFs designed with AISC 341-16 SCWB moment ratio equation (continued)

Story	Ext. Column		Int. Column		Beam
	Section	Db. Plate (mm)	Section	Db. Plate (mm)	
9-IV					
9	W24X131	20.0	W24X192	44.0	W27X102
7/8	W24X131	18.0	W24X192	44.0	W27X102
5/6	W24X176	22.0	W24X306	40.0	W33X130
3/4	W24X207	20.0	W24X335	42.0	W33X141
1/2	W24X250	14.0	W24X335	40.0	W33X141
Period	$T_1 = 1.560 \text{ sec}$				
12-II					
11/12	W24X76	6.5	W24X76	24.0	W18X50
9/10	W24X76	12.0	W24X103	30.0	W18X65
7/8	W24X131	6.5	W24X131	28.0	W21X68
5/6	W24X146	6.5	W24X162	28.0	W24X76
3/4	W24X192	4.0	W24X192	30.0	W24X84
1/2	W24X279	0.0	W24X192	36.0	W24X94
Period	$T_1 = 3.482 \text{ sec}$				
12-III					
11/12	W24X76	10.0	W24X94	30.0	W18X60
9/10	W24X94	12.0	W24X146	30.0	W21X73
7/8	W24X131	12.0	W24X162	34.0	W24X84
5/6	W24X162	12.0	W24X192	36.0	W24X94
3/4	W24X229	0.0	W24X207	32.0	W27X94
1/2	W24X306	0.0	W24X229	34.0	W27X102
Period	$T_1 = 3.015 \text{ sec}$				
12-IV					
11/12	W24X84	18.0	W36X150	26.0	W24X84
9/10	W24X131	20.0	W36X182	30.0	W30X108
7/8	W24X192	14.0	W36X231	32.0	W30X116
5/6	W24X250	10.0	W36X247	38.0	W33X130
3/4	W24X370	0.0	W36X282	32.0	W33X130
1/2	W24X370	0.0	W36X330	28.0	W33X130
Period	$T_1 = 1.993 \text{ sec}$				
15-II					
15	W24X76	8.0	W24X94	26.0	W18X55
13/14	W24X76	8.0	W24X94	24.0	W18X55
11/12	W24X94	12.0	W24X146	30.0	W24X76
9/10	W24X131	12.0	W24X162	34.0	W24X84
7/8	W24X176	8.0	W24X192	36.0	W24X94
5/6	W24X229	0.0	W24X192	36.0	W24X94
3/4	W24X306	0.0	W24X229	34.0	W27X102
1/2	W24X370	0.0	W24X250	30.0	W27X102
Period	$T_1 = 3.769 \text{ sec}$				

Table. 1-1 Section sizes for SMFs designed with AISC 341-16 SCWB moment ratio equation (continued)

Story	Ext. Column		Int. Column		Beam
	Section	Db. Plate (mm)	Section	Db. Plate (mm)	
15-III					
15	W36X160	0.0	W36X160	10.0	W18X55
13/14	W36X160	0.0	W36X160	10.0	W18X55
11/12	W36X182	0.0	W36X160	18.0	W24X76
9/10	W36X194	0.0	W36X160	20.0	W24X84
7/8	W36X210	0.0	W36X170	24.0	W27X94
5/6	W36X262	0.0	W36X182	28.0	W27X102
3/4	W36X330	0.0	W36X210	24.0	W30X108
1/2	W36X395	0.0	W36X231	26.0	W30X108
Period	$T_1 = 3.151 \text{ sec}$				
15-IV					
15	W36X170	4.0	W36X160	24.0	W24X84
13/14	W36X170	2.0	W36X160	24.0	W24X84
11/12	W36X194	4.0	W36X194	28.0	W30X108
9/10	W36X247	5.0	W36X247	30.0	W30X116
7/8	W36X302	2.0	W36X247	36.0	W33X130
5/6	W36X302	2.0	W36X262	34.0	W33X130
3/4	W36X441	0.0	W36X302	30.0	W33X130
1/2	W36X441	0.0	W36X302	30.0	W33X130
Period	$T_1 = 2.453 \text{ sec}$				

Table. 1-2 Section sizes for SMFs designed with the proposed SCWB moment ratio equation

Story	Ext. Column		Int. Column		Beam
	Section	Db. Plate (mm)	Section	Db. Plate (mm)	
3-II+					
3	W14X132	8.0	W14X176	26.0	W18X50
2	W14X132	14.0	W14X176	38.0	W21X62
1	W14X132	14.0	W14X176	38.0	W21X62
Period	$T_1 = 1.241 \text{ sec}$				
3-III					
3	W14X145	5.0	W14X257	5.0	W18X50
2	W14X145	24.0	W14X257	40.0	W24X84
1	W14X145	24.0	W14X257	40.0	W24X84
Period	$T_1 = 0.995 \text{ sec}$				
6-II					
5/6	W24X76	6.5	W14X132	36.0	W18X50
3/4	W24X94	6.5	W14X193	32.0	W21X62
1/2	W24X146	6.5	W14X283	24.0	W24X76
Period	$T_1 = 2.036 \text{ sec}$				
6-III					
5/6	W24X76	9.525	W24X103	26.988	W18X60
3/4	W24X103	11.113	W24X162	28.575	W24X76
1/2	W24X146	12.700	W24X207	33.338	W24X94
Period	$T_1 = 1.656 \text{ sec}$				
9-II					
9	W24X76	6.5	W24X94	20.0	W18X50
7/8	W24X76	6.5	W24X94	20.0	W18X50
5/6	W24X94	6.5	W24X131	24.0	W21X62
3/4	W24X131	6.5	W24X146	26.0	W21X68
1/2	W24X207	0.0	W24X176	26.0	W24X76
Period	$T_1 = 2.914 \text{ sec}$				
9-III					
9	W24X94	8.0	W24X146	24.0	W21X62
7/8	W24X94	8.0	W24X146	24.0	W21X62
5/6	W24X131	12.0	W24X176	32.0	W24X84
3/4	W24X192	14.0	W24X229	34.0	W24X94
1/2	W24X207	6.5	W24X250	30.0	W27X94
Period	$T_1 = 2.328 \text{ sec}$				

Table. 1-2 Section sizes for SMFs designed with the proposed SCWB moment ratio equation (continued)

Story	Ext. Column		Int. Column		Beam
	Section	Db. Plate (mm)	Section	Db. Plate (mm)	
12-II					
11/12	W24X76	6.5	W24X94	20.0	W18X50
9/10	W24X76	12.0	W24X131	28.0	W18X65
7/8	W24X131	6.5	W24X146	26.0	W21X68
5/6	W24X146	6.5	W24X176	26.0	W24X76
3/4	W24X192	4.0	W24X207	26.0	W24X84
1/2	W24X279	0.0	W24X229	28.0	W24X94
Period	$T_1 = 3.450 \text{ sec}$				
12-III					
11/12	W24X76	10.0	W24X131	26.0	W18X60
9/10	W24X94	12.0	W24X162	28.0	W21X73
7/8	W24X131	12.0	W24X192	30.0	W24X84
5/6	W24X162	12.0	W24X229	30.0	W24X94
3/4	W24X229	0.0	W24X250	24.0	W27X94
1/2	W24X306	0.0	W24X279	24.0	W27X102
Period	$T_1 = 2.976 \text{ sec}$				
15-II					
15	W24X76	8.0	W24X103	24.0	W18X55
13/14	W24X76	8.0	W24X103	22.0	W18X55
11/12	W24X131	8.0	W24X176	28.0	W24X76
9/10	W24X131	12.0	W24X207	28.0	W24X84
7/8	W24X176	8.0	W24X229	28.0	W24X94
5/6	W24X229	0.0	W24X229	28.0	W24X94
3/4	W24X306	0.0	W24X279	24.0	W27X102
1/2	W24X370	0.0	W24X279	24.0	W27X102
Period	$T_1 = 3.725 \text{ sec}$				
15-III					
15	W36X160	0.0	W36X160	10.0	W18X55
13/14	W36X160	0.0	W36X160	10.0	W18X55
11/12	W36X182	0.0	W36X160	18.0	W24X76
9/10	W36X194	0.0	W36X160	20.0	W24X84
7/8	W36X210	0.0	W36X194	22.0	W27X94
5/6	W36X262	0.0	W36X210	24.0	W27X102
3/4	W36X330	0.0	W36X247	26.0	W30X108
1/2	W36X395	0.0	W36X282	24.0	W30X108
Period	$T_1 = 3.136 \text{ sec}$				