



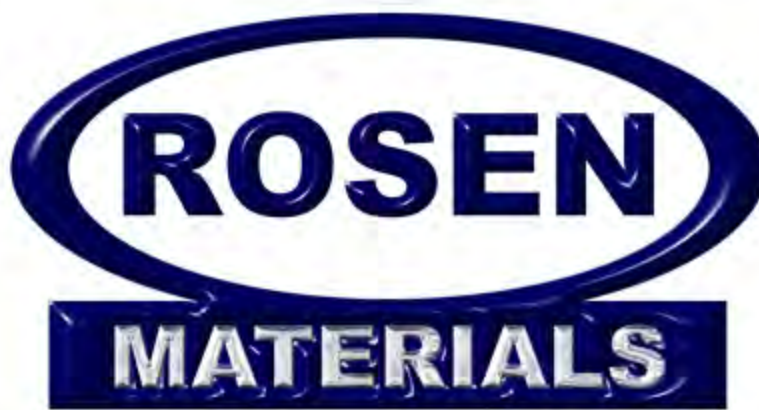
Metal Framing Specifications Guide

September 8, 2014



All Rosen Materials metal framing products are proudly made in the United States of America at our manufacturing facilities in Miami & Riviera Beach, Florida.

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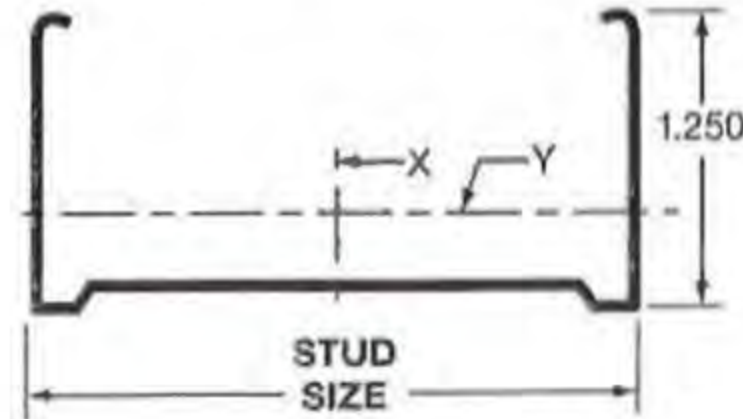
Drywall Studs

Drywall studs are roll-formed, galvanized, C-channel type, non-bearing steel members. They are used extensively for interior partitions. Drywall studs are fabricated in custom order and stock length sizes from corrosion resistant galvanized steel. The flanges are knurled to prevent screw ride and to facilitate the efficient installation of gypsum wallboard. Knockouts are provided for the installation of electrical wiring, piping, and horizontal bracing over the length of the stud.

Rosen Materials standard 25, 22, and 20 gage drywall products meet ASTM C-645, A-446, A-525, A-754 and A-653.

The properties and weights below are calculated on minimum design thickness in accordance with A.I.S.I. specifications.

Gage	Design Thickness
25	.0179
22	.0269
20	.0329



- Area - Gross Area
- Mx - Fully braced allowable x-axis moment.
- Ix - Moment of inertia about the x-axis.
- Sx - Section modulus for load about the x-axis.
- Rx - Radius of gyration about the x-axis.
- Iy - Moment of inertia about the y-axis.
- Sy - Section modulus about the y-axis.
- Ry - Radius of gyration about the y-axis.
- Xo - Distance from shear center to centroid along principal y-axis.
- J - St. Venant torsional constant.
- Cw - Warping torsion constant.
- Ro - Polar radius of gyration about shear center.
- B - $1-(Xo/Ro)$

25 Ga. Drywall Studs

Maximum Allowable Clear Span Height in Feet

Stud Size (in.)	Studs Spacing 12" on center			Studs Spacing 16" on center			Studs Spacing 24" on center		
	L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360
1 5/8	10.0	8.0	7.0	9.1	7.2	6.3	8.0	6.3	5.5
2 1/2	13.9	11.1	9.7	12.7	10.1	8.8	11.1	8.8	7.7
3 5/8	18.6	14.7	12.9	16.9	13.4	11.7	14.7	11.7	10.2
4	20.1	15.9	13.9	18.2	14.5	12.6	15.7	12.6	11.0
6	-	-	-	-	-	-	-	-	-

Physical Structural Properties

Stud Size (in.)	Weight (lbs./ft.)	Cross Section Area (sq. in.)	About Major Axis				About Minor Axis				m (in.)	Xo (in.)	J x 1000	Cw	ra (in.)	B BETA	Resisting Moment (x-x) (in.-lbs.)
			x (in.)	Ix (in. ⁴)	Sx (in. ³)	Rx (in.)	Iy (in. ⁴)	Sy (in. ³)	Ry (in.)								
1 5/8	.273	.067	.539	.036	.045	0.738	.014	.019	.452	.653	-1.101	.007	.010	1.373	.357	805	
2 1/2	.327	.069	.521	.093	.075	1.162	.014	.020	.455	.591	-.965	.009	.025	1.470	.569	1451	
3 5/8	.395	.089	.404	.227	.125	1.594	.019	.022	.456	.530	-.839	.011	.057	1.700	.756	2432	
4	.418	.096	.375	.287	.143	1.729	.020	.023	.452	.513	-.805	.012	.071	1.791	.798	2767	
6	.540	.132	.273	.765	.255	2.410	.073	.024	.4210	.439	-1.666	.016	.179	2.336	.919	-	

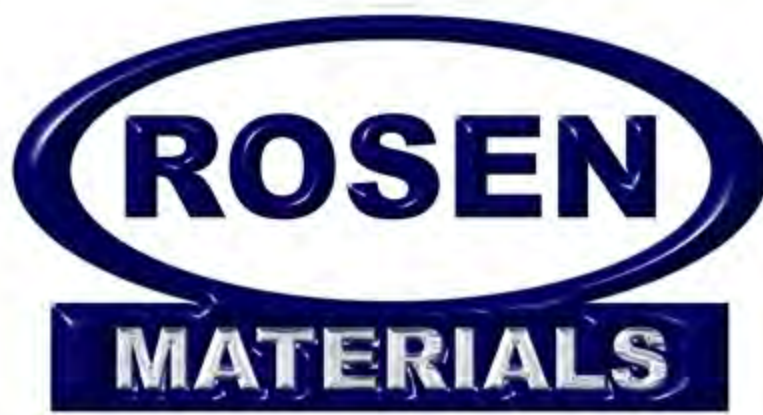
22 Ga. Drywall Studs

Maximum Allowable Clear Span Height in Feet

Wind Load (lb.sq. ft.)	Deflection Criteria	1 5/8" Stud		2 1/2" Stud			3 5/8" Stud			4" Stud			6" Stud			
		Stud Spacing (inches on center)														
		12	16	24	12	16	24	12	16	24	12	16	24	12	16	24
5	L/120	11.5	10.5	9.1	16.0	14.6	12.7	21.5	19.5	17.0	23.2	21.1	18.4	31.9	29.0	25.3
	L/240	9.1	8.3	7.3	12.7	11.6	10.1	17.0	15.5	13.5	18.4	16.7	14.6	25.3	23.0	20.1
	L/360	8.0	7.3	6.3	11.1	10.1	8.8	14.9	13.5	11.8	16.1	14.8	12.8	22.1	20.1	17.6
10	L/120	9.1	8.3	7.3	12.7	11.6	10.1	17.0	15.5	13.2	18.4	16.7	14.1	25.3	22.8	18.6
	L/240	7.3	6.6	5.8	10.1	9.2	8.0	13.5	12.3	10.7	14.6	13.3	11.6	20.1	18.3	16.0
	L/360	6.3	5.8	5.0	8.8	8.0	7.0	11.8	10.7	9.4	12.8	11.6	10.1	17.6	16.0	14.0
15	L/120	8.0	7.3	6.2	11.1	10.1	8.3	14.9	13.2	10.8	16.1	14.1	11.5	21.5	18.6	15.2
	L/240	6.3	5.8	5.0	8.8	8.0	7.0	11.8	10.7	9.4	12.8	11.6	1.1	17.6	16.0	14.0
	L/360	5.5	5.0	4.4	7.7	7.0	6.1	10.3	9.4	8.2	11.2	10.1	8.9	15.4	14.0	12.2
20	L/120	7.3	6.6	5.4	10.1	8.8	7.2	13.2	11.4	9.3	14.1	12.2	10.0	18.6	16.1	13.2
	L/240	5.8	5.2	4.6	8.0	7.3	6.4	10.7	9.8	8.5	11.6	10.5	9.2	16.0	14.5	12.7
	L/360	5.0	4.6	4.0	7.0	6.4	5.6	9.4	8.5	7.5	10.1	9.2	8.0	14.0	12.7	11.1
30	L/120	6.2	5.4	4.4	8.3	7.2	5.9	1.8	9.3	7.6	11.5	10.0	8.2	15.2	13.2	10.6
	L/240	5.0	4.6	4.0	7.0	6.4	5.6	9.4	8.5	7.5	10.1	9.2	8.0	14.0	12.7	10.6
	L/360	4.4	4.0	3.5	6.1	5.6	4.9	8.2	7.5	6.5	8.9	8.0	7.0	12.2	11.1	9.7
40	L/120	5.4	4.7	3.8	7.2	6.3	5.1	9.3	8.1	6.8	10.0	8.7	7.1	13.2	11.4	7.9
	L/240	4.6	4.2	3.6	6.4	5.8	5.1	8.5	7.7	6.8	9.2	8.4	7.1	12.7	11.4	7.9
	L/360	4.0	3.6	3.2	5.6	5.1	4.4	7.5	6.8	5.9	8.0	7.3	6.4	11.1	10.1	7.9
50	L/120	4.8	4.2	3.4	6.5	5.6	4.6	8.3	7.2	5.9	8.9	7.7	6.3	11.8	9.5	6.3
	L/240	4.2	3.9	3.4	5.9	5.4	4.6	7.9	7.2	5.9	8.6	7.7	6.3	11.8	9.5	6.3
	L/360	3.7	3.4	2.9	5.2	4.7	4.1	6.9	6.3	5.5	7.5	6.8	5.9	10.3	9.3	6.3

Physical Structural Properties

Stud Size (in.)	Weight (lbs./ft.)	Cross Section Area (sq. in.)	About Major Axis				About Minor Axis				m (in.)	Xo (in.)	J x 1000	Cw	ra (in.)	B BETA	Resisting Moment (x-x) (in.-lbs.)
			x (in.)	Ix (in. ⁴)	Sx (in. ³)	Rx (in.)	Iy (in. ⁴)	Sy (in. ³)	Ry (in.)								
1 5/8	.407	.099	.534	.054	.066	0.734	.020	.028	.448	.649	-1.092	.025	.015	1.362	.357	1307	
2 1/2	.487	.103	.516	.138	.110	1.157	.021	.029	.451	.586	-.956	.030	.037	1.459	.571	2346	
3 5/8	.590	.133	.399	.336	.185	1.589	.027	.032	.451	.525	-.831	.038	.083	1.690	.758	3915	
4	.624	.143	.371	.425	.213	1.724	.029	.033	.447	.508	-.797	.040	.104	1.782	.800	4494	
6	.807	.197	.269	1.138	.379	2.404	.034	.035	.415	.434	-.658	.053	.262	2.327	.920	7820	



20 Ga. Drywall Studs

Maximum Allowable Clear Span Height in Feet

Wind Load (lb.sq. ft.)	Deflection Criteria	1 5/8" Stud			2 1/2" Stud			3 5/8" Stud			4" Stud			6" Stud		
		Stud Spacing (inches on center)									12	16	24	12	16	24
		12	16	24	12	16	24	12	16	24	12	16	24	12	16	24
5	L/120	12.0	10.9	9.6	17.1	15.5	13.6	22.8	20.7	18.1	24.7	22.4	19.6	34.1	31.0	27.1
	L/240	9.6	8.7	7.6	13.6	12.3	10.8	18.1	16.5	14.4	19.6	17.8	15.5	27.1	24.6	21.5
	L/360	8.4	7.6	6.6	11.9	10.8	9.4	15.8	14.4	12.6	17.1	15.5	13.6	23.6	21.5	18.8
10	L/120	9.6	8.7	7.6	13.6	12.3	10.8	18.1	16.5	14.4	19.6	17.8	15.5	27.1	24.6	21.2
	L/240	7.6	6.9	6.0	10.8	9.8	8.6	14.4	13.1	11.4	15.5	14.1	12.3	21.5	19.5	17.0
	L/360	6.6	6.0	5.3	9.4	8.6	7.5	12.6	11.4	10.0	13.6	12.3	10.8	18.8	17.0	14.9
15	L/120	8.4	7.6	6.6	11.9	10.8	9.4	15.8	14.4	12.1	17.1	15.1	12.9	23.6	21.2	17.3
	L/240	6.6	6.0	5.3	9.4	8.6	7.5	12.6	11.4	10.0	13.6	12.3	10.8	18.8	17.0	14.9
	L/360	5.8	5.3	4.6	8.2	7.5	6.5	11.0	10.0	8.7	11.9	10.8	9.4	16.4	14.9	13.0
20	L/120	7.6	6.9	6.0	10.8	9.8	8.1	14.4	12.8	10.5	15.5	13.7	11.2	21.2	18.3	15.0
	L/240	6.0	5.5	4.8	8.6	7.8	6.8	11.4	10.4	9.1	12.3	11.2	9.8	17.0	15.5	13.5
	L/360	5.3	4.8	4.2	7.5	6.8	5.9	10.0	9.1	7.9	10.8	9.8	8.6	14.9	13.5	11.8
30	L/120	6.6	6.0	4.9	9.4	8.1	6.6	12.1	10.5	8.5	12.9	11.2	9.2	17.3	15.0	12.2
	L/240	5.3	4.8	4.2	7.5	6.8	5.9	10.0	9.1	7.9	10.8	9.8	8.6	14.9	13.5	11.8
	L/360	4.6	4.2	3.7	6.5	5.9	5.2	8.7	7.9	6.9	9.4	8.6	7.5	13.0	11.8	9.4
40	L/120	6.0	5.2	4.3	8.1	7.0	5.7	10.5	9.1	7.4	11.2	9.7	7.9	15.0	13.0	10.6
	L/240	4.8	4.3	3.8	6.8	6.2	5.4	9.1	8.2	7.2	9.8	8.9	7.8	13.5	12.3	10.6
	L/360	4.2	3.8	3.3	5.9	5.4	4.7	7.9	7.2	6.3	8.6	7.8	6.8	11.8	10.7	9.4
50	L/120	5.4	4.7	3.8	7.3	6.3	5.1	9.4	8.1	6.6	10.0	8.7	7.1	13.4	11.6	9.5
	L/240	4.4	4.0	3.5	6.3	5.7	5.0	8.4	7.6	6.6	9.1	8.3	7.1	12.6	11.4	9.5
	L/360	3.9	4.5	3.1	5.5	5.0	4.4	7.4	6.7	5.8	7.9	7.2	6.3	11.0	10.0	8.7

Physical Structural Properties

Stud Size (in.)	Weight (lbs./ft.)	Cross Section Area (sq. in.)	About Major Axis				About Minor Axis				m (in.)	Xo (in.)	J x 1000	Cw	ra (in.)	B BETA	Resisting Moment (x-x) (in.-lbs.)
			x (in.)	Ix (in. ⁴)	Sx (in. ³)	Rx (in.)	Iy (in. ⁴)	Sy (in. ³)	Ry (in.)								
1 5/8	.494	.120	.531	.064	.079	0.731	.024	.034	.445	.646	-1.086	.044	.018	1.355	.358	1646	
2 1/2	.592	.125	.513	.166	.133	1.155	.025	.035	.448	.583	-.950	.055	.044	1.452	.572	2957	
3 5/8	.718	.162	.396	.407	.224	1.586	.032	.039	.448	.522	-.825	.068	.099	1.683	.760	4928	
4	7.60	.174	.368	.515	.258	1.721	.034	.040	.444	.505	-.791	.073	.124	1.775	.801	5654	
6	.984	.240	.267	1.381	.460	2.400	.041	.042	.412	.431	-.652	.096	.314	2.321	.921	10099	

Note: Heights shown are based on using a variable PSF uniform load perpendicular to the studs and based on stud structural properties above. Values do not account for web crippling.

Maximum Stud Height, ft.-in., Single Layer Gypsum Wallboard, Each Side

Stud Spacing in.	Stud Width in.	L/120			
		5 PSF (240 Pa ²)	7.5 PSF (360 Pa ²)	10 PSF (480 Pa ²)	5 PSF (240 Pa ²)
16	1 5/8	11-0	9-7	8-9	8-9
	2 1/2	14-8	12-10	11-8	11-8
	3 5/8	19-5	17-0	15-5	15-5
	4	20-8	18-1	16-5	16-5
24	1 5/8	10-0	8-9	7-11	7-11
	2 1/2	13-5	11-9	10-8	10-8
	3 5/8	17-3	15-1	13-8	13-8
	4	18-5	16-3	14-7	14-7

Maximum Stud Height, ft.-in., Single Layer Gypsum Wallboard, Each Side

Stud Spacing in.	Stud Width in.	L/120			
		5 PSF (240 Pa ²)	7.5 PSF (360 Pa ²)	10 PSF (480 Pa ²)	5 PSF (240 Pa ²)
24	1 5/8	12-4	10-9	9-9	9-9
	2 1/2	15-10	13-10	12-7	12-7
	3 5/8	19-5	17-0	15-5	15-5
	4	20-8	18-1	16-5	16-5



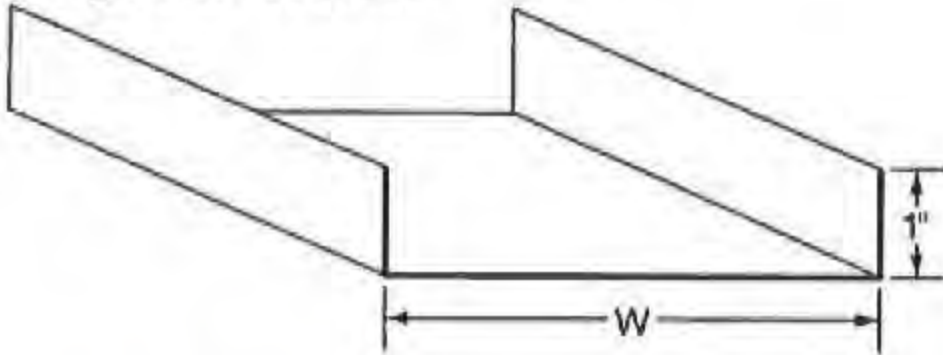
Drywall Track

Drywall track is roll-formed in a channel configuration with leg heights of 1 inch or 1 1/4 inches. Drywall track is manufactured for the corresponding stud sizes and gages. Track is manufactured with an over-bend in the leg for a friction fit.

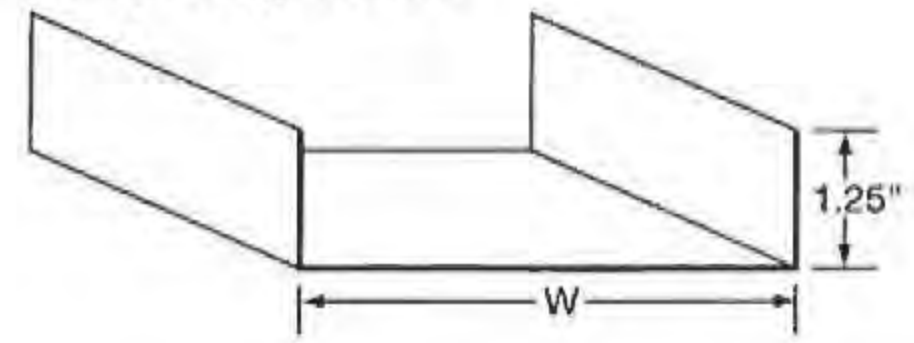
Rosen Materials standard 25, 22, and 20 gage track products meet ASTM C-645, A-568, A-653, A-525, A-463, A-792, and A-446.

The weights and structural properties below are calculated on minimum thickness in accordance with A.I.S.I. specifications.

Regular Track



Deep-leg track



Physical and Structural Properties

(RT) Regular Track – 25 GA. – 1" Leg

WEB W (in)	WT (lb/ft)	A (In ²)	I _x (in ⁴)	S _x (in ³)	M _x (in-k)
1 5/8	0.230	0.068	0.024	0.022	0.419
2 1/2	0.286	0.084	0.065	0.043	0.820
3 1/2	0.350	0.103	0.149	0.074	1.246
3 5/8	0.358	0.105	0.162	0.078	1.311
4	0.382	0.112	0.207	0.092	1.512
6	0.510	0.150	0.571	0.146	2.763

(DT) Deep-leg Track – 25 GA. – 1 1/4" Leg

WEB W (in)	WT (lb/ft)	A (In ²)	I _x (in ⁴)	S _x (in ³)	M _x (in-k)
1 5/8	0.262	0.077	0.027	0.023	0.438
2 1/2	0.318	0.093	0.071	0.045	0.853
3 1/2	0.382	0.112	0.161	0.077	1.290
3 5/8	0.390	0.115	0.175	0.081	1.356
4	0.414	0.122	0.219	0.084	1.561
6	0.542	0.159	0.602	0.150	2.829

(RT) Regular Track – 20 GA. – 1" Leg

WEB W (in)	WT (lb/ft)	A (In ²)	I _x (in ⁴)	S _x (in ³)	M _x (in-k)
1 5/8	0.400	0.117	0.050	0.055	0.950
2 1/2	0.497	0.146	0.131	0.097	1.721
3 5/8	0.623	0.183	0.315	0.163	2.963
4	0.665	0.196	0.399	0.188	3.439
6	0.889	0.261	1.098	0.351	6.149

(DT) Deep-leg Track – 20 GA. – 1 1/4" Leg

WEB W (in)	WT (lb/ft)	A (In ²)	I _x (in ⁴)	S _x (in ³)	M _x (in-k)
1 5/8	0.456	0.134	0.055	0.058	0.997
2 1/2	0.553	0.163	0.145	0.103	1.805
3 1/2	0.665	0.196	0.316	0.164	2.944
3 5/8	0.679	0.200	0.344	0.172	3.102
4	0.721	0.212	0.434	0.198	3.598
6	0.945	0.278	1.182	0.369	6.264