Weaver
CONSTRUCTION MANAGEMENT
3679 S Huron Street, Suite 404 Englewood, Colorado 80110
Phone: (303) 789-4111 FAX: (303) 789-4310

SUBMITTAL TRANSMITAL

February 22, 2012
Submittal No: 09252-001

PROJECT: **Harold Thompson Regional WRF**
Birdsall Rd.
Fountain, CO 80817
Job No. 2908

ENGINEER: **GMS, Inc.**
611 No. Weber St., #300
Colorado Springs, CO 80903
719-475-2935 Roger Sams

OWNER: **Lower Fountain Metropolitan Sewage Disposal District**
901 S. Santa Fe Ave.
Fountain, CO 80817
719-382-5303 James Heckman

CONTRACTOR: **Tri City Drywall, Inc.**
3720 E Saint Vrain St.
Colorado Springs, CO 80909
719-596-0095 Frank Hoover

SUBJECT: Steel Stud Framing in the Interior Rooms @ the EM building

SPEC SECTION: 09252 – Fabricated spec number

PREVIOUS SUBMISSION DATES: None

DEVIATIONS FROM SPEC: ___ YES _X_ NO

CONTRACTOR'S STAMP: This submittal has been reviewed by Weaver Construction Management and, unless indicated otherwise, has been found to be in conformance with the intent of the contract documents.

Contractor's Stamp:	Engineer's Stamp:
Date: 2/22/12 Reviewed by: H.C. Myers ( ) Reviewed Without Comments (X) Reviewed With Comments	

ENGINEER'S COMMENTS:_____
_____

Project: HDTWRF Project

Location: Fountain, CO

Supplier: Tri City Drywall

Date: 2/21/12

Submittal 09252-001 Steel Stud Framing for EM Building Interior Rooms

Additional Submittal Review Comments:

1. **Tri City Drywall is submitting 20 ga and 14 ga steel framing studs for mechanical, toilet, heated storage and storage rooms framing for the EM building.**

CEMCO
Steel Framing and Metal Lath

Corporate Headquarters & Main Manufacturing Facility
263 North Covina Lane, City of Industry, CA 91744
Phone: 800.775.2362 | Fax: 626.330.7598

Northern California Manufacturing Facility
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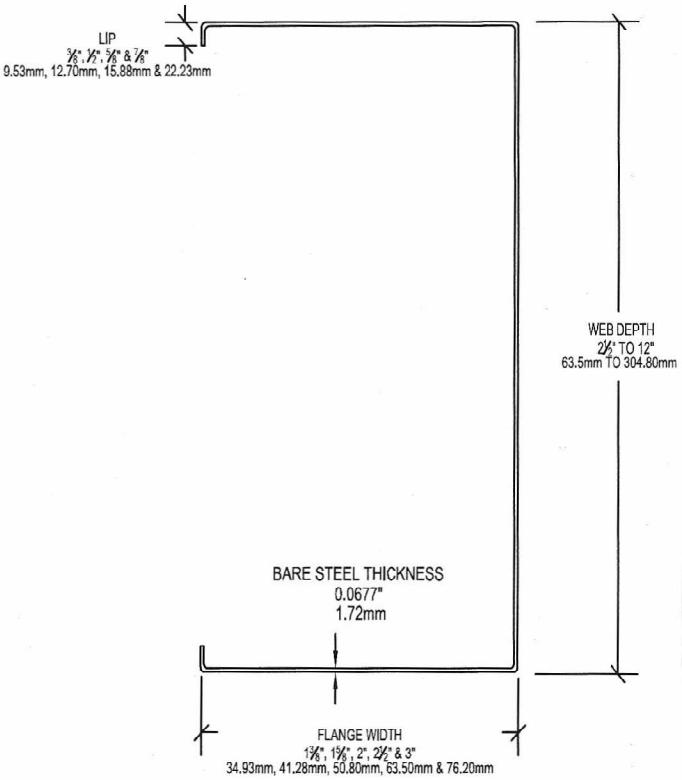
Phone: 925.473.9340 | Fax: 925.473.9341

Denver Colorado Manufacturing Facility
490 Osage Street, Denver, CO 80204
Phone: 303.572.3626 | Fax: 303.572.3627

"S" – PUNCHED "C" STUDS, 68 MIL (14 GA. STRUCTURAL)

Geometric Properties

"S" studs are fabricated in several web depths and flange widths. All CEMCO structural load-bearing studs are produced from hot-dipped galvanized steel in standard G60 coating. G90 is available upon special request.



Steel Thickness

Mil thickness	Design Thickness (in.)[1]	Minimum Thickness (in.)[1,2]
68	0.0713 (1.81 mm)	0.0677 (1.72 mm)

Color Code (painted on ends)

68 mil: Orange

ASTM & Code Standards

- ASTM A653/A653M, A924/A924M, & A1003/A1003M, C955, C1007
- SSMA Code Compliance Certification Program
- 2001 AISI NASPEC with 2004 supplement
- 2006 IBC
- 2007 CBC

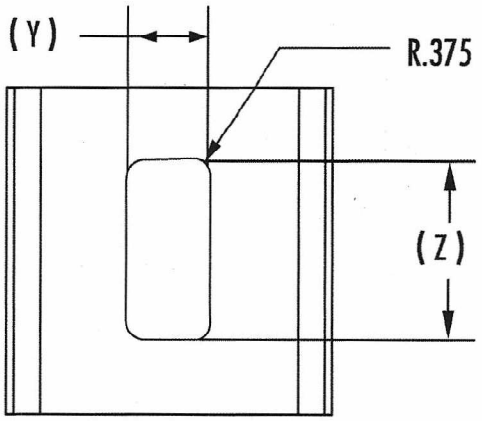
LEED Points and Recycled Content

By using CEMCO steel framing products, your project can contribute to earning points for:

- LEED MR 2.1 & 2.2 – Construction Waste Management: up to 2 points.
- LEED MR 4.1 & 4.2 – Recycled Content: up to 2 points.
- LEED MR 5.1 & 5.2 - Regional Proximity to project site.
- For more information on potential LEED points, contact CEMCO at www.cemcosteel.com

CEMCO cold-formed steel framing products contain 30% to 35% recycled steel.

- Total Recycled Content: 32.7%
- Post Consumer: 25.5%
- Pre-Consumer: 6.8%



Hole Detail

Standard hole centers are 24"	(Z)	(Y)
2½" to 3" stud	2.000"	0.750"
3½" to 14" stud	3.250"	1.500"

Technical Services

Contact Technical Services at 800.416.2278 for specific information or email to techservices@cemcosteel.com

CEMCO

Steel Framing and Metal Lath

SECTION PROPERTIES FOR STRUCURAL STUDS

Member	Design Thickness (in)	Gross							Effective Properties 50 ksi					Torsional Properties					
		Area	Weight	Ix	Sx	Rx	Iy	Ry	Ix	Sx	Ma	Vag	Vanet	Jx1000	Cw	Xo	m	Ro	Beta
		(in^2)	(lb/ft)	(in^4)	(in^3)	(in)	(in^4)	(in)	(in^4)	(in^3)	(in-k)	(lb)	(in)	(in^4)	(in^6)	(in)	(in)	(in)	
250S137-68	0.0713	0.390	1.33	0.386	0.309	0.994	0.095	0.495	0.386	0.308	10.65*	2866	519	0.661	0.138	-1.096	0.663	1.561	0.507
250S162-68	0.0713	0.443	1.51	0.450	0.360	1.007	0.162	0.605	0.450	0.357	12.11*	2866	519	0.752	0.268	-1.424	0.835	1.846	0.405
350S137-68	0.0713	0.461	1.57	0.849	0.485	1.357	0.107	0.482	0.849	0.472	14.12	4202	897	0.782	0.280	-0.973	0.598	1.738	0.687
350S162-68	0.0713	0.515	1.75	0.985	0.563	1.383	0.184	0.597	0.985	0.549	16.44	4202	897	0.872	0.514	-1.280	0.772	1.977	0.581
362S137-68	0.0713	0.470	1.60	0.922	0.509	1.401	0.109	0.480	0.922	0.493	14.77	4370	1004	0.797	0.302	-0.959	0.592	1.764	0.704
362S162-68	0.0713	0.524	1.78	1.069	0.590	1.429	0.186	0.596	1.069	0.574	17.18	4370	1004	0.887	0.552	-1.264	0.765	1.998	0.600
362S200-68	0.0713	0.595	2.02	1.265	0.698	1.458	0.337	0.753	1.265	0.666	19.95	4370	1004	1.008	1.089	-1.696	1.006	2.360	0.484
362S250-68	0.0713	0.666	2.27	1.490	0.822	1.496	0.578	0.931	1.490	0.689	20.63	4370	1004	1.129	1.837	-2.165	1.259	2.791	0.398
362S300-68	0.0713	0.773	2.63	1.756	0.969	1.507	1.010	1.143	1.756	0.812	24.31	4370	1004	1.310	3.965	-2.841	1.630	3.413	0.307
400S137-68	0.0713	0.497	1.69	1.165	0.582	1.531	0.112	0.475	1.165	0.558	16.7	4871	1356	0.842	0.375	-0.922	0.574	1.849	0.751
400S162-68	0.0713	0.550	1.87	1.346	0.673	1.564	0.192	0.591	1.346	0.648	19.41	4871	1356	0.933	0.677	-1.220	0.745	2.069	0.653
400S200-68	0.0713	0.622	2.12	1.589	0.795	1.599	0.349	0.750	1.589	0.751	22.48	4871	1356	1.054	1.318	-1.643	0.983	2.412	0.536
400S250-68	0.0713	0.693	2.36	1.864	0.932	1.640	0.599	0.929	1.864	0.775	23.19	4871	1356	1.174	2.225	-2.105	1.235	2.826	0.445
400S300-68	0.0713	0.800	2.72	2.195	1.098	1.657	1.048	1.145	2.195	0.913	27.33	4871	1356	1.356	4.683	-2.774	1.603	3.428	0.345
550S137-68	0.0713	0.604	2.05	2.503	0.910	2.036	0.123	0.451	2.503	0.909	31.42*	5350	2532	1.023	0.764	-0.801	0.514	2.234	0.871
550S162-68	0.0713	0.657	2.24	2.861	1.040	2.086	0.212	0.568	2.861	1.031	34.94*	5350	2532	1.114	1.342	-1.072	0.675	2.414	0.803
600S137-68	0.0713	0.640	2.18	3.094	1.031	2.200	0.125	0.443	3.094	1.03	30.84	5350	2879	1.084	0.930	-0.768	0.497	2.371	0.895
600S162-68	0.0713	0.693	2.36	3.525	1.175	2.255	0.218	0.560	3.525	1.164	39.47*	5350	2879	1.174	1.626	-1.032	0.655	2.543	0.835
600S200-68	0.0713	0.764	2.60	4.101	1.367	2.316	0.400	0.723	4.101	1.317	43.71*	5350	2879	1.295	3.047	-1.415	0.878	2.809	0.746
600S250-68	0.0713	0.836	2.84	4.727	1.576	2.378	0.688	0.908	4.723	1.386	41.49	5350	2879	1.416	5.145	-1.842	1.119	3.142	0.656
600S300-68	0.0713	0.943	3.21	5.534	1.845	2.423	1.214	1.135	5.534	1.61	48.2	5350	2879	1.597	9.992	-2.465	1.471	3.638	0.541
800S137-68	0.0713	0.782	2.66	6.303	1.576	2.839	0.134	0.414	6.285	1.468	43.96	4221	3367	1.325	1.789	-0.661	0.440	2.944	0.950
800S162-68	0.0713	0.836	2.84	7.089	1.772	2.913	0.235	0.530	7.070	1.663	49.8	4221	3367	1.416	3.093	-0.899	0.586	3.094	0.916
800S200-68	0.0713	0.907	3.09	8.140	2.035	2.996	0.435	0.692	8.140	1.964	65.21*	4221	3367	1.537	5.712	-1.248	0.796	3.319	0.859
800S250-68	0.0713	0.978	3.33	9.261	2.315	3.077	0.752	0.877	9.240	2.059	61.65	4221	3367	1.658	9.652	-1.644	1.027	3.597	0.791
800S300-68	0.0713	1.085	3.69	10.758	2.690	3.149	1.336	1.110	10.758	2.371	70.98	4221	3367	1.839	18.066	-2.226	1.363	4.012	0.692
1000S162-68	0.0713	0.978	3.33	12.325	2.465	3.550	0.246	0.502	11.978	2.154	64.51	3345	3345	1.658	5.121	-0.798	0.531	3.673	0.953
1000S200-68	0.0713	1.050	3.57	13.994	2.799	3.652	0.460	0.662	13.665	2.42	72.46	3345	3345	1.779	9.401	-1.120	0.729	3.876	0.917
1000S250-68	0.0713	0.978	3.33	12.325	2.465	3.550	0.246	0.502	12.256	2.276	44.98	3345	3345	11.978	2.154	-0.798	0.531	3.673	0.953
1000S300-68	0.0713	1.228	4.18	18.153	3.631	3.845	1.430	1.079	18.153	3.153	94.41	3345	3345	2.081	29.210	-2.034	1.271	4.482	0.794
1200S162-68	0.0713	1.121	3.81	19.518	3.253	4.1	0.255	0.477	18.39	2.645	79.19	2771	2771	1.899	7.739	-0.719	0.485	4.261	0.972
1200S200-68	0.0713	1.192	4.06	21.947	3.658	4.291	0.479	0.634	20.864	2.963	88.71	2771	2771	2.020	14.176	-1.017	0.673	4.455	0.948
1200S250-68	0.0713	1.263	4.30	24.484	4.081	4.402	0.836	0.813	23.575	3.007	90.04	2771	2771	2.141	24.034	-1.362	0.884	4.679	0.915
1200S300-68	0.0713	1.370	4.66	28.003	4.667	4.520	1.504	1.048	28.003	3.734	111.79	2771	2771	2.322	43.658	-1.876	1.193	5.005	0.860

1. Web-height to thickness ratio exceeds 200. Web Stiffeners are required at all support points and concentrated loads.

* Where Ma is noted with an asterisk, cold-work of forming is applicable and has been used.

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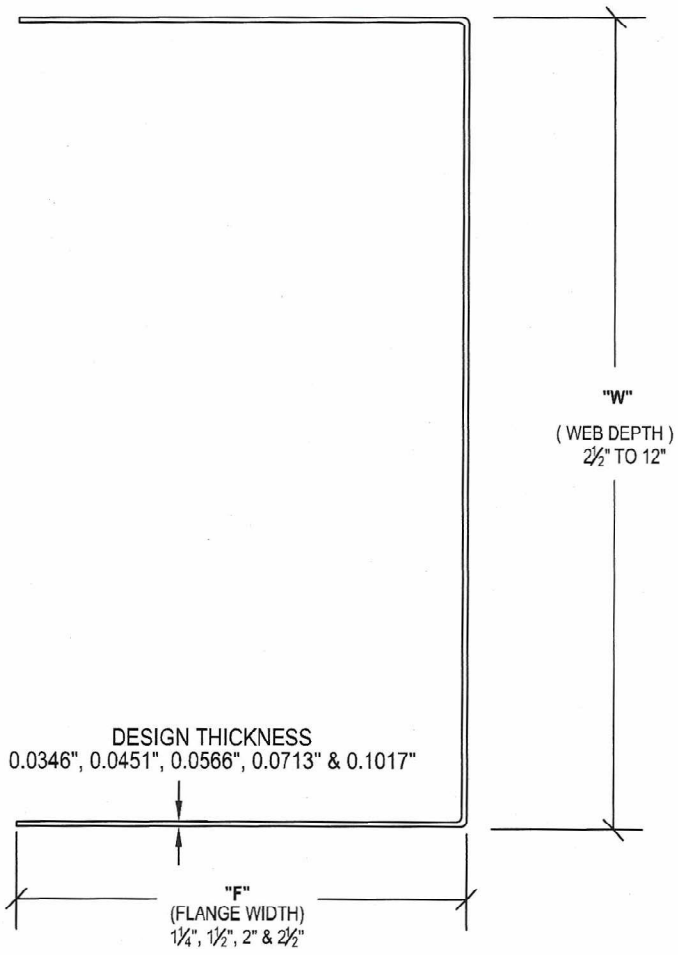
"T" – UN-PUNCHED TRACK, 33 MIL (20 GA. STRUCTURAL)

Geometric Properties

"T" tracks are fabricated in several web depths and flange widths. All CEMCO tracks designed to be used with structural load-bearing C-Studs are produced from hot-dipped galvanized steel in standard G60 coating weight. G90 is available upon special request. .



Steel Thickness

Mil thickness	Design Thickness (in.)[1]	Minimum Thickness (in.)[1,2]
33	0.0346 (0.88 mm)	0.0329 (.84 mm)

Color Code (painted on ends)

33 mil: White

ASTM & Code Standards

- A1003, A653, A924, C955, C1007
- SSMA Code Compliance Certification Program
- AISI 2001 NAS
- 2006 IBC
- 2007 CBC

LEED Points and Recycled Content

By using CEMCO steel framing products, your project can contribute to earning points for:

- LEED MR 2.1 & 2.2 – Construction Waste Management: up to 2 points.
- LEED MR 4.1 & 4.2 – Recycled Content: up to 2 points.
- LEED MR 5.1 & 5.2 - Regional Proximity to project site.
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CEMCO cold-formed steel framing products contain 30% to 35% recycled steel.

- Total Recycled Content: 32.7%
- Post Consumer: 25.5%
- Pre-Consumer: 6.8%

Technical Services

Contact Technical Services at 800.416.2278 for specific information or email to techservices@cemcosteel.com

CEMCO

Steel Framing and Metal Lath

SECTION PROPERTIES FOR STRUCURAL STUDS

Member	Design Thickness (in)	Gross							Effective Properties 33 ksi					Torsional Properties					
		Area	Weight	Ix	Sx	Rx	Iy	Ry	Ix	Sx	Ma	Vag	Vanet	Jx1000	Cw	Xo	m	Ro	Beta
		(in^2)	(lb/ft)	(in^4)	(in^3)	(in)	(in^4)	(in^4)	(in^3)	(in^3)	(in-k)	(lb))	(lb)	(in^4)	(in^5)	(in)	(in)	(in)	
250S137-33	0.0346	0.197	0.67	0.203	0.163	1.015	0.052	0.515	0.203	0.158	3.11	975	399	0.079	0.076	-1.141	0.677	1.612	0.499
250S162-33	0.0346	0.223	0.76	0.235	0.188	1.027	0.087	0.624	0.235	0.180	3.55	975	399	0.089	0.146	-1.47 0	0.859	1.898	0.401
350S137-33	0.0346	0.232	0.79	0.441	0.252	1.380	0.059	0.503	0.441	0.223	4.41	1024	487	0.093	0.153	-1.016	0.621	1.786	0.676
350S162-33	0.0346	0.258	0.88	0.508	0.290	1.404	0.098	0.617	0.508	0.257	5.08	1024	487	0.103	0.277	-1.324	0.796	2.026	0.573
362S137-33	0.0346	0.236	0.80	0.479	0.264	1.424	0.059	0.501	0.479	0.232	4.59	1024	521	0.094	0.165	-1.003	0.615	1.813	0.694
362S162-33	0.0346	0.262	0.89	0.551	0.304	1.450	0.099	0.616	0.551	0.268	5.29	1024	521	0.105	0.297	-1.308	0.789	2.048	0.592
362S200-33	0.0346	0.297	1.01	0.648	0.358	1.478	0.177	0.772	0.647	0.294	5.81	1024	521	0.118	0.577	-1.741	1.030	2.411	0.478
400S137-33	0.0346	0.249	0.85	0.603	0.301	1.556	0.061	0.496	0.603	0.259	5.12	976	595	0.099	0.204	-0.965	0.597	1.897	0.741
400S162-33	0.0346	0.275	0.94	0.692	0.346	1.586	0.103	0.611	0.692	0.299	5.91	976	595	0.110	0.363	-1.263	0.768	2.118	0.644
400S200-33	0.0346	0.310	1.05	0.812	0.406	1.619	0.183	0.769	0.812	0.328	6.49	976	595	0.124	0.697	-1.688	1.007	2.462	0.530
550S137-33	0.0346	0.301	1.02	1.283	0.467	2.064	0.067	0.472	1.283	0.453	8.95	699	699	0.12	0.411	-0.841	0.536	2.278	0.864
550S162-33	0.0346	0.327	1.11	1.458	0.530	2.112	0.113	0.589	1.458	0.512	10.11	699	699	0.13	0.713	-1.114	0.697	2.459	0.795
600S137-33	0.0346	0.318	1.08	1.582	0.527	2.229	0.069	0.464	1.548	0.455	8.98	638	638	0.127	0.500	-0.807	0.519	2.416	0.889
600S162-33	0.0346	0.344	1.17	1.793	0.598	2.282	0.116	0.581	1.793	0.577	11.41	638	638	0.137	0.861	-1.072	0.677	2.587	0.828
600S200-33	0.0346	0.379	1.29	2.075	0.692	2.340	0.209	0.743	2.058	0.621	12.28	638	638	0.151	1.593	-1.457	0.901	2.855	0.740
800S137-33[1]	0.0346	0.388	1.32	3.198	0.799	2.873	0.073	0.435	2.998	0.622	12.3	474	474	0.155	0.957	-0.696	0.460	2.987	0.946
800S162-33[1]	0.0346	0.413	1.41	3.582	0.896	2.943	0.125	0.550	3.384	0.710	14.03	474	474	0.165	1.630	-0.936	0.607	3.137	0.911
800S200-33[1]	0.0346	0.448	1.52	4.096	1.024	3.023	0.227	0.712	4.096	0.816	16.12	474	474	0.179	2.971	-1.288	0.817	3.363	0.853

1. Web-height to thickness ratio exceeds 200. Web Stiffeners are required at all support points and concentrated loads.

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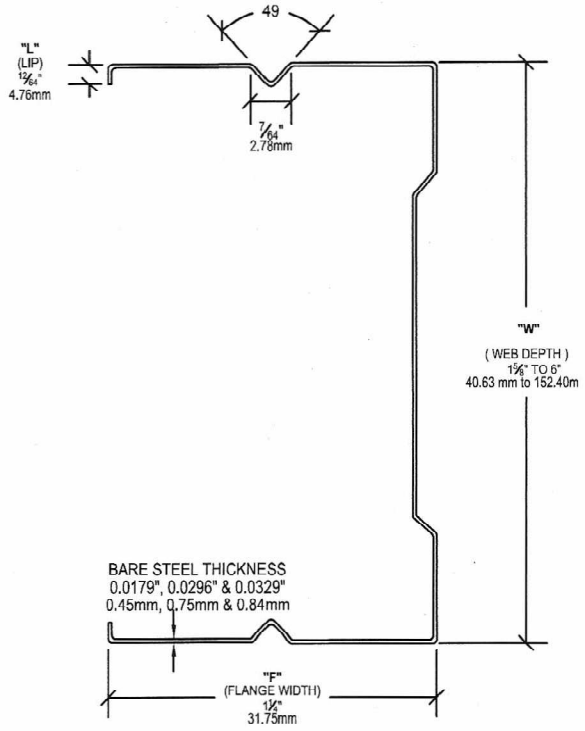
"S" – NON-STRUCTURAL PUNCHED "C" STUDS, 1-1/4" FLANGE

Geometric Properties

"S" studs are fabricated in 1-5 /8, 2-1 /2", 3-5 /8", 4", and 6" widths, from 18, 30, and 33 mil thick galvanized steel. The flange size is 1-1/4" with a return of .1875"



Steel Thickness

Mil thickness	Design Thickness (in.)[1]	Minimum Thickness (in.)[1,2]
33	0.0346 (0.88 mm)	0.0329 (.84 mm)

1) Uncoated Steel Thickness. Thickness is for carbon sheet steel
2) Minimum Thickness represents 95% of the design thickness and is the minimum acceptable thickness delivered to the job site, based on Section A3.4 of the 2001 AISI specification with 2004 AISI supplement.
3) Non Structural Studs are fabricated from hot- dipped galvanized steel complying with a minimum G40 coating. G60 coating is available upon request.

Color Code (painted on ends)

33 mil: White

ASTM & Code Standards

33 mil framing members meet or exceed the following standards:

- ASTM C645, A653, A924, & A1003.
- 2006 IBC, 2007 CBC and 2008 LABC.
- 2001 AISI NASPEC with 2004 supplement.
- For installation and storage refer to ASTM C754.

LEED Points and Recycled Content

By using CEMCO steel framing products, your project can contribute to earning points for:

- LEED MR 2.1 & 2.2 – Construction Waste Management: up to 2 points.
- LEED MR 4.1 & 4.2 – Recycled Content: up to 2 points.
- LEED MR 5.1 & 5.2 - Regional Proximity to project site.

CEMCO cold-formed steel framing products contain 30% to 35% recycled steel.

- Total Recycled Content: 32.3%
- Post Consumer: 25.5%
- Pre-Consumer: 6.8%

Technical Services

Contact Technical Services at 800.416.2278 for specific information or email to techservices@cemcosteel.com

ALLOWABLE HEIGHTS FOR NON-STRUCTURAL STUD MEMBERS

Deflection	L/120			L/240			L/360		
Spacing	12"	16"	24"	12"	16"	24"	12"	16"	24"
Section	Surface-Load 5 PSF - Interior only								
162S12533	12' 0"	10' 11"	9' 6"	9' 6"	8' 8"	7' 7"	8' 4"	7' 7"	6' 7"
250S12533	16' 7"	15' 1"	12' 10"	13' 2"	12' 0"	10' 6"	11' 6"	10' 6"	9' 2"
362S12533	21' 11"	18' 11"	15' 6"	17' 7"	16' 0"	14' 0"	15' 4"	14' 0"	12' 2"
400S12533	23' 2"	20' 0"	16' 4"	19' 0"	17' 3"	15' 1"	16' 7"	15' 1"	13' 2"
600S12533	31' 2"	27' 0"	22' 1"	26' 2"	23' 9"	20' 9"	22' 10"	20' 9"	18' 1"

NOTES: 1. Strength Multiplier = 1.0, 2. Deflection Multiplier = 1.0, 3. Studs considered unpunched for web crippling and shear, 4. Limiting heights based on continuous support of each flange over a full length stud.

NON-STRUCTURAL STUD PHYSICAL PROPERTIES

2004 Specification

Member	Design Thickness	Gross							Effective Properties 33 ksi					Torsional Properties					
		Area	Weight	Ix	Sx	Rx	Iy	Ry	Ix	Sx	Ma	Vag	Vanet	Jx1000	Cw	Xo	m	Ro	Beta
	(in)	(in^2)	(lb/ft)	(in^4)	(in^3)	(in)	(in^4)	(in)	(in^4)	(in^3)	(in-k)	(lb)	(lb)	(in^4)	(in^6)	(in)	(in)	(in)	
162S125-33	0.0346	0.15	0.49	0.067	0.083	0.679	0.028	0.440	0.066	0.069	1.37	601	105	0.058	0.016	-1.010	0.583	1.294	0.391
250S125-33	0.0346	0.18	0.60	0.178	0.142	1.006	0.033	0.431	0.175	0.125	2.48	975	399	0.070	0.040	-0.885	0.532	1.408	0.605
362S125-33	0.0346	0.22	0.73	0.421	0.232	1.400	0.037	0.413	0.415	0.182	3.59	1024	521	0.086	0.094	-0.769	0.480	1.650	0.783
400S125-33	0.0346	0.23	0.77	0.531	0.265	1.527	0.038	0.407	0.524	0.203	4.01	976	595	0.091	0.118	-0.738	0.465	1.744	0.821
600S125-33	0.0346	0.30	1.01	1.409	0.470	2.179	0.042	0.374	1.361	0.369	7.300	638	638	0.118	0.300	-0.608	0.399	2.293	0.930