

ICC-ES Evaluation Report

ESR-5837

Issued November 2025

Subject to renewal November 2026

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DIVISION: 05 00 00—METALS Section: 05 40 00—Cold-Formed Metal Framing DIVISION: 09 00 00—FINISHES Section: 09 22 16.13—Non-Structural Metal Stud Framing	REPORT HOLDER: REFINED METALS	EVALUATION SUBJECT: DRYWALL EQ FRAMING SYSTEMS	
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1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2024 and 2021 [International Building Code® \(IBC\)](#)
- 2024 and 2021 [International Residential Code® \(IRC\)](#)

Property evaluated:

- Structural

2.0 USES

Drywall EQ Framing Systems consist of nonstructural EQ Smart® Studs and Tracks and are used for interior nonload-bearing walls.

3.0 DESCRIPTION

3.1 General:

Product evaluated under this report are limited to the Drywall EQ Framing System: EQ Smart® Studs and Tracks noted in [Tables 1](#) and [2](#). The steel studs are cold-formed in a “C” shape with ribs in flanges and web as shown in [Figure 1](#). The steel tracks are channel-shaped with ribs in flanges and web as well. Flanges ends in tracks are fully bent as shown in [Figure 2](#). The last two digits of the member’s ID in the provided tables represent the design uncoated base-metal thickness in mils for studs and tracks. Minimum and design thicknesses of the studs and tracks are:

Thickness		Minimum Base-metal Thickness (in.)	Design Thickness (in.)
Mils	Gauge		
13	25	0.0128	0.0135
15	25	0.0143	0.015
19	20	0.0181	0.019

For SI Units: 1 inch = 25.4 mm.

The EQ Smart® Studs are manufactured with or without punch-outs. See [Figure 2](#) for punch-outs configurations and dimensions. The punch-outs (when provided) are located along the centerline of the webs with a minimum center-to-center spacing of 24 inches (610 mm). The minimum distance between end of the

stud and center of the web punch-out is 12 inches (305 mm). The EQ Smart[®] Tracks are manufactured without punch-outs.

3.2 Materials:

3.2.1 Steel: The members, as noted in [Tables 1](#) and [2](#), are formed from coils of steel complying with ASTM A653 CS Type B with minimum yield stress of 33 ksi (228 MPa), ASTM A1003 Nonstructural Grade 33 (NS 33), ASTM A1003 Nonstructural Grade 50 (NS 50), or ASTM A1003 Nonstructural Grade 70 (NS 70). The coating is per AISI S220-20, Section A4.1.1 (minimum G40).

3.2.2 Gypsum Wallboard: For composite wall assemblies, gypsum wallboards must be in accordance with the requirements of the IBC or IRC, as applicable. It must be Type X and comply with ASTM C1396.

3.2.3 Fasteners: Fasteners for attaching the gypsum wallboard to the studs and tracks must be No. 6, Type S, fine thread drywall bugle head screws conforming to ASTM C1002.

4.0 DESIGN AND INSTALLATION

4.1 Design:

EQ Smart[®] Studs and Tracks of the Drywall EQ Framing System and their connections must be designed and installed in accordance with IBC Section 2204 (2021 IBC Section 2210), using the section properties referenced in [Table 2](#). Section properties and design values in [Table 2](#) have been determined in accordance with the North American Specification for the Design of Cold-Formed Steel Structural Members [AISI S100-16 (2020) w/S2-20]. The allowable moments in [Table 2](#) are for use with Allowable Strength Design (ASD) and are for flexural members installed with the compression flange continuously braced. For other conditions of compression flange bracing, the allowable moment must be determined in accordance with AISI S100. The design of members must address other aspects such as web crippling and combined loading conditions, as applicable, in accordance with AISI S100.

Allowable wall heights for interior nonload-bearing non-composite wall design are shown in [Table 3](#). These heights can conservatively be applied for interior nonload-bearing composite walls as well.

For use of the EQ Smart[®] Studs and Tracks under the IRC, the cold-formed steel members must be limited to engineered structures, in accordance with IRC Section R301.1.3.

4.2 Installation:

Installation of the EQ Smart[®] Studs and Tracks must be in accordance with the applicable codes, the approved plans, and this report. In the event of a conflict between the plans submitted for approval and this report, this report governs. The approved plans must be available in the jobsite at all times during installation.

Sheathing used with non-composite system walls must be installed in accordance with the applicable code requirements for the sheathing material. Sheathing must be installed on both sides of the wall framing to provide continuous lateral bracing for studs flanges.

5.0 CONDITIONS OF USE:

The EQ Smart[®] Studs and Tracks of the Drywall EQ Framing System described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1** Minimum base steel thickness of cold-formed steel members, as delivered to the jobsite, must be as specified in Section 3.1 of this report.
- 5.2** Connections evaluation, including members at supports and near ends, are outside the scope of the evaluation report and must be designed by a registered design professional.
- 5.3** Design of the attachment of the wall to the surrounding structure is outside the scope of this report.
- 5.4** Installation of the gypsum wallboard must meet the requirements of ASTM C840 or GA-216.
- 5.5** Use of EQ Smart[®] Studs and Tracks in other than non-structural applications, as defined by AISI S220, is outside the scope of this report.
- 5.6** The construction documents prepared or reviewed by a registered design professional, where required by the statutes of the jurisdiction in which the project is to be constructed specifying the Drywall EQ Framing System, must indicate compliance with this evaluation report and applicable codes and must be submitted to the code official for approval.
- 5.7** The EQ Smart[®] Studs and Tracks of the Drywall EQ Framing System are manufactured under an approved quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the [ICC-ES Acceptance Criteria for Cold-formed Steel Framing Members \(AC46\)](#), dated October 2024.

7.0 IDENTIFICATION

- 7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-5837) along with the name, registered trademark, or registered logo of the report holder must be included in the product label.
- 7.2 In addition, each EQ Smart[®] Stud and Track covered by this report must have a legible label or stamp, at a maximum spacing of 96 inches (2438 mm) on center, indicating the manufacturer's name or initials (Refined Metals); the bare metal thickness in mils or inches; the minimum yield strength in ksi (if other than 33 ksi); the coating designation (if other than G40); and the designation "NS".
- 7.3 The report holder's contact information is the following:

REFINED METALS
15-30 131 STREET, COLLEGE POINT
QUEENS, NEW YORK 11356
+1 (929) 235-9009
napoleon.k@refined-metal.com

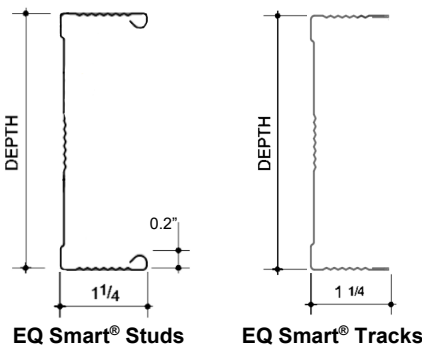


FIGURE 1—EQ SMART[®] STUDS AND TRACKS

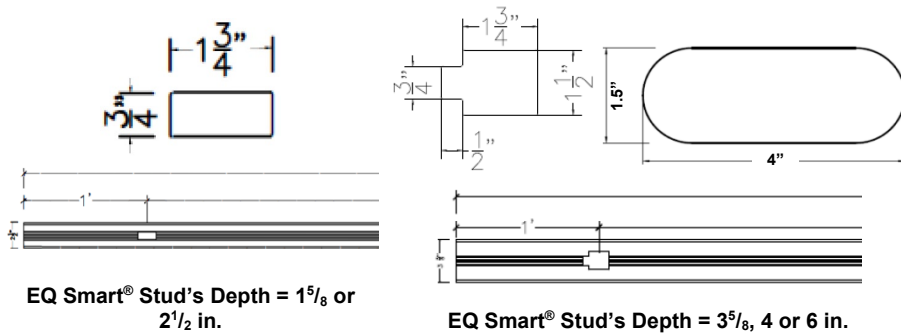


FIGURE 2—EQ SMART[®] STUDS PUNCH-OUTS: CONFIGURATIONS AND DIMENSIONS

TABLE 1—DIMENSIONS OF EQ SMART[®] STUDS AND TRACKS

SECTION DESIGNATION ¹	DIMENSIONS (inches)			
	Depth ²	Flange Width	Lip Length	Inside Bend Radius
EQ SMART® STUDS				
162S125-XX	1.625	1.25	0.20	0.0559" for 13 mils 0.0539" for 15 mils 0.0492" for 19 mils
250S125-XX	2.500			
362S125-XX	3.625			
400S125-XX	4.000			
600S125-XX	6.000			
EQ SMART® TRACKS				
162T125-XX	1.625	1.25	Not Applicable	0.0559" for 13 mils 0.0539" for 15 mils 0.0492" for 19 mils
250T125-XX	2.500			
362T125-XX	3.625			
400T125-XX	4.000			
600T125-XX	6.000			

For **SI** Units: 1 inch = 25.4 mm

¹ The last two digits "XX" in member designation marks its bare metal thickness in mils as shown in Section 3.1 of the evaluation report.

² The depth is measured from outside-to-outside of flanges. For tracks, the actual depth is equal to the provided values + two times the thickness + a tolerance of 1/32" to 1/16".

TABLE 2—SECTION PROPERTIES OF EQ SMART® STUDS AND TRACKS⁷

MEMBER	Design Thick. (in.)	Area (in. ²)	Wt (lb/ft)	F _y (ksi)	GROSS PROPERTIES ¹					EFFECTIVE PROPERTIES ^{2,3}					TORSIONAL PROPERTIES ¹							L _u (in.)	
					I _x (in. ⁴)	S _x (in. ³)	R _x (in.)	I _y (in. ⁴)	R _y (in.)	I _{xo} (in. ⁴)	S _{xo} (in. ³)	M _{al} (in.k)	M _{ed} (in.k)	V _{ag} (lbs)	V _{anet} (lbs)	Jx1000 (in. ⁴)	C _w (in. ⁶)	X _o (in.)	m (in.)	R _o (in.)	β		
EQ SMART® STUDS (F _y = 33 ksi)																							
162S125-13	0.0135	0.059	0.200	33	0.028	0.035	0.690	0.012	0.455	0.024	0.020	0.396	0.417	147	74	0.004	0.007	-1.048	0.603	1.335	0.384	29.3	
250S125-13		0.071	0.240		0.073	0.059	1.019	0.014	0.447	0.067	0.037	0.734	0.650	93	93	0.004	0.018	-0.922	0.552	1.446	0.593	29.2	
362S125-13 ⁴		0.086	0.292		0.172	0.095	1.416	0.016	0.430	0.132	0.047	0.775	0.764	50	---	0.005	0.040	-0.803	0.498	1.684	0.772	29.1	
400S125-13 ⁵		0.091	0.309		0.217	0.108	1.544	0.016	0.424	0.158	0.052	0.858	0.845	45	---	0.006	0.051	-0.771	0.483	1.777	0.812	29.0	
600S125-13 ⁶		0.118	0.401		0.571	0.190	2.200	0.018	0.391	---	---	---	---	---	---	0.007	0.128	-0.637	0.415	2.324	0.925	---	
162S125-15	0.015	0.065	0.222		0.031	0.038	0.690	0.014	0.455	0.027	0.023	0.457	0.482	192	88	0.005	0.008	-1.046	0.602	1.333	0.384	29.3	
250S125-15		0.079	0.267		0.082	0.065	1.019	0.016	0.447	0.075	0.044	0.868	0.755	127	127	0.006	0.019	-0.920	0.551	1.444	0.594	29.2	
362S125-15 ⁴		0.095	0.324		0.191	0.105	1.416	0.018	0.429	0.153	0.055	0.900	0.889	69	---	0.007	0.045	-0.802	0.497	1.683	0.773	29.1	
400S125-15 ⁴		0.101	0.343		0.241	0.120	1.543	0.018	0.423	0.183	0.060	0.997	0.983	62	---	0.008	0.056	-0.769	0.482	1.776	0.812	29.0	
600S125-15 ⁶		0.131	0.445		0.634	0.211	2.200	0.020	0.391	---	---	---	---	---	---	0.010	0.141	-0.636	0.414	2.323	0.925	---	
162S125-19	0.019	0.083	0.281		0.039	0.048	0.688	0.017	0.453	0.035	0.032	0.633	0.667	309	111	0.010	0.010	-1.042	0.600	1.328	0.385	29.3	
250S125-19		0.099	0.337		0.103	0.082	1.017	0.020	0.445	0.096	0.062	1.227	1.053	258	203	0.012	0.024	-0.916	0.548	1.440	0.595	29.2	
362S125-19		0.121	0.410		0.241	0.133	1.414	0.022	0.428	0.207	0.077	1.516	1.490	175	170	0.015	0.056	-0.798	0.495	1.679	0.774	29.0	
400S125-19		0.128	0.434		0.304	0.152	1.542	0.023	0.421	0.255	0.085	1.404	1.381	126	126	0.015	0.070	-0.766	0.480	1.772	0.813	28.9	
600S125-19 ⁶		0.166	0.564		0.801	0.267	2.198	0.025	0.389	---	---	---	---	---	---	0.020	0.177	-0.633	0.412	2.320	0.926	---	
EQ SMART® STUDS (F _y = 50 ksi)																							
162S125-13	0.0135	0.059	0.200	50	0.028	0.035	0.690	0.012	0.455	0.022	0.017	0.518	0.531	147	74	0.004	0.007	-1.048	0.603	1.335	0.384	23.8	
250S125-13		0.071	0.240		0.073	0.059	1.019	0.014	0.447	0.064	0.031	0.933	0.825	93	93	0.004	0.018	-0.922	0.552	1.446	0.593	23.7	
362S125-13 ⁴		0.086	0.292		0.172	0.095	1.416	0.016	0.430	0.120	0.040	1.008	0.965	50	---	0.005	0.040	-0.803	0.498	1.684	0.772	23.6	
400S125-13 ⁵		0.091	0.309		0.217	0.108	1.544	0.016	0.424	0.144	0.045	1.116	1.066	45	---	0.006	0.051	-0.771	0.483	1.777	0.812	23.6	
600S125-13 ⁶		0.118	0.401		0.571	0.190	2.200	0.018	0.391	---	---	---	---	---	---	0.007	0.128	-0.637	0.415	2.324	0.925	---	
162S125-15	0.015	0.065	0.222		0.031	0.038	0.690	0.014	0.455	0.025	0.020	0.598	0.616	202	92	0.005	0.008	-1.046	0.602	1.333	0.384	23.7	
250S125-15		0.079	0.267		0.082	0.065	1.019	0.016	0.447	0.072	0.037	1.097	0.960	127	127	0.006	0.019	-0.920	0.551	1.444	0.594	23.7	
362S125-15 ⁴		0.095	0.324		0.191	0.105	1.416	0.018	0.429	0.140	0.047	1.170	1.124	69	---	0.007	0.045	-0.802	0.497	1.683	0.773	23.6	
400S125-15 ⁴		0.101	0.343		0.241	0.120	1.543	0.018	0.423	0.167	0.052	1.296	1.243	62	---	0.008	0.056	-0.769	0.482	1.776	0.812	23.5	
600S125-15 ⁶		0.131	0.445		0.634	0.211	2.200	0.020	0.391	---	---	---	---	---	---	0.010	0.141	-0.636	0.414	2.323	0.925	---	
162S125-19	0.019	0.083	0.281		0.039	0.048	0.688	0.017	0.453	0.033	0.028	0.832	0.857	380	137	0.010	0.010	-1.042	0.600	1.328	0.385	23.7	
250S125-19		0.099	0.337		0.103	0.082	1.017	0.020	0.445	0.093	0.053	1.602	1.347	258	203	0.012	0.024	-0.916	0.548	1.440	0.595	23.7	
362S125-19		0.121	0.410		0.241	0.133	1.414	0.022	0.428	0.193	0.066	1.974	1.893	175	170	0.015	0.056	-0.798	0.495	1.679	0.774	23.5	
400S125-19		0.128	0.434		0.304	0.152	1.542	0.023	0.421	0.233	0.073	1.827	1.752	126	126	0.015	0.070	-0.766	0.480	1.772	0.813	23.5	
600S125-19 ⁶		0.166	0.564		0.801	0.267	2.198	0.025	0.389	---	---	---	---	---	---	0.020	0.177	-0.633	0.412	2.320	0.926	---	
EQ SMART® STUDS (F _y = 70 ksi)																							
162S125-13	0.0135	0.059	0.200	70	0.028	0.035	0.690	0.012	0.455	0.021	0.015	0.644	0.643	147	74	0.004	0.007	-1.048	0.603	1.335	0.384	20.1	
250S125-13		0.071	0.240		0.073	0.059	1.019	0.014	0.447	0.062	0.027	1.141	0.997	93	93	0.004	0.018	-0.922	0.552	1.446	0.593	20.1	
362S125-13 ⁴		0.086	0.292		0.172	0.095	1.416	0.016	0.430	0.114	0.036	1.247	1.162	50	---	0.005	0.040	-0.803	0.498	1.684	0.772	20.0	
400S125-13 ⁵		0.091	0.309		0.217	0.108	1.544	0.016	0.424	0.137	0.039	1.382	1.282	45	---	0.006	0.051	-0.771	0.483	1.777	0.812	19.9	
600S125-13 ⁶		0.118	0.401		0.571	0.190	2.200	0.018	0.391	---	---	---	---	---	---	0.007	0.128	-0.637	0.415	2.324	0.925	---	
162S125-15	0.015	0.065	0.222		0.031	0.038	0.690	0.014	0.455	0.023	0.018	0.745	0.747	202	92	0.005	0.008	-1.046	0.602	1.333	0.384	20.0	
250S125-15		0.079	0.267		0.082	0.065	1.019	0.016	0.447	0.069	0.032	1.338	1.161	127	127	0.006	0.019	-0.920	0.551	1.444	0.594	20.0	
362S125-15 ⁴		0.095	0.324		0.191	0.105	1.416	0.018	0.429	0.133	0.041	1.449	1.354	69	---	0.007	0.045	-0.802	0.497	1.683	0.773	19.9	
400S125-15 ⁴		0.101	0.343		0.241	0.120	1.543	0.018	0.423	0.159	0.046	1.605	1.496	62	---	0.008	0.056	-0.769	0.482	1.776	0.812	19.9	
600S125-15 ⁶		0.131	0.445		0.634	0.211	2.200	0.020	0.391	---	---	---	---	---	---	0.010	0.141	-0.636	0.414	2.323	0.925	---	
162S125-19	0.019	0.083	0.281		0.039	0.048	0.688	0.017	0.453	0.031	0.025	1.036	1.043	410	148	0.010	0.010	-1.042	0.600	1.328	0.385	20.0	
250S125-19		0.099	0.337		0.103	0.082	1.017	0.020	0.445	0.090	0.046	1.934	1.633	258	203	0.012	0.024	-0.916	0.548	1.440	0.595	20.0	
362S125-19		0.121	0.410		0.241	0.133	1.414	0.022	0.428	0.182	0.058	2.441	2.286	175	170	0.015	0.056	-0.798	0.495	1.679	0.774	19.9	
400S125-19		0.128	0.434		0.304	0.152	1.542	0.023	0.421	0.222	0.065	2.259	2.114	126	126	0.015	0.070	-0.766	0.480	1.772	0.813	19.8	
600S125-19 ⁶		0.166	0.564		0.801	0.267	2.198	0.025	0.389	---	---	---	---	---	---	0.020	0.177	-0.633	0.412	2.320	0.926	---	
EQ SMART® TRACKS (F _y = 33 ksi)																							
162T125-13	0.0135	0.055	0.188	33	0.028	0.033	0.713	0.009	0.413	0.018	0.014	0.234	---	142	---	0.003	0.005	-0.885	0.508	1.209	0.464	---	
250T125-13		0.067	0.228		0.072	0.056	1.033	0.011	0.401	0.050	0.022	0.367	---	---	90	---	0.004	0.012	-0.774	0.464	1.352	0.672	---
362T125-13 ⁵		0.082	0.280		0.166	0.090	1.420	0.012	0.382	0.110	0.033	0.537	---	---	49	---	0.005	0.029	-0.670	0.417	1.616	0.828	---
400T125-13 ⁵		0.087	0.297		0.209	0.103	1.545	0.012	0.375	0.135	0.036	0.594	---	---	45	---	0.005	0.036	-0.642	0.403	1.715	0.860	---
600T125-13 ⁶		0.114	0.389		0.548	0.181	2.189	0.013	0.343	---	---	---	---	---	---	0.007	0.093	-0.526	0.343	2.277	0.947	---	
162T125-15	0.015	0.062	0.209		0.031	0.037	0.713	0.010	0.412	0.021	0.017	0.285	---	---	192	---	0.005	0.005	-0.884	0.507	1.208	0.465	---
250T125-15		0.075	0.254		0.080	0.062	1.033	0.012	0.401	0.057	0.027	0.446	---	---	124	---	0.006	0.014	-0.773	0.463	1.351	0.673	---
362T125-15 ⁴		0.092	0.311		0.185	0.100	1.421	0.013	0.381	0.137	0.039	0.650	---	---	68	---							

TABLE 2—SECTION PROPERTIES OF EQ SMART[®] STUDS AND TRACKS⁷ (... Cont'd)

MEMBER	Design Thick. (in.)	Area (in. ²)	Wt (lb/ft)	F _y (ksi)	GROSS PROPERTIES ¹					EFFECTIVE PROPERTIES ^{2,3}					TORSIONAL PROPERTIES ¹							L _u (in.)
					I _x (in. ⁴)	S _x (in. ³)	R _x (in.)	I _y (in. ⁴)	R _y (in.)	I _{xe} (in. ⁴)	S _{xe} (in. ³)	M _{al} (in.k)	M _{ad} (in.k)	V _{ag} (lbs)	V _{anet} (lbs)	Jx1000 (in. ⁴)	C _w (in. ⁶)	X _o (in.)	m (in.)	R _o (in.)	β	
EQ SMART® TRACKS (F _y = 50 ksi)																						
162T125-13	0.0135	0.055	0.188	50	0.028	0.033	0.713	0.009	0.413	0.017	0.012	0.298	---	142	---	0.003	0.005	-0.885	0.508	1.209	0.464	---
250T125-13		0.067	0.228		0.072	0.056	1.033	0.011	0.401	0.046	0.019	0.469		90		0.004	0.012	-0.774	0.464	1.352	0.672	
362T125-13 ⁵		0.082	0.280		0.166	0.090	1.420	0.012	0.382	0.096	0.028	0.688		49		0.005	0.029	-0.670	0.417	1.616	0.828	
400T125-13 ⁵		0.087	0.297		0.209	0.103	1.545	0.012	0.375	0.118	0.030	0.761		45		0.005	0.036	-0.642	0.403	1.715	0.860	
600T125-13 ⁶		0.114	0.389		0.548	0.181	2.189	0.013	0.343	---	---	---		---		0.007	0.093	-0.526	0.343	2.277	0.947	
162T125-15	0.015	0.062	0.209		0.031	0.037	0.713	0.010	0.412	0.020	0.014	0.361	---	194	---	0.005	0.005	-0.884	0.507	1.208	0.465	
250T125-15		0.075	0.254		0.080	0.062	1.033	0.012	0.401	0.054	0.023	0.566		124		0.006	0.014	-0.773	0.463	1.351	0.673	
362T125-15 ⁴		0.092	0.311		0.185	0.100	1.421	0.013	0.381	0.114	0.033	0.829		68		0.007	0.032	-0.669	0.416	1.616	0.828	
400T125-15 ⁵		0.097	0.330		0.232	0.114	1.545	0.014	0.375	0.140	0.037	0.917		61		0.007	0.040	-0.641	0.403	1.715	0.860	
600T125-15 ⁶		0.127	0.432		0.610	0.201	2.190	0.015	0.343	---	---	---		---		0.010	0.103	-0.525	0.343	2.278	0.947	
162T125-19	0.019	0.078	0.265		0.040	0.047	0.715	0.013	0.412	0.026	0.022	0.559	---	380	---	0.009	0.007	-0.881	0.506	1.207	0.467	
250T125-19		0.095	0.322		0.101	0.079	1.035	0.015	0.400	0.073	0.035	0.875		251		0.011	0.017	-0.771	0.462	1.351	0.674	
362T125-19		0.116	0.394		0.235	0.127	1.422	0.017	0.381	0.177	0.051	1.274		172		0.014	0.041	-0.667	0.415	1.616	0.829	
400T125-19 ⁴		0.123	0.419		0.295	0.145	1.547	0.017	0.374	0.210	0.056	1.407		124		0.015	0.051	-0.639	0.402	1.715	0.861	
600T125-19 ⁶		0.161	0.548		0.773	0.255	2.191	0.019	0.342	---	---	---		---		0.019	0.130	-0.524	0.342	2.278	0.947	
EQ SMART® TRACKS (F _y = 70 ksi)																						
162T125-13	0.0135	0.055	0.188	70	0.028	0.033	0.713	0.009	0.413	0.017	0.010	0.366	---	142	---	0.003	0.005	-0.885	0.508	1.209	0.464	---
250T125-13		0.067	0.228		0.072	0.056	1.033	0.011	0.401	0.042	0.016	0.575		90		0.004	0.012	-0.774	0.464	1.352	0.672	
362T125-13 ⁵		0.082	0.280		0.166	0.090	1.420	0.012	0.382	0.089	0.024	0.844		49		0.005	0.029	-0.670	0.417	1.616	0.828	
400T125-13 ⁵		0.087	0.297		0.209	0.103	1.545	0.012	0.375	0.109	0.027	0.934		45		0.005	0.036	-0.642	0.403	1.715	0.860	
600T125-13 ⁶		0.114	0.389		0.548	0.181	2.189	0.013	0.343	---	---	---		---		0.007	0.093	-0.526	0.343	2.277	0.947	
162T125-15	0.015	0.062	0.209		0.031	0.037	0.713	0.010	0.412	0.019	0.013	0.441	---	194	---	0.005	0.005	-0.884	0.507	1.208	0.465	
250T125-15		0.075	0.254		0.080	0.062	1.033	0.012	0.401	0.050	0.020	0.692		124		0.006	0.014	-0.773	0.463	1.351	0.673	
362T125-15 ⁴		0.092	0.311		0.185	0.100	1.421	0.013	0.381	0.106	0.029	1.015		68		0.007	0.032	-0.669	0.416	1.616	0.828	
400T125-15 ⁵		0.097	0.330		0.232	0.114	1.545	0.014	0.375	0.130	0.032	1.123		61		0.007	0.040	-0.641	0.403	1.715	0.860	
600T125-15 ⁶		0.127	0.432		0.610	0.201	2.190	0.015	0.343	---	---	---		---		0.010	0.103	-0.525	0.343	2.278	0.947	
162T125-19	0.019	0.078	0.265		0.040	0.047	0.715	0.013	0.412	0.025	0.019	0.675	---	392	---	0.009	0.007	-0.881	0.506	1.207	0.467	
250T125-19		0.095	0.322		0.101	0.079	1.035	0.015	0.400	0.071	0.030	1.058		251		0.011	0.017	-0.771	0.462	1.351	0.674	
362T125-19		0.116	0.394		0.235	0.127	1.422	0.017	0.381	0.160	0.044	1.547		172		0.014	0.041	-0.667	0.415	1.616	0.829	
400T125-19 ⁴		0.123	0.419		0.295	0.145	1.547	0.017	0.374	0.193	0.049	1.710		124		0.015	0.051	-0.639	0.402	1.715	0.861	
600T125-19 ⁶		0.161	0.548		0.773	0.255	2.191	0.019	0.342	---	---	---		---		0.019	0.130	-0.524	0.342	2.278	0.947	

For SI Units: 1 inch = 25.4 mm; 1 pound = 4.448 N; 1 lb/ft = 14.594 N/m; 1 in.kip = 112.99 N.m

¹ Gross properties and torsional properties are based on the full, unreduced cross-section away from any web punch-outs.

² Effective section properties for studs (except for V_{ag}) were calculated considering webs punch-outs. The effect of cold-work of forming on steel strength was not considered for all members (studs and tracks).

³ The allowable ASD moment should be the lesser of M_{al} and M_{ad}. Distortional buckling is based on an assumed K_φ = 0.

⁴ Web height-to-thickness ratio, h/t, exceeds 200 but is less than 260. Bearing stiffeners are required in accordance with AISI S100. No punch-outs are permitted in the web at these locations.

⁵ Web height-to-thickness ratio, h/t, exceeds 260 but is less than 300. Bearing and intermediate stiffeners are required in accordance with AISI S100.

No pinch-outs are permitted in the web of these members.

⁶ Web height-to-thickness ratio, h/t, exceeds 300. Allowable design values for these members are outside the scope of this report and may be determined in accordance with AISI S100.

⁷ Values marked with "----" are outside the scope of this evaluation report.

Definitions of symbols for use with Table 2:

- F_y: Minimum yield strength
K_φ: Distortional buckling moment (M_{ad}) is calculated without the beneficial effect of sheathing to rotational stiffness, K_φ = 0.
L_u: Maximum unbraced length at which the member is considered to be fully braced for design purposes.

Gross Properties (away from punch-outs):

- Area: The cross-sectional area of the full unreduced cross-section of the studs, away from the punch-outs.
Wt: The weight per foot of the full unreduced cross-section of the studs, away from the punch-outs.
I_x: Moment of inertia of the gross section about the strong axis (X-X).
R_x: Radius of gyration of the gross section about the X-X axis.
S_x: Gross section-modulus about the strong axis (X-X).
I_y: Moment of inertia of the gross section about the weak axis (Y-Y).
R_y: Radius of gyration of the gross section about the Y-Y axis.

Effective Properties:

- I_{xe}: Effective moment of inertia about the strong axis (X-X). Use I_{xe} for deflection calculations.
S_{xe}: Effective section-modulus about the strong axis (X-X).
M_{al}: Allowable bending moment based on local buckling.
M_{ad}: Allowable bending moment based on distortional buckling, assuming K_φ = 0
V_{ag}: Allowable strong axis shear away from punch-out.
V_{anet}: Allowable strong axis shear at punch-out.

Torsional Properties (away from punch-outs):

- J: St. Venant torsional constant.
C_w: Torsional warping constant.
X_o: Distance from the shear center to the centroid along the principal X-axis.
R_o: Polar radius of gyration about the centroidal principal axis.
β: Torsional flexural constant: 1 - (X_o / R_o)²

TABLE 3—NON-COMPOSITE LIMITING WALL HEIGHTS⁴

STUDS	F _y (ksi)	STUDS O.C. SPACING (in.)	TRANSVERSE PRESSURE								
			5 psf			7.5 psf			10 psf		
			L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360
EQ SMART® STUDS (F _y = 33 ksi)											
162S125-13	33	12	7' 3"	6' 9"	5' 11"	5' 11"	5' 11"	5' 2"	5' 0"	5' 0"	4' 8"
		16	6' 3"	6' 2"	5' 4"	5' 0"	5' 0"	4' 8"	4' 5"	4' 5"	4' 3"
		24	5' 0"	5' 0"	4' 8"	4' 2"	4' 2"	4' 0"	3' 7"	3' 7"	3' 7"
250S125-13		12	9' 3"	9' 3"	8' 4"	7' 7"	7' 7"	7' 3"	6' 6"	6' 6"	6' 6"
		16	8' 0"	8' 0"	7' 7"	6' 6"	6' 6"	6' 6"	5' 8"	5' 8"	5' 8"
		24	6' 6"	6' 6"	6' 6"	5' 4"	5' 4"	5' 4"	4' 7"	4' 7"	4' 7"
362S125-13 ²		12	10' 1"	10' 1"	10' 1"	8' 1"	8' 1"	8' 1"	7' 0"	7' 0"	7' 0"
		16	8' 7"	8' 7"	8' 7"	7' 0"	7' 0"	7' 0"	6' 2"	6' 2"	6' 2"
		24	7' 0"	7' 0"	7' 0"	5' 9"	5' 9"	5' 9"	5' 0"	5' 0"	5' 0"
400S125-13 ³		12	10' 7"	10' 7"	10' 7"	8' 7"	8' 7"	8' 7"	7' 6"	7' 6"	7' 6"
		16	9' 1"	9' 1"	9' 1"	7' 6"	7' 6"	7' 6"	6' 6"	6' 6"	6' 6"
		24	7' 6"	7' 6"	7' 6"	6' 0"	6' 0"	6' 0"	5' 3"	5' 3"	5' 3"
162S125-15	33	12	7' 9"	7' 0"	6' 2"	6' 4"	6' 2"	5' 4"	5' 6"	5' 6"	4' 10"
		16	6' 9"	6' 5"	5' 7"	5' 6"	5' 6"	4' 10"	4' 9"	4' 9"	4' 5"
		24	5' 6"	5' 6"	4' 10"	4' 6"	4' 6"	4' 3"	3' 10"	3' 10"	3' 10"
250S125-15		12	10' 0"	9' 11"	8' 7"	8' 1"	8' 1"	7' 7"	7' 0"	7' 0"	6' 10"
		16	8' 7"	8' 7"	7' 10"	7' 0"	7' 0"	6' 10"	6' 0"	6' 0"	6' 0"
		24	7' 0"	7' 0"	6' 10"	5' 9"	5' 9"	5' 9"	5' 0"	5' 0"	5' 0"
362S125-15 ²		12	10' 10"	10' 10"	10' 10"	8' 10"	8' 10"	8' 10"	7' 8"	7' 8"	7' 8"
		16	9' 4"	9' 4"	9' 4"	7' 8"	7' 8"	7' 8"	6' 8"	6' 8"	6' 8"
		24	7' 8"	7' 8"	7' 8"	6' 3"	6' 3"	6' 3"	5' 5"	5' 5"	5' 5"
400S125-15 ²		12	11' 4"	11' 4"	11' 4"	9' 4"	9' 4"	9' 4"	8' 1"	8' 1"	8' 1"
		16	9' 10"	9' 10"	9' 10"	8' 1"	8' 1"	8' 1"	7' 0"	7' 0"	7' 0"
		24	8' 1"	8' 1"	8' 1"	6' 7"	6' 7"	6' 7"	5' 8"	5' 8"	5' 8"
162S125-19	33	12	9' 1"	7' 8"	6' 8"	7' 6"	6' 8"	5' 10"	6' 5"	6' 0"	5' 4"
		16	7' 11"	7' 0"	6' 0"	6' 5"	6' 0"	5' 4"	5' 7"	5' 6"	4' 10"
		24	6' 5"	6' 0"	5' 4"	5' 3"	5' 3"	4' 8"	4' 7"	4' 7"	4' 2"
250S125-19		12	11' 10"	10' 9"	9' 4"	9' 7"	9' 4"	8' 1"	8' 4"	8' 4"	7' 5"
		16	10' 3"	9' 9"	8' 6"	8' 4"	8' 4"	7' 5"	7' 3"	7' 3"	6' 9"
		24	8' 4"	8' 4"	7' 5"	6' 10"	6' 10"	6' 6"	5' 11"	5' 11"	5' 11"
362S125-19		12	14' 1"	13' 11"	12' 1"	11' 6"	11' 6"	10' 7"	9' 11"	9' 11"	9' 7"
		16	12' 1"	12' 1"	11' 0"	9' 11"	9' 11"	9' 7"	8' 7"	8' 7"	8' 7"
		24	9' 11"	9' 11"	9' 7"	8' 1"	8' 1"	8' 1"	7' 0"	7' 0"	7' 0"
400S125-19 ²		12	13' 6"	13' 6"	13' 0"	11' 0"	11' 0"	11' 0"	9' 7"	9' 7"	9' 7"
		16	11' 9"	11' 9"	11' 9"	9' 7"	9' 7"	9' 7"	8' 3"	8' 3"	8' 3"
		24	9' 7"	9' 7"	9' 7"	7' 10"	7' 10"	7' 10"	6' 9"	6' 9"	6' 9"
EQ SMART® STUDS (F _y = 50 ksi)											
162S125-13	50	12	8' 3"	6' 7"	5' 9"	6' 9"	5' 9"	5' 0"	5' 10"	5' 2"	4' 6"
		16	7' 2"	6' 0"	5' 2"	5' 10"	5' 2"	4' 6"	5' 0"	4' 9"	4' 0"
		24	5' 10"	5' 2"	4' 6"	4' 9"	4' 6"	4' 0"	4' 0"	4' 0"	3' 7"
250S125-13		12	10' 4"	9' 4"	8' 1"	8' 6"	8' 1"	7' 2"	7' 4"	7' 4"	6' 6"
		16	9' 0"	8' 6"	7' 5"	7' 4"	7' 4"	6' 6"	6' 5"	6' 5"	5' 11"
		24	7' 4"	7' 4"	6' 6"	6' 0"	6' 0"	5' 8"	5' 2"	5' 2"	5' 2"
362S125-13 ²		12	11' 4"	11' 4"	10' 1"	9' 3"	9' 3"	8' 10"	8' 0"	8' 0"	8' 0"
		16	9' 9"	9' 9"	9' 1"	8' 0"	8' 0"	8' 0"	6' 11"	6' 11"	6' 11"
		24	8' 0"	8' 0"	8' 0"	6' 6"	6' 6"	6' 6"	5' 8"	5' 8"	5' 8"
400S125-13 ³		12	11' 11"	11' 11"	10' 9"	9' 7"	9' 7"	9' 4"	8' 4"	8' 4"	8' 4"
		16	10' 3"	10' 3"	9' 9"	8' 4"	8' 4"	8' 4"	7' 3"	7' 3"	7' 3"
		24	8' 4"	8' 4"	8' 4"	6' 10"	6' 10"	6' 10"	5' 11"	5' 11"	5' 11"
162S125-15	50	12	8' 7"	6' 10"	6' 0"	7' 3"	6' 0"	5' 3"	6' 3"	5' 5"	4' 9"
		16	7' 8"	6' 3"	5' 5"	6' 3"	5' 5"	4' 9"	5' 5"	4' 11"	4' 4"
		24	6' 3"	5' 5"	4' 9"	5' 0"	4' 9"	4' 2"	4' 5"	4' 4"	3' 9"
250S125-15		12	11' 3"	9' 9"	8' 6"	9' 1"	8' 6"	7' 5"	8' 0"	7' 9"	6' 9"
		16	9' 9"	8' 10"	7' 9"	8' 0"	7' 9"	6' 9"	6' 11"	6' 11"	6' 2"
		24	8' 0"	7' 9"	6' 9"	6' 6"	6' 6"	5' 11"	5' 7"	5' 7"	5' 4"
362S125-15 ²		12	12' 1"	12' 1"	10' 7"	9' 11"	9' 11"	9' 4"	8' 7"	8' 7"	8' 4"
		16	10' 7"	10' 7"	9' 7"	8' 7"	8' 7"	8' 4"	7' 5"	7' 5"	7' 5"
		24	8' 7"	8' 7"	8' 4"	7' 0"	7' 0"	7' 0"	6' 0"	6' 0"	6' 0"
400S125-15 ²		12	12' 10"	12' 10"	11' 4"	10' 6"	10' 6"	9' 10"	9' 1"	9' 1"	9' 0"
		16	11' 1"	11' 1"	10' 3"	9' 1"	9' 1"	9' 0"	7' 10"	7' 10"	7' 10"
		24	9' 1"	9' 1"	9' 0"	7' 5"	7' 5"	7' 5"	6' 5"	6' 5"	6' 5"

TABLE 3—NON-COMPOSITE LIMITING WALL HEIGHTS⁴ (... Cont'd)

STUDS	F _y (ksi)	STUDS O.C. SPACING (in.)	TRANSVERSE PRESSURE								
			5 psf			7.5 psf			10 psf		
			L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360
EQ SMART® STUDS (F _y = 50 ksi)											
162S125-19	50	12	9' 6"	7' 6"	6' 7"	8' 3"	6' 7"	5' 9"	7' 5"	6' 0"	5' 2"
		16	8' 7"	6' 10"	6' 0"	7' 5"	6' 0"	5' 2"	6' 5"	5' 5"	4' 9"
		24	7' 5"	6' 0"	5' 2"	6' 0"	5' 2"	4' 6"	5' 3"	4' 9"	4' 0"
250S125-19		12	13' 4"	10' 7"	9' 3"	10' 11"	9' 3"	8' 1"	9' 4"	8' 4"	7' 4"
		16	11' 7"	9' 7"	8' 4"	9' 4"	8' 4"	7' 4"	8' 1"	7' 8"	6' 8"
		24	9' 4"	8' 4"	7' 4"	7' 8"	7' 4"	6' 5"	6' 8"	6' 8"	5' 10"
362S125-19		12	15' 10"	13' 7"	11' 10"	12' 11"	11' 10"	10' 4"	11' 1"	10' 9"	9' 4"
		16	13' 9"	12' 4"	10' 9"	11' 1"	10' 9"	9' 4"	9' 7"	9' 7"	8' 7"
		24	11' 1"	10' 9"	9' 4"	9' 1"	9' 1"	8' 3"	7' 11"	7' 11"	7' 5"
400S125-19 ²		12	15' 3"	14' 6"	12' 7"	12' 4"	12' 4"	11' 0"	10' 9"	10' 9"	10' 0"
		16	13' 1"	13' 1"	11' 6"	10' 9"	10' 9"	10' 0"	9' 4"	9' 4"	9' 1"
		24	10' 9"	10' 9"	10' 0"	8' 9"	8' 9"	8' 9"	7' 7"	7' 7"	7' 7"
EQ SMART® STUDS (F _y = 70 ksi)											
162S125-13	70	12	8' 1"	6' 6"	5' 8"	7' 0"	5' 8"	4' 11"	6' 6"	5' 0"	4' 6"
		16	7' 5"	5' 10"	5' 0"	6' 6"	5' 0"	4' 6"	5' 8"	4' 8"	4' 0"
		24	6' 6"	5' 0"	4' 6"	5' 4"	4' 6"	3' 11"	4' 7"	4' 0"	3' 6"
250S125-13		12	11' 6"	9' 3"	8' 1"	9' 4"	8' 1"	7' 0"	8' 1"	7' 4"	6' 5"
		16	9' 11"	8' 4"	7' 4"	8' 1"	7' 4"	6' 5"	7' 0"	6' 8"	5' 10"
		24	8' 1"	7' 4"	6' 5"	6' 7"	6' 5"	5' 7"	5' 9"	5' 9"	5' 0"
362S125-13 ²		12	12' 4"	11' 4"	9' 11"	10' 1"	9' 11"	8' 7"	8' 9"	8' 9"	7' 11"
		16	10' 9"	10' 4"	9' 0"	8' 9"	8' 9"	7' 11"	7' 7"	7' 7"	7' 2"
		24	8' 9"	8' 9"	7' 11"	7' 2"	7' 2"	6' 11"	6' 2"	6' 2"	6' 2"
400S125-13 ³		12	13' 0"	12' 1"	10' 7"	10' 7"	10' 7"	9' 3"	9' 1"	9' 1"	8' 4"
		16	11' 3"	11' 0"	9' 7"	9' 1"	9' 1"	8' 4"	8' 0"	8' 0"	7' 7"
		24	9' 1"	9' 1"	8' 4"	7' 6"	7' 6"	7' 4"	6' 6"	6' 6"	6' 6"
162S125-15		70	12	8' 4"	6' 8"	5' 10"	7' 4"	5' 10"	5' 0"	6' 8"	5' 3"
	16		7' 8"	6' 0"	5' 3"	6' 8"	5' 3"	4' 7"	6' 0"	4' 10"	4' 2"
	24		6' 8"	5' 3"	4' 7"	5' 9"	4' 7"	4' 0"	4' 11"	4' 2"	3' 8"
250S125-15	12		12' 1"	9' 7"	8' 4"	10' 1"	8' 4"	7' 4"	8' 9"	7' 8"	6' 8"
	16		10' 9"	8' 9"	7' 8"	8' 9"	7' 8"	6' 8"	7' 7"	6' 11"	6' 0"
	24		8' 9"	7' 8"	6' 8"	7' 2"	6' 8"	5' 10"	6' 2"	6' 0"	5' 3"
362S125-15 ²	12		13' 4"	12' 0"	10' 6"	10' 11"	10' 6"	9' 1"	9' 6"	9' 6"	8' 4"
	16		11' 7"	10' 11"	9' 6"	9' 6"	9' 6"	8' 4"	8' 1"	8' 1"	7' 6"
	24		9' 6"	9' 6"	8' 4"	7' 9"	7' 9"	7' 3"	6' 8"	6' 8"	6' 7"
400S125-15 ²	12		14' 1"	12' 9"	11' 1"	11' 6"	11' 1"	9' 7"	9' 11"	9' 11"	8' 10"
	16		12' 1"	11' 7"	10' 1"	9' 11"	9' 11"	8' 10"	8' 7"	8' 7"	8' 0"
	24		9' 11"	9' 11"	8' 10"	8' 1"	8' 1"	7' 8"	7' 0"	7' 0"	7' 0"
162S125-19	70		12	9' 3"	7' 4"	6' 5"	8' 1"	6' 5"	5' 7"	7' 4"	5' 10"
		16	8' 4"	6' 8"	5' 10"	7' 4"	5' 10"	5' 0"	6' 8"	5' 4"	4' 7"
		24	7' 4"	5' 10"	5' 0"	6' 5"	5' 0"	4' 5"	5' 10"	4' 7"	4' 0"
250S125-19		12	13' 3"	10' 6"	9' 1"	11' 7"	9' 1"	8' 0"	10' 4"	8' 4"	7' 3"
		16	12' 1"	9' 7"	8' 4"	10' 4"	8' 4"	7' 3"	9' 0"	7' 7"	6' 7"
		24	10' 4"	8' 4"	7' 3"	8' 6"	7' 3"	6' 4"	7' 4"	6' 7"	5' 9"
362S125-19		12	16' 9"	13' 4"	11' 7"	14' 3"	11' 7"	10' 1"	12' 4"	10' 7"	9' 3"
		16	15' 1"	12' 1"	10' 7"	12' 4"	10' 7"	9' 3"	10' 7"	9' 7"	8' 4"
		24	12' 4"	10' 7"	9' 3"	10' 0"	9' 3"	8' 1"	8' 7"	8' 4"	7' 4"
400S125-19 ²		12	16' 9"	14' 3"	12' 4"	13' 7"	12' 4"	10' 10"	11' 10"	11' 3"	9' 10"
		16	14' 6"	12' 11"	11' 3"	11' 10"	11' 3"	9' 10"	10' 3"	10' 3"	8' 11"
		24	11' 10"	11' 3"	9' 10"	9' 7"	9' 7"	8' 7"	8' 4"	8' 4"	7' 10"

For SI Units: 1 inch = 25.4 mm; 1 ft = 0.305 m; 1 pound = 4.448 N; 1 psf = 47.88 N/m²

¹ The provided limiting heights are for fully braced studs (compression flange is fully supported by sheathing). The heights were calculated based on studs moment capacities and deflection limits. Other limit states, such as shear, web crippling and end stud connection with track are outside the scope of this evaluation report and must be determined by a registered design professional.

² Web height-to-thickness ratio, h/t, exceeds 200 but is less than 260. Bearing stiffeners are required in accordance with AISI S100.

³ Web height-to-thickness ratio, h/t, exceeds 260 but is less than 300. Bearing and intermediate stiffeners are required in accordance with AISI S100.

⁴ L/120, L/240, and L/360 are deflection limits relative to the wall height, L.