COLD FORM STEEL / EXPANDED POLYSTRENE INSULATED STRUCTURAL COMPOSITE PANELS

EVALUATION SUBJECT: TONGUE & GROOVE (T-G) & SHIP LAP (S-L) PANELS

SUBJECT: LOAD TABLES

REPORT HOLDER(s):

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CSI Division: 07 – THERMAL AND MOISTURE PROTECTION
CSI Division: 07410 – Metal Roof and Wall Panels

1.0 EVALUATION SCOPE

1.1 Compliance with codes & Standards:

- 2012, 2009, & 2006 International Building Code® (IBC)
- 2012, 2009 & 2006 International Residential Code® (IRC)

1.2 Evaluated in Structural Accordance with:

- 2012, 2007 & 2001 North American Specification for the Design of Cold-Formed Steel Structural Members (AISI)
- ASCE 7-2010 & 7-2005 Minimum Design Loads for Buildings and Other Structures

2.0 PRODUCT USAGE

The Tongue and Groove (T-G) and Ship-Lap (S-L) panels are insulated structural composites that are used to construct walls, floors and roofs in Type V construction. Walls may be either load bearing or non-load bearing. This panelized system is available for both residential and commercial applications. Racking and shear values, which are outside the scope of this report, can be obtained through the normal bracing used in construction. The panels comply with IBC Section K107 as prefabricated construction. The panels are to be permitted where an engineering design is submitted in accordance with Section R301.1.3 of the IRC.

3.0 DESCRIPTION

3.1 General: T-G and S-L panels are manufactured with expanded polystyrene foam plastic insulation and light gauge galvanized steel to create an insulated light weight structural composite panel. Light gauge steel members (stiffeners) support the loads and are flush with each face of the panel. These light gauge steel load carrying members are separated and bonded to Expanded Polystyrene (EPS) insulation. The insulation provides a thermal break between faces. Panels are manufactured by applying a thermosetting adhesive coating to the steel and then subjecting the framing member to low- pressure molding.

3.1.1 Framing: The framing members (stiffeners) are light gauge galvanized steel embedded in both faces of the panel. Stiffeners are spaced at 16 inches (406 mm) or 24 inches (610 mm) on center. The light gauge material is roll formed from 24, 20, 18, or 16 gage steel sheets bent to shape for use in the panel as shown in Figure 1.

3.1.2 Tracks: Depending on design conditions, panel ends are supplied with Nos. 18, 20 or 24 gauge galvanized or galvalume steel track.

3.1.3 Upper Header: In wall panels, the upper header is metal or wood with a minimum nominal height of 2 inches (1 ½" (38 mm)). Nominal header dimensions in inches are: 2x4; 2x6; and 2x8. Header width shall match the EPS core thickness.

3.1.4 Panel: The standard manufactured panel is 48 inches (1219 mm) wide. Standard panel lengths are 8 ft (2438 mm), 9 ft (2743 mm), 10 ft (3048 mm), or 12 ft (3658mm). In addition, custom widths and lengths can be formed. Standard panel thicknesses are 3½ inch (89 mm), 5½ inch (140 mm) and 7½ inches (190 mm), see Figures 1 and 2. The T-G fastening system provides for an opening for a wire chase between panels. The type of panel (T-G) or (S-L) available for a given project is a function of the equipment in the plant where the panels will be manufactured

3.1.5 Connector/Shear Plate: These plates are light gauge steel with a minimum thickness of No. 20 gauge. The area shall be no smaller than 3-inch-by-5- inch (76 mm-by-127 mm).

3.1.6 Self-tapping Screws: Screws shall be No. 8 by 1/2-inch-long (12.7 mm), self-tapping and produced from steel that complies with AISI 1018 or equivalent. Screws shall be quenched in liquid and tempered to a minimum of 650°F. The steel hardness shall meet a Rockwell C44 minimum hardness value.

3.2 Material Information

3.2.1 Expanded Polystyrene (EPS): EPS panels shall be manufactured in accordance with ASTM C578. The flame-spread index and smoke density index shall be less than 25 and 450, respectively at a nominal density of 1.3 to 1.5 pounds per cubic foot (pcf) or (20.8 grams/liter). EPS panel density varies with thickness, see Table 1.

Table 1. EPS Panel Density

Thickness		Density			
		Minimum		Maximum	
inches	(mm)	pcf[a]	(g/l)[b]	pcf	(g/l)
3.5	89	1.25	20.0	1.55	24.8
5.5	140	0.9	14.4	1.3	20.8
7.5	190	0.9	14.4	1.3	20.8

[a]pounds per cubic foot [b]grams per liter

3.2.2 Panel Steel: All steel members for the panels shall be manufactured in accordance with ASTM A653 SS, Grade 37, and coated with ASTM A924 G60 galvanizing/galvalume. In this evaluation report, steel thickness refers to the minimum uncoated base-metal thickness. The design thickness is based on AISI uncoated values as noted in Table 2 of this report.

Table 2 Light Gauge Metal Coil Thickness (inches)

Gauge	Uncoated			Coated (Galvanized)	
	Minimum	Nominal	AISI Design	Abs min	Nominal
24	0.0209	0.0239	0.0220	0.0236	0.0276
22	0.0269	0.0299	0.0283	0.0296	0.0336
20	0.0329	0.0359	0.0346	0.0356	0.0396
18	0.0428	0.0478	0.0451	0.0466	0.0516
16	0.0538	0.0598	0.0566	0.0575	0.0635

3.2.3 Thermosetting Adhesive: A Thermosetting neoprene/phenol adhesive is applied to steel members (stiffeners) and tracks prior to molding the panel.

4.0 DESIGN AND INSTALLATION

4.1 Design

4.1.1 Design Loads: Design loads are to be determined in accordance with the applicable code and manufacturer's design manual. Design may be based on Allowable Stress Design (ASD) or Load Resistance Factor Design (LRFD). Both the allowable design load and the load causing failure are provided in load Tables 3 through 9 of this report. These two types of loadings are consistent with the IBC code and are provided to give the designer a choice.

4.1.1.1 Wall Bearing Loads: Axial compressive Loads may act on a wall panel as a point load (lbs), or distributed load (lbs/ft). Table 3 shows allowable (ASD) or capacity (LRFD) of a point load acting on two stiffener or studs (one on each face) of a panel. If a point load is between stiffeners (studs), the top plate shall be sized for the location of the load on the plate.

4.1.1.2 Transverse Loads: Panels may be used to support floor or roof loads. Tables 4 through 9 of this report provide uniform distributed transverse allowable (ASD) and failure (LRFD) loads. Single span deflections for service live loads are also given.

4.1.1.3 Load Interaction: If loading conditions result in a simultaneously applied axial and transverse load, use the formula below:

$$\text{ASD: } \left(\frac{p}{p_a}\right)+\left(\frac{w}{w_a}\right)\le 1 \qquad \text{Eq.1}$$

$$\text{LRFD: } \left(\frac{p_u}{\varphi p_n}\right)+\left(\frac{w_u}{\varphi w_n}\right)\le 1 \qquad \text{Eq.2}$$

In which axial compressive loads may be either distributed or a point load; p is an axial load and w is a transverse load. The subscript "a" is allowable, "n" is nominal and "u" is factored (used with LRFD).

4.1.2 Limitations of the Load Tables: Tabulated loads listed in the load tables may be used for shorter spans or shorter heights. Extrapolation of panel lengths is outside the scope of this report.

4.1.3 Scope: Other supporting elements typically used to brace against design loads such as, siding, wood structural sheathing (OSB or Plywood), and gypsum are outside the scope of this report

4.2 Installation: All panels (T-G or S-L) shall be installed in accordance with the items listed in this report, the manufacturer's installation instructions, and IBC section 2603.

4.2.1 Panel to Panel Connection: Both T-G and S-L Panels are connected to each other by shear plate connectors. Each panel has a steel channel that runs full length along the edges of the outside and inside facings. The facings butt to the edge of the next panel. A minimum of 4 equally spaced connector/shear steel plates (maximum spacing of 2 ft-6 inches (762mm) shall be attached with three self-tapping screws to each framing member in accordance with Figure 2 of this report. The connector/shear plate shall be applied on both faces of the panels.

4.2.2 Corners: Corners are joined in accordance with the details shown in Figure 3 of this report.

4.2.3 Exterior and Interior Wall Panels: Each exterior and interior wall panel shall be attached to top and bottom tracks with self-tapping screws. Three self-tapping screws shall be provided at inside and outside faces where track and stud (member or stiffener) intersect. If required, a second top track or wood top plate may be installed.

4.2.4 Roof and Floor Panels: Each roof and floor panel shall have an in-plane boundary element field-installed across the width of the top and bottom of the panel similar to the top and bottom tracks of exterior and interior wall panels.

4.2.5 Cladding Attachment

4.2.5.1 Exterior Walls: Exterior wall panels shall be protected with a water-resistive barrier in accordance with IBC Chapter 14. Exterior wall panels shall be protected with a code approved exterior wall covering. The exterior wall coverings shall be installed in accordance with applicable codes and the manufacturer's recommendations. Thermal barriers are required in accordance with section 5.4 of this report.

4.2.5.2 Interior Walls: The interior wall panels shall be covered with an approved interior wall covering. Installation methods shall be approved by the Building Official and in accordance with the IBC or IRC. Thermal barriers are required in accordance with section 5.4 of this report.

4.2.5.3 Roof: The roof covering, flashing, and underlayment, shall be installed in accordance with IBC Chapter 15 and approved by the Building Official. Thermal barriers are required in accordance with section 5.4 of this report. Minimum roof slope shall be in accordance with IBC Chapter 15 or IRC Chapter 9. The roof shall provide for proper drainage.

4.2.5.4 Floor: Floor panels shall be covered with an approved floor covering. Installation methods shall be in accordance with the current IBC. Thermal barriers are required in accordance with section 5.4 of this report.

5.0 LIMITATIONS OF USAGE

Both Tongue and Groove (T-G) and Ship Lap (S-L) Panels described in this report comply with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, and subject to the following conditions.

5.1 Standards: Both T-G and S-L "Manufactured Panel Building Systems" shall be identified and installed in accordance with this report, the manufacturer's instructions, the governing IBC or IRC, AISI S100, and ASCE 7. Should conflicts exist, the more restrictive requirements shall govern.

5.2 Permits: Structural calculations shall be performed and submitted to the code official for approval to size panels to carry the applied loads. Calculations shall also be performed to resist in-plane shear, panel connections, top and bottom plate connections, upper header size, lintel types and sizes for openings, anchors between walls and floor, and supporting structure. Where applicable, structural details shall be provided to resist loads such high winds, tornadoes, hurricanes, snow, seismic, hurricanes and etc. When required by statues for the site where the panels are to be used; plans, specifications, structural calculations and other construction documents shall be prepared by a registered design professional for review and approval.

5.3 Panel Usage: T-G and S-L Panels are recognized for Type V construction.

5.4 Interior Separation: Except as provided for in IBC section 2603.4.1 and 2012 IBC Section 2603.10, 2009 and 2006 IBC Section 2603.9 and IRC Sections R316.5 and R316.6, S-L and T-G Panels shall be separated from the interior of a building by a thermal barrier of minimum ½ inch (12.7 mm) thick gypsum wallboard or other approved material in accordance with IBC 2603.4.

5.5 Roofing: Roof covering, flashing and underlayment shall be in accordance with IBC Chapter 15 or IRC Chapter 9 and approved by the code official. The use of hot-asphalt or hot-coal roof coverings are outside the scope of this report.

5.6 Thermal Barrier: Thermal barrier exceptions in 2012 IBC Section 2603.4.1.1 through 2603.4.1.14, 2009 or 2006 IBC Sections 2603.4.1 through 2603.13 and IRC Sections R316.5 and R316.6, do not apply to foam plastic insulation used as an interior wall or ceiling finish in plenums.

5.7 Vapor Barrier: Both T-G and S-L panels are manufactured with an expanded polystyrene core (EPS). The EPS core has a permeability rating sufficient to not require a vapor barrier.

5.8 Termites: In areas where the probability of termite infestation is very heavy in accordance with 2012 IBC Figure 2603.9, 2009 and 2006 IBC Figure 2603.8 and IRC Figure R301.2(6) installation is limited in accordance with 2012 IBC Section 2603.9, 2009 and 2006 IBC Section 2603.8.

5.9 Field Cuts: Field-cutting of the panel, panel alteration, is outside the scope of this report.

5.10 Fabrication: Some plants manufacture T-G and others manufacture S-L. The panel type will typically be a function of the manufacturing facility. T-G or S-L Panels are fabricated at the listed panel manufacturing Facilities under a quality control program that meets the minimum requirements for IAPMO and other ES Listee Quality Assurance Systems.

5.11 Foam plastic: Foam plastic insulation used in the panels shall be listed in a product evaluation report showing compliance with requirements of IBC Chapter 26 from an approved and accredited certification agency or other nationally recognized certification program that is acceptable by IAPMO or IES.

5.12 Fire: The flame spread index and smoke development index are outside the scope of this report.

6.0 EVIDENCE SUBMITTED

6.1 Testing and Test Results: Test results are from laboratories in compliance with ISO/IEC 17025. Test data was in accordance with the Standard Test Methods of Conducting Strength Tests of Panels for Building Construction, ASTM E72.

6.2 Panel Selection- Load tables in this report were developed based on calculations to resist yielding, local buckling, and lateral buckling in accordance with the 2001 - 2012 North American Specification for the Design of Cold-Formed Steel Structural Members (AISI), 2006-2012 International Building Code (IBC), 2006-2012 International Residential Code 2006-2012, and ASCE 7-5 and ASCE 7-10 and verified with ASTM E72 test data.

7.0 IDENTIFICATION

The T-G and S-L Panels are identified by a label that notes the manufacturer's name, product name and a certification Mark of Conformity, and the report number 0901 that is listed in this report.

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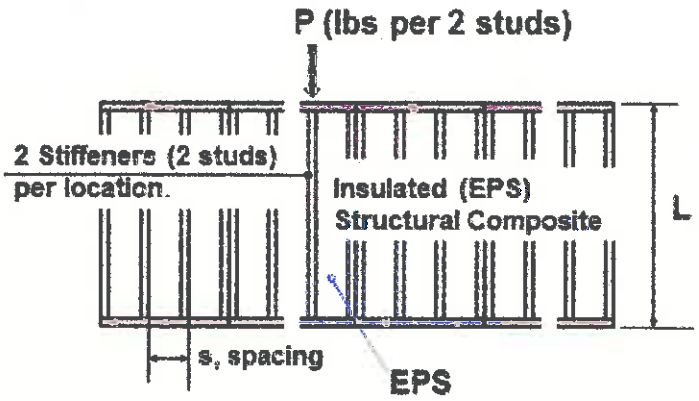

Elevation View: Wall Panel with a Point Load
(Note: The stiffener spacing shown is 16" oc.)

Table 3. Concentrated Axial Design Load per 2 Stiffeners

		Strength , LRFD (ϕP_n)			Allowable, ASD (P_a)		
Length (ft)	gauge	3.5" (lbs)	5.5" (lbs)	7.5" (lbs)	3.5" (lbs)	5.5" (lbs)	7.5" (lbs)
8	24	2,455	2,821	3,660	1,535	1,763	2,287
9	24	2,455	2,821	3,660	1,535	1,763	2,287
10	24	2,455	2,821	3,660	1,535	1,763	2,287
12	24	2,455	2,821	3,660	1,535	1,763	2,287
8	20	4,612	5,004	6,210	2,882	3,127	3,881
9	20	4,612	5,004	6,210	2,882	3,127	3,881
10	20	4,612	5,004	6,210	2,882	3,127	3,881
12	20	4,612	5,004	6,210	2,882	3,127	3,881
8	18	9,729	9,977	11,233	6,051	6,236	7,020
9	18	9,729	9,977	11,143	5,756	6,236	6,965
10	18	9.729	9,977	11,019	5,442	6,236	6,887
12	18	8,630	9,938	10,735	4,781	6,211	6,709
8	16	13,568	13,583	14,059	8,480	8,489	8,787
9	16	12,907	13,324	13,918	8,067	8,327	8,699
10	16	12,207	13,040	13,761	7,629	8,150	8,601
12	16	10,727	12,406	13,406	6,704	7,754	8,379

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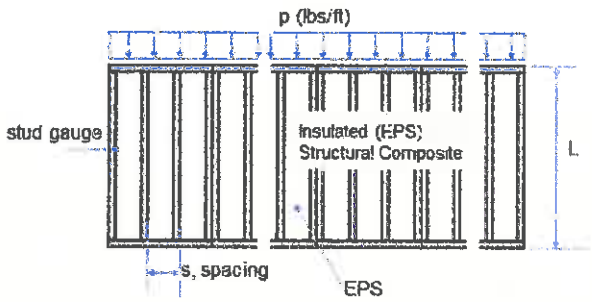
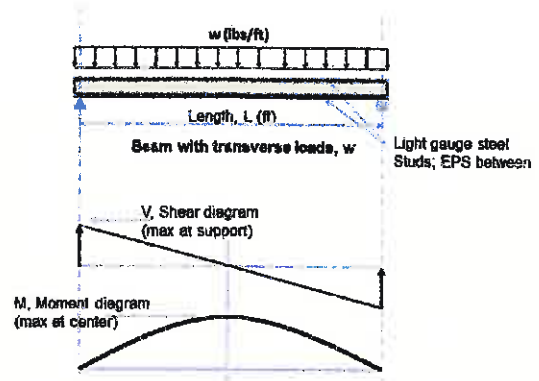


Axial distributed Load (plf)



Transverse distributed loading (plf)

Table 4. 3.5" thick panel; Stiffeners (350T75-Mils) at 16" o.c.; no gypsum or siding

		Axial Distributed loads plf)[a]		(EPS: 1pcf); Transverse Loads (psf)[b]				
		Strength	Allowable	Strengh	Service loads			
Gauge	L (ft)	LRFD (φp_n)	ASD (p_a)	(φw_n)	ASD (w_a)	L/180	L/240	L/360
24	8	2,432	1,520	56	35	47	35	24
24	9	2,432	1,520	45	28	45	34	23
24	10	2,432	1,520	36	23	34	25	17
24	12	2,432	1,520	25	16	20	15	10
20	8	4,612	2,882	56	35	89	67	44
20	9	4,612	2,882	50	31	66	49	33
20	10	4,612	2,882	45	28	50	37	25
20	12	4,612	2,882	36	22	30	23	15
18	8	9,729	6,081	56	35	107	80	54
18	9	9,729	6,081	50	31	80	49	33
18	10	9,729	6,081	45	28	61	46	30
18	12	8,630	5,394	37	23	37	28	19
16	8	13,568	8,480	56	35	125	93	62
16	9	12,907	8,067	50	31	94	70	47
16	10	12,207	7,629	45	28	72	54	36
16	12	10,727	6,704	37	23	45	34	22

(a) LRFD: Capacity reduction factor, ϕ=0.8; ASD: Factor of safety = 2.0

(b) LRFD: Capacity reduction factor, ϕ=0.8; ASD: Factor of safety = 2.0

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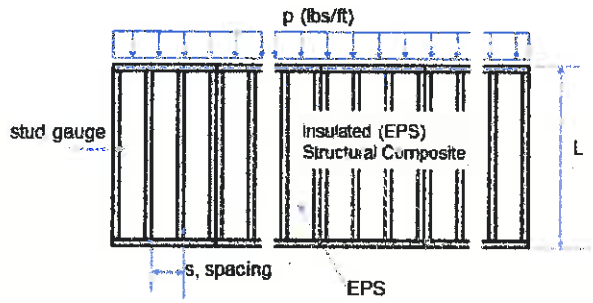
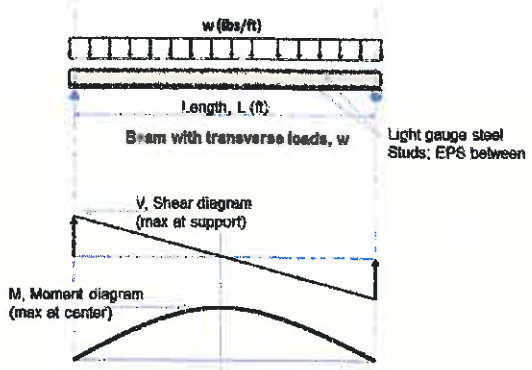


Axial distributed Load (plf)



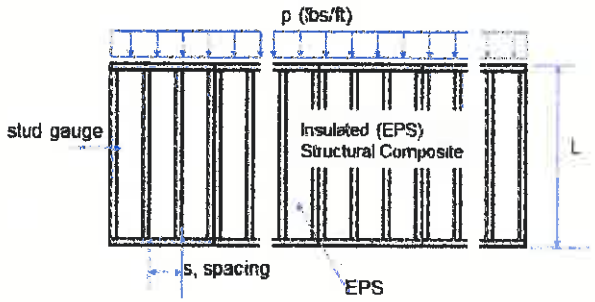
Transverse distributed loading (plf)

Table 5. 3.5" Thick Panel; Stiffeners (350T75-Mils) at 24" o.c.; no gypsum or siding

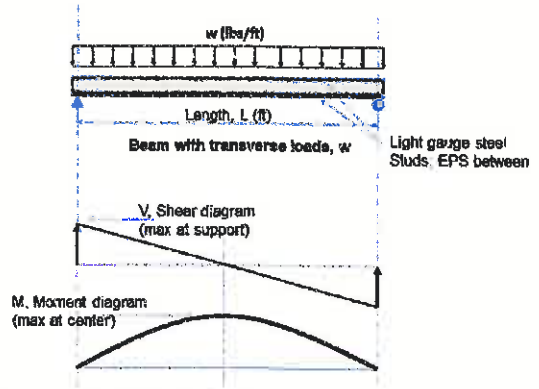
		Axial Distributed loads plf)[a]		(EPS: 1pcf); Transverse Loads (psf)[b]				
		Strength	Allowable	Strength	Service loads			
Gauge	L (ft)	LRFD (φp_n)	ASD (p_a)	(φw_n)	ASD (w_a)	L/180	L/240	L/360
24	8	1,841	1,151	43	27	44	33	22
24	9	1,841	1,151	34	21	31	24	16
24	10	1,841	1,151	27	17	23	17	12
24	12	1,841	1,151	19	12	14	10	7
20	8	3,459	2,162	56	35	64	48	32
20	9	3,459	2,162	48	30	47	35	23
20	10	3,459	2,162	39	24	35	26	17
20	12	3,459	2,162	27	17	21	16	10
18	8	7,297	4,560	56	35	79	59	39
18	9	7,297	4,560	50	31	58	35	23
18	10	7,297	4,560	45	28	43	33	22
18	12	6,472	4,045	35	22	26	20	13
16	8	10,176	6,360	56	35	93	70	46
16	9	9,680	6,050	50	31	69	51	34
16	10	9,155	5,722	45	28	52	39	26
16	12	8,045	5,028	37	23	32	24	16

(a) LRFD: Capacity reduction factor, ϕ=0.8; ASD: Factor of safety = 2.0

(b) LRFD: Capacity reduction factor, ϕ=0.8; ASD: Factor of safety = 2.0



Axial distributed Load (plf)



Transverse distributed loading (plf)

Table 6. 5.5" thick panel with track type studs at 16" o.c.; no gypsum or siding.

		Axial Distributed loads (plf)[a]			(EPS: 1pcf); Transverse Loads (psf)[b]					
		Tested			Strength		Calculated Service loads			
Gauge	Ht (ft)	Failure	LRFD (ϕp_n)	Allowable ASD (p_a)	Tested	LRFD (ϕw_n)	Allowable ASD (w_a)	L/180	L/240	L/360
24	8	4,115	2,821	1,763	125	88	55	80	60	40
24	9		2,821	1,763		74	46	64	48	32
24	10	3,915	2,821	1,763	66	60	38	52	39	26
24	12	3,925	2,821	1,763	50	42	26	35	26	17
20	8	5,750	5,000	3,125	157	88	55	94	70	47
20	9		5,000	3,125		78	49	77	58	39
20	10	6,447	5,000	3,125	88.4	70	44	64	48	32
20	12	6,333	5,000	3,125	93	59	37	45	34	22
18	8		9,977	6,236		88	55	101	76	51
18	9		9,977	6,236		78	49	84	58	39
18	10		9,977	6,236		70	44	71	53	35
18	12		9,938	6,211		59	37	51	38	25
16	8		13,583	8,489		88	55	107	80	53
16	9		13,324	8,327		78	49	90	67	45
16	10		13,040	8,150		70	44	76	57	38
16	12		12,406	7,754		59	37	56	42	28

(a) LRFD: Capacity reduction factor, ϕ=0.8; ASD: Factor of safety = 2.0

(b) LRFD: Capacity reduction factor, ϕ=0.8; ASD: Factor of safety = 2.0

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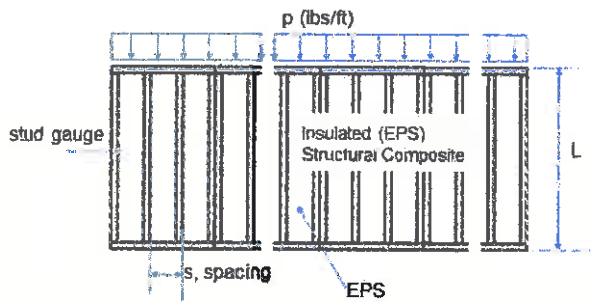
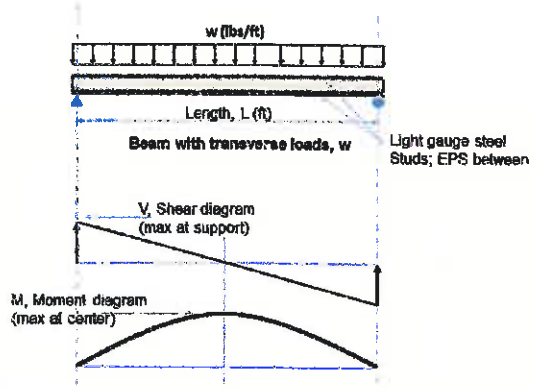


Axial distributed Load (plf)



Transverse distributed loading (plf)

Table 7. 5.5" thick panel with studs at 24" o.c.; no gypsum or siding.

		Axial Distributed Loads (plf)			(EPS: 1 pcf); Transverse Loads (psf)[b]					
		Tested			Strength		Calculated Service loads			
Gauge	Ht (ft)	Failure	LRFD (ϕp_n)	Allowable ASD (p_a)	Tested	LRFD (ϕw_n)	Allowable ASD (w_a)	L/180	L/240	L/360
24	8	3,165	2,116	1,322	82	63	39	66	50	33
24	9		2,116	1,322		49	31	52	39	26
24	10	2,775	2,116	1,322	56	40	25	41	31	20
24	12	2,875	2,116	1,322	37	28	17	27	20	13
20	8		3,750	2,344		88	55	81	61	41
20	9		3,750	2,344		78	49	65	49	33
20	10		3,750	2,344		70	44	53	40	26
20	12		3,750	2,344		59	37	36	27	18
18	8		7,483	4,677		88	55	90	67	45
18	9		7,483	4,677		78	49	73	49	33
18	10		7,483	4,677		70	44	60	45	30
18	12		7,453	4,658		59	37	42	31	21
16	8		10,187	6,367		88	55	96	72	48
16	9		9,993	6,246		78	49	79	59	40
16	10		9,780	6,113		70	44	66	49	33
16	12		9,305	5,816		59	37	47	35	23

(a) LRFD: Capacity reduction factor, ϕ=0.8; ASD: Factor of safety = 2.0

(b) LRFD: Capacity reduction factor, ϕ=0.8; ASD: Factor of safety = 2.0

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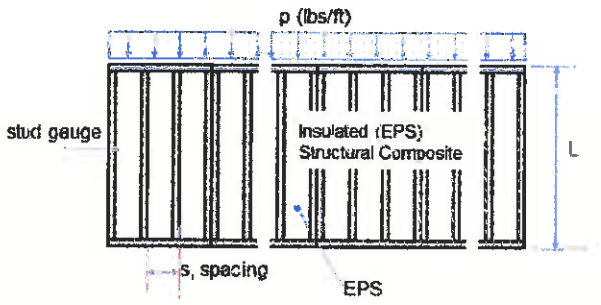
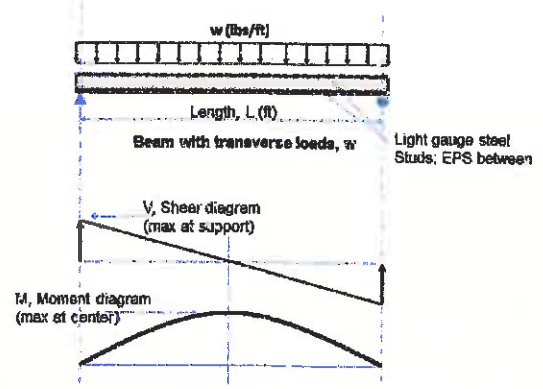


Axial distributed Load (plf)



Transverse distributed loading (plf)

Table 8. 7.5" thick panel with track type studs at 16" o.c.; no gypsum or siding.

		Axial Distributed loads (plf)[a]			(EPS: 1pcf); Transverse Loads (psf)[b]					
		Tested			Strength		Calculated Service loads			
Gauge	Ht (ft)	Failure	LRFD (ϕp_n)	Allowable ASD (p_a)	Tested	LRFD (ϕw_n)	Allowable ASD (w_a)	L/180	L/240	L/360
24	8	4,791	3,311	2,069	138	115	72	65	49	33
24	9		3,311	2,069		91	57	56	42	28
24	10		3,311	2,069		74	46	48	36	24
24	12	4,174	3,311	2,069	65	51	32	36	27	18
20	8		6,205	3,878		120	75	70	52	35
20	9		6,205	3,878		107	67	60	45	30
20	10		6,205	3,878		96	60	52	39	26
20	12		6,205	3,878		80	50	40	30	20
18	8		11,233	7,020		120	75	72	54	36
18	9		11,143	6,965		107	67	62	45	30
18	10		11,019	6,887		96	60	55	41	27
18	12		10,735	6,709		80	50	43	32	21
16	8		14,059	8,787		120	75	73	55	37
16	9		13,917	8,698		107	67	64	48	32
16	10		13,761	8,601		96	60	56	42	28
16	12		13,405	8,378		80	50	44	33	22

(a) LRFD: Capacity reduction factor, ϕ=0.8; ASD: Factor of safety = 2.0

(b) LRFD: Capacity reduction factor, ϕ=0.8; ASD: Factor of safety = 2.0

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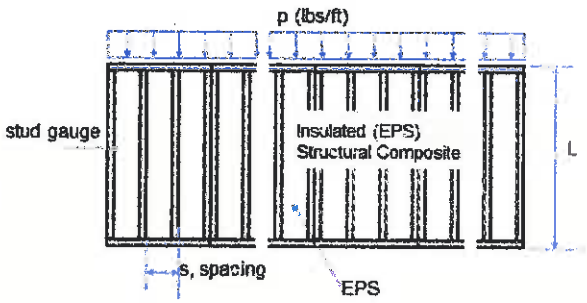
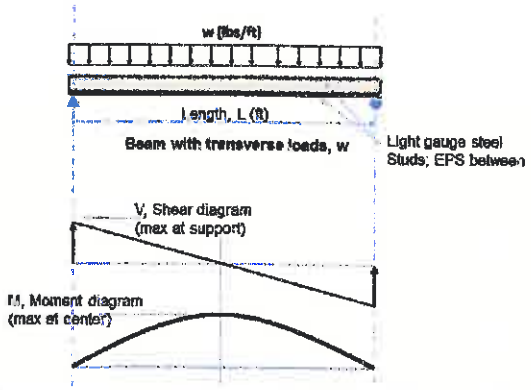


Axial distributed Load (plf)



Transverse distributed loading (plf)

Table 9. 7.5" thick panel with studs at 24" o.c.; no gypsum or siding.

		Distributed Axial Load (psf)			(EPS: 1pcf); Transverse Loads (psf)[b]					
		Tested			Strength		Calculated Service loads			
Gauge	Ht (ft)	Failure	LRFD (ϕp_n)	Allowable ASD (p_a)	Tested	LRFD (ϕw_n)	Allowable ASD (w_a)	L/180	L/240	L/360
24	8		2,483	1,552		77	48	60	45	30
24	9		2,483	1,552		61	38	50	38	25
24	10		2,483	1,552		49	31	42	32	21
24	12		2,483	1,552		34	21	31	23	15
20	8		4,654	2,909		120	75	66	49	33
20	9		4,654	2,909		107	67	56	42	28
20	10		4,654	2,909		96	60	48	36	24
20	12		4,654	2,909		80	50	36	27	18
18	8		8,424	5,265		120	75	69	51	34
18	9		8,358	5,223		107	67	59	42	28
18	10		8,264	5,165		96	60	51	38	25
18	12		8,051	5,032		80	50	39	29	19
16	8		10,544	6,590		120	75	71	53	35
16	9		10,438	6,524		107	67	61	46	30
16	10		10,321	6,450		96	60	53	40	27
16	12		10,054	6,284		80	50	41	31	21

(a) LRFD: Capacity reduction factor, ϕ=0.8; ASD: Factor of safety = 2.0

(b) LRFD: Capacity reduction factor, ϕ=0.8; ASD: Factor of safety = 2.0

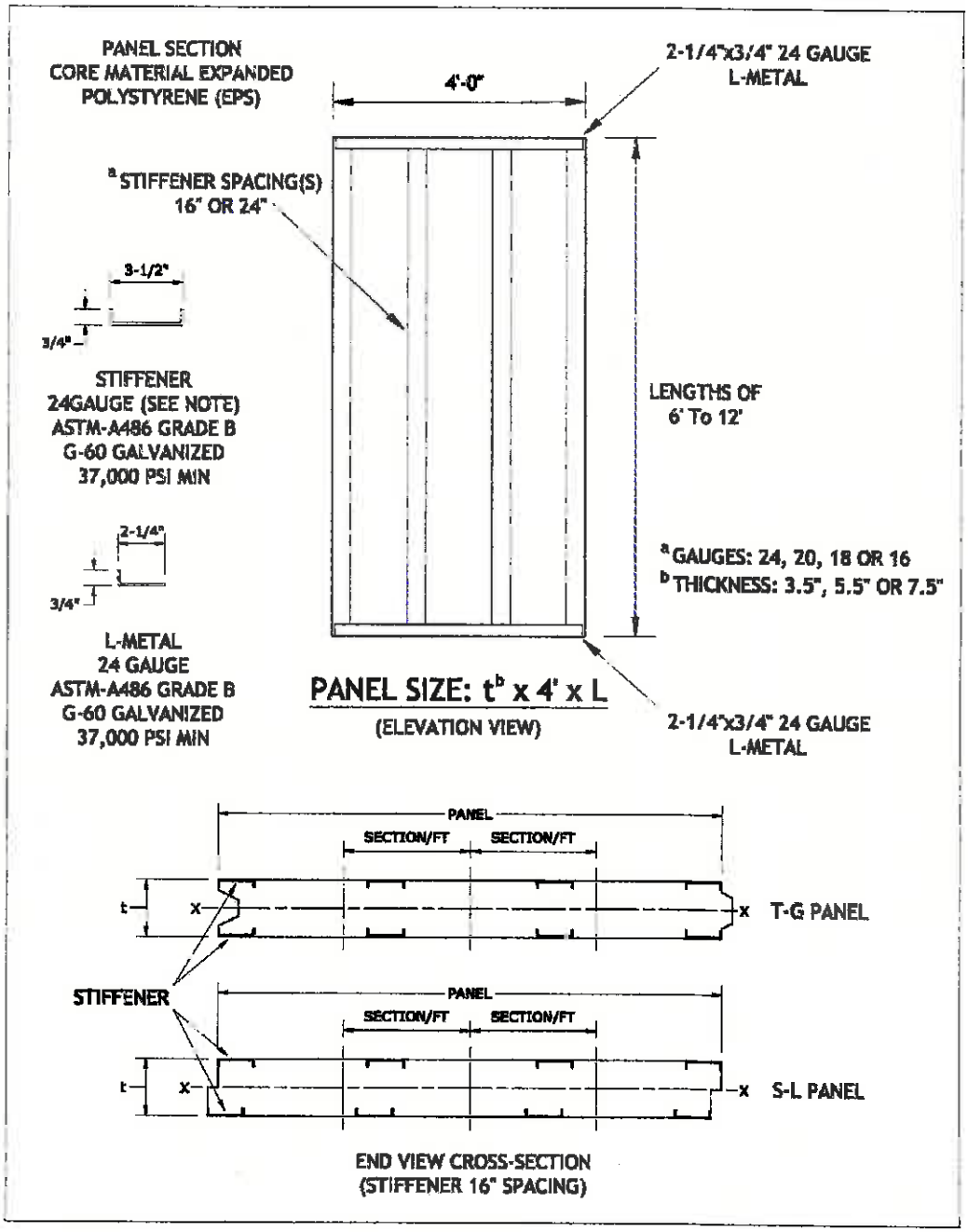


Figure 1 Typical T-G and S-I Structural Insulated Composite Panels

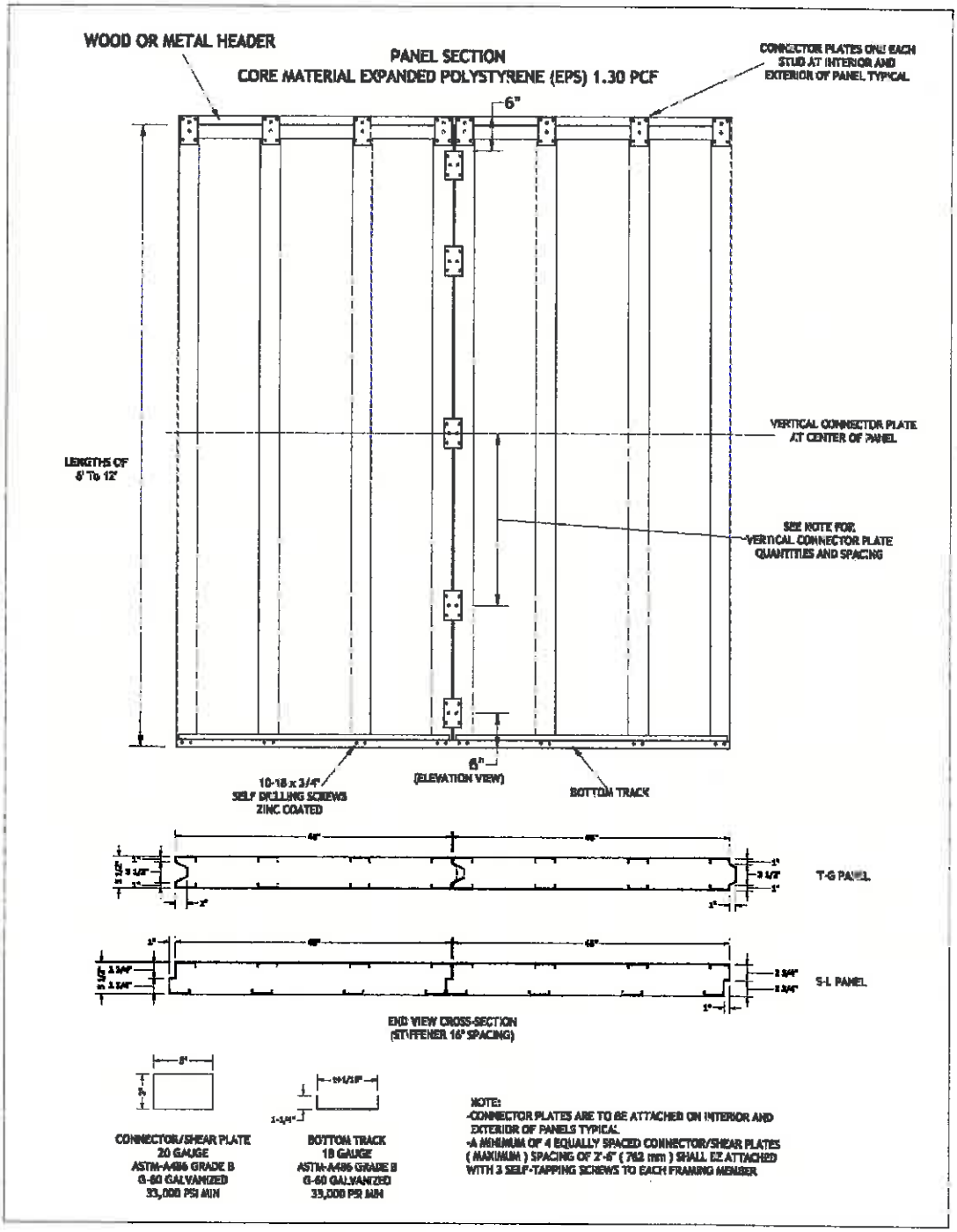


Figure 2 T-G/S-L Fastening System for Two Adjacent Panels

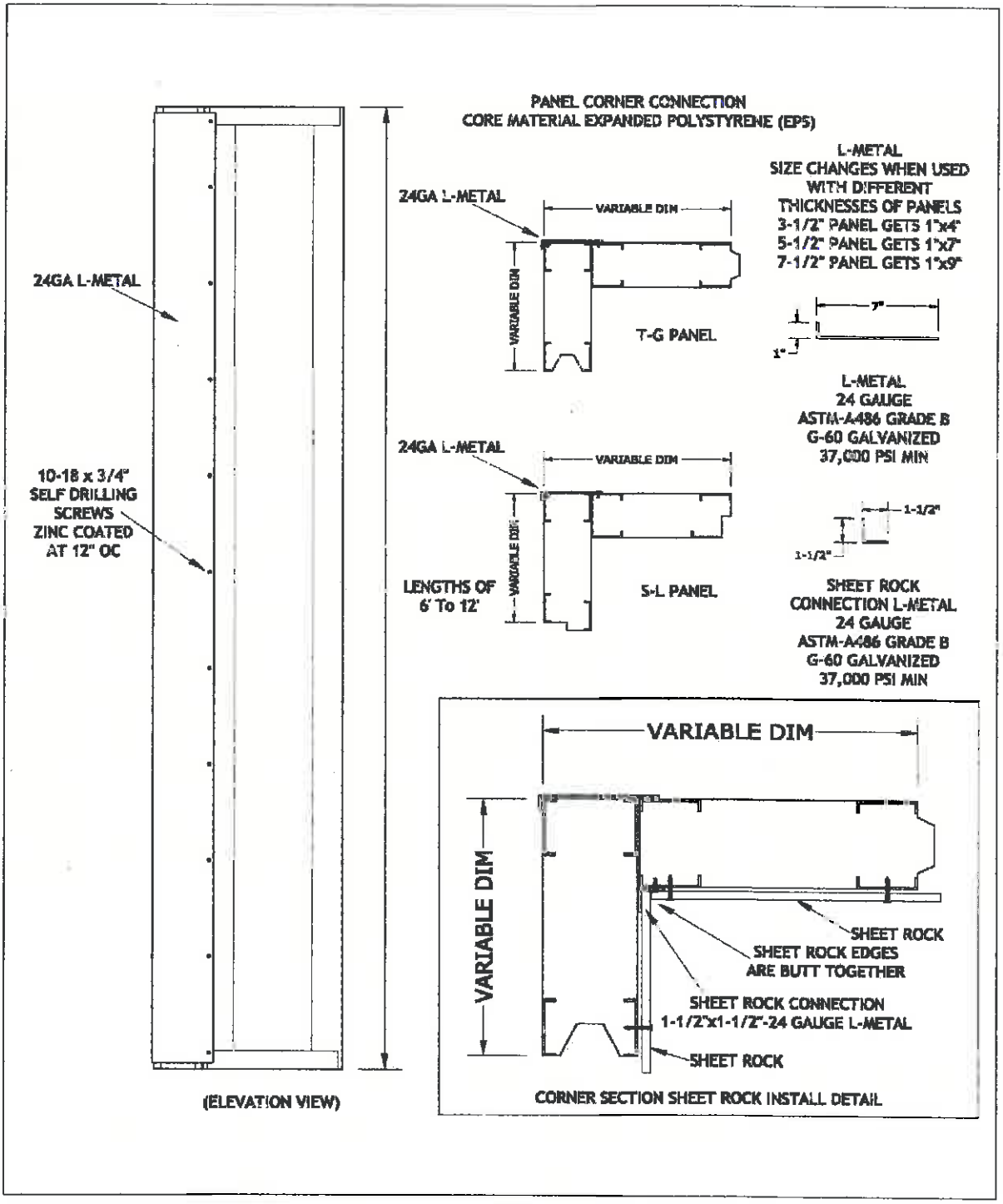


Figure 3 T-G/S-L Wall Corner Detail and Gypsum Installation

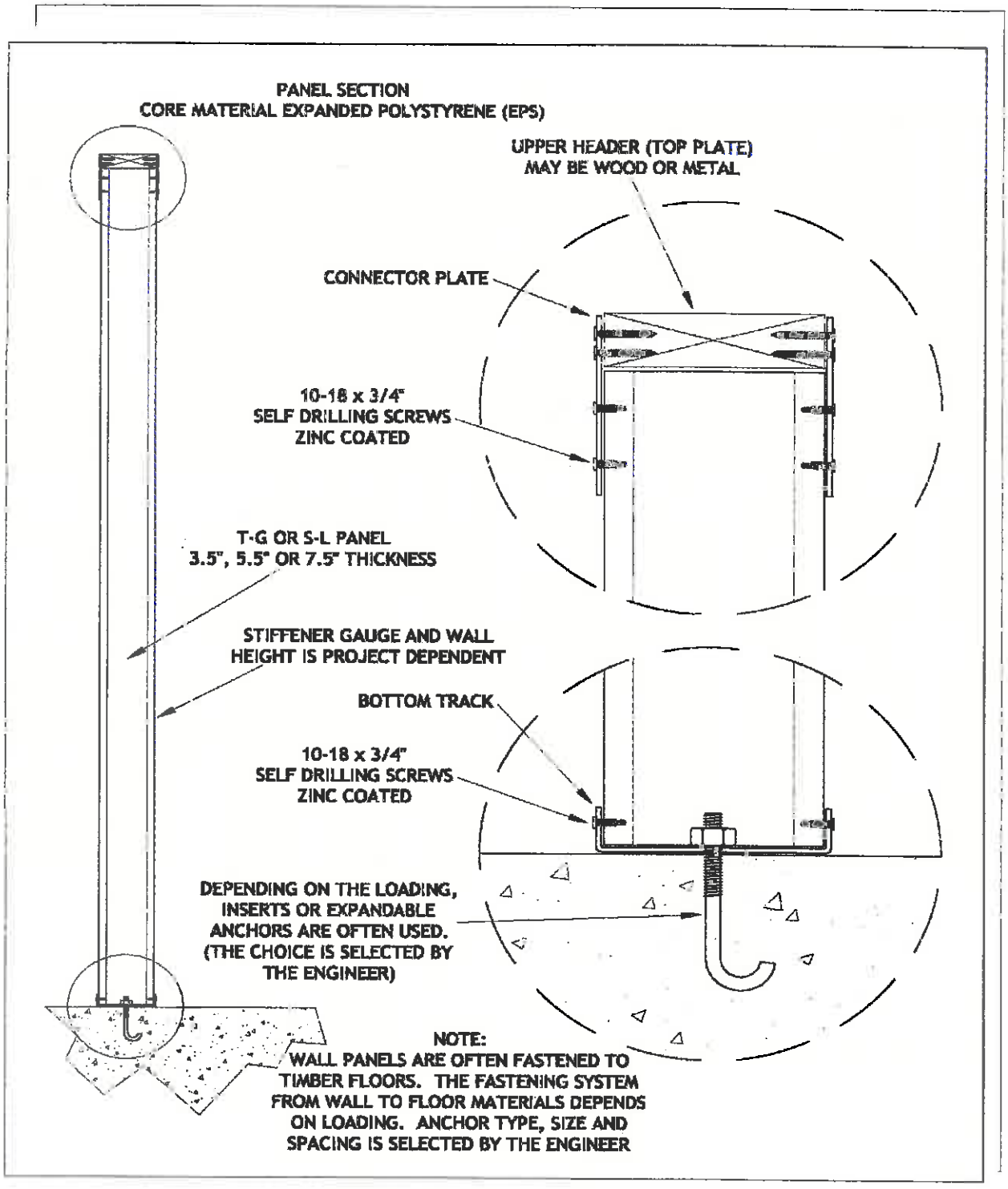


Figure 4 T-G/S-L Wall Panel Floor Anchoring System