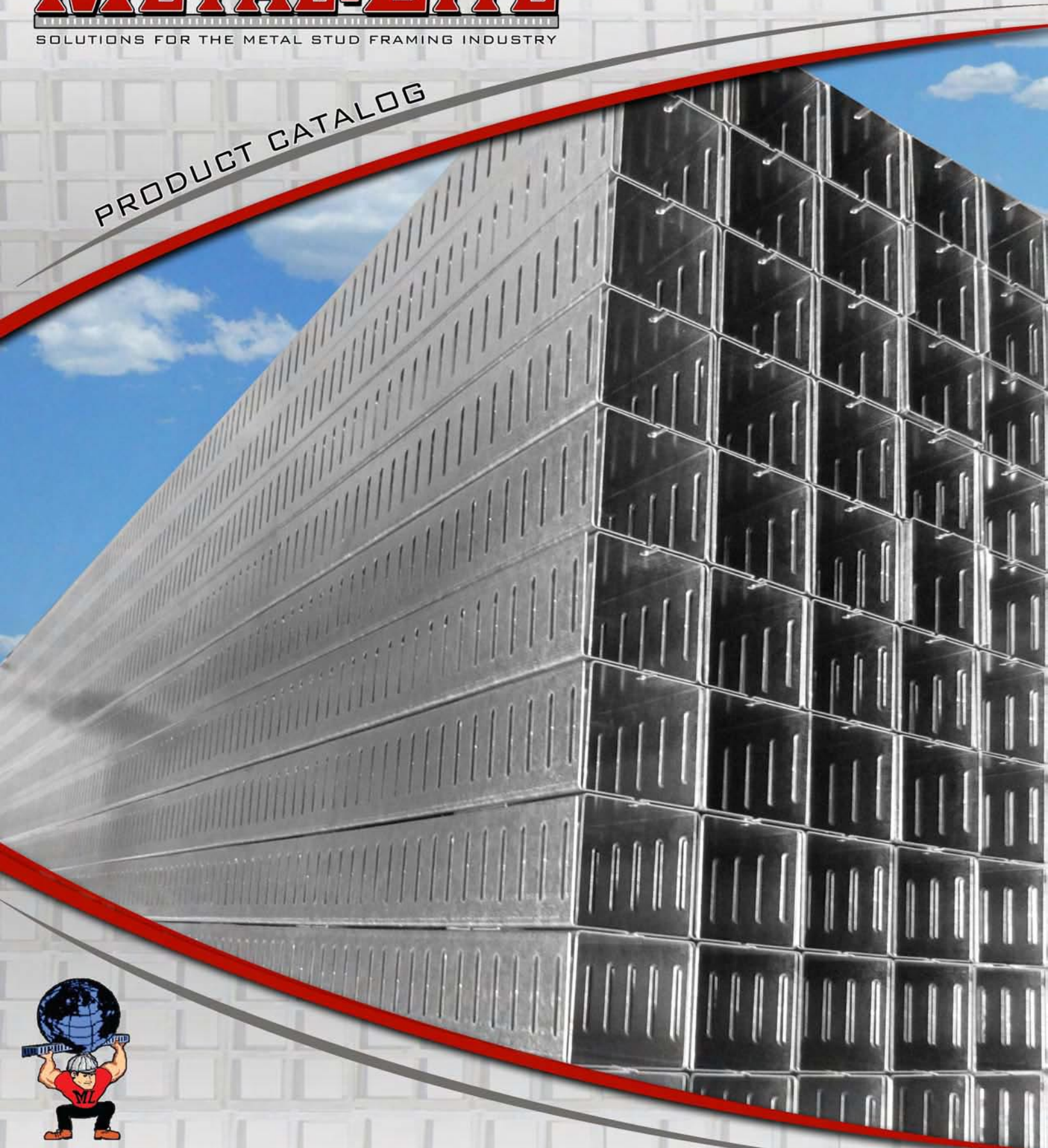


METAL-LITE

SOLUTIONS FOR THE METAL STUD FRAMING INDUSTRY

PRODUCT CATALOG



WWW.METAL-LITE.NET

PH: 800-236-0302

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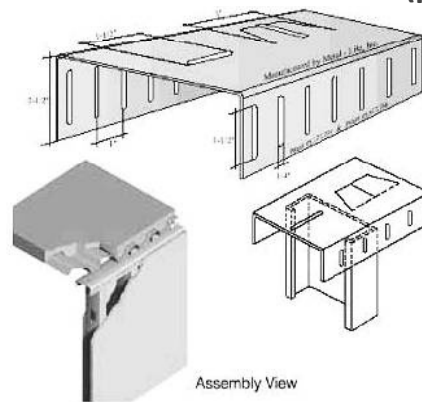
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“The System” Slotted Deflection Track (pat# 5,913,788)



UBC 1997/CBC 1997

Section 702. Definitions

A FIRE-RESISTIVE JOINT SYSTEM is an assemblage of specific materials or products that are designed, tested, and fire-resistance rated in accordance with UBC Standard 7-1 to resist, for a prescribed period of time, the passage of fire through joints.

Section 706.2 Fire-Resistive Joint Systems.

Fire-Resistive Joint Systems shall be tested in accordance with UBC Standard 7-1 or UL 2079 2001 edition under the following conditions:

5. Joint systems shall be tested at the maximum joint width for which they are designed. Joint systems designed to accommodate movement shall be expanded to the maximum joint opening width for which they are intended to function.

7. Joint systems designed to accommodate movement shall be preconditioned by cycling between the minimum and the maximum joint opening width for which they are intended to function for the number of cycles specified in TABLE 7-D.

Table 7-D

Size of Test Specimen is 100 square foot	
Preconditioned Cycles	
Type of Joint System	Number of Cycles
Seismic	100
Expansion/Contraction	500
Wind Sway	500

ASTM E-119 Standard for Fire Tests of Building Construction and Materials

...it is necessary that the fire-resistive properties of materials and assemblies be measured and specified according to a common standard expressed in terms that are applicable alike to a wide variety of materials, situations, and conditions of exposure.

^{1.1} The test methods described in this fire-test-response standard are applicable to assemblies of masonry units and to composite assemblies of structural materials for buildings, including bearing and other walls and partitions...they are also applicable to other assemblies and structural units that constitute permanent integral parts of a finished building.

10. Fire Endurance Test.

10.1 Continue the fire endurance test on the specimen with its applied load, if any, until failure occurs, or until the specimen has withstood the test conditions for a period equal to that herein specified in the conditions of acceptance for the given type of construction.

11. Hose Stream Test.

11.2 The hose stream test shall be conducted on a duplicate test specimen.

11.2.1 The Duplicate specimen shall be exposed to the effects of the hose stream immediately after being subjected to a fire endurance test for a time period of one-half the fire endurance classification period determined from the fire endurance test on the initial specimen.

11.2.2 The length of time that the duplicate specimen is subjected to the fire endurance test shall not exceed 1h.

Test of Bearing Wall and Partitions

14. Size of Specimen

14.1 The area exposed to fire shall be not less than 100 square feet (9 sq. in), with neither dimension less than 9 ft (2.7m). The test specimen shall not be restrained on its vertical edges.

Test of Non-Bearing Wall and Partitions

17. Size of Specimen

17.1 The area exposed to fire shall be not less than 100 square feet (9 sq. m.), with neither dimension less than 9 ft (2.7m). Restrain the test specimen on all four edges.

All metal stud framed walls (load bearing and non-load bearing) must meet the requirements for a fire-resistance-rated assembly of at least 1-2 hour fire rating in compliance with ASTM E-119 ASTM E-1966, ANSI/UL 2079 2001.

Cold-formed steel framing categories (CFSF) AISI S201-07 Product Data Standard

Connectors and Fasteners in Cold-Formed Steel Framing

Connectors are used in cold-formed steel construction to attach members (i.e. studs, joists) to each other or to the primary structure for the purpose of load transfer and support. Since an assembly is only as strong as its weakest component, it is important to engineer each connection so that it meets specified performance requirements.

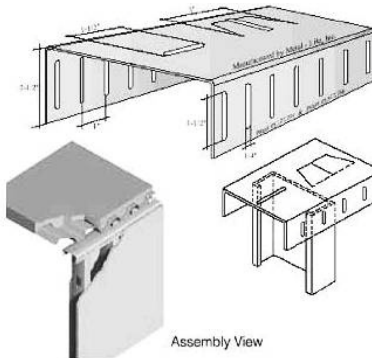
There are two main connection types. Fixed and Movement-Allowing (Slip). Fixed connections of framing members do not allow movement of the connected parts. They can be found in axial-load bearing walls, curtain walls, trusses, roofs, and floors. Movement-Allowing connections are designed to allow deflection of the primary structure in the vertical direction due to live load, or in the horizontal direction due to wind or seismic loads, or both vertical and horizontal directions.

One application for a vertical movement- allowing connection is to isolate non-axial load bearing walls (drywall) from the vertical live load of the structure and to prevent damage to finishes. If the structure is in an active seismic zone, vertical and horizontal movement-allowing connections may be used to accommodate both the vertical deflection and horizontal drift of the structure.

Connectors may be fastened to cold-formed steel members and primary structure using welds, bolts, or self-drilling screws. These fastening methods are recognized in the American Iron and Steel Institute (AISI) 2007 North American Specification for the Design of Cold-Formed Steel Structural Members. Chapter E. Other fastening methods, such as clinching, power actuated fasteners (PAF), mechanical anchors, adhesive anchors and structural glue, are used based on manufacturer's performance-based tests.

Deep Leg Deflection Track and Double Track methods do not allow for positive attachment with the stud. There is no positive connection securing the stud to the deflection track above.

“The System” Slotted Deflection Track (pat# 5,913,788)



“The System” Slotted Deflection Track (pat# 5,913,788):

The only patented single piece system for deflection at the head-of-wall with positive attachment. Meets or exceeds all known building codes. The only deflection track to pass full cycling and fire/hose stream tests as required. Testing in accordance with UBC Standard 7-I and UL 2079, 2001.

Replaces:

Deep Leg Deflection Track

Problems:

NO POSITIVE ATTACHMENT for stud to deep leg track. During a seismic event the integrity of the wall is compromised due to the fact that the studs are allowed to move perpendicular to the track, thus allowing the studs of the wall to simply slide out of the deep leg track because there is no attachment.

Double Track

Problems:

NO POSITIVE ATTACHMENT for inner track to outer track. During a seismic event the integrity of the wall is compromised due to the fact that the studs attached to the inner track are allowed to move perpendicular to the outer track, thus allowing the studs and inner track of the wall to simply slide out of the outer track because there is no attachment.

All metal stud framed walls (load bearing and non-load bearing) must meet the requirements for a fire-resistance-rated assembly of at least 1-2 hour fire rating in compliance with ASTM E-119, ASTM E-1966, ANSI/UL2079 2001.

Deep Leg Track and Double Track have no UL Listings nor have they every been fully cycled to 500 times or fire and hose-stream tested to ASTM and ANSI/UL 2001 Requirements for fire-rated walls.

Metal-Lite "The System" Slotted Track Property Table

Thickness				Size		Weight		Packaging
Gauge	Mills	Design Thickness		Inches	Mm	Lbs/ft	Kg/m	Pcs/Skid
		Inches	Mm					
20	33	0.0346	0.879	2 1/2	63.5	0.882	1.309	100
				3 5/8	92.1	1.015	1.505	100
				4	101.6	1.571	1.571	100
				6	152.4	1.922	1.922	100
				8	203.2	1.529	2.270	100
				10	-	-	-	-
18	43	0.0451	1.146	2 1/2	63.5	1.150	1.706	100
				3 5/8	92.1	1.323	1.965	100
				4	101.6	1.380	2.047	100
				6	152.4	1.687	2.503	100
				8	203.2	1.993	2.959	100
				10	-	-	-	-
16	54	0.0566	1.438	2 1/2	63.5	1.443	2.142	100
				3 5/8	92.1	1.660	2.463	100
				4	101.6	1.732	2.571	100
				6	152.4	2.117	3.142	100
				8	203.2	2.502	3.713	100
				10	254	2.887	4.284	100
14	68	0.0713	1.811	2 1/2	63.5	1.818	2.699	100
				3 5/8	92.1	2.091	3.103	100
				4	101.6	2.182	3.237	100
				6	152.4	2.667	3.959	100
				8	203.2	3.152	4.677	100
				10	254	3.637	5.295	100

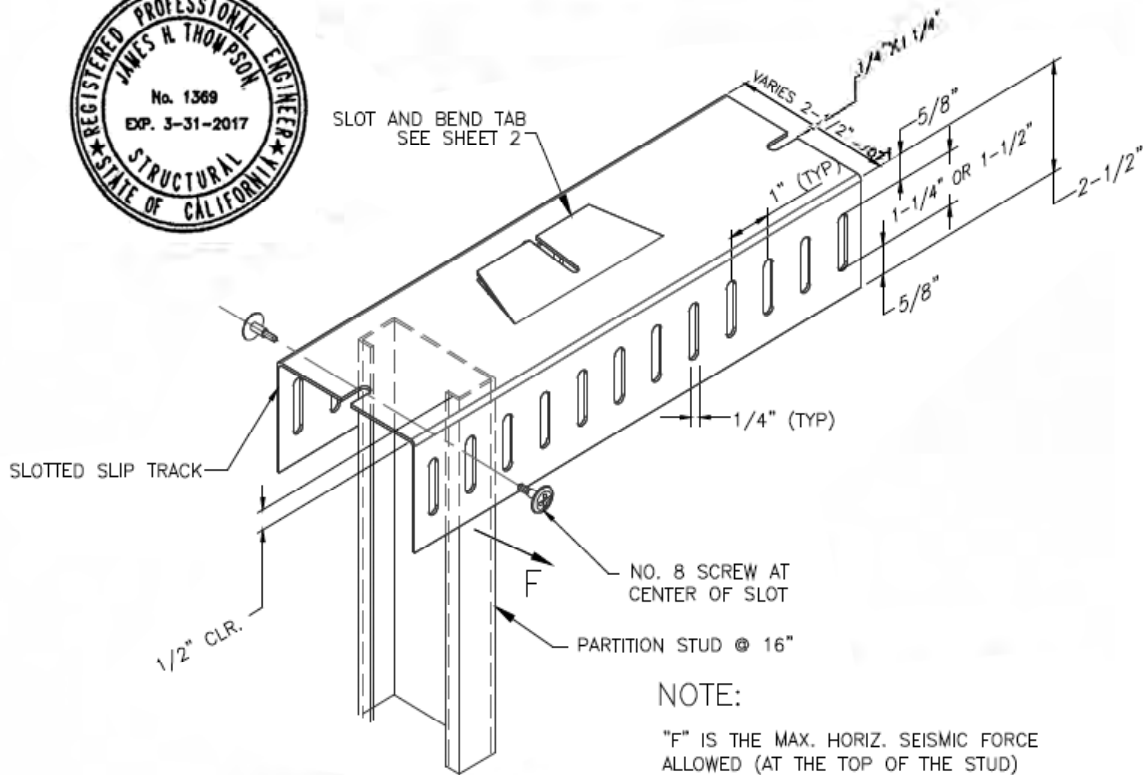
Metal-Lite "The System" Slotted Track Allowable Loads

20 Gauge ST P = 165 lbs	16 Gauge ST P = 314 lbs
18 Gauge ST P = 195 lbs	14 Gauge ST P = 314 lbs

THOMPSON AND ASSOC. STRUCTURAL ENGINEERS, PASADENA, CA.

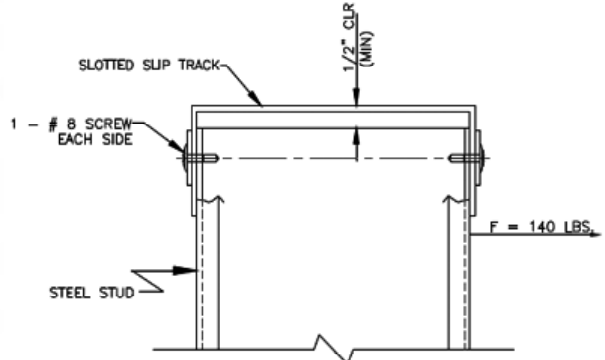
PERFECT WALL, INC.	DES J.H.T.	SHEET 1
	JOB 8-9150	
SLOTTED TOP TRACK - SINGLE TRACK SLIP SYSTEM INTERIOR PARTITIONS	DATE 07-19-2010	OF 3 SHEETS

PHONE (800) 236-0302, (931) 277-5772



ISOMETRIC VIEW

NOTE:
 "F" IS THE MAX. HORIZ. SEISMIC FORCE ALLOWED (AT THE TOP OF THE STUD) DUE TO THE WEIGHT OF THE WALL SUPPORTED EQUIP., BUT NOT INCLUDING CODE REQUIRED 5 PSF LATERAL LOAD WHICH IS NOT ADDITIVE TO WALL DEAD LOAD SEISMIC FORCES.

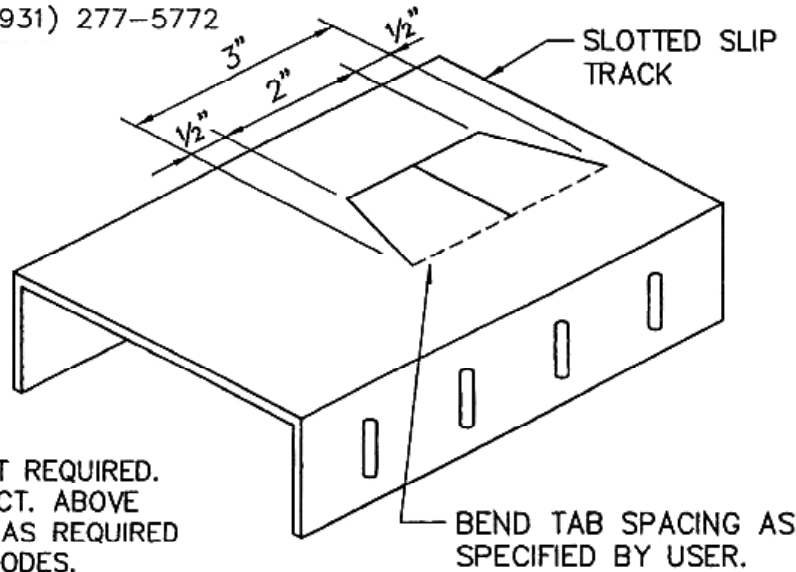


SECTION

THOMPSON AND ASSOC. STRUCTURAL ENGINEERS, PASADENA, CA.

PERFECT WALL, INC.	DES J.H.T.	SHEET
	JOB 8-9150	2
SLOTTED TOP TRACK - SINGLE TRACK SLIP SYSTEM INTERIOR PARTITIONS	DATE 07-19-2010	OF 3 SHEETS

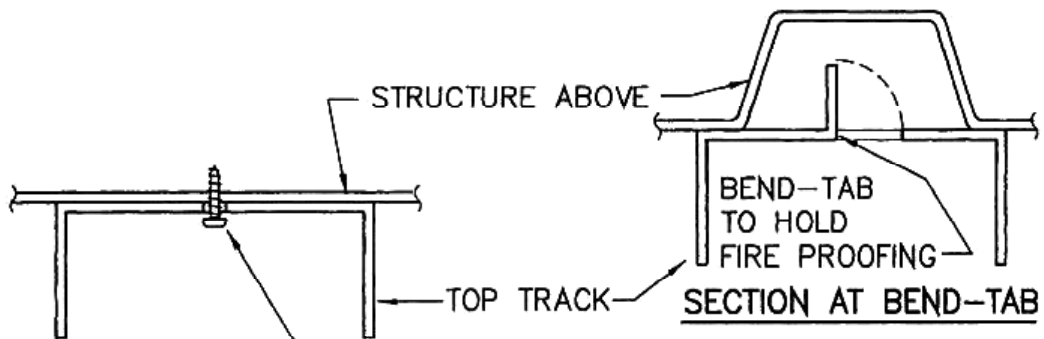
PHONE (800) 236-0302 , (931) 277-5772



NOTES:

1. TRACK IS 16 GA. MIN.
2. FY = 50 KSI (MIN.)
3. SINGLE TRACK SYSTEM,
SECOND TOP TRACK NOT REQUIRED.
4. FASTEN TRACK TO STRUCT. ABOVE
FOR LATERAL SUPPORT AS REQUIRED
BY APPLICABLE BLDG. CODES.
5. SLIP TRACK PATENT NO. 5913788.

ISOMETRIC VIEW



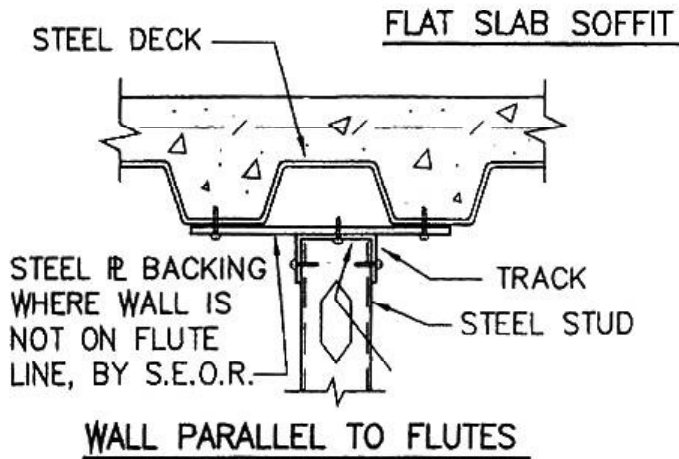
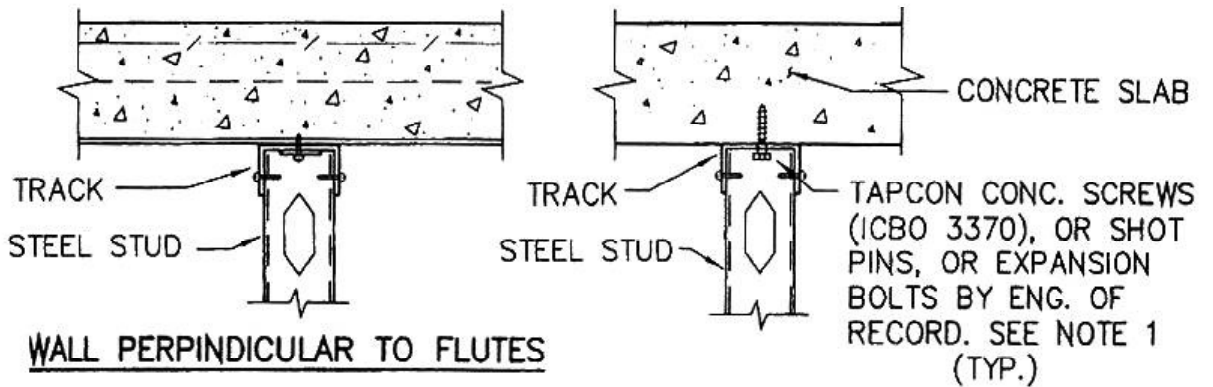
10 SCREW TO STRUCT.
16" O.C., MIN AND AS
DETERMIND BY S.E.O.R.
SEE NOTE 1 ON DRWG. 3

SECTION AT SCREW

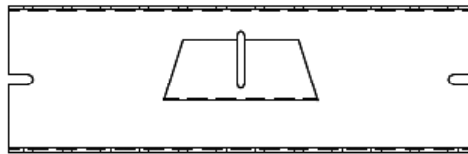
THOMPSON AND ASSOC. STRUCTURAL ENGINEERS, PASADENA, CA.		
PERFECT WALL, INC. SLOTTED TOP TRACK - SINGLE TRACK SLIP SYSTEM INTERIOR PARTITIONS	DES J.H.T.	SHEET
	JOB 8-9150	3
	DATE 07-19-2010	OF 3 SHEETS
PHONE (800) 236-0302, (931) 277-5772		

NOTES:

1. CONNECTION TO STRUCTURE ABOVE SHALL BE DESIGNED BY THE STRUCT. ENG. OF RECORD FOR A SITE SPECIFIC PROJECT. CAPACITY SHALL BE ABLE TO RESIST 140 LBS. PER STUD, MIN., HORIZ. LOAD, AT EA. STUD, WITH #10 SCREW (MIN.) @ 16" O.C. AT STEEL-TO-STEEL CONNECTIONS.
2. WHERE SHEET METAL SCREWS EXTEND INTO CONCRETE, PRE-DRILL CONCRETE AS REQUIRED.



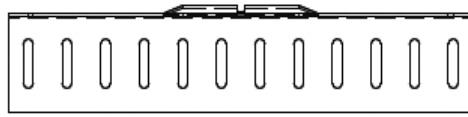
THOMPSON AND LA BRIE, STRUCTURAL ENGINEERS, PASADENA, CA.			SHEET 1
METAL-LITE INC.	(800)236-0302	DES J.H.T.	
SLOTTED TOP TRACK – SINGLE TRACK DETAIL VIEWS		JOB 8-9150	
		DATE 9-1-97	



TOP VIEW



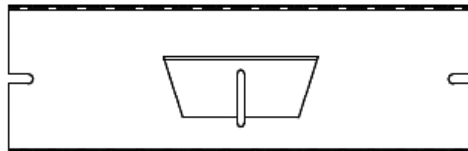
LEFT VIEW



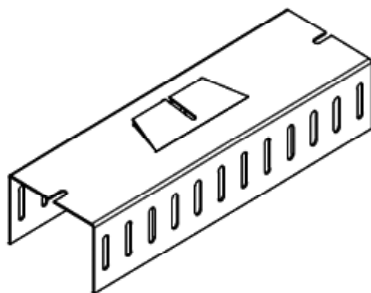
FRONT VIEW



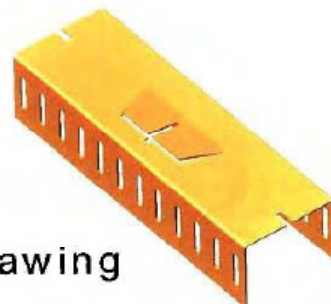
RIGHT VIEW



BOTTOM VIEW

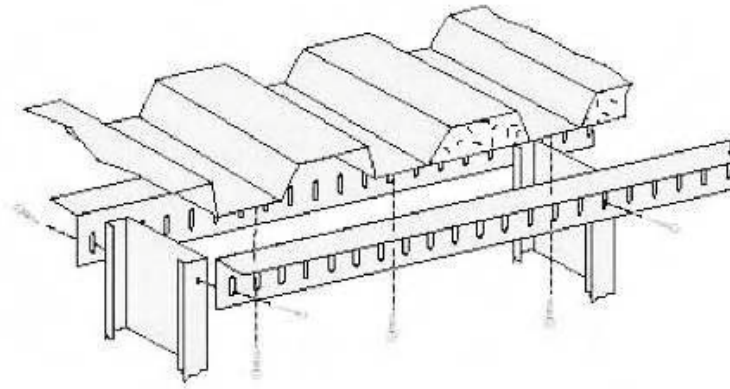


ISOMETRIC VIEW



E-Drawing

The Angle System



Slotted Angle System (pat# 6,055,668):

The Angle System is a patented U.L. tested for 1-2 hour fire and seismic movement of 1 1/2". Slots for deflection are spaced every one inch on center. Provides a flange of 2 1/2" at the head-of-wall for ceiling attachment. The Angle System can be used for retro-fitting of pre-standing walls where deflection at the head-of-wall is required by code.

This two piece system can be used with any wall width. Tack slots allow for upward and downward movement of the structure while maintaining a positive attachment/secure installation.

Meets the cycle, fire resistance, and hose stream testing requirements of the BOCA Code (1999) Section 709; Standard Code Section 705; UBC Section 706 and the IBC 2000. Underwriters Laboratories, Inc. Tested and Listed.

The Angle System is the only two-piece slotted deflection system to meet the requirements for:

Underwriters Laboratories, Inc. (UL) Underwriters Laboratories Standard ANSI/UL 2079

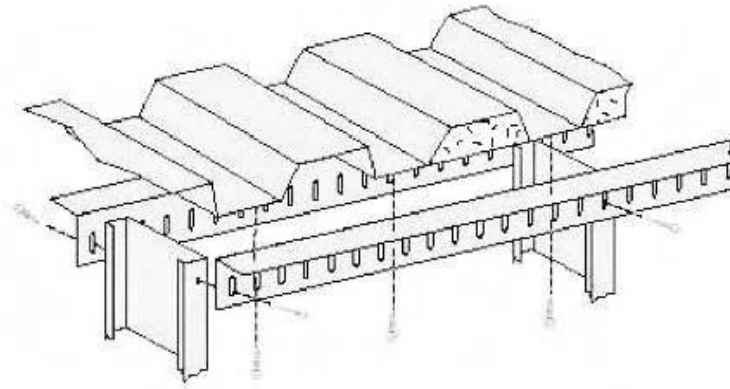
Standard for Fire Resistant Joint Systems ASTM E-1966 Standard for Fire Resistant Joint

Systems ASTM E-119 Standard for Fire Tests of Building Construction and Materials Cycle

Tested 500 times for expansion and contraction Cycle Tested 100 times for seismic

deflection

The Angle System



Underwriters Laboratories, Inc. Listed and Tested:

System Number HW-D-0141 1 & 2 Hour Dynamic/Deflection Head-of-Wall System

System Number HW-D-0142 1 & 2 Hour Dynamic/Deflection Head-of-Wall System

Meets or Exceeds all National Model Building Codes:

UBC 1997

Section 706 - Fire Resistive Joint Systems

Section 709 - Walls and Partitions

BOCA 1999

Section 709 - Fire Resistive Joint Systems

Section 711 - Fire Partitions

Standard Code 1997

Section 704 - Fire Resistant Joint Systems

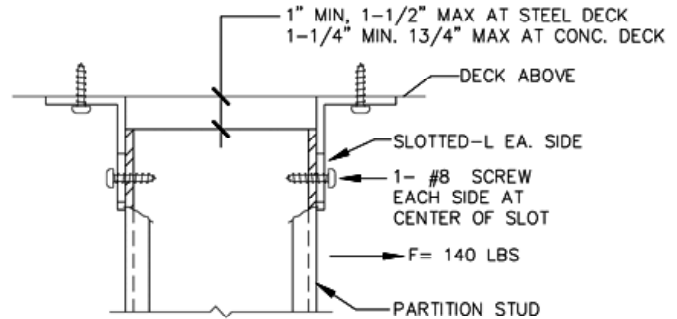
Section 705 - Fire Resistant Joint Systems

IBC 2000

Chapter 7 — Fire Resistant Joint Systems

THOMPSON AND LA BRIE, STRUCTURAL ENGINEERS, PASADENA, CA.

PERFECT WALL, INC	PHONE (800) 236-0302	DES J.H.T.	SHEET CALCULATION 1 OF 1 SHEETS
		JOB 8-0119	
SLOTTED TOP ANGLE SYSTEM INTERIOR PARTITIONS	DATE 3/15/02		



SECTION

NOTES:

- CHECK T LEGS IN BENDING FOR LATERAL LOADS, 5 PSF ON 15' HIGH PARTITION, STUDS @ 16" o.c. OR WALL MOUNTED EQUIPMENT LOADS WITH RESULTING FORCE OR 140 LBS.
- EFFECTIVE L-LEG WIDTH IN BENDING = 2 X DEPTH = 7" NET AT ROOT OF FLANGE.

$$F = 140 \text{ LBS} \rightarrow$$

$$M = 140 \times 2.25 / 2 = 157.5 \text{ IN-LBS.}$$

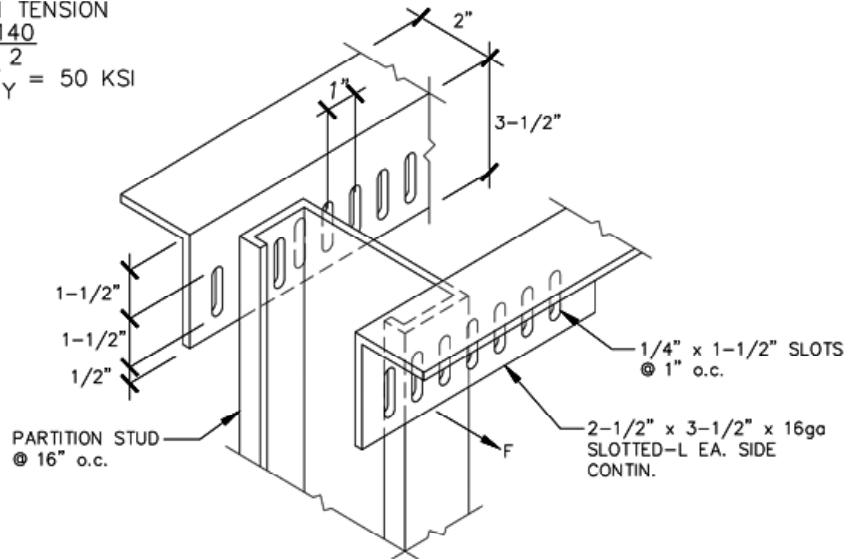
$$f_b = \frac{6 \times 157.5}{7 \times 0.0598^2} = 37.75 \text{ KSI}$$

$$\text{ALLOW} = 0.60 \times 50 \times 1 - 1/3 = 40 \text{ KSI}$$

NO. 8 SCREW IN TENSION

$$t = 94 \text{ LBS} > \frac{140}{2}$$

USE: 14 ga $F_Y = 50 \text{ KSI}$

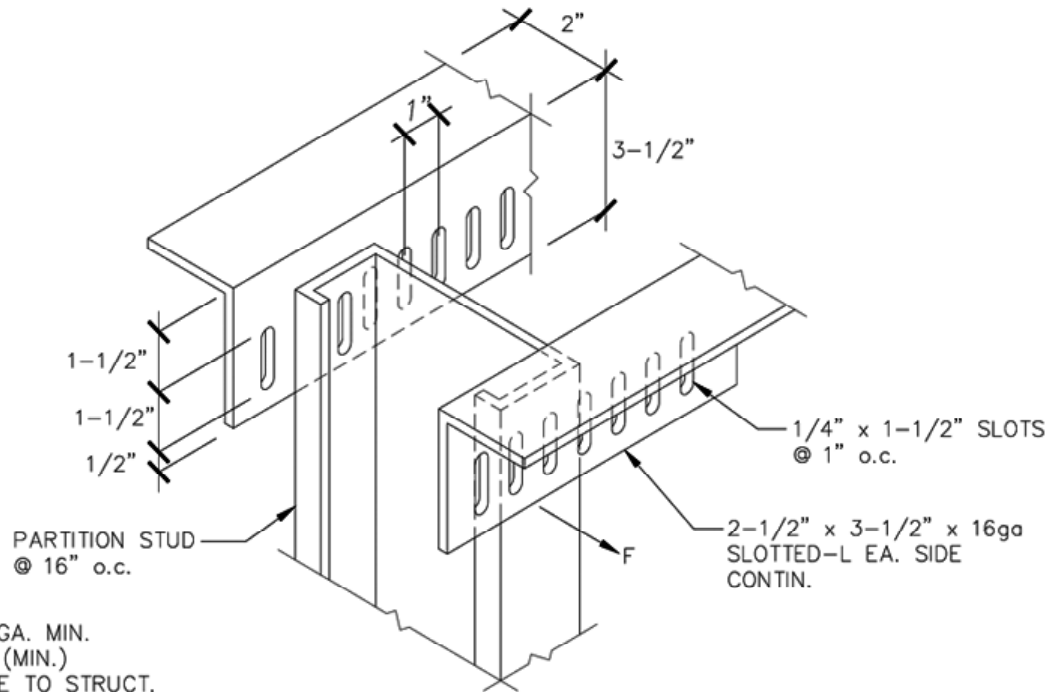


ISOMETRIC VIEW

CONCLUSION:

SLOTTED ANGLES ACCEPTABLE FOR INTERIOR PARTITIONS, DESIGN IS BASED ON SYSTEM RESISTING 5 PSF PARTITION LATERAL LOAD, OR 140 LBS PER STUD (AT TOP) DUE TO WALL MOUNTED EQUIPMENT, TRIBUTARY HORIZONTAL SEISMIC REACTION.

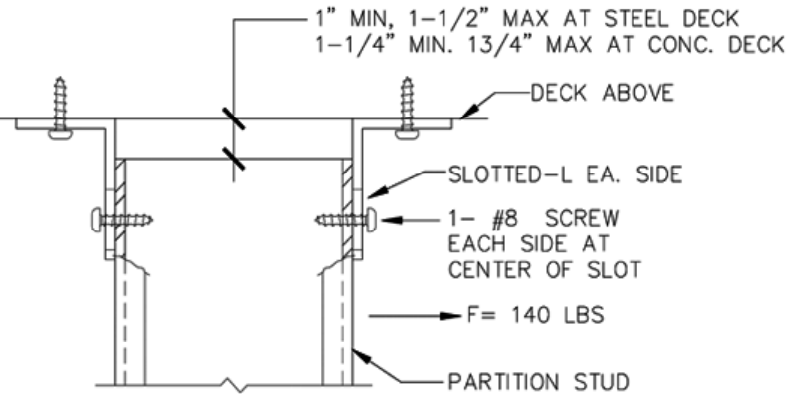
PERFECT WALL, INC	800-236-0302	DES J.H.T.	SHEET 1
		JOB 8-0119	
SLOTTED TOP ANGLE SYSTEM SLIP SYSTEM INTERIOR PARTITIONS		DATE 3/15/02	OF 6 SHEETS



ISOMETRIC VIEW

- NOTES:
1. ANGLE IS 16 GA. MIN.
 2. FY = 50 KSI (MIN.)
 3. FASTEN ANGLE TO STRUCT. ABOVE FOR LATERAL SUPPORT AS REQ'D BY APPLICABLE BLDG. CODES AND AS REQ'D BY S.E.O.R. FOR PROJECT
 4. U.S. PATENT 6058668
C.N. PATENT 2308254

NOTE:
"F" IS THE MAX. HORIZ. SEISMIC FORCE ALLOWED (AT THE TOP OF THE STUD) DUE TO THE WEIGHT OF THE WALL SUPPORTED EQUIP., BUT NOT INCLUDING CODE REQUIRED 5 PSF LATERAL LOAD WHICH IS NOT ADDITIVE TO WALL DEAD LOAD SEISMIC FORCES.



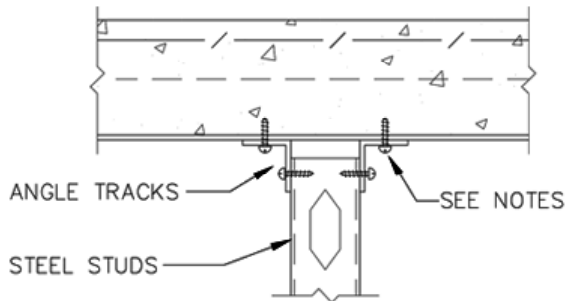
SECTION

PERFECT WALL, INC	800-236-0302	DES J.H.T.	SHEET 2 OF 6 SHEETS
		JOB 8-0119	
SLOTTED TOP ANGLE SYSTEM SLIP SYSTEM INTERIOR PARTITIONS		DATE 3/15/02	

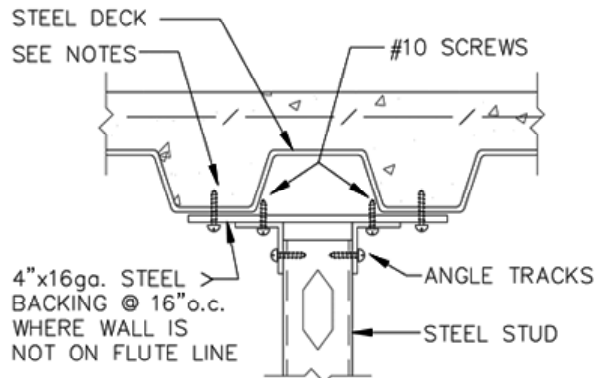


NOTES:

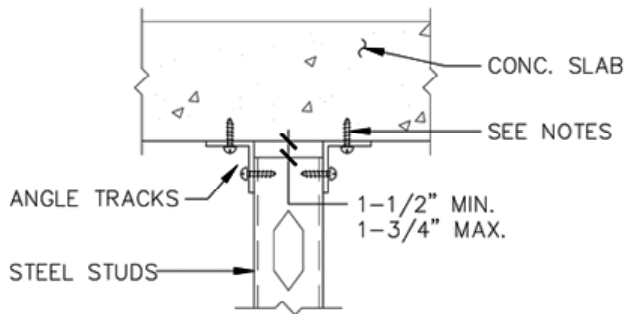
1. CONNECTION TO STRUCTURE ABOVE SHALL BE DESIGNED BY THE STRUCT. ENG. OF RECORD (S.E.O.R.) FOR A SITE SPECIFIC PROJECT. CAPACITY SHALL BE ABLE TO RESIST 140 LBS. PER STUD, MIN., HORIZ. LOAD, AT EA. STUD, WITH #10 SCEW (MIN.) @ 16" O.C. EACH ANGLE AT STEEL-TO-STEEL CONNECTIONS, OR EQUIVALENT.
2. WHERE SHEET METAL SCREWS EXTEND INTO CONCRETE PRE-DRILL CONCRETE AS REQUIRED
3. FOR CONCRETE ANCHORS USE TAPCON CONC. SCREWS (ICBO 3370), WELDS, SHOT PINS, OR EXPANSION BOLTS BY S.E.O.R.



WALL PERPENDICULAR TO FLUTES

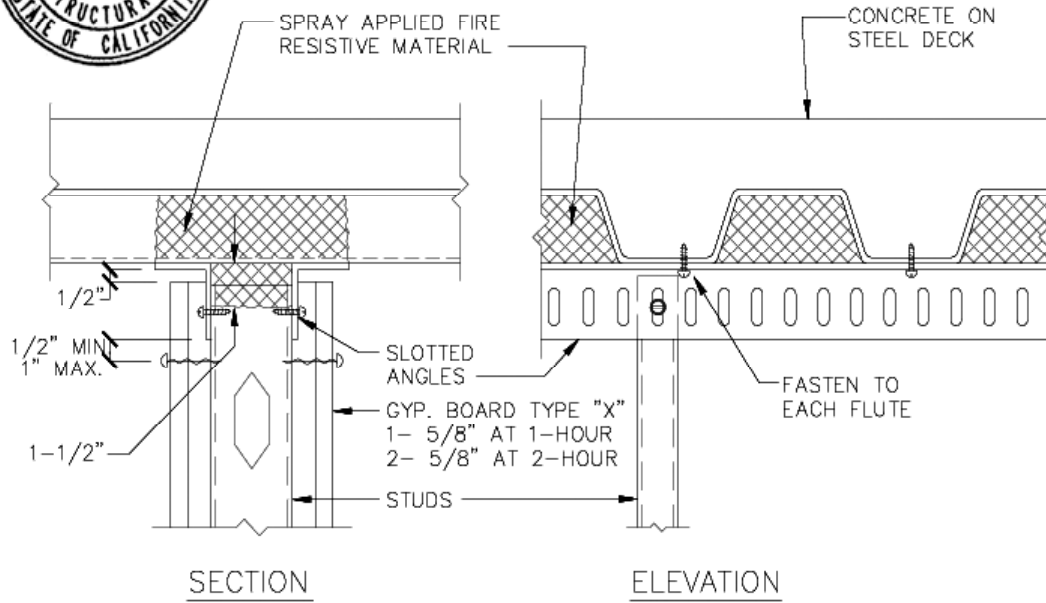


WALL PARALLEL TO FLUTES



FLAT SLAB SOFFIT

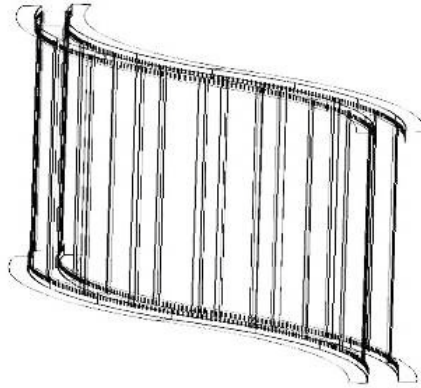
PERFECT WALL, INC SLOTTED TOP ANGLE SYSTEM 1 AND 2 HOUR FIRE RATED ASSEMBLY	800-236-0302	DES J.H.T. JOB 8-0119 DATE 3/15/02	SHEET 3 OF 6 SHEETS



PARTITION PERPENDICULAR TO DECK FLUTES

UL SYSTEMS: HW-D-0141, HW-D-0142

Curved Angle Deflection Track



Curved Angle Deflection Track (pat# 6,055,668):

The Curved Angle Deflection System is a patented U.L. tested for 1-2 hour fire and seismic movement of 1 1/2". Slots for deflection are spaced every one inch on center. Provides a flange of 2 1/2" at the head-of-wall for ceiling attachment. The Curved Angle System can be used for retrofitting of pre-standing curved walls where deflection at the head-of-wall is required by code.

This two piece system can be used with any wall width. Tack slots allow for upward and downward movement of the structure while maintaining a positive attachment/secure installation.

Meets the cycle, fire resistance, and hose stream testing requirements of the BOCA Code (1999) Section 709; Standard Code Section 705; UBC Section 706 and the IBC 2000. Underwriters Laboratories, Inc. Tested and Listed.

ASTM E-1966 Standard for Fire Resistant Joint Systems

ASTM E-1966 Hose Stream Test Procedure

14.1 Requirements.

14.1.1 Within 10min after the end of the fire endurance test, subject test specimens that are extensions of walls to the impact, erosion, and cooling effects of a host stream.

14.1.2 Conduct the hose stream test on a duplicate test assembly which has been conditioned, movement cycled, and subjected to a fire test equal to one-half of the fire endurance but not more than 60 min.

All metal stud framed walls (load bearing and non-load bearing) must meet the requirements for a fire-resistance-rated assembly of at least 1-2 hour fire rating in compliance with ASTM E-119, ASTM E-1966, ANSI/UL 2079 2004.

UBC 1997/CBC 1997

Section 702.

Definitions.

A FIRE-RESISTIVE JOINT SYSTEM is an assemblage of specific materials or products that are designed, tested, and fire-resistance rated in accordance with UBC Standard 7-1 to resist, for a prescribed period of time, the passage of fire through joints.

Section 706.2 Fire-Resistive Join Systems.

Fire-resistive joint systems shall be tested in accordance with UBC Standard 7-1 or UL 2079 2001 edition under the following conditions:

5. Joint systems shall be tested at the maximum joint width for which they are designed. Joint systems designed to accommodate movement shall be expanded to the maximum joint opening width for which they are intended to function.

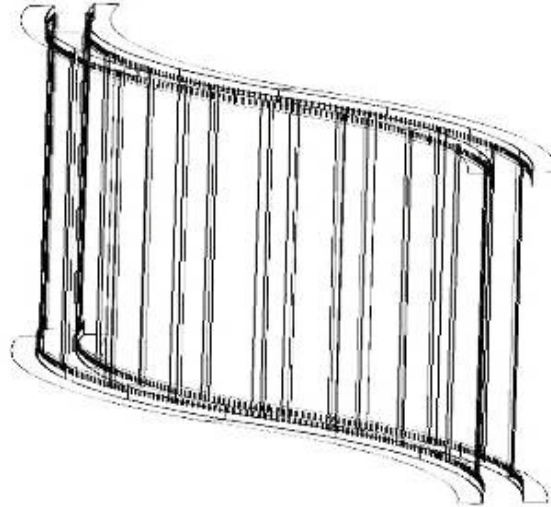
7. Joint systems designed to accommodate movement shall be preconditioned by cycling between the minimum and the maximum joint opening width for which they are intended to function for the number of cycles specified in TABLE 7-D.

Table 7-D

Size of Test Specimen is 100 square foot	
Preconditioned Cycles	
Type of Joint System	Number of Cycles
Seismic	100
Expansion/Contraction	500
Wind Sway	500

Curved Angle Deflection Track

(pat# 6,055,668)



The Curved Angle Deflection Track is the only curved track to allow deflection at the head-of-wall where cycling is required by code.

Curved Angle Deflection Track is the only curved track system to be fully cycled 500 times and fire & hose stream tested in accordance with ANSI/UL 2079 (2001) and the ASTM Standards, E-119 & E-1966.

UBC 1997

Section 706 - Fire Resistive Joint Systems
Section 709 - Walls and Partitions

BOCA 1999

Section 709 - Fire Resistive Joint Systems
Section 711 - Fire Partitions

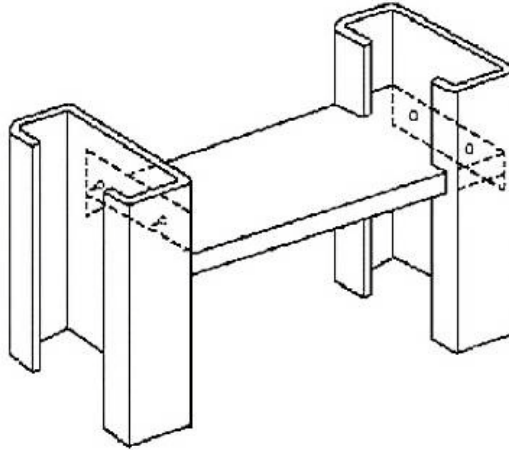
Standard Code 1997

Section 704 - Fire Resistant Joint Systems
Section 705 - Fire Resistant Joint Systems

IBC 2000

Chapter 7 - Fire Resistant Joint Systems

Fire-Tite Bridging & Blocking



Fire-Tite Bridging & Blocking (pat# 6,260,318):

Fire-Tite bridging, blocking, and draft stop. Bridging between studs to keep stud straight in the wall. Fire blocking for metal stud construction with 99% coverage.

Bridging, Fire Blocking, and Draft Stopping

Fire-Tite is a simple, easily installed, cost effective solution to all metal stud framed bridging. Replaces traditional channel iron bridging with clips.

FIRE BLOCKING. Building materials or materials approved for use as fire-blocking, installed to resist the free passage of flame to other areas of the buildings through concealed spaces.

- No clips to install
- No wire to install
- No trimming
- No threading through punch holes
- Insert between metal studs, twist so stud legs fit in notch and screw off
- Availability floor inventory maintained to meet any demand. Fire-Tite™ is the simple and easy solution where fire blocking is required between studs
- Largest percentage area of closure of open area
- Faster to install than fire treated wood no trimming or custom cutting
- Easy installation - One piece can be used for both bridging and blocking

Available in 3-5/8 inch, 4 inch, and 6 inch widths, 16 inch and 24 inch lengths in 20 gauge, 18 gauge, and 16 gauge galvanized steel.

IBC 2009 Section 707 Fire Barriers

707.5.1 Supporting Construction

The supporting construction for a fire barrier shall be protected to afford the required fire-resistance rating of the fire barrier supported. Hollow vertical spaces within a fire barrier shall be fire blocked in accordance with **Section 717.2** at every floor.

Section 717 Concealed Spaces

717.1 General

Fire-blocking and draft-stopping shall be installed in combustible concealed locations in accordance with this section. Fire-blocking shall comply with Section 717.2...The permitted use of combustible materials in concealed spaces of buildings of Type I or II construction shall be limited to the applications indicated Section 717.5.

717.2 Fire-blocking

Fire-blocking shall be installed to cut off concealed draft openings (both vertical and horizontal) and shall form an effective barrier between floors...Fire-blocking shall be installed in the locations specified in 717.2.2 through 717.2.7

717.2.1.4 Fireblocking Integrity

The integrity of fireblocks shall be maintained.

717.2.2 Concealed Wall Spaces

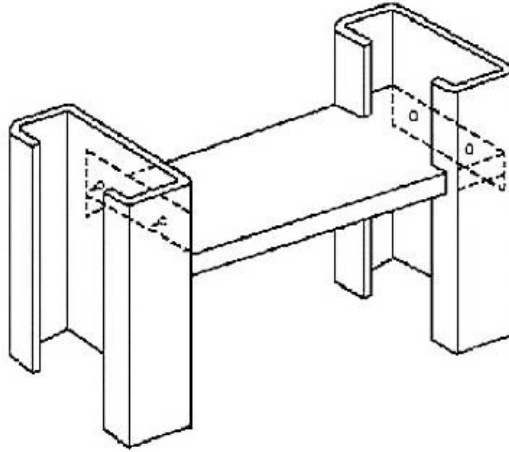
Fire-blocking shall be provided in concealed spaces of stud walls and partitions, including furred spaces, and parallel rows of studs or staggered studs, as follows:

1. Vertically at the ceiling and floor levels.
2. Horizontally at intervals not exceeding 10ft (3048mm).

717.5 Combustible materials in concealed spaces in Type I or II construction

Combustible materials shall not be permitted in concealed spaces of buildings of Type I or II construction.

Fire-Tite Bridging & Blocking (pat# 6,260,318)



Fire-Tite bridging, blocking, and draft stop. Fire-Tite has Bridging between studs to keep stud straight in the wall, which cancels out the need for cold-rolled channel bridging with clips. Fire-Tite also provides fire blocking for metal stud construction with 99% coverage.

Fire-Tite is the most cost effective solution for fire-blocking a metal stud framed wall.

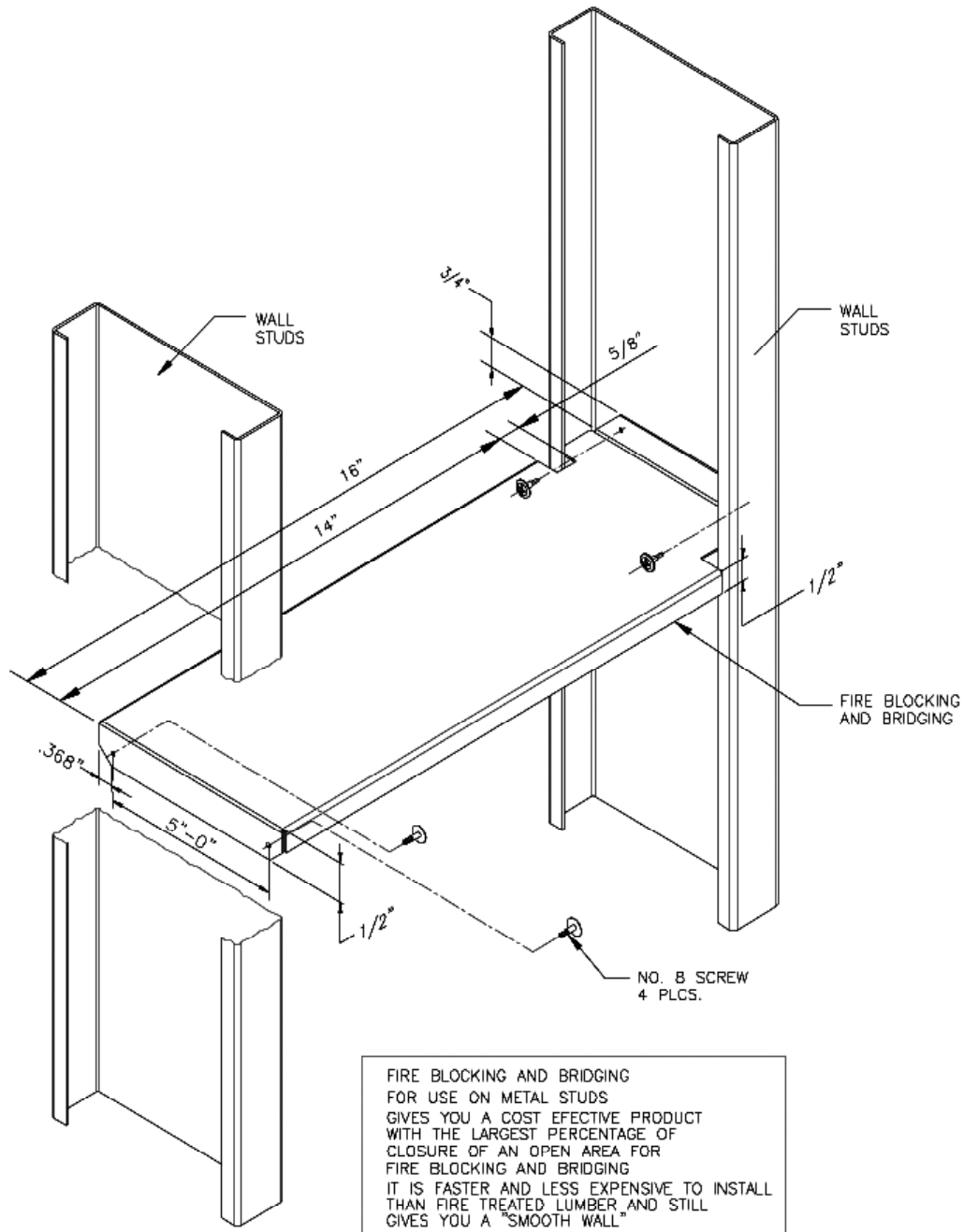
Excerpt from the IBC-2009 717.2.1 Fire Blocking Materials

replaces:

- 1 Two-inch nominal lumber
- 2 Two thickness of 1-inch nominal lumber with broken lap joints.
- 3 One thickness of 0.719-inch wood structural panels with joints backed by 0.719-inch wood structural panels.
- 4 One thickness of 0.75-inch particleboard with joints backed by 0.75 particle board.
- 5 One-half-inch cement-based board.
- 6 One-fourth-inch cement-based millboard.
- 7 Batts or blankets of mineral wool, mineral fiber or other approved materials installed in such a manner as to be securely retained in place.

Combustible materials shall not be permitted in concealed spaces of buildings of Type I or II construction. As stated by the IBC 2009 Section 717 (Concealed Spaces) 717.5

METAL-LITE	800-236-0302	DES J.H.T.	SHEET 1
Fire Blocking and Bridging		JOB	
		DATE	



THOMPSON AND LA BRIE, STRUCTURAL ENGINEERS, PASADENA, CA.

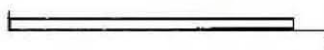
METAL-LITE	(800) 236-0302	DES J.H.T.	SHEET
Fire Blocking and Bridging		JOB	1
		DATE	OF 1 SHEETS



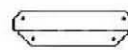
TOP VIEW



LEFT VIEW



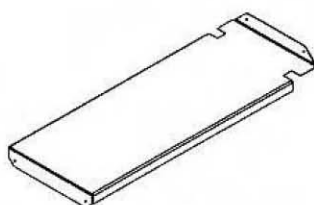
FRONT VIEW



RIGHT VIEW



BOTTOM VIEW

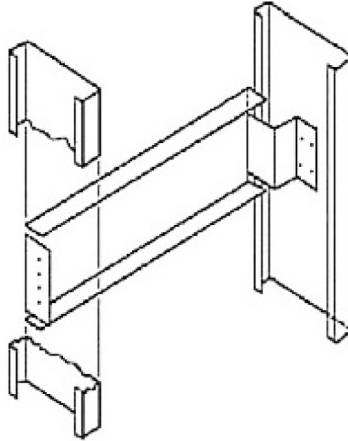


ISOMETRIC VIEW



E-Drawing

Flush-Mount Backing



Flush-Mount ADA Compliant Backing (pat# 5,189,857) :

Flush-Mount is the backing solution that is easy and fast to install between studs when a smooth wall is demanded.

UL Tested to 250 push/pull point load complying with ADAAG Section 4.26.
Mounts in a straight line for path of travel in hospitals, schools, etc.

Meets the requirements of the Americans with Disabilities Act Accessibility Guidelines (ADAAG), the BOCA (1999), Standard Code (1997), and UBC (1997) model building codes, the International Building Code 2000, and both the ICC/A117.1-1998 Section 609 (Grab Bars) Section 610 (Seats) and ANSI/ASCE 7-98 Standards.

ALLOWABLE LOADS (Pounds)				
Stud Spacing	Load Type	Stud Gauge		
		16ga	18ga	20ga
16"	T	284	284	284
	V	566	570	306

(Americans with Disabilities Act Accessibility Guidelines)

ADAAG Section 4.26

4.26 Handrails, Grab Bars, Tub and Shower Seats. 4.26.1* General. All handrails, grab bars, and tub and shower seats required to be accessible by **4.1** (application), **4.8** (ramps), **4.9** (stairs), **4.16** (water closets), **4.17** (toilet stalls), **4.20** (bath tubs) or **4.21** (shower stalls) shall comply with 4.26.

4.26.3 Structural Strength. The structural strength of grab bars, tub and shower seats, fasteners, and mounting devices shall meet the following specification:

(1) Bending stress in a grab bar or seat induced by the maximum bending moment from the application of 250 lbf (1112N) shall be less than the allowable stress for the material of the grab bar or seat.

(2) Shear stress induced in a grab bar or seat by the application of 250 lbf (1112N) shall be less than the allowable shear stress for the material of the grab bar or seat. If the connection between the grab bar or seat and its mounting bracket or other support is considered to be fully restrained, then direct and torsional shear stresses shall be totaled for the combined shear stress, which shall not exceed the allowable shear stress.

(3) Shear force induced in a fastener or mounting device from the application of 250 lbf (1112N) shall be less than the allowable lateral load of either the fastener or mounting device or the supporting structure, whichever is the smaller allowable load.

(4) Tensile force induced in a fastener by direct tension force of 250 lbf (112N) plus the maximum moment from the application of 250 lbf (1112N) shall be less than the allowable withdrawal load between the fastener and the supporting structure.

(5) Grab bars shall not rotate within their fittings.

ICC/A117.1-2003 Section 609 (Grab Bars)

Section 609 (Grab bars)

609.8 Structural Strength.

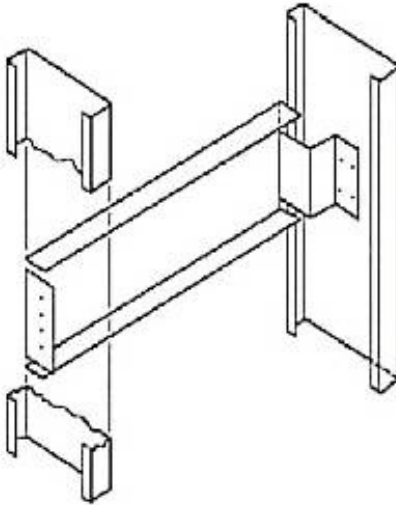
Allowable stresses in bending, shear, and tension shall not be exceeded for materials used where a vertical or horizontal force of 250 lb (1112 N) is applied at any point on the grab bar, fastener mounting device, or supporting structure.

Section 610 (Seats)

610.4 Structural Strength.

Allowable stresses in bending, shear, and tension shall not be exceeded for materials used where a vertical or horizontal force of 250 pound (1112 N) is applied at any point on the seat, fastener mounting device, or supporting structure.

Flush-Mount ADA Compliant Backing (pat# 5,189,857)



Flush-Mount Backing is the only product on the market today to meet the requirements of the Americans with Disabilities Act Accessibility Guidelines 4.26 (ADAAG), the BOCA (1999), Standard Code (1997), and UBC (1997) model building codes, the International Building Code 2000, and both the ICC/A 117.1-2003 Section 609 (Grab Bars) Section 610 (Seats) and ANSI/ASCE 7-98 Standards. Flush-Mount is the only product ever tested to UL Standards requiring 250 pull/point load for handrails, grab bars, and seats.

Replaces:

Steel Plate Backing

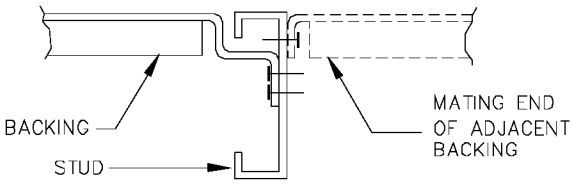
Steel Plate backing has never been UL Tested to 250 lbs pull/point load and does not pass any code.

Flat Strap Backing Flat strap backing has never been UL Tested to 250 lbs pull/point load and does not pass any code.

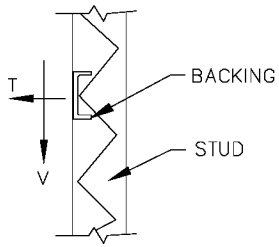
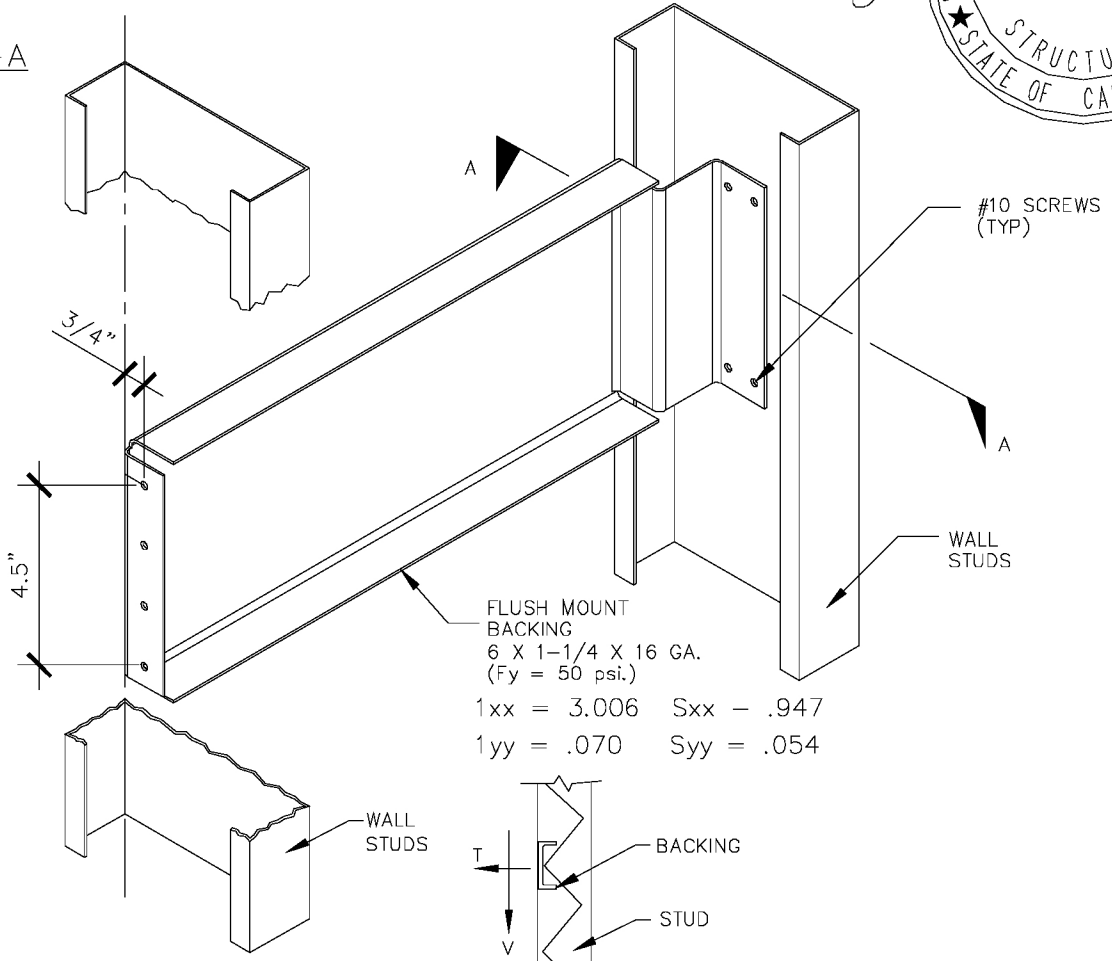
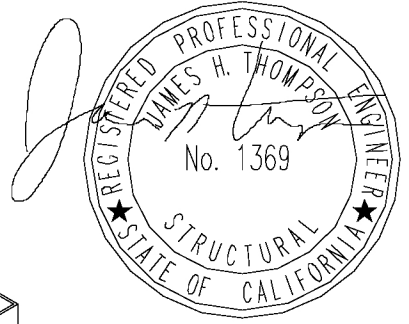
Flush-Mount Backing is the most cost effective means where ADA Code applies and a smooth wall is needed. No other product on the market today can accomplish this with full code compliance.

Flush-Mount is the only patented backing system that meets ADA Code with a smooth wall.

METAL-LITE	(800) 236-0302	DES J.H.T.	SHEET
Flush Mount Backing : 6 x 1-1/4 x 16 Ga. 50 ksi. Face - Edge Projection Free		JOB 8-9150	1
		DATE 9-25-97	OF 2 SHEETS



PLAN A-A



LOAD TYPES

ALLOWABLE LOADS (LBS)

STUD SPACING	LOAD TYPE	STUD GAGE		
		16	18	20
16"	T	264	264	264
	V	566	570	306

METAL-LITE	800-236-0302	DES J.H.T.	SHEET
Flush Mount Backing : 6 x 1-1/4 x 16 Ga. 50 ksi. Face - Edge Projection Free		JOB 8-9150	2
		DATE 9-25-97	OF 2 SHEETS

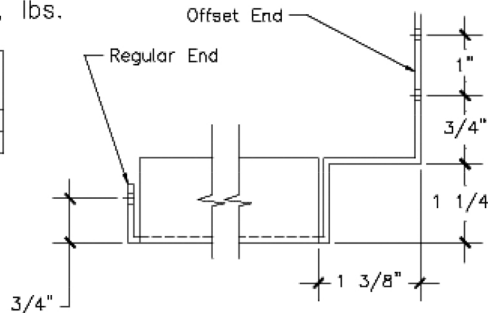
Screws - Allowable loads, lbs.

Number of Screws	LOAD TYPE	STUD GAGE			LOCATION
		16	18	20	
4 - #10	T	1,044	1,052	564	Regular End
	V	566	570	306	
4 - #10	T	1,044	1,052	564	Offset End
	V	707	713	382	
6 - #10	T	(See note 3)			
	V	834	843	450	



Track - Allowable loads, lbs.

Stud Spacing	LOAD TYPE	50 ksi steel
16"	T	264
	V	9,135

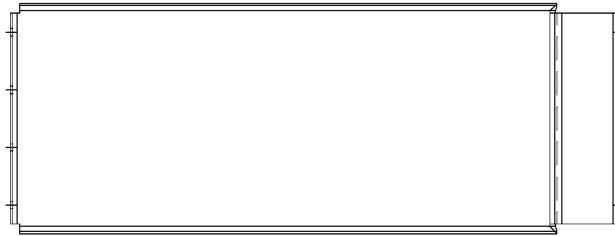


Backing (Track) Plan

Notes:

1. Allowable loads on table on sheet 1 are for either "T" or "V" acting alone, as a single backing load. If both "T" or "V" are acting on the same piece of backing, use a "unity" check to show that the combined stress ratios are less than 1.0.
2. Loads are assumed to act at the most critical position on backing at the midspan for bending at the "offset end" for weak axis bending, and at the connections for screw stress.
3. "T" load for 6 screw end connection can be ratioed directly from 4 screw loads, but should only be used if exact location of load is known.
4. This pre-approval covers a standard wall backing, of 14 gage steel that is applied to a partition for the purpose of supporting vari wall mounted elements that are connected to the backing. Allowable loads are listed that give the backing load capacity.
5. The Architect or engineer of record must verify the adequacy of the connection of the applied element, and of the wall, and the walls attachment to the primary structure, and the primary structure itself, as appropriate.

METAL-LITE	(800) 236-0302	DES J.H.T.	SHEET
Flush Mount Backing : 6 x 1-1/4 x 16 Ga. 50 ksi. Face - Edge Projection Free		JOB 8-9150	1
		DATE 9-25-97	OF 1 SHEETS



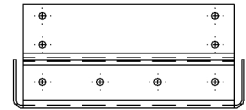
TOP VIEW



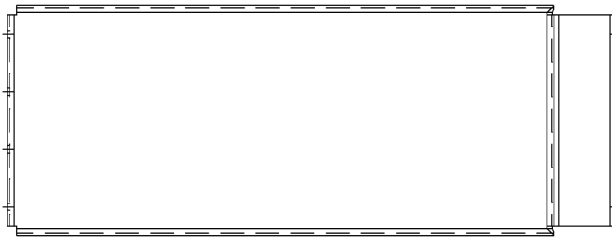
LEFT VIEW



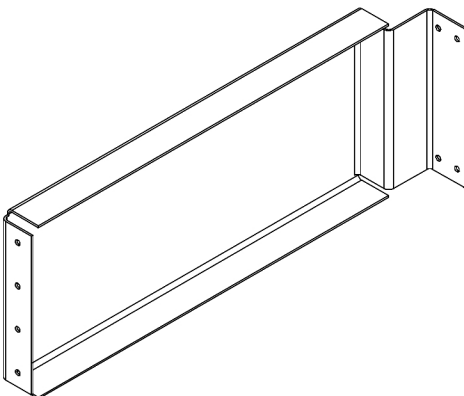
FRONT VIEW



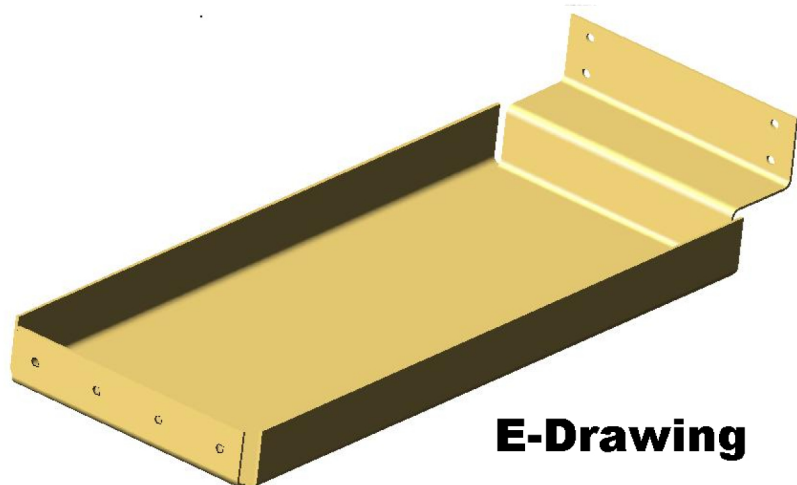
RIGHT VIEW



BOTTOM VIEW

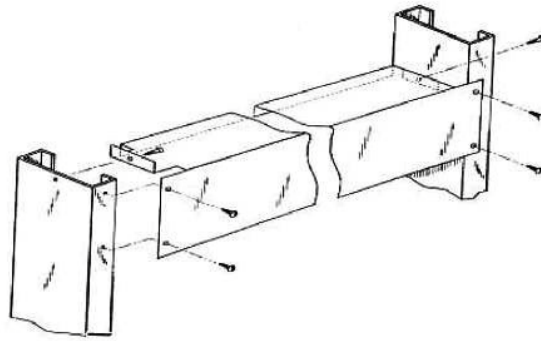


ISOMETRIC VIEW



E-Drawing

3-IN-ONE Blocking, Bridging, & Backing



3-IN-ONE Bridging, Backing & Blocking (pat# 6,260,318):

U.L Tested for 250 pounds push/pull load. The 3-IN-ONE serves as a cable chase when needed. Mounts in a straight line for handrails & grab bars. The 3-IN-ONE replaces black iron channel bridging and clips. Also replaces wood fire-blocking that must be cut-out to fit between studs.

As Wall backing: Used for Handrails, grab bars, tub and shower seating, wall mounted equipment, and furnishings. Meets Americans With disabilities Act Accessibility Guidelines (ADAAG) Section 4.36, and all national model building codes (BOCA, Standard Code, UBC, and IBC 2009 Section 709.4; 717.2; 717.3), and the ICC/A117.1-1998 Section 609 (Grab Bars) Section 505 (Handrails). Is used in place of flat sheet material.

As Bridging: As bridging replaces black iron channel and clips. Single piece or continuous installation. No wiring or clips. Don't have to trim and fit through punches.

As Blocking: Replaces wood fire blocking that have to be hand made to fit in between studs. Can be used for draft stops or fire blocking when required.

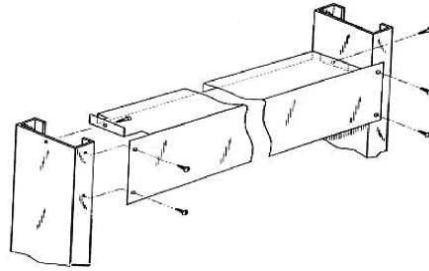
Quality:

- Prime steel, quality assurance program.
- 20 gauge construction.

Tested:

- Underwriters Laboratories, Inc.
- Tested to 250 pounds pull and point load.

3-IN-ONE Bridging, Backing & Blocking (pat# 6,260,318)



The 3-IN-ONE is the only product ever tested to UL Standards requiring 250 pull/point load for handrails, grab bars, and mounted seating required by the ADAAG 4.26 and the ICC/A117.1-2003 Sections 609 & 610. The only product on the market today to cover fire-blocking, bridging, and backing all in one piece.

Replaces:

Bridging:

Cold-Rolled Channel Bridging with clips and other forms of bridging.

Backing:

Steel Plate Backing Steel Plate backing has never been UL Tested to 250 lbs pull/point load and does not pass any code.

Flat Strap Backing Flat strap backing has never been UL Tested to 250 lbs pull/point load and does not pass any code.

Fire & Draft blocking:

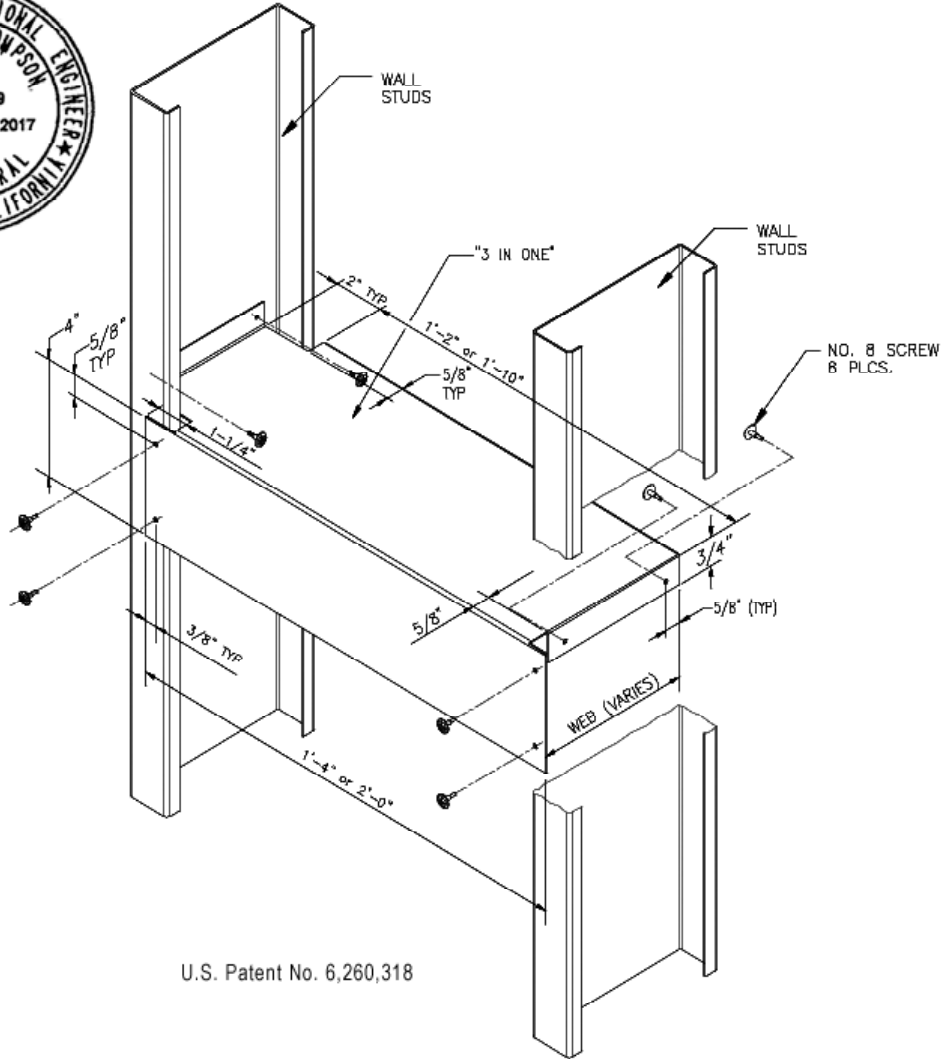
- 1 Two-inch nominal lumber
- 2 Two thickness of 1-inch nominal lumber with broken lap joints.
- 3 One thickness of 0.719-inch wood structural panels with joints backed by 0.719-inch wood structural panels.
- 4 One thickness of 0.75-inch particleboard with joints backed by 0.75 particle board.
- 5 One-half-inch cement-based millboard.
- 6 Batts or blankets of mineral wood, mineral fiber or other approved materials installed in such a manner as to be securely retained in place.

Combustible materials shall not be permitted in concealed spaces of buildings of Type I or II construction.

As stated by the IBC 2009 Section 717 (Concealed Spaces) 717.5

THOMPSON AND LA BRIE, STRUCTURAL ENGINEERS, PASADENA, CA.

METAL-LITE	800-236-0302	DES J.H.T.	SHEET 1
3 IN ONE		JOB	
		DATE	

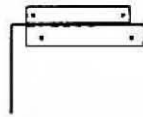


U.S. Patent No. 6,260,318

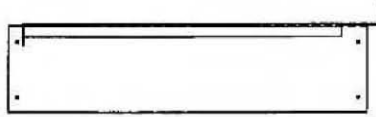
THOMPSON AND LA BRIE, STRUCTURAL ENGINEERS, PASADENA, CA.		
METAL-LITE	(800) 236-0302	DES J.H.T.
3 IN ONE DETAIL VIEWS		JOB 8-9150
		DATE 9-1-97
		SHEET 1



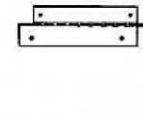
TOP VIEW



LEFT VIEW



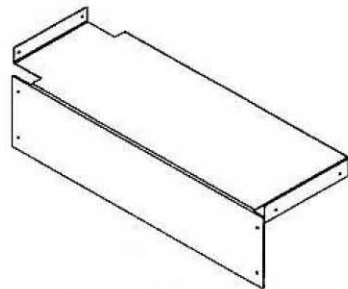
FRONT VIEW



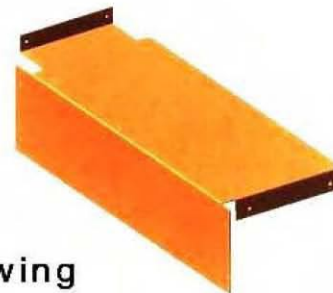
RIGHT VIEW



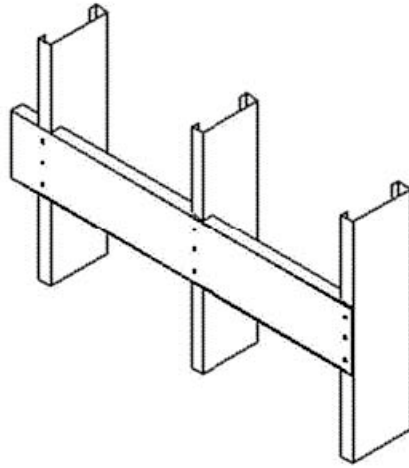
BOTTOM VIEW



ISOMETRIC VIEW



E-Drawing



Notch-Tite Flat-Reinforced Backing:

Backing for Handrails, Grab Bars, Tub and Shower Seats, Wall-Mounted Equipment and Furniture.
Underwriters Laboratories (UL) Tested

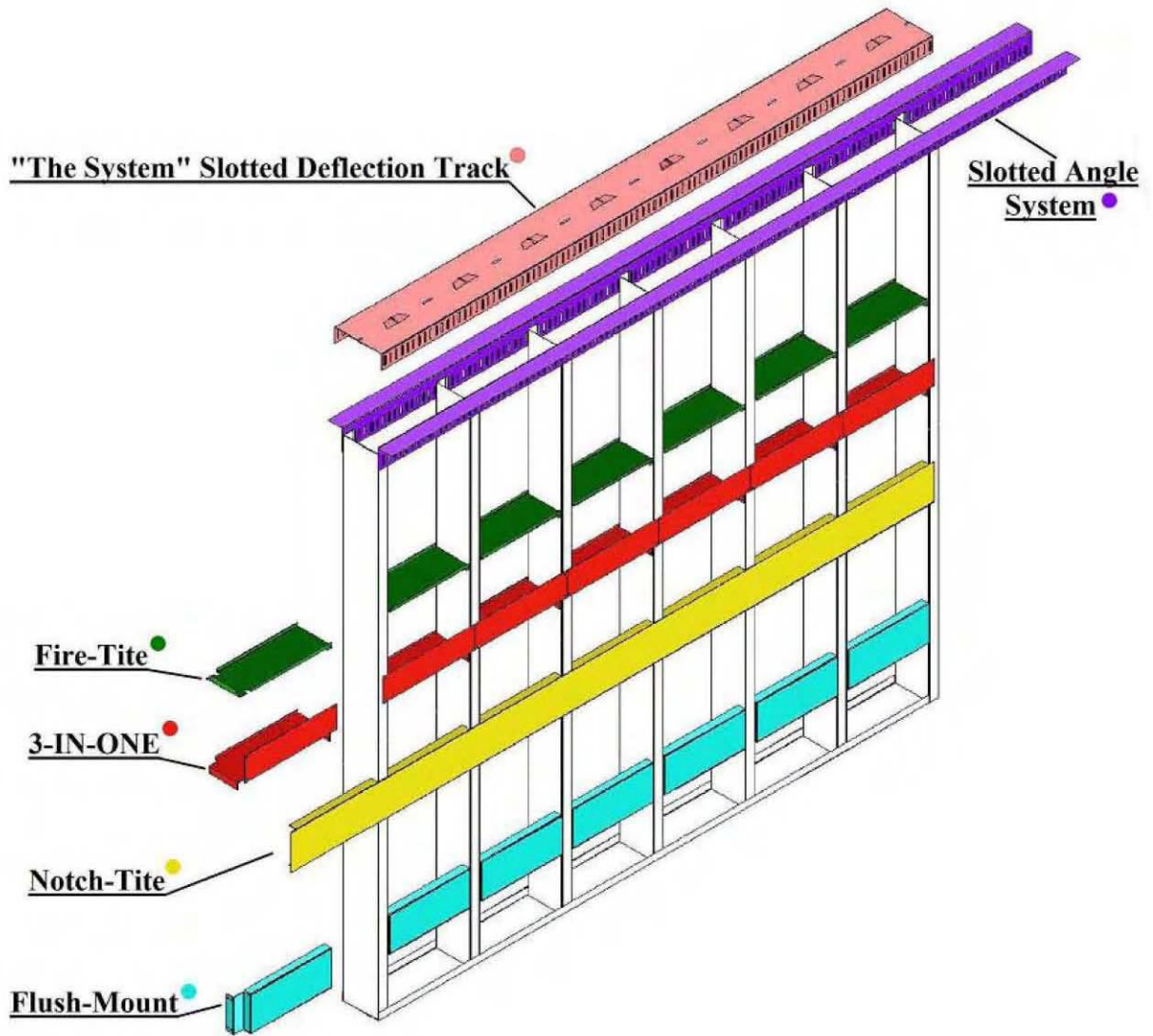
Pull Test to a minimum of 250 pounds pull and point load

Field tested and approved by California Office of Statewide Planning and Development

Meets or exceeds backing requirement of the: The Building Officials and Code Administrators International, Inc. (BOCA) National Model Building Code, 1999 edition; the 1997 Standard Building Code; the 1997 Uniform Building Code (UBC); the International Building Code, 2000; the ICC/ANSI A117.1-1998 (Accessible and Usable Buildings and Facilities) Standard; and the American Society of Civil Engineers (ASCE) Standard ANSI/ASCE 7-98 Minimum Design Loads for Building and Other Structures.

- Reduced labor costs
- Mount and Screw Installation
- No Field Modifications for 16" O.C. stud framing
- Each piece has 1/2 notch on each end for continuous installation
- Submittal/Test Information Provided Upon Request
- Standard Size 6" with 1 1/4" legs, 16 gauge

Front View of Assembly Profile



Rear View of Assembly Profile

