



Report Number: 0145

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DIVISION: 05—METALS
Section: 05 40 00—Cold-Formed Metal Framing
Section: 05 41 00—Structural Metal Stud Framing

DIVISION: 09—FINISHES
Section: 09 22 00—Supports for Plaster and Gypsum Board
Section: 09 22 16—Non-Structural Metal Framing

REPORT HOLDER:

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EVALUATION SUBJECT:

Cold-Formed Steel Framing Members

1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2006 International Building Code® (IBC)

1.2 Evaluated in accordance with:

- ICC AC46 dated February 2007 (Editorially revised April 2008)

Property Evaluated:

Structural

2.0 USES

2.1 ClarkWestern MaxTrak™ Slotted Deflection Track (SLT): The SLT slotted slip track is a top track that is used for framing exterior curtain walls and non-load bearing interior walls where vertical deflection occurs

and serves as connecting member that isolates the cold-formed steel framing system from the movement of the primary structure or other building elements subject to differential movement.

2.2 ClarkWestern MaxTrak™ 2D Slotted Deflection & Drift Track (SLT/H): The SLT/H Slotted Slip Track is a top track that is used for framing exterior curtain walls and non-load bearing interior walls where vertical and horizontal deflection occurs and serves as connecting member that isolates the cold-formed steel framing system from the movement of the primary structure or other building elements subject to differential movement.

2.3 ClarkWestern MaxTrak™ Slotted Deflection Track (SLT) Expansion Joint System: The SLT Slotted Slip Track provides positive attachment of the stud to the slotted top track in joints designed to accommodate vertical movement, in compliance with Section 713.2 of the IBC. SLT, when installed in accordance with Figures 1 and 2, is designed for an allowable total vertical movement of 1-1/2 inches (+/- 3/4 inch) [38.1 mm (+/- 19.1 mm)].

3.0 DESCRIPTION

3.1 General: ClarkWestern Building Systems' factory fabricated cold-formed steel framing members described in this report are limited to those noted in **Table 1**.

3.2 ClarkWestern MaxTrak™ Slotted Deflection Track Materials: ClarkWestern Building Systems' light-gauge steel framing members are cold-formed from galvanized steel coils conforming to ASTM A 653 SS Grade 33 for members 43 mil (18ga) or thinner and ASTM A 653 HSLAS Grade 50 for members 54 mil (16ga) and thicker. The steel has a G40 galvanization coating designation for use in nonstructural, interior applications or



Report Number: 0145

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G60 or greater galvanization coating designation for use in structural, exterior applications.

3.3 ClarkWestern MaxTrak™ Slotted Deflection Track (SLT): The SLT sections are U-shaped channels with two slotted, perpendicular flanges manufactured from cold-formed sheet steel per Section 3.2. The SLT sections are fabricated to nominal widths of 2-1/2", 3-5/8", 4", 6" and 8" and have design thicknesses of 0.0188", 0.0346", 0.0451", 0.0566" and 0.0713" (No. 18, 33, 43, 54, 68 mils, respectively). The section legs (flanges) are 2-1/2" long and have 1-1/4" long x 7/32" wide holes spaced at 1" on center along the length of the section. Figure 1 contains the details of the SLT section.

The SLT section properties shown in Table 1 are based on Section 2210 of the IBC. The minimum base metal thickness of the section delivered to the jobsite must be 95 percent of the design thickness.

3.4 ClarkWestern MaxTrak™ Slotted Deflection & Drift Track (SLT/H): The SLT/H sections are manufactured as described in Section 3.3 and have additional longitudinal holes in the web. The holes in the web are 4" long x 7/32" wide spaced at 8" on center, staggered along the length of the member. The holes are placed at a distance 3/4" from the center of the web to the center of the hole. Figure 2 contains the additional details of the SLT/H Section.

3.5 Fasteners for Wall Stud to Track Connection:

For wall studs 43 Mils (18ga) or thinner use minimum Philips No. 8 x 9/16 inch long pan head screws with a measured pan head diameter of 0.43 inch [10.922 mm] per ICC-ES ER-5280. For wall studs 54 Mils (16ga) or thicker use minimum Philips No. 10 x 9/16 inch long pan head screws with a measured pan

head diameter of 0.43 inch [10.922 mm] per ICC-ES ER-5280.

4.0 INSTALLATION

4.1 ClarkWestern MaxTrak™ Slotted Deflection Track (SLT) – Track to Structure Connection: Attach the web of the Slotted Track to the structure above using approved fasteners. Fasteners must be designed by the Engineer of Record to withstand the maximum allowable lateral load applied from the wall studs. Space fasteners as required by design and no more than 24" o.c.

(SLT/H) Track to Structure Connection: Attach the web of the Slotted Track to the structure above using approved fasteners. Fasteners must be designed by the Engineer of Record to withstand the maximum allowable lateral load applied from the wall studs. Space fasteners as required by design and no more than 24" o.c.

4.2 ClarkWestern MaxTrak™ Deflection (SLT & SLT/H) – Wall Stud to Track Connection: Once the Slotted Track is secured to the structure above, place the wall studs into the Slotted Track with the web of the wall studs perpendicular to the track legs. Wall studs are to be cut short leaving a space between the top of the wall stud and the bottom of the track web. This space/gap is to be determined by the Engineer of Record that has designed the structure the track is attached to. The space/gap should be no more than 1". Fasten screws through both sides of the Slotted Track into the each flange of the wall stud using the appropriate fastener described in Section 3.3.

Place the screws through the center of the slots allowing for vertical movement. Install the screws in compliance with ASTM C-754 leaving a minimum of three threads penetrating the stud flange.



Report Number: 0145
Issued: 07/2010
Expires: 07/2011

5.0 CONDITIONS OF USE

The ClarkWestern MaxTrak™ Deflection (SLT) and ClarkWestern MaxTrak™ 2D Deflection & Drift Slotted Slip Track for Horizontal Movement (SLT/H) described in this report complies with, or is a suitable alternative to what is specified in the code listed in Section 1.0 of this report, subject to the following conditions:

5.1 SLT or SLT/H tracks must be installed and identified in accordance with this report, the applicable code and the manufacturer's instructions.

5.2 Load reactions resulting from wall heights shall be checked by Engineer of Record with structural properties noted in Table 1 and allowable lateral loads noted in Table 2. The Engineer of Record shall check the wall stud member for web crippling and use a bearing with equal to or greater than 1-5/8 inches [40 mm].

5.3 The minimum incubated steel thickness of cold-formed members, as delivered to the jobsite, must be at least 95 percent of the designed base-metal thickness as specified in this report.

6.0 EVIDENCE SUBMITTED

6.1 Structural: Test reports in accordance with the ICC-ES Acceptance Criteria for connectors used with cold-formed steel structural members (AC46), dated February 2007 (Editorially Revised April 2008).

7.0 IDENTIFICATION

Each SLT and SLT/H slotted track section is identified at a maximum 48" o.c. with the name "SLT" or "SLT/H", manufacture's name, the minimum base steel thickness (uncoated), the coating grade (if 60 or greater), the minimum yield strength (if over 33ksi) and the IAPMO ES Report Number (IAPMO#0145). In addition, each pallet of slotted track is identified with the

company name, the steel thickness, and the section designation in accordance with Section 2203.1 of the IBC and the IAPMO ES Mark of Conformity.



IAPMO #0145

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Director of Evaluation Services

EVALUATION REPORT



Report Number: 0145
 Issued: 07/2010
 Expires: 07/2011

Table 1A - Structural Properties of ClarkWestern Slotted Slip Track

Section Designation with Web Holes	Section Designation with Web Holes	Design Thickness (inch)	Minimum Thickness (inch)	Nominal Depth (inch)	Nominal Thickness (mil)	Leg Length (inch)	Outside Web Depth (inch)	Yield Strength F _y (ksi)
250SLT250-33	250SLT/H250-33	0.0346	0.0329	2.500	33	2.500	2.641	33
250SLT250-43	250SLT/H250-43	0.0451	0.0428	2.500	43	2.500	2.661	33
250SLT250-54	250SLT/H250-54	0.0566	0.0538	2.500	54	2.500	2.698	50
250SLT250-68	250SLT/H250-68	0.0713	0.0677	2.500	68	2.500	2.750	50
362SLT250-33	362SLT/H250-33	0.0346	0.0329	3.625	33	2.500	3.766	33
362SLT250-43	362SLT/H250-43	0.0451	0.0428	3.625	43	2.500	3.786	33
362SLT250-54	362SLT/H250-54	0.0566	0.0538	3.625	54	2.500	3.823	50
362SLT250-68	362SLT/H250-68	0.0713	0.0677	3.625	68	2.500	3.875	50
400SLT250-33	400SLT/H250-33	0.0346	0.0329	4.000	33	2.500	4.141	33
400SLT250-43	400SLT/H250-43	0.0451	0.0428	4.000	43	2.500	4.161	33
400SLT250-54	400SLT/H250-54	0.0566	0.0538	4.000	54	2.500	4.198	50
400SLT250-68	400SLT/H250-68	0.0713	0.0677	4.000	68	2.500	4.250	50
600SLT250-33	600SLT/H250-33	0.0346	0.0329	6.000	33	2.500	6.146	33
600SLT250-43	600SLT/H250-43	0.0451	0.0428	6.000	43	2.500	6.161	33
600SLT250-54	600SLT/H250-54	0.0566	0.0538	6.000	54	2.500	6.198	50
600SLT250-68	600SLT/H250-68	0.0713	0.0677	6.000	68	2.500	6.250	50
800SLT250-33	800SLT/H250-33	0.0346	0.0329	8.000	33	2.500	8.146	33
800SLT250-43	800SLT/H250-43	0.0451	0.0428	8.000	43	2.500	8.161	33
800SLT250-54	800SLT/H250-54	0.0566	0.0538	8.000	54	2.500	8.198	50
800SLT250-68	800SLT/H250-68	0.0713	0.0677	8.000	68	2.500	8.250	50

EVALUATION REPORT



Report Number: 0145
 Issued: 07/2010
 Expires: 07/2011

Table 1B - Structural Properties of ClarkWestern Slotted Slip Track

Section Designation with Web Holes	Section Designation with Web Holes	Gross Section Properties						
		Yield Strength F _y (ksi)	Weight ¹ (lbs/ft)	Unpunched Area ¹ (in ²)	I _x (in ⁴)	r _x (in)	I _y (in ⁴)	r _y (in)
250SLT250-33	250SLT/H250-33	33	0.544	0.259	0.339	1.144	0.178	0.827
250SLT250-43	250SLT/H250-43	33	0.711	0.338	0.443	1.146	0.230	0.826
250SLT250-54	250SLT/H250-54	50	0.891	0.424	0.565	1.155	0.287	0.824
250SLT250-68	250SLT/H250-68	50	1.122	0.534	0.728	1.168	0.360	0.821
362SLT250-33	362SLT/H250-33	33	0.677	0.298	0.740	1.575	0.200	0.820
362SLT250-43	362SLT/H250-43	33	0.884	0.389	0.966	1.577	0.260	0.818
362SLT250-54	362SLT/H250-54	50	1.106	0.487	1.224	1.585	0.324	0.816
362SLT250-68	362SLT/H250-68	50	1.394	0.614	1.565	1.597	0.406	0.813
400SLT250-33	400SLT/H250-33	33	0.721	0.311	0.914	1.714	0.207	0.815
400SLT250-43	400SLT/H250-43	33	0.939	0.405	1.193	1.715	0.268	0.813
400SLT250-54	400SLT/H250-54	50	1.180	0.509	1.511	1.723	0.335	0.811
400SLT250-68	400SLT/H250-68	50	1.486	0.641	1.928	1.735	0.418	0.808
600SLT250-33	600SLT/H250-33	33	0.956	0.380	2.236	2.424	0.233	0.783
600SLT250-43	600SLT/H250-43	33	1.248	0.496	2.916	2.425	0.303	0.781
600SLT250-54	600SLT/H250-54	50	1.565	0.622	3.678	2.432	0.377	0.779
600SLT250-68	600SLT/H250-68	50	1.969	0.783	4.670	2.442	0.472	0.776
800SLT250-33	800SLT/H250-33	33	3.460	1.116	6.767	2.462	0.662	0.770
800SLT250-43	800SLT/H250-43	33	1.554	0.586	5.629	3.100	0.326	0.746
800SLT250-54	800SLT/H250-54	50	1.949	0.735	7.090	3.106	0.407	0.744
800SLT250-68	800SLT/H250-68	50	2.456	0.926	8.978	3.114	0.509	0.741

EVALUATION REPORT



Report Number: 0145
 Issued: 07/2010
 Expires: 07/2011

Table 1C - Structural Properties of ClarkWestern Slotted Slip Track

Section Designation with Web Holes	Section Designation with Web Holes	Yield Strength F_y (ksi)	Effective Section Properties					
			I_{xe} (in^4)	$S_{xe}(t)$ (in^3)	$S_{xe}(b)$ (in^3)	I_{ye} ($in^4 \times 10^3$)	$S_{ye}(l)$ (in^3)	$S_{ye}(r)$ (in^3)
250SLT250-33	250SLT/H250-33	33	0.129	0.087	0.111	0.206	0.0245	0.0009
250SLT250-43	250SLT/H250-43	33	0.168	0.113	0.144	0.262	0.0297	0.0011
250SLT250-54	250SLT/H250-54	50	0.213	0.141	0.180	0.319	0.0345	0.0013
250SLT250-68	250SLT/H250-68	50	0.273	0.177	0.226	0.387	0.0395	0.0016
362SLT250-33	362SLT/H250-33	33	0.312	0.151	0.183	0.220	0.0324	0.0009
362SLT250-43	362SLT/H250-43	33	0.406	0.196	0.237	0.279	0.0387	0.0012
362SLT250-54	362SLT/H250-54	50	0.512	0.244	0.297	0.340	0.0443	0.0014
362SLT250-68	362SLT/H250-68	50	0.651	0.306	0.371	0.415	0.0500	0.0017
400SLT250-33	400SLT/H250-33	33	0.396	0.175	0.210	0.223	0.0348	0.0009
400SLT250-43	400SLT/H250-43	33	0.516	0.227	0.272	0.283	0.0414	0.0012
400SLT250-54	400SLT/H250-54	50	0.650	0.284	0.340	0.346	0.0472	0.0014
400SLT250-68	400SLT/H250-68	50	0.825	0.356	0.427	0.421	0.0531	0.0017
600SLT250-33	600SLT/H250-33	33	1.022	0.299	0.375	0.230	0.0462	0.0010
600SLT250-43	600SLT/H250-43	33	1.425	0.434	0.496	0.300	0.0539	0.0012
600SLT250-54	600SLT/H250-54	50	1.793	0.543	0.620	0.360	0.0605	0.0015
600SLT250-68	600SLT/H250-68	50	2.267	0.680	0.777	0.450	0.0669	0.0018
800SLT250-33	800SLT/H250-33	33	1.869	0.384	0.570	0.240	0.0557	0.0010
800SLT250-43	800SLT/H250-43	33	2.782	0.618	0.760	0.310	0.0640	0.0013
800SLT250-54	800SLT/H250-54	50	3.548	0.792	0.955	0.380	0.0709	0.0015
800SLT250-68	800SLT/H250-68	50	4.775	1.100	1.221	0.460	0.0774	0.0019

EVALUATION REPORT



Report Number: 0145
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Table 2 - Allowable Lateral Loads on Slotted Slip Track

Section Thickness	Allowable Load for single stud more than 12" from end of the track	Allowable Load for single stud within 12" of end of track (without splice)
	(lbs)	(lbs)
33	156	100
43	205	133
54	360	237
68	537	355

Table Notes:

1. Screws must be located 1-1/4" from the track web.
2. #8 min. wafer head screws shall be used for 33 mil material sections.
3. #10 min. wafer head screws shall be used for 43 mil and heavier sections
4. 33 & 43 mil material shall have a yield strength equal or greater than 33,000 psi
5. 54 & 68 mil material shall have a yield strength equal or greater than 50,000 psi
6. The values in these tables applies to the depths of members shown in Table 1

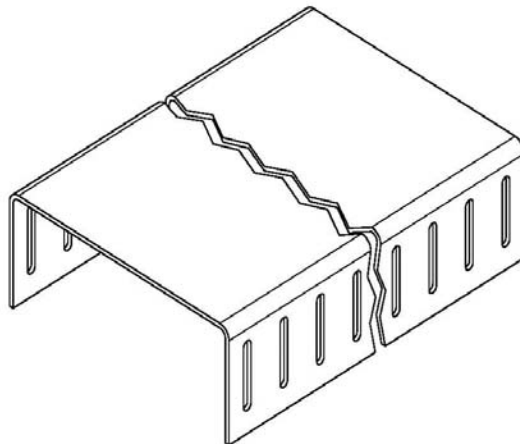
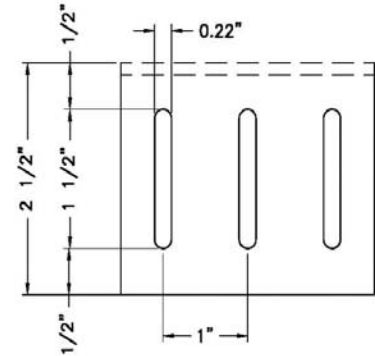
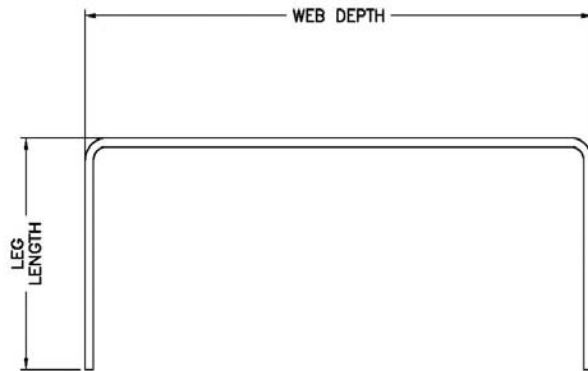
EVALUATION REPORT



Report Number: 0145

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WEB DEPTH	LEG LENGTH
2-1/2"	2.500"
3-5/8"	2.500"
4"	2.500"
6"	2.500"
8"	2.500"

MATERIAL THICKNESS	DESIGN THICKNESS	MIN. THICKNESS	YIELD STRENGTH	COLOR
18mils 25ga	0.0188"	0.0179"	33 KSI	NO COLOR
33mils 20ga	0.0346"	0.0329"	33 KSI	WHITE
43mils 18ga	0.0451"	0.0428"	33 KSI	YELLOW
54mils 16ga	0.0566"	0.0538"	50 KSI	GREEN
68mils 14ga	0.0713"	0.0677"	50 KSI	ORANGE

FIGURE 1

