

Perkins+Will, Inc. | 2218 Bryan Street, Suite 200 Dallas TX 75201 United States

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SUBJECT: 05 40 00 - 001 R1 Cold-Formed Metal Framing SUBMITTAL ID: 05 40 00-001

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PURPOSE: For Review VIA: Info Exchange

SPEC SECTION: 05 40 00

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REMARKS: Please see attached submittal for review.

DESCRIPTION OF CONTENTS

QTY	DATED	TITLE	NUMBER	NOTES
1	10/29/2018	05 40 00 Resubmittal .pdf		

Structural (C955)

- Coating Requirement for Structural Framing as Listed in ASTM C 955



TABLE 1 Coating Designations

Coating Classification	Coating Designator	Minimum Coating Requirements			
		Zinc-Coated ^A	Zinc Iron ^B	55 % Al-Zinc ^C	Zinc-5 % ^D
Metallic Coated	CP 40	G 40	A 40	AZ 50	GF 30
	CP 60	G 60	A 60	AZ 50	GF 30
	CP 90	G 90	Not Applicable	AZ 50	GF 45
Painted Metallic	PM	The metallic coated substrate shall meet the requirements of metallic coated. In addition, the paint film shall have a minimum thickness of 0.5 mil per side (primer plus topcoat) with a minimum primer thickness of 0.1 mil per side. ^E			
Painted	PTD	Non-metallic coated substrate shall be painted after roll forming and shall have a minimum paint thickness of 1.0 mil on all surfaces including edges. Use of painted product is limited to environments where the rate of corrosion is low; typically areas such as interiors of buildings and areas of low rainfall and low humidity as defined by ISO 9223, Category 1 and 2. ^{E,F}			

^A Zinc-coated steel sheet as described in Specification A 653/A 653M.

^B Zinc-iron alloy-coated steel sheet as described in Specification A 653/A 653M.

^C 55 % Aluminum-zinc alloy-coated steel sheet as described in Specification A 792/A 792M.

^D Zinc-5 % aluminum alloy-coated steel sheet as described in Specification A 875/A 875M.

^E In accordance with the requirements of Specification A 1003/A 1003M.

^F ISO 9223.

Product category: S162 (1-5/8" Flange Structural Stud)
Product name: 600S162-54 (50ksi, CP60) P - Punched
54mils (16ga) Coating: CP60 per ASTM C955
Color coding: Green

Geometric Properties

Web depth	6.000 in	Punchout width	1.50 in
Flange width	1.625 in	Punchout length	4.00 in
Stiffening lip	0.500 in	Min. steel thickness	0.0538 in
Design thickness	0.0566 in	Fy with Cold-Work, Fya	55.3 ksi
Yield strength, Fy	50 ksi		
Ultimate, Fu	65.0 ksi		

Gross Section Properties of Full Section, Strong Axis

Cross sectional area (A)	0.556 in ²
Member weight per foot of length	1.89 lb/ft
Moment of inertia (Ix)	2.861 in ⁴
Section modulus (Sx)	0.954 in ³
Radius of gyration (Rx)	2.268 in
Gross moment of inertia (Iy)	0.180 in ⁴
Gross radius of gyration (Ry)	0.570 in

Effective Section Properties, Strong Axis

Effective Area (Ae)	0.307 in ²
Moment of inertia for deflection (Ix)	2.860 in ⁴
Section modulus (Sx)	0.916 in ³
Allowable bending moment (Ma)	30.33 in-k
Allowable moment based on distortion buckling (Mad)	25.91 in-k
Allowable shear force in web (solid section)	2823 lb
Allowable shear force in web (perforated section)	1947 lb
Unbraced length (Lu)	31.4 in

Torsional Properties

St. Venant torsion constant (J x 1000)	0.594 in ⁴
Warping constant (Cw)	1.337 in ⁶
Distance from shear center to neutral axis (Xo)	-1.049 in
Distance between shear center and web centerline (m)	0.663 in
Radii of gyration (Ro)	2.563 in
Torsional flexural constant (Beta)	0.833

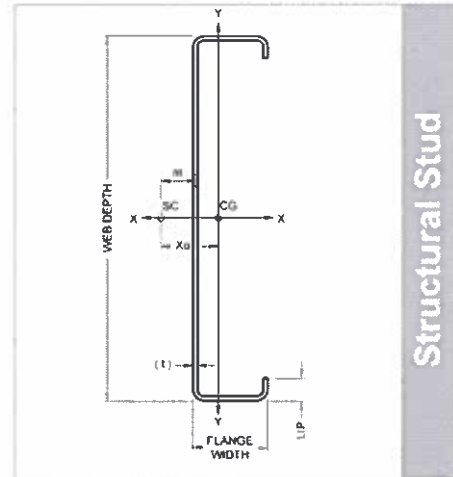
ASTM & Code Standards:

- AISI North American Specification [NASPEC] S100-12
- * Effective properties incorporate the strength increase from the cold work of forming
- Gross properties are based on the cross section away from the punchouts
- Structural framing is produced to meet or exceed ASTM C955
- Sheet steel meets or exceeds mechanical and chemical requirements of ASTM A1003
- ClarkDietrich's structural and nonstructural framing comply with the SFIA Code Compliance Certification Program, ICC-ES ESR-1166P and Intertek CCRR-0206
- For installation & storage information refer to ASTM C1007
- SDS & Product Certification Information is available at itools.clarkdietrich.com

Sustainability Credits:

For more details and LEED letters contact Technical Services at 888-437-3244 or visit www.clarkdietrich.com/LEED
LEED v4 MR Credit -- Building Product Disclosure and Optimization: EPD (1 point) - Sourcing of Raw Materials (1 point) - Material Ingredients (1 point) - Construction and Demolition Waste Management (up to 2 points) - Innovation Credit (up to 2 points).
LEED 2009 Credit MR 2 & MR 4 -- ClarkDietrich's steel products are 100% recyclable and have a minimum recycled content of 34.2% (19.8% post-consumer and 14.4% pre-consumer). If seeking a higher number to meet Credit MR 5, please contact us at info@clarkdietrich.com / 888-437-3244)

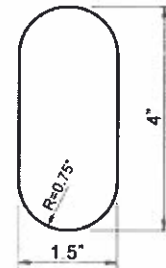
05.40.00 (Cold-Formed Metal Framing)



Structural Stud

Used in framing applications:

- Load-bearing walls
- Curtain walls
- Tall interior walls
- Floor & ceiling joists
- Trusses



Structural Punchout

East market punchout spacing:
12" from lead end then 24" o.c.

West market punchout spacing:
24" from lead end then 24" o.c.

Project Information

Name:
Address:

Contractor Information

Name:
Contact:
Phone:
Fax:

Architect Information

Name:
Contact:
Phone:
Fax:

Product category: T125 (1-1/4" Leg Structural Track)
Product name: 600T125-54 (50ksi, CP60) - Unpunched
54mils (16ga) Coating: CP60 per ASTM C955
Color coding: Green

Geometric Properties

Web depth 6.198 in
Leg width 1.25 in
Design thickness 0.0566 in Min. steel thickness 0.0538 in
Yield strength, Fy 50 ksi *Fy with Cold-Work, Fya 50.0 ksi
Ultimate, Fu 65.0 ksi

Gross Section Properties of Full Section, Strong Axis

Cross sectional area (A) 0.480 in²
Member weight per foot of length 1.63 lb/ft
Moment of inertia (Ix) 2.345 in⁴
Section modulus (Sx) 0.757 in³
Radius of gyration (Rx) 2.209 in
Gross moment of inertia (Iy) 0.054 in⁴
Gross radius of gyration (Ry) 0.335 in

Effective Section Properties, Strong Axis

Effective Area (Ae) 0.234 in²
Moment of inertia for deflection (Ix) 2.241 in⁴
Section modulus (Sx) 0.592 in³
Allowable bending moment (Ma) 17.74 in-k
Allowable shear force in web 2728 lb

Torsional Properties

St. Venant torsion constant (J x 1000) 0.513 in⁴
Warping constant (Cw) 0.384 in⁶
Distance from shear center to neutral axis (Xo) -0.508 in
Distance between shear center and web centerline (m) 0.332 in
Radii of gyration (Ro) 2.292 in
Torsional flexural constant (Beta) 0.951

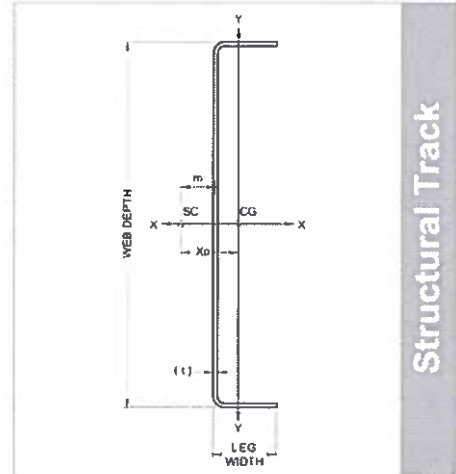
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05.40.00 (Cold-Formed Metal Framing)



Structural Track

Used in framing applications:

- Load-bearing walls
- Curtain walls
- Tall interior walls
- Floor & ceiling joists
- Trusses

Project Information

Name:
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Contractor Information

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Fax:

Architect Information

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Contact:
Phone:
Fax:

Double Deflection Track (Slip Track)

Structural deflection track for interior & exterior walls

A double deep leg track system allows the top of the wall system to float within the top track legs. This connection allows for vertical live load movement of the primary structure without transferring axial loads to the wall studs. The top track is made with an oversized width to fit around the bottom track. The bottom deep leg track is attached to the wall studs to prevent stud rotation eliminating the need for lateral bracing 12" from the slip track system. The deflection track system must be designed for the end reaction of the wall studs (point loads) and for the specific gap required for vertical deflection.

Product Data & Ordering Information:

Material: Yield Strength: Grade 33ksi or 50ksi
Coating: CP60 per ASTM C955 (G90 Available)
 33mils: 20 Ga. Structural, 0.0346" Design Thickness, 0.0329" Min. Thickness
43mils: 18 Gauge, 0.0451" Design Thickness, 0.0428" Min. Thickness
54mils: 16 Gauge, 0.0566" Design Thickness, 0.0538" Min. Thickness
 68mils: 14 Gauge, 0.0713" Design Thickness, 0.0677" Min. Thickness
 97mils: 12 Gauge, 0.1017" Design Thickness, 0.0966" Min. Thickness

Dimensions:

Bottom Track: **3", 3-1/2"** or 4" legs with an inside depth equal to the depth of the stud.
 Top Track: **2", 2-1/2"** or 3" legs with an inside depth 1/4" more than the depth of stud.
 - **Standard depths available: 3-5/8", and 6"**

ASTM & Code Standards:

- Structural framing is produced to meet or exceed ASTM C955
- Sheet steel meets or exceeds mechanical and chemical requirements of ASTM A1003
- ClarkDietrich's structural and nonstructural framing comply with the SFIA Code Compliance Certification Program and ICC-ES ESR-1166P
- MSDS & Product Certification Information available at www.clarkdietrich.com

Allowable Deflection Track Point Loads:

2" Leg Top Track & 3" Leg Bottom Track with 1/2" Gap - Allowable Point Load					
Yield Strength	33mils (20ga)	43mils (18ga)	54mils (16ga)	68mils (14ga)	97mils (12ga)
33ksi	113	192	258	N/A	N/A
50ksi	N/A	291	391	512	821

2-1/2" Leg Top Track & 3-1/2" Leg Bottom Track with 3/4" Gap - Allowable Point Load					
Yield Strength	33mils (20ga)	43mils (18ga)	54mils (16ga)	68mils (14ga)	97mils (12ga)
33ksi	75	128	172	N/A	N/A
50ksi	N/A	194	261	341	547

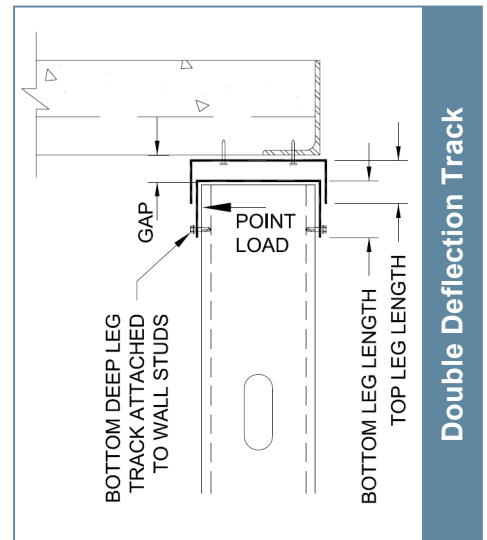
3" Leg Top Track & 4" Leg Bottom Track with 1" Gap - Allowable Point Load					
Yield Strength	33mils (20ga)	43mils (18ga)	54mils (16ga)	68mils (14ga)	97mils (12ga)
33ksi	56	96	129	N/A	N/A
50ksi	N/A	145	195	256	411

Table notes:

1. Values above are designed for wall stud spacing at 16" o.c.
2. Bottom track serves only to restrain studs and distribute a uniform bearing. This track may be 33mils (20ga).
3. Values are based on equations from AISI North American Standard for CFSF – Wall Stud Design (S211-07)
4. Stud failure modes relating to the deflection track connection (shear, web crippling, etc.) must be checked separately.

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Calculating slip track point load:

Point Load =
 (wind pressure PSF) x (spacing FT) x (wall stud length FT) / 2
 Example:
 (20 PSF) x (1.33 FT) x (15.5 FT) / 2 = 206.6 lbs.

Project Information

Name:
Address:

Contractor Information

Name:
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Architect Information

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