Code Compliance Research Report
CCRR-0207

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

REPORT HOLDER:
ClarkDietrich Building Systems, LLC
9050 Centre Pointe Drive, Suite 400
West Chester, OH 45069
614-423-8860
www.clarkdietrich.com

REPORT SUBJECT:
ProSTUD® Cold-Formed Steel Studs
ProTRAK® Cold-Formed Steel Tracks

1.0 SCOPE OF EVALUATION

1.1 This Research Report addresses compliance with the following Codes:

- 2015 *International Building Code®* (IBC)
- 2015 *International Residential Code®* (IRC)
- 2017 *Florida Building Code - Building* (FBC-B) (see Section 9)
- 2017 *Florida Building Code - Residential* (FBC-R) (see Section 9)
- 2016 *California Building Code* (CBC) (see Section 9)
- 2016 *California Residential Code* (CRC) (see Section 9)

1.2 ProSTUD and ProTRAK have been evaluated for the following properties:

- Structural
- Acoustical
- Fire Resistance

1.3 ProSTUD and ProTRAK have been evaluated for use as interior nonload-bearing (nonstructural), gypsum board sheathed walls and ceilings in compliance with Sections 2210.1 and 2508 of the IBC, FBC-B, and CBC, and Sections R603 and R702.3 of the IRC, FBC-R, and CRC.

2.0 STATEMENT OF COMPLIANCE

ProSTUD and ProTRAK comply with the Codes listed in Section 1.1, for the properties stated in Section 1.2 and uses stated in Section 1.3, when installed as described in this report, including the Conditions of Use stated in Section 6.0.

3.0 DESCRIPTION

3.1 General – ProSTUD steel framing members are "C" shaped members with three evenly spaced grooves in each flange. ProSTUD members have offsets in the web, and diamond embosses on the center of the web of 2-1/2" and deeper members. The flanges of the ProSTUD members may be formed with or without knurling. ProTRAK steel framing members are "U" shaped members without a flange stiffener. ProTRAK members may be formed with or without two evenly spaced grooves in each flange and the flanges may be formed with or without a hem. ProTRAK members may be formed with or without a web offset or the diamond emboss. The flanges of ProSTUD and ProTRAK members may be formed with or without knurling. See Figures 1-3. The ProSTUD framing system products that are recognized in this report are limited to the products whose designations are found in Table 2.

3.2 ProSTUD and ProTRAK framing members (studs and tracks) are fabricated from steel coil conforming to the mechanical and chemical properties of ASTM A1003. Steel grades for each ProSTUD and ProTRAK framing member designations and specifications are recognized. See Table 2. The ProSTUD and ProTRAK members have a protective coating which conforms to ASTM Specification C645 and have a protective coating conforming to Specification A653/A653M–G40 minimum or have a protective coating which provides an equivalent corrosion resistance to a G40 coating. ProSTUD and ProTRAK members' equivalent corrosion resistance coatings are designated G40EQ or G40EQ DiamondPlus™.

3.3 ProSTUD is available in steel design thicknesses of 0.0158", 0.0190", 0.0200", 0.0312", and 0.0346". The

framing members are available in depths of 1-5/8", 2-1/2", 3-1/2", 3-5/8", 4", 5-1/2" and 6". The 18-mil ProSTUD is not recognized for 3-1/2" and 5-1/2" depths. See Figure 1 for stud profiles and Table 2 for recognized product designations.

3.4 ProTRAK thicknesses correspond to the stud thicknesses. See Figure 3 for track profiles and Table 2 for recognized product designations.

3.5 ProSTUD is pre-punched with knockouts spaced every 48 inches throughout the stud length and shall not be located less than 10 inches from the end of the member to the near edge of the web knockout. Punch-out hole dimensions are as indicated in Figure 4 for each stud depth.

3.6 Fasteners for attachment of gypsum wall board to framing shall be a minimum #6 Type S drywall screws complying with SAE J78 and ASTM C1002. Fasteners are spaced a maximum of 16 inches on center for 16 in. or 12 in. stud spacing; and 12 inches on center for 24 in. stud spacing.

3.7 Gypsum wallboard for composite assemblies shall comply with ASTM C1396 and be 5/8" thick Type X gypsum, manufactured by American, CertainTeed, Georgia Pacific, Continental, National, PABCO, or United States Gypsum.

4.0 PERFORMANCE CHARACTERISTICS

4.1 Reference the ClarkDietrich Building Systems ProSTUD Product Catalog (attached) for design capacities, where only the following pages are within the scope of this report:

4.1.1 ProSTUD and ProTRAK Section Properties on pages 6-10.

4.1.2 ProSTUD and ProTRAK Screw Connection Values on page 11.

4.1.3 ProSTUD Composite Limiting Height tables and instructions on pages 13-14. When composite limiting heights are used the interior nonload-bearing wall assemblies shall be limited to interior installations where the superimposed axial load is zero pounds.

4.1.4 ProSTUD Non-Composite Limiting Height tables on pages 15-16. Per ASTM C645, nonstructural wall studs manufactured from steel with a minimum measured thickness of 0.0179" (18 mil) may have a superimposed vertical load, exclusive of sheathing materials, not exceeding 100 lb/ft, or a superimposed vertical load not exceeding 200 lbs. per stud.

4.1.5 ProSTUD Sound Assemblies identified in the tables on pages 17-18 provide the Sound Transmission Class (STC) required for air-borne sound according to IBC, FBC and CBC Section 1207.2 and IRC Section AK102 where STC ratings are not less than 50 and 45, respectively.

4.1.6 ProSTUD Fire Rated Assemblies identified in the tables on page 19. ProSTUD and ProTRAK framing meet requirements for use in fire-resistance rated assemblies in accordance with IBC, FBC and CBC Section 703.2 when used in accordance with UL Certification CIKV.R26512 and related UL Design Nos.

4.1.7 ProSTUD Allowable Ceiling Span tables on page 21.

4.2 For construction governed by the FBC High Velocity Hurricane Zone (HVHZ), the wall height is limited to the height at the L/240 deflection level.

4.3 Non-loadbearing (nonstructural) wall heights are determined by the lesser of the limiting conditions which include wall deflection, shear strength, web crippling strength, or flexural strength of the stud.

5.0 INSTALLATION

5.1 ProSTUD and ProTRAK must be installed in accordance with the manufacturer's published installation instructions, the applicable Code, and this Research Report. A copy of the manufacturer's instructions must be available on the jobsite during installation.

5.2 Framing shall be in accordance with the code requirements, ASTM C645 and ASTM C754.

5.3 Fire rated assemblies shall be in accordance with the applicable UL Design No. from UL Certification CIKV.R26512.

Sound rated assemblies shall be in accordance with the wall assembly description given in the sound transmission test report correlating with the sound assembly from pages 21 in the attached product catalog.

6.0 CONDITIONS OF USE

6.1 Installation must comply with this Research Report, the manufacturer's published installation instructions, and the applicable Code. In the event of a conflict, this report governs.

6.2 All designs and calculations shall be prepared by a licensed design professional according to the requirements in the jurisdiction where the project is located.

6.3 Jobsite manufacturing of studs or tracks is outside the scope of this report.

6.4 The minimum base steel thickness of the section delivered to the jobsite must be a minimum of 95% of the design thickness.

6.5 The ProSTUD and ProTRAK Framing identified in this report is manufactured in accordance with the manufacturer's approved quality control system with inspections by Intertek. See Table 3 for approved manufacturing locations.

7.0 SUPPORTING EVIDENCE

7.1 Manufacturer's drawings and installation instructions.

7.2 Reports of testing and engineering analysis in accordance with ICC-ES AC86, Acceptance Criteria for Steel Studs and Gypsum-Board Interior Nonload-Bearing Walls-Composite Construction, revised August 2015.

7.3 Reports of evaluation and engineering analysis in accordance with AISI S100-07 with 2010 supplement, North American Specification for the Design of Cold-Formed Steel Structural Members.

7.3.1 AISI S100-07 reviewed and deemed equivalent to AISI S100-12 for compliance with 2015 IBC.

7.4 Reports of testing and engineering analysis demonstrating compliance with ICC-ES AC46, Acceptance Criteria for Cold-Formed Steel Framing Members, revised April 2015.

7.5 Reports of testing and evaluation of G40EQ and G40EQ DiamondPlus coating to verify equivalent corrosion resistance to G40 coated specimens per the requirements of ASTM C645 and AISI 220.

7.6 Reports of acoustical testing in accordance with ASTM E90-04 – Testing Standard for Air-Borne Sound Transmission Loss of Building Partitions and Elements.

7.7 Documentation of an Intertek approved quality control system for the manufacturing of products recognized in this report.

8.0 IDENTIFICATION

ProSTUD and ProTRAK produced in accordance with this report shall be identified with labeling at a maximum spacing of 96 inches that includes the following information:

8.1 The manufacturers name, logo, or initials;

8.2 The ProSTUD and ProTRAK framing designation;

8.3 Minimum base steel thickness (uncoated) in decimals or mils;

8.4 Yield strength;

8.5 Galvanization coating designation G40, G40EQ or G40EQ DiamondPlus.

8.6 The Intertek Code Compliance Research Report identification and number, "Intertek CCRR-0207"

8.7 ProSTUD and ProTRAK Framing to be used in fire-resistance rated assemblies shall be labeled in accordance with UL certification CIKV.R26512.

8.8 Bundles of like members shall be identified with the Intertek identification mark and Code Compliance Research Report number as shown:

9.0 ADDITIONAL CODES

9.1 FLORIDA BUILDING CODE

9.1.1 Scope of Evaluation: The ProSTUD and ProTRAK were evaluated for compliance with the 2017 *Florida Building Code – Building and Florida Building Code – Residential.*

9.1.2 Conclusion: The ProSTUD and ProTRAK, described in Sections 2.0 through 7.0 of this Research Report, comply with the 2017 Florida Building Code – Building and Florida Building Code – Residential, including the High-Velocity Hurricane Zone provisions.

9.2 CALIFORNIA BUILDING CODE

9.2.1 Scope of Evaluation: The ProSTUD and ProTRAK were evaluated for compliance with the 2016 California Building Code and California Residential Code.

9.2.2 Conclusion: The ProSTUD and ProTRAK, described in Sections 2.0 through 7.0 of this Research Report, comply with the 2016 California Building Code and California Residential Code.

10.0 CODE COMPLIANCE RESEARCH REPORT USE

10.1 Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

10.2 Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product by Intertek.

10.3 Reference to the https://bpdirectory.intertek.com is recommended to ascertain the current version and status of this report.

TABLE 1 - CODE REFERENCED STANDARDS

2015 IBC	2017 FBC	2016 CBC
AISI S100-12	AISI S100-12	AISI S100-07
AISI S220-11	AISI S200-11	AISI S220-11
ASTM C645-13 Section 10	ASTM C645-13	ASTM C645-13 Section 10

TABLE 2 - PROSTUD AND PROTRAK SPECIFICATIONS[1]

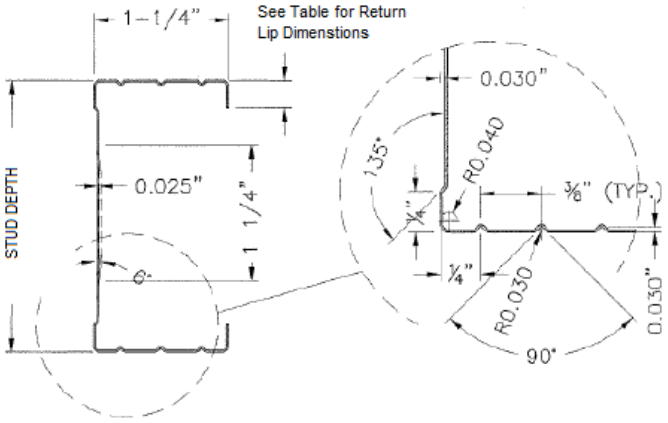
ClarkDietrich Designation	Min. Base Steel Thickness	Min. Yield Strength (ksi)
ProSTUD 25	0.0150" (15-mil)	NS 50
ProSTUD 20[2]	0.0181 (18-mil)	NS 70
ProSTUD 20 LTD	0.0190" (19-mil)	NS 65
ProSTUD 30	0.0296" (30-mil)	NS 33
ProSTUD 33	0.0329" (33-mil)	NS 33
ProTRAK 25	0.0150" (15-mil)	NS 50
ProTRAK 20[2]	0.0181 (18-mil)	NS 50
ProTRAK 20 LTD	0.0190" (19-mil)	NS 50
ProTRAK 30	0.0296" (30-mil)	NS 33
ProTRAK 33	0.0329" (33-mil)	NS 33

[1] *ProSTUD* and *ProTRAK* are available in depths of 1-5/8", 2-1/2", 3-1/2", 3-5/8", 4", 5-1/2" and 6".

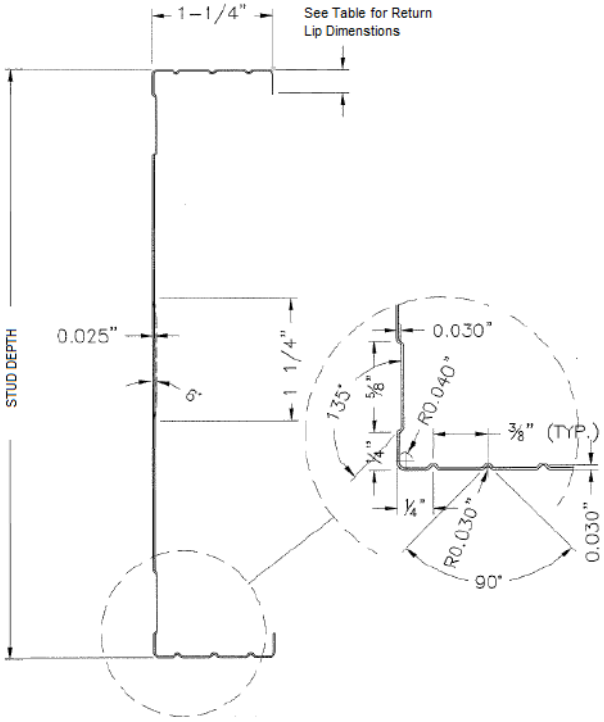
[2] 18-mil *Pro Stud 20* and *ProTRAK 20* are available in depths of 1-5/8”, 2-1/2”, 3-5/8”, 4”, and 6”.

TABLE 3 - PROSTUD AND PROTRAK MANUFACTURING LOCATIONS

ClarkDietrich® Building System - BALTIMORE 4601 North Point Blvd. Baltimore, MD 21219	**ClarkDietrich® Building System – MCDONOUGH** 330 Greenwood Place McDonough, GA 30253
ClarkDietrich® Building System - BAYTOWN 4200 Cedar Blvd. Baytown, TX 77520	**ClarkDietrich® Building System - RIVERSIDE** 6510 General Drive Riverside, CA 92509
ClarkDietrich® Building System – BRISTOL 780 James P, Casey Road Bristol, CT 06010	**ClarkDietrich® Building System – ROCHELLE** 501 Steward Road, Suite 100 Rochelle, IL 61068
ClarkDietrich® Building System – DADE CITY 38020 Pulp Drive Dade City, FL 33523	**ClarkDietrich® Building System – WOODLAND** 1685 Tide Court Woodland, CA 95776
ClarkDietrich® Building System – DALLAS 10340 Denton Drive Dallas, TX 75220	**ClarkDietrich® Building System – VIENNA** 1455 Ridge Road Vienna Township, OH 44473



1-5/8" & 2-1/2" Studs



3-1/2", 3-5/8", 4", 5-1/2" & 6" Studs

Return Lip Dimensions		
Section	Minimum Thickness	Return Lip
162S125	0.015"	0.250"
250S125		
350S125		
362S125		
400S125		
550S125		
600S125		
162S125	0.0181"	0.275"
250S125		0.315"
362S125		0.325"
400S125		0.34
600S125		0.386
162S125	0.019"	0.265"
250S125		0.300"
350S125		0.315"
362S125		0.315
400S125		0.330"
550S125		0.350"
600S125		0.360"
162S125	0.0296"	0.250"
250S125		
350S125		
362S125		
400S125		
550S125		
600S125		
162S125	0.0329"	0.250"
250S125		
350S125		
362S125		
400S125		
550S125		
600S125		

FIGURE 1 – PROSTUD SECTION PROFILES

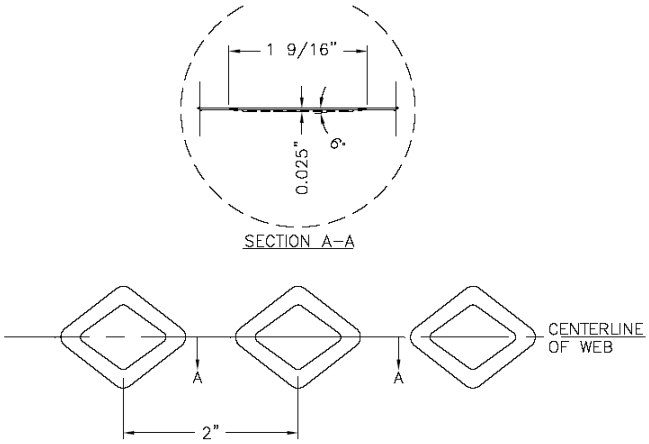


FIGURE 2 – WEB EMBOSSMENT DETAIL
(No embossment on 1-5/8" studs)

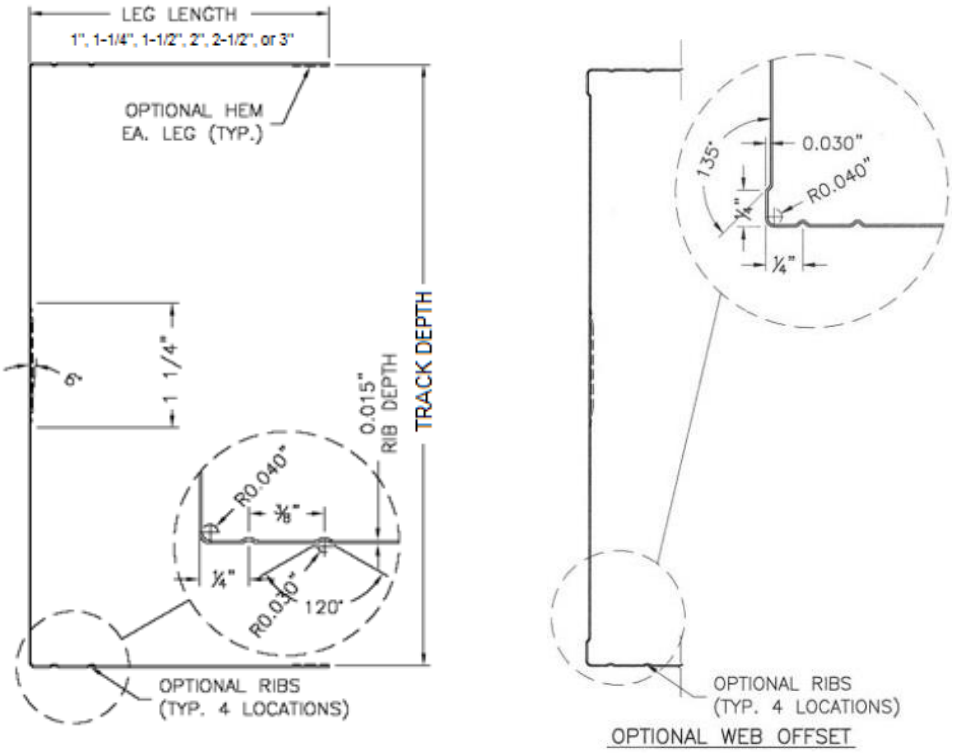


FIGURE 3 – PROTRAK SECTION PROFILE

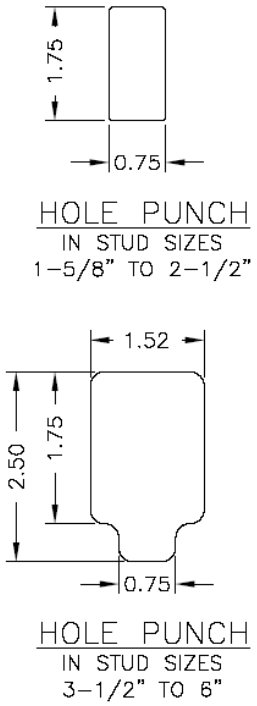


FIGURE 4 – PUNCH-OUT HOLE DIMENSIONS