



Code Compliance Research Report CCRR-0224

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REPORT SUBJECT:

Standard Cold-Formed Steel Framing Members

1.0 SCOPE OF EVALUATION

This research report addresses compliance with the following Codes:

- 2015 International Building Code (IBC)
- 2015 International Residential Code (IRC)
- 2014 Florida Building Code (FBC)
Including High Velocity Hurricane Zone (HVHZ)
- 2013 California Building Code (CBC)

Standard Cold-Formed Steel Framing Members have been evaluated for the following properties:

- Structural
- Corrosion protection

2.0 USES

2.1. Cold-formed steel framing members (studs, tracks, and U-channels) recognized in this report are used for framing of nonload-bearing interior walls, curtain walls, load-bearing walls, floor joists, headers, roof rafters and roof trusses.

3.0 DESCRIPTION

3.1. Materials

3.1.1. Non-structural steel framing members are cold-formed from steel coils conforming to ASTM A 1003

Non-Structural Grade, Type NS. Non-structural members have a minimum protective coating of G40 galvanization conforming to ASTM A 653.

3.1.2. Structural steel framing members are cold-formed from steel coils conforming to ASTM A 1003 Structural Grade 33 Type H and Structural Grade 50 Type H. Structural members have a minimum protective coating in accordance with Table 1, CP 60 as listed in ASTM C 955.

3.2. Studs are manufactured with and without factory web punchouts. Web punchout holes are spaced a minimum of 24 inches on center along 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 punchout. Web punch-out widths shall not exceed 2.5 inches, or half of the member depth. Web punch-out length shall not exceed 4.5 inches. Tracks and U-channels are manufactured without web punch-outs.

3.3. See page 2 of the SFIA Technical Guide for Cold-Formed Steel Framing Products for member designations.

4.0 PERFORMANCE CHARACTERISTICS

4.1. Reference the SFIA Technical Guide for Cold-Formed Steel Framing Products (attached) for section properties and design capacities established in accordance with AISI S100 and, AISI S200 or S220, as applicable, where only the following pages are within the scope of this report:

4.1.1. General Product Information on pages 2-4.

4.1.2. Non-Structural Stud, Structural Stud, and Track Section Properties on pages 5-18

4.1.3. Limiting Wall Heights Tables for Interior Non-Structural Non-Composite on pages 19-22.

4.1.4. Limiting Wall Height Tables for Interior Non-Structural Composite on pages 23-24. Gypsum wall board must be a minimum of 5/8" thick and Type X, complying with ASTM C1396 and manufactured by American Gypsum, CertainTeed, Georgia Pacific, Lafarge, National Gypsum, Temple-Inland, or USG. The interior nonload-bearing wall assemblies shall be limited to interior installations where the superimposed axial load is zero pounds.

4.1.5. Limiting Wall Heights Tables for Curtain Wall Single-Span on pages 25-36.

4.1.6. Combined Axial and Lateral Allowable Load Tables on pages 37-61

4.1.7. Allowable Floor Joist Span Tables on pages 62-75

4.1.8. Header Allowable Load Tables on pages 76-80. Lateral bracing of the compression flange shall be spaced at intervals not exceeding L_u (see section properties) to develop full allowable bending strength, M_a .

4.1.9. Allowable Web Crippling Load Tables on pages 81-85

4.1.10. U-Channel Section Properties on page 86. Allowable moments (M_a) apply to flexural members with the compression flange continuously braced.

4.2. For construction governed by the FBC High Velocity Hurricane Zone (HVHZ), the interior wall heights are limited to the heights at the L/240 and L/360 deflection levels.

5.0 INSTALLATION

Standard cold-formed steel framing members must be installed in accordance with the manufacturer's published installation instructions, the applicable Code and referenced AISI standards therein for cold-formed steel light-frame construction, including Section 2211 of the IBC, FBC, and CBC, and IRC Sections R505, R603, and R804. The manufacturer's published installation instructions and this Research Report must be strictly adhered to, and a copy of the instructions must be available on the jobsite during installation.

6.0 SUPPORTING EVIDENCE

6.1. Manufacturer's drawings and installation instructions.

6.2. Steel Framing Industry Association Technical Guide for Cold-Formed Steel Framing Products, Version 2015.101

6.3. Reports of testing and engineering analysis demonstrating compliance with ICC-ES AC46,

Acceptance Criteria for Cold-formed Steel Framing Members, editorially revised April 2015.

6.4. Reports of evaluation and engineering analysis in accordance with AISI S100-12, North American Specification for the Design of Cold-Formed Steel Structural Members.

6.4.1. AISI S100-07 reviewed and deemed equivalent to AISI S100-12 for compliance with 2014 FBC and 2013 CBC.

6.5. Reports of testing and engineer analysis demonstrating compliance with ICC-ES AC86, *Acceptance Criteria for Cold-Formed Steel Framing Members - Interior Nonload-Bearing Wall Assemblies*, revised August 2015.

6.6. Quality control manual in compliance with ICC-ES AC10, *Acceptance Criteria for Quality Control System Documentation*, dated June 2014.

7.0 CONDITION OF USE

The cold-formed steel framing members described in this Research Report comply with, or is a suitable alternative to, what is specified in those Codes listed in Sections 1.0 and 2.0 of this report, subject to the following conditions:

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

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

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

7.4. Wall assemblies based upon non-composite construction, pages 19-22 of the attached SFIA Technical Guide, are limited to a lateral (transverse) load of not more than 10 lb/ft², a superimposed vertical load, exclusive of sheathing materials, of not more than 100 lbf/ft, or a superimposed vertical load of not more than 200 lbs per stud.

7.5. The minimum base steel thickness of the section delivered to the jobsite must be 95% of the design thickness noted on page 3 of the SFIA Technical Guide for Cold-Formed Steel Framing Products.

7.6. Cold-Formed steel framing members identified in this report are manufactured at the manufacturing facilities recognized in Table 2 in accordance with the manufacturer's approved quality control system with inspections by Intertek (IAS AA-676).

8.0 IDENTIFICATION

The Standard Cold-Formed Steel Framing Members described in this Research Report are identified with labeling at a maximum of 96 inches that includes the following information:

8.1. Manufacturer's name, logo, or other positive identification;

8.2. For structural steel framing members: framing member designation, uncoated metal thickness, yield strength, and galvanization coating designation, CP60

8.3. For non-structural steel framing members: framing member designation, uncoated metal thickness, yield strength if other than 33 ksi, galvanization coating if other than G40, and designation "NS".

8.4. Intertek designation and Code Compliance Research Report number (Intertek CCRR-0224)

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



9.0 CODE COMPLIANCE RESEARCH REPORT

9.1. 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.

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

9.3. Reference to the Intertek website address: whdirectory.intertek.com is recommended to ascertain the current version and status of this report.

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