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Section: 05 41 00 – Structural Metal Stud Framing
Section: 05 42 00 – Cold-Formed Metal Joist
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Section: 09 22 16 – Nonstructural Metal Framing

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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)

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, and headers.

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 50 (NS50), Non-Structural Grade 57 (NS57), or Non-Structural Grade 33 (NS33). Non-structural members have a minimum protective coating of G40 galvanization coating designation complying with ASTM C 645.

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 of G60 galvanization coating designation complying with 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, 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 Heights Tables for Curtain Wall Single-Span on pages 25-36.

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

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

4.1.7. 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 .

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

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

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 IBC Section 2211 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 in accordance with ICC-ES AC46, *Acceptance Criteria for Cold-formed Steel Framing Members*, June 2012.

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.

6.5. 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. Non-structural steel members are limited to interior nonload-bearing walls with transverse loads of 10 psf or less and where the superimposed vertical loads do not exceed 100 lbf/ft, exclusive of sheathing materials, or a superimposed vertical load of 200 lbs.

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 in accordance with the manufacturer's approved quality control system with inspections by Intertek.

8.0 IDENTIFICATION

The Standard Cold-Formed Steel Framing Members described in this Research Report are identified by a marking bearing:

- 8.1. Manufacturer's name or 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 identification mark and Code Compliance Research Report number (Intertek CCRR-0224):



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 Architectural Testing.
- 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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