



Standard Specification for Load-Bearing (Transverse and Axial) Steel Studs, Runners (Tracks), and Bracing or Bridging for Screw Application of Gypsum Panel Products and Metal Plaster Bases¹

This standard is issued under the fixed designation C955; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

^{ε1} NOTE—Fig. 1 was revised editorially to remove an unnecessary asterisk in Dec. 2015.

1. Scope*

1.1 This specification covers steel studs, runners (tracks), and bracing or bridging (with a base steel minimum thickness of not less than 0.0329 in. (0.836 mm)) for screw application of gypsum panel products and metal plaster bases in load-bearing (transverse and axial) construction assemblies. Steel of lesser thickness shall be permitted in additional engineered products.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

2. Referenced Documents

2.1 ASTM Standards:²

A653/A653M Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

A792/A792M Specification for Steel Sheet, 55 % Aluminum-Zinc Alloy-Coated by the Hot-Dip Process

A875/A875M Specification for Steel Sheet, Zinc-5 % Aluminum Alloy-Coated by the Hot-Dip Process

A1003/A1003M Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members

C11 Terminology Relating to Gypsum and Related Building Materials and Systems

C954 Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel

Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness

2.2 AISI Standard:³

S100 North American Specification for the Design of Cold-Formed Steel Structural Members

S200 North American Standard for Cold-Formed Steel Framing—General Provisions—2007 Edition

3. Terminology

3.1 Definitions:

3.1.1 Definitions shall be in accordance with Terminology **C11**.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *members, n*—studs, runners, tracks, bracing, bridging, accessories, or other items manufactured in accordance with this standard.

3.2.2 *structural member, n*—a member in a steel framed system in which the loading exceeds any of the following conditions: a transverse load of 20 lbf/ft (290 N/m) of member length, or an axial load, exclusive of sheathing, of 200 lbf (890 N) per member.

4. Materials and Manufacture

4.1 Members shall be manufactured from steel meeting the requirements of Specification **A1003/A1003M**.

4.2 The minimum steel thickness (base steel) shall be not less than 0.0329 in. (0.84 mm).

4.3 Individual measurements before the application of protective coating shall be not less than 95 % of the specified design thickness.

4.4 Members shall have a protective coating in accordance with **Table 1**, CP 60 minimum.

4.5 Edges of members shall be manufactured to minimize burrs and sharp edges.

¹ This specification is under the jurisdiction of ASTM Committee **C11** on Gypsum and Related Building Materials and Systems and is the direct responsibility of Subcommittee **C11.02** on Specifications and Test Methods for Accessories and Related Products.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from American Iron and Steel Institute (AISI), 1140 Connecticut Ave., NW, Suite 705, Washington, DC 20036, <http://www.steel.org>.

TABLE 1 Coating Designations

Coating Classification	Coating Designator	Minimum Coating Requirements			
		Zinc-Coated ^A oz/ft ² (g/m ²)	Zinc Iron ^B oz/ft ² (g/m ²)	55 % Al-Zinc ^C oz/ft ² (g/m ²)	Zinc-5 % ^D oz/ft ² (g/m ²)
Metallic Coated	CP 60	G60 (Z 180)	A60 (ZF 180)	AZ 50 (AZM 150)	GF 30 (ZGF 90)
	CP 90	G90 (Z 275)	Not Applicable	AZ 50 (AZM 150)	GF 45 (ZGF 135)
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 (0.013 mm) per side (primer plus topcoat) with a minimum primer thickness of 0.1 mil (0.002 mm) per side. ^E			

^A Zinc-coated steel sheet as described in Specification A653/A653M.

^B Zinc-iron alloy-coated steel sheet as described in Specification A653/A653M.

^C 55 % Aluminum-zinc alloy-coated steel sheet as described in Specification A792/A792M.

^D Zinc-5 % aluminum alloy-coated steel sheet as described in Specification A875/A875M.

^E In accordance with the requirements of Specification A1003/A1003M.

4.6 Factory punch-outs, when provided, shall be located along the centerline of the webs of members and shall have center-to-center spacing of not less than 24 in. (610 mm). Web punch-outs maximum width shall be the lesser of 0.5 times the member depth, *d*, or 2½ in. (64 mm). Web punch-out length shall not exceed 4½ in. (114 mm). Minimum distance between the end of the member and the near edge of the web punch-out shall be 10 in. (254 mm). The size of the factory punch-outs shall not exceed the size used in design and the center-to-center spacing shall not be less than that used in design.

4.7 The properties and strength of members shall be computed in accordance with the AISI S100.

5. Dimensions and Permissible Variations

5.1 Data for calculating design performance shall be supplied by the manufacturer.

5.2 The width of the surface to which the sheathing board is attached shall be not less than 1¼ in. (32 mm).

5.3 Runners (track) shall be formed in a U-shaped configuration, having a depth compatible with that of the studs of the same nominal size.

5.4 Minimum height of runner (track) flanges shall be 1¼ in. (32 mm).

5.5 Members shall be manufactured within the limits as shown in Table 2 and Fig. 1.

5.6 Bracing and bridging shall have configuration and steel thickness to provide secondary support for the studs in accordance with the AISI S100.

TABLE 2 Manufacturing Tolerances

Dimension ^A	Item Checked	Structural Studs, in. (mm)	Structural Track, in. (mm)
A	length	+ ⅛ (3.18)	+ ½ (12.7)
		– ⅜ (9.53)	– ¼ (6.35)
B ^B	web width	+ ⅜ (9.53)	+ ⅜ (9.53)
		– ⅜ (9.53)	+ ⅜ (3.18)
C	flare overbend	+ ⅜ (1.59)	+ 0 (0)
		– ⅜ (1.59)	– ⅜ (2.38)
D	hole center width	+ ⅜ (1.59)	n/a
		– ⅜ (1.59)	n/a
E	hole center along length	+ ½ (12.7)	n/a
		– ½ (12.7)	n/a
F	crown	+ ⅜ (1.59)	+ ⅜ (1.59)
		– ⅜ (1.59)	– ⅜ (1.59)
G ^C	camber	⅜ (3.2) max per 10 ft	⅜ per ft (0.79) ½ max (12.7)
H ^C	bow	⅜ (3.2) max per 10 ft	⅜ per ft (0.79) ½ max (12.7)
I	twist	⅜ per ft (0.79) ½ max (12.7)	⅜ per ft (0.79) ½ max (12.7)
J	flange width	+ ⅜ (3.18)	+ ¼ (6.35)
		– ⅜ (1.59)	– ⅜ (1.59)
K	stiffening lip length	+ ⅜ (3.18) – ⅜ (0.79)	n/a

^A All measurements shall be taken not less than 1 ft (305 mm) from the end.

^B Outside dimension for stud; inside for track.

^C ⅜ in. (3 mm) max per 10 ft (3000 mm) represents L/960 maximum for overall camber and bow. Thus a 20-ft (6000-mm) long member would have ⅜ in. (6 mm) permissible maximum; a 5-ft (1500-mm) long member would have ⅜ in. (1.5 mm) permissible maximum.

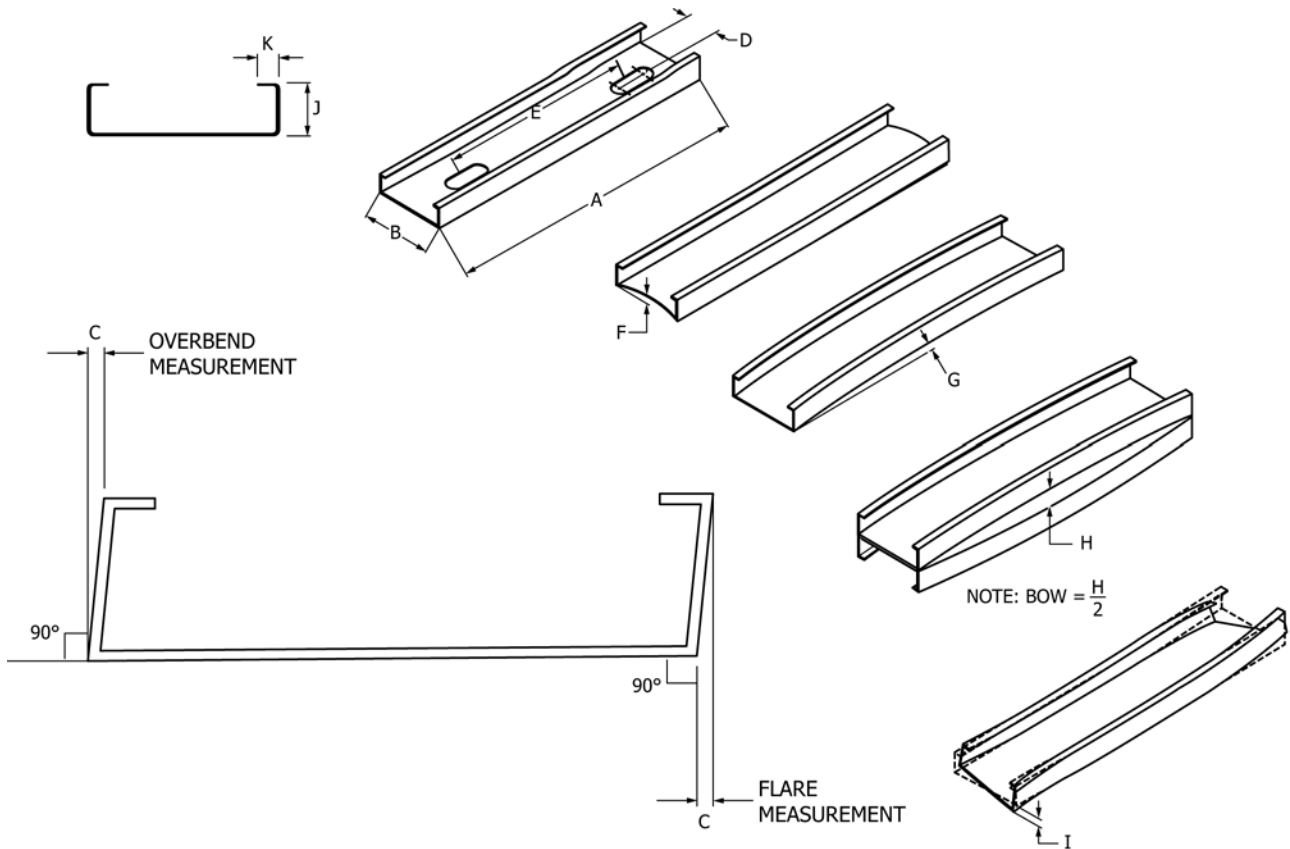


FIG. 1 Manufacturing Tolerances

6. Workmanship, Finish, and Appearance

6.1 The steel members shall be free of defects that interfere with the purpose for which they are intended.

7. Inspection

7.1 Inspection of the members shall be agreed upon between the purchaser and the producer or supplier as part of the purchase agreement.

8. Rejection

8.1 When specified in the purchase agreement, members that fail to conform to the requirements of this specification shall be rejected. Rejection shall be reported to the producer or supplier promptly and in writing. The notice of rejection shall contain a statement documenting how the member has failed to conform to the requirements of this specification and the purchase agreement.

9. Certification

9.1 When specified in the purchase agreement, a producer's or supplier's report shall be furnished at the time of shipment certifying that the product is in compliance with this specification.

10. Marking and Identification

10.1 See AISI S200, Section A5—Product Identification.

11. Protection

11.1 Material shall be protected during shipment as required. When specified in the purchase order, the members shall be packaged in accordance with the purchaser's instructions.

11.2 When materials are stored outside, they shall be stacked off the ground and be properly supported on a level surface.

12. Keywords

12.1 runners; screws; section properties; studs; thickness

SUMMARY OF CHANGES

Committee C11 has identified the location of selected changes to this standard since the last issue (C955 – 11c) that may impact the use of this standard. (Approved March 15, 2015.)

(1) Previous subsection 1.3, Sections 5 and 8, and Fig. 1, all regarding the penetration test, were removed.

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