



AISI S201-17



**American
Iron and Steel
Institute**

AISI STANDARD

North American Standard for Cold-Formed Steel Framing – Product Data

2017 Edition



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DISCLAIMER

The material contained herein has been developed by the American Iron and Steel Institute (AISI) Committee on Framing Standards. The Committee has made a diligent effort to present accurate, reliable, and useful information on cold-formed steel framing design and installation. The Committee acknowledges and is grateful for the contributions of the numerous researchers, engineers, and others who have contributed to the body of knowledge on the subject. Specific references are included in the *Commentary*.

With anticipated improvements in understanding of the behavior of *cold-formed steel* framing and the continuing development of new technology, this material will become dated. It is anticipated that AISI will publish updates of this material as new information becomes available, but this cannot be guaranteed.

The materials set forth herein are for general purposes only. They are not a substitute for competent professional advice. Application of this information to a specific project should be reviewed by a design professional. Indeed, in many jurisdictions, such review is required by law. Anyone making use of the information set forth herein does so at their own risk and assumes any and all liability arising therefrom.

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PREFACE

The American Iron and Steel Institute Committee on Framing Standards has developed AISI S201, *North American Standard for Cold-Formed Steel Framing – Product Data*, to standardize requirements for *cold-formed steel* framing products. This standard is intended to establish and encourage the production and use of standardized products in the United States, Canada and Mexico. This edition supersedes the previous edition, designated as AISI S201-2012.

Since this standard is intended for use in Canada, Mexico and the United States, it was necessary to develop a format that would allow for provisions particular to each country. This resulted in a main document, Chapters A through D, and one country-specific appendix applicable only to Canada. No technical differences are intended between the provisions in Appendix A and the main body of the standard. Appendix A is intended to represent a subset of the broader range of standard products offered in the United States and Mexico.

The Committee acknowledges and is grateful for the contributions of the numerous engineers, researchers, producers and others who have contributed to the body of knowledge on the subjects. The Committee wishes to also express its appreciation for the support of the Canadian Sheet Steel Building Institute.

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NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL FRAMING— PRODUCT DATA

A. GENERAL

A1 Scope

This Standard provides criteria, including material and product requirements, for *structural members* and *nonstructural members* utilized in *cold-formed steel light-frame construction* applications.

The components covered in this standard include *C-shape studs, joists, track, U-channels, furring channels* and angles.

This Standard shall not preclude the use of other products not meeting the criteria herein, when the other products demonstrate equivalent performance for the intended use to those specified in this standard. Where there is a conflict between this Standard and other reference documents, the requirements contained within this Standard shall govern.

This Standard shall include Sections A through D, and Appendix A, as applicable.

A2 Definitions

In this Standard, “shall” is used to express a mandatory requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the Standard. Provisions described as “permitted” are optional, and the election to use such provisions is at the discretion of the user.

Where the terms appear in this Standard in italics, such terms shall have the meaning as defined in AISI S240. Terms included in square brackets are specific to *LSD* terminology. Where a country is indicated in square brackets following the definition, the definition shall apply only in the country indicated. Terms not defined in Section A2 shall have ordinary accepted meaning for the context for which they are intended.

 **Note:** See Appendix A for Provisions applicable to Canada.

A3 Referenced Documents

The following documents or portions thereof are referenced within this standard and shall be considered part of the requirements of this document.

1. American Iron and Steel Institute, 25 Massachusetts Avenue NW, Suite 800, Washington, DC 20001:

AISI S240-15, *North American Standard for Cold-Formed Steel Structural Framing*

AISI S220-15, *North American Standard for Cold-Formed Steel Framing – Nonstructural Members*

 **Note:** See Appendix A for Provisions applicable to Canada.

B. MATERIALS

B1 Material Specification

Structural members shall be cold-formed to shape from sheet steel in compliance with the requirements of AISI S240 Section A3. *Nonstructural members* shall be cold-formed to shape from sheet steel in compliance with the requirements of AISI S220 Section A4. *Structural members* shall be limited to Grade 33 [230] and Grade 50 [340]. *Nonstructural members* shall be limited to Grade 33 [230].

 **Note:** See Appendix A for Provisions applicable to Canada.

B2 Base Steel Thickness

Structural members shall be cold-formed to shape from sheet steel with a minimum *base steel thickness* listed in Table B2-1. *Nonstructural members* shall be cold-formed to shape from sheet steel with a minimum base steel thickness listed in Table B2-2. Member thickness shall be referenced to the corresponding *designation thickness*.

 **Note:** See Appendix A for Provisions applicable to Canada.

Table B2-1
Standard Thickness—Structural Members

Designation Thickness	Minimum Base Steel Thickness		Design Thickness	
	(inch)	(mm)	(inch)	(mm)
33	0.0329	0.836	0.0346	0.879
43	0.0428	1.087	0.0451	1.146
54	0.0538	1.367	0.0566	1.438
68	0.0677	1.720	0.0713	1.811
97	0.0966	2.454	0.1017	2.583
118	0.1180	2.997	0.1242	3.155

Table B2-2
Standard Thickness—Nonstructural Members

Designation Thickness	Minimum Base Steel Thickness		Design Thickness	
	(inch)	(mm)	(inch)	(mm)
18	0.0179	0.455	0.0188	0.478
27	0.0269	0.683	0.0283	0.719
30	0.0296	0.752	0.0312	0.792

B3 Corrosion Protection

Structural members shall have a Zinc or 55% Al-Zinc protective coating in accordance with the requirements of Section A4.1 of AISI S240. *Nonstructural members* shall have a Zinc or 55% Al-Zinc protective coating in accordance with the requirements of Section A5.1 of AISI S220.

 **Note:** See Appendix A for Provisions applicable to Canada.

C. PRODUCTS

C1 Product Designator

References to *structural members* and *nonstructural members* shall use a four-part product designator that identifies the size (both *web* depth and *flange* width), style, and thickness. The standard designator as described (i.e. based on U.S. Customary units) shall be used for either U.S. Customary or SI Metric units. The product designator shall consist of the following sequential codes:

A three- or four-digit numeral indicating member *web* depth in 1/100 inch. A letter indicating:

S = *Stud* or joist framing member which has *lips*

T = *Track* section

U = Channel or *stud* framing section which does not have *lips*

F = Furring channels

L = Angle or L-*header*

A three-digit numeral indicating *flange* width in 1/100 inch, followed by a dash. A two- or three-digit numeral indicating *designation thickness*.

When specifying material for use in structural applications, the material *grade* used in design shall be identified on the contract documents and when ordering the material.

C2 Standard Shapes

The standard shapes for *structural members* and *nonstructural members* shall be any combination of the basic dimensions listed in Tables C2-1 through C2-5, depending on the member type. The standard shapes are illustrated in Figure C2-1.

 **Note:** See Appendix A for Provisions applicable to Canada.

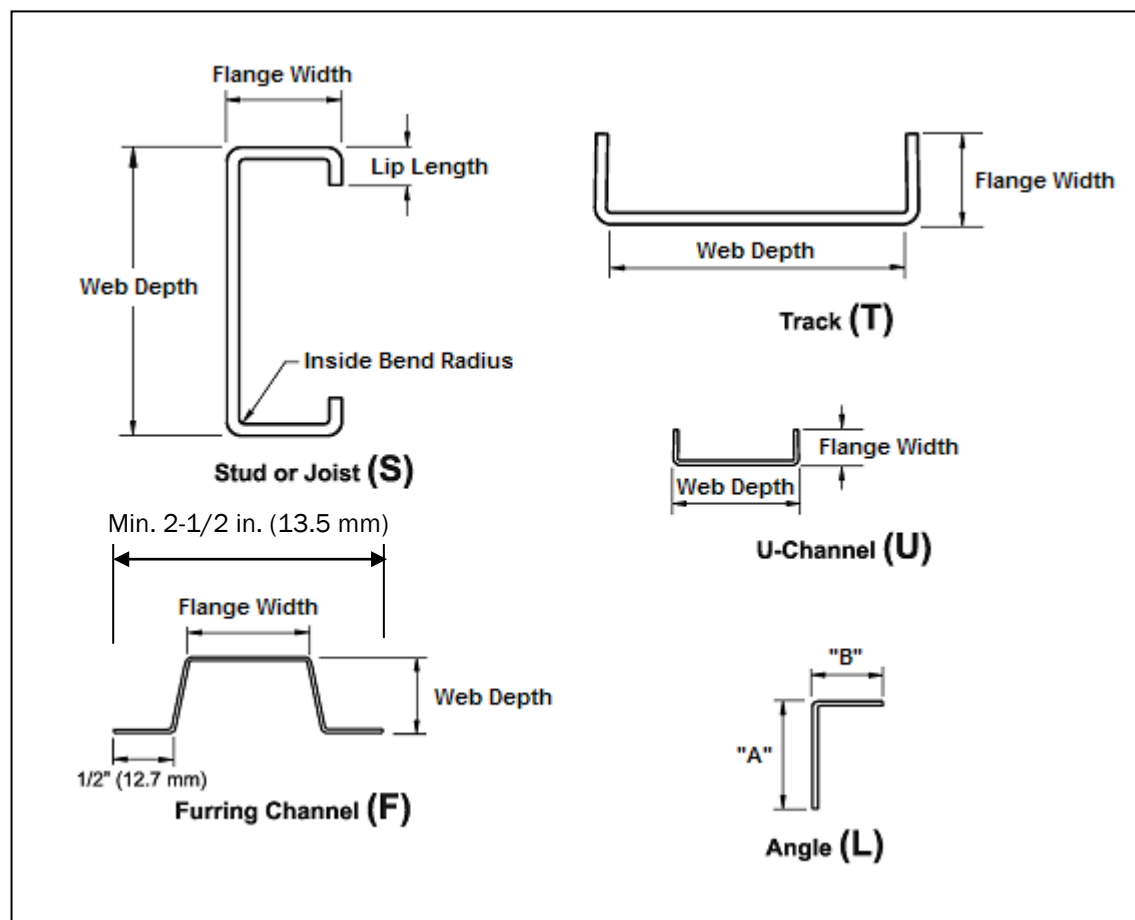


Figure C2-1 Cold-Formed Steel Framing Member Types

Table C2-1
Standard Dimensions for C-Shape Studs and Joists (S)

Web Depth		
Depth Designation	Design Depth	
	(inch)	(mm)
162	1-5/8	41.3
250	2-1/2	63.5
350	3-1/2	88.9
362	3-5/8	92.1
400	4	102
550	5-1/2	140
600	6	152
800	8	203
1000	10	254
1200	12	305
1400	14	356

Flange Width		
Width Designation	Design Width	
	(inch)	(mm)
125	1-1/4	31.8
137	1-3/8	34.9
162	1-5/8	41.3
200	2	50.8
250	2-1/2	63.5
300	3	76.2
350	3-1/2	88.9

Note: Not all shapes are available in every standard thickness.