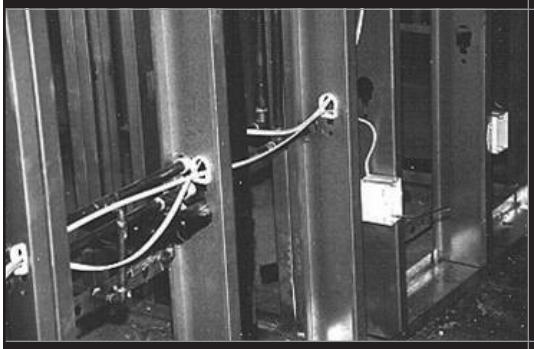
A Building Inspector's Guide
to Steel Frame Construction



Steel Framing Inspection Guide

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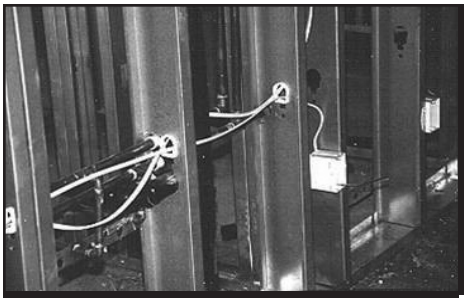


STEEL FRAMING INSPECTIO

AN EASY-TO-USE GUIDE FOR STEEL

INTRODUCTION

COLD-FORMED STEEL (CFS) IS:

- **Strong – steel has the highest strength-to-weight ratio of all structural building materials**
- **Inert – studs and joists won't swell, shrink or off gas with climatic changes**
- **Ductile – CFS frames perform well in high wind and seismic zones**
- **Fire Resistant – steel frames are ideal for areas of high housing density and frequent wildfires**
- **Ferrous metal – steel is dimensionally stable and will not provide food for termites, insects and mold**
- **Recyclable – domestic CFS products have a minimum recycled content of 28%**

STEEL FRAMING

COLD-FORMED STEEL PARTS

Cold-formed steel (CFS) studs and joists are hollow C-shaped sheet steel members that are used to frame walls, floors and roofs in residential and commercial structures. In residential designs that follow the prescriptive method outlined in building codes, structural members will be arranged in-line and platform framed.

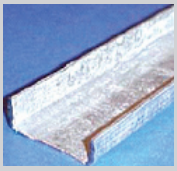
CFS has been durability-tested in the commercial sector where steel frames have been designed and connected to withstand climatic rigors like tornado and hurricane winds, earthquakes, wildfires, and insect infestation. Today, designers and builders are increasingly specifying CFS as the structural frame for homes – from suburban singles to multi-story, multi-family and multi-function buildings. This guide will introduce the building inspector to steel frames and provide a useful aid for residential CFS framing.

Refer to the approved design or recognized design standard for specifics (which govern over this Guide). Cold-formed steel refers to five common shapes that are rolled from sheet steel to form components that can be assembled into the structural framework of a building. The shapes are known by the acronym **S-T-U-F-L**, for **S**tud, **T**rack, **U**-channel, **F**urring, and **L**-header.

Cold-Formed Steel Shapes

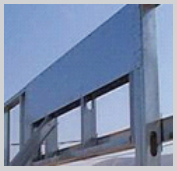
Stud or Joist

Track



U-channel

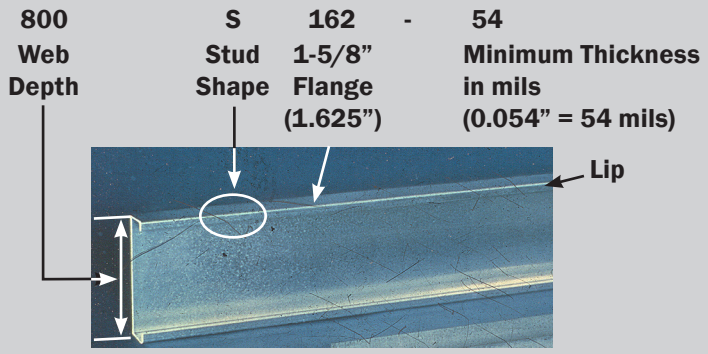
Furring Channel



L-header

N GUIDE
F R A M E C O N S T R U C T I O N

Steel Member using the Universal Designation System

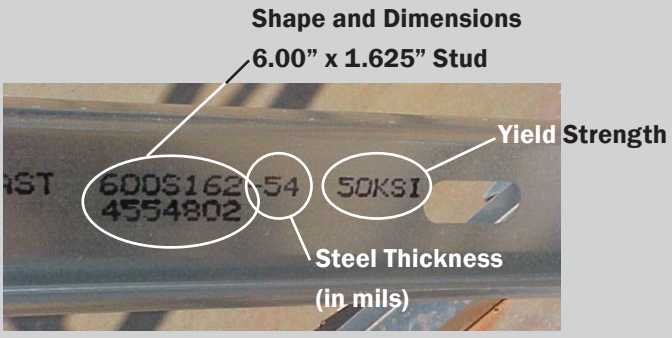


CONFORMANCE TO STANDARDS

Building codes and standards require that steel framing members be labeled with the manufacturer's identification, minimum uncoated steel thickness, yield strength and (corrosion protection) coating designation.

Some labels on cold-formed steel may follow the universal designation system shown above which includes manufacturer, web size, steel shape, flange size, thickness, and yield strength. Stud (and joist or rafter) shapes have a web, two flanges with lips. Track will have a web and 2 flanges but no lips, so that it fits over the ends of studs and joists.

Cold-formed Steel Identification



Web and flange sizes are expressed in 1/100ths of an inch and thickness is expressed in 1/1000ths of inch, or "mils." Using the CFS universal designation system, the stud shown is a 6.00" x 1.62" stud shape of 50 KSI (kips per square inch) steel.

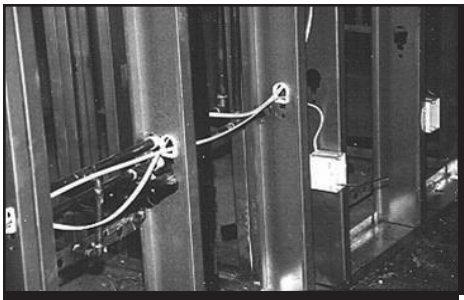
CORROSION PROTECTION

Steel studs are galvanized to protect the steel against deterioration from oxidation. The level of protection that is provided is measured by the gross weight of the metallic coating applied to the surface area of the steel on all sides. The higher the number is, the thicker the coating. Zinc metal is often used in the galvanizing process of CFS because it provides an impervious barrier between the steel and corrosive elements in the atmosphere - moisture and corrosive chlorides and sulfides. The zinc will corrode before the steel until it is entirely consumed. A minimum protective coating of G60 (conforming to ASTM A653, ASTM A792, or ASTM A875) is required for structural members, while non-structural, interior framing members may have a minimum coating of G40.

CONNECTIONS

The IRC 2006 covers structural connections using No. 8 and No. 10 screws with a minimum of three threads (approximately 3/8" of the screw shank) extending past the final member (backside) of the connection. Generally, No. 10s are required for roof member-to-member connections and No. 8 fasteners are appropriate in other locations. Gypsum board can be attached to steel of 33 mils and less with No. 6 screws. Thicker CFS will require No. 8 screws. There are pin nails approved for gypsum application, as well.

Codes also recognize bolted and welded connections. Fastening methods like clinching, riveting, and pneumatic pin nailing are also permitted. The alternative materials section of the codes, provides for case-by-case approval by the building official.



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BUILDING CODES

Codes developed by the International Code Council have been widely adopted as building standards in the United States and, as such, will serve as primary reference in this Field Guide. Both the International Building Code (IBC) and International Residential Code (IRC) include provisions for constructing with cold-formed steel in commercial and residential buildings. Citations to the building code that are contained in this guide will refer to the prescriptive method for steel construction in the IRC and referenced standards. The References section at the conclusion of this guide provides more comprehensive coverage of both IRC and IBC design references for CFS.

The American Iron and Steel Institute's (AISI) *(2004) Standard for Cold-formed Steel Framing-Prescriptive Method for One- and Two-family Dwellings 2001 Edition with Supplement 2 (AISI COFS/PM)* is an industry standard that is referenced in and considered to be a part of the IRC 2006.

ENGINEERED DESIGNS

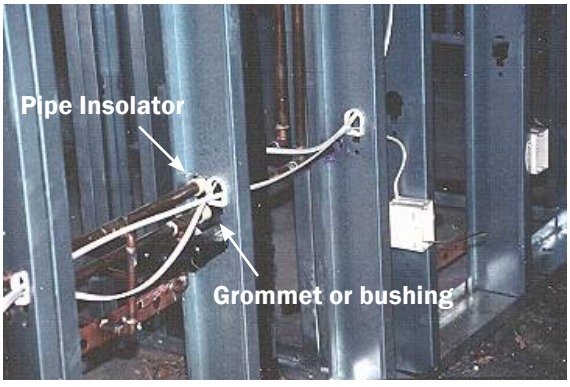
Steel can be used differently in engineered designs than it can be used by following the prescriptive methods in the IRC. Engineered designs analyze the stud, joist, header, and roof components as columns, beams, and rafters for the most efficient use of the material. Thus, each component is individually engineered for a specific design, so the spacing between structural members and thickness of the steel can vary widely in engineered designs. Engineered CFS designs are acceptable alternatives to a prescriptive design. Non-generic steel is frequently used in residential construction where proprietary products, like floor joists with large utility punchouts, meet the need for cost effectiveness and mechanical system integration.

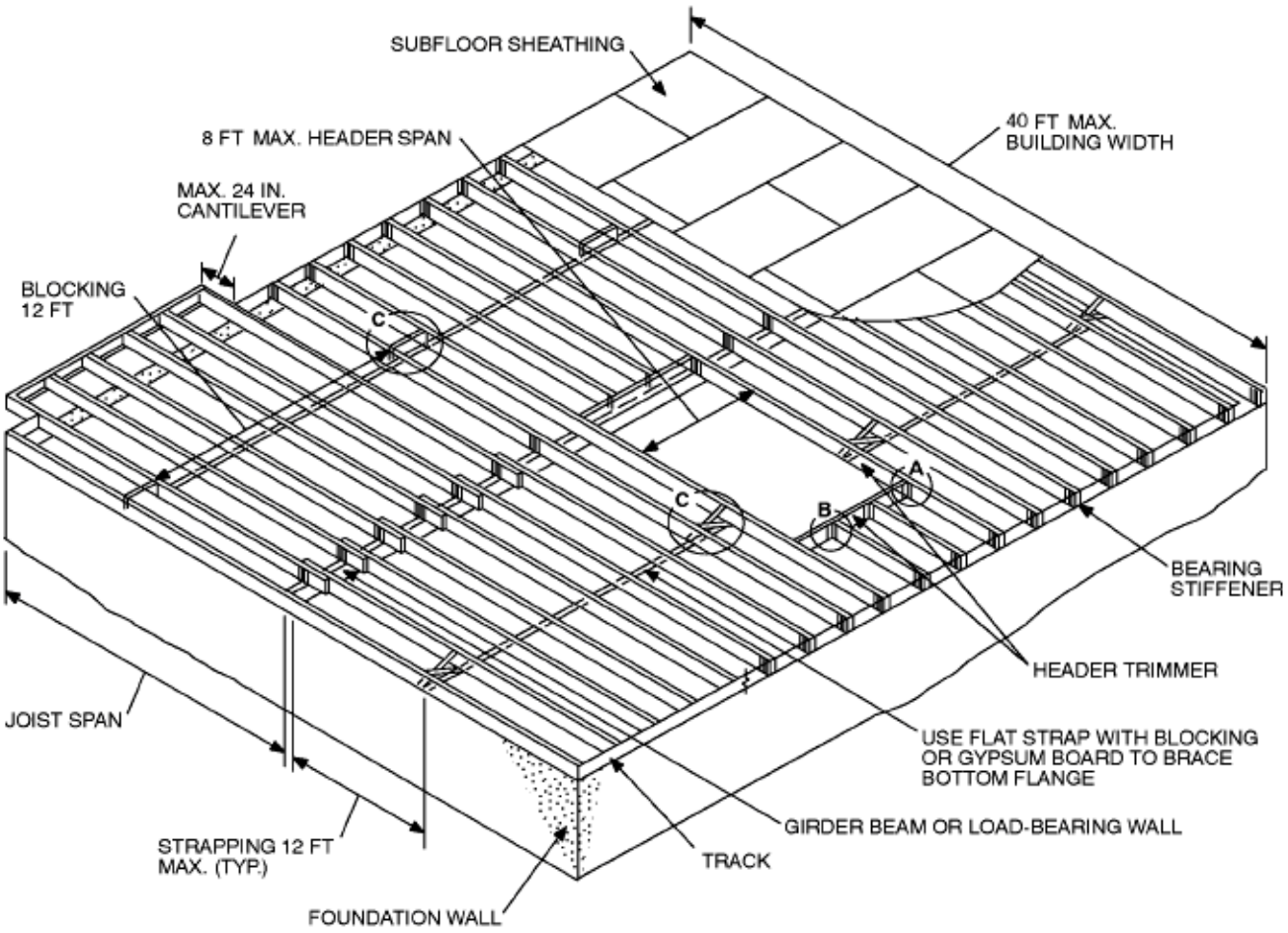
Cold-formed steel studs of 33 or 43 mil thicknesses are frequently specified for structural applications in residential designs. Thicker steel is heavier to handle and cut, more difficult to seat fasteners into, and more costly. Track is the non-structural end cap to C-shapes – both studs and joists – and is specified to the same thickness as structural studs and joists/rafters.

MECHANICAL, ELECTRICAL AND PLUMBING INTEGRATION IN STEEL FRAMES

Punchouts in the web of studs, joists, and rafters provide a ready pathway for mechanical, electrical and plumbing (MEP) runs. Grommets, bushings and isolators can be used to protect wiring or piping from the sharp edges of the punched opening in CFS or to separate reactive metal, like copper, from the steel. These plastic accessories that cap the punchouts can also provide intermittent support to the MEP systems, and are typically snapped in place prior to wire or pipe installation so they remain permanently affixed to the CFS. Wire ties secured through punchouts may be used to hold wire that parallels a CFS member.

Field punchouts are permitted in the webs of CFS within stated tolerances. Drills with hole saw or unibit attachments, punches, and plasma cutters are some of the tools that can be used to make holes in steel. Field installed holes should be located along the centerline of the member, cannot be larger than 4 ½" in length and 1 ½" to one half the member's depth (dependent on member width), and should be spaced a minimum of 24" on center and a minimum of 10" from member end or end of bearing location. Hole patches of the same thickness of steel as the member secured with No. 8 screws at one-inch spacing are allowed in webs only.





For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

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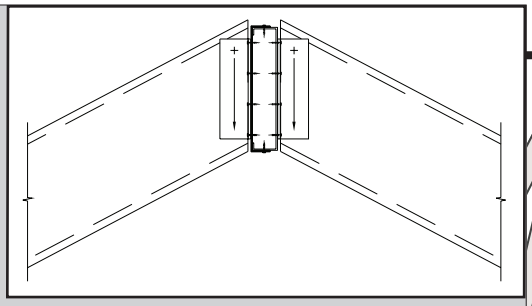
CONSTRUCTION DETAILS

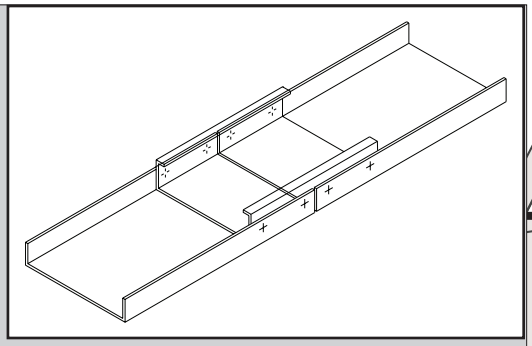
FOR STEEL FRAMING INSPECTORS

RIDGE MEMBER CONNECTION



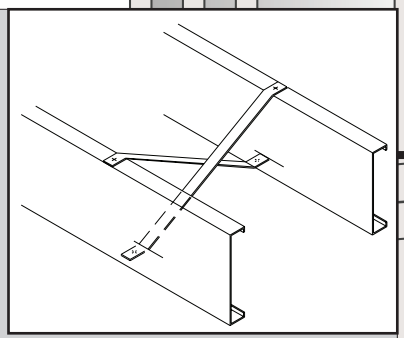
- Nest track and joist to form a ridge member

TRACK SPLICE



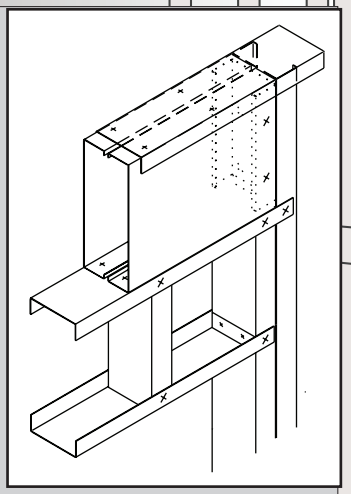
- Stud section of same thickness

JOIST BLOCKING



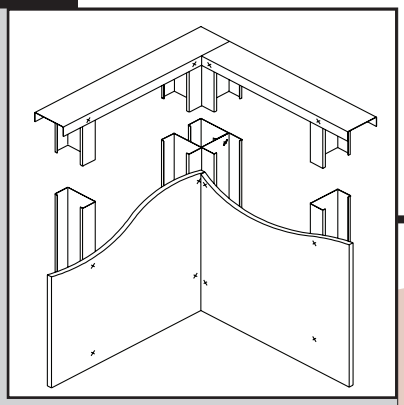
- STRAP
- In lieu of solid blocking
- With gypsum board bracing

BOX BEAM HEADER



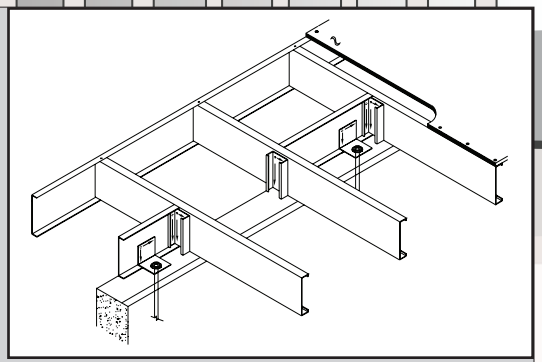
- Two joists and track
- Cripple studs
- Structural sheathing one face

CORNER FRAMING



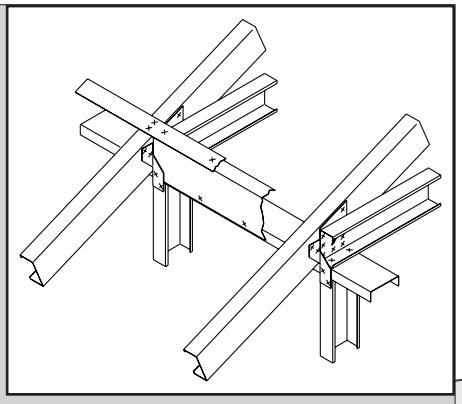
- Top track overlap

CANTILEVERED FLOOR



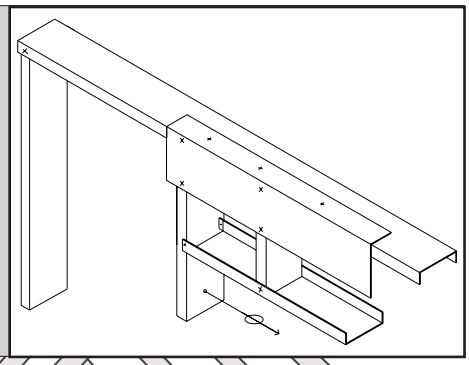
- Web stiffener
- Blocking
- Clip angle with bolt

STRAP AND BLOCKING AT ROOF EAVE

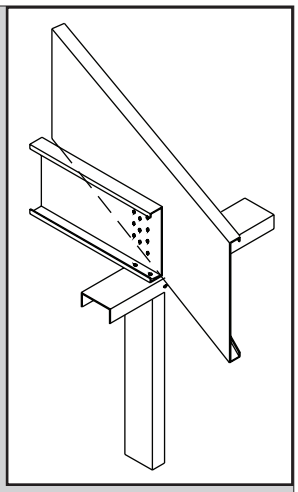


- Solid blocking between rafters
- Strap bracing at top chord flange

SINGLE L-HEADER

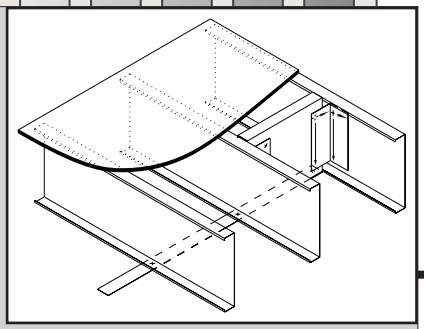


INLINE FRAMING



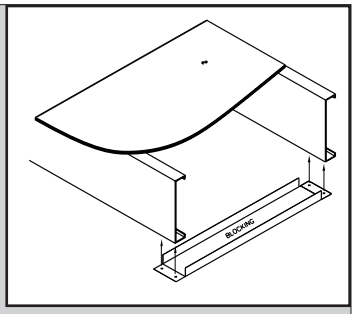
- Maximum ¾" tolerance

SOLID BLOCKING



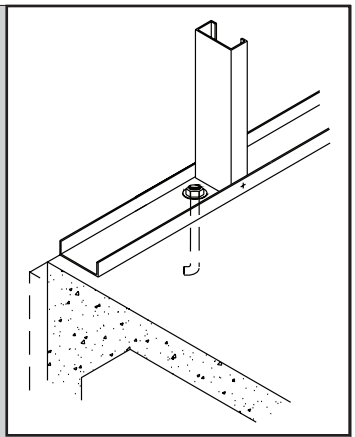
- Between bottom chord strap bracing
- Int. bearing at continuous joist (every other joist)
- Joist or track, 33 mils min.

BRACING



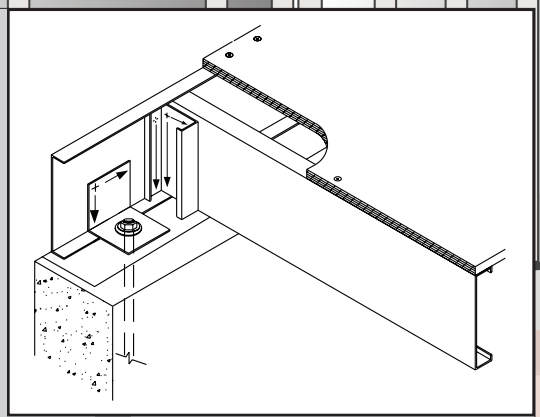
Bottom Chord Bracing
- ½" gypsum board, or
- Flat strap
- Cut track

ALTERNATE WALL TO FOUNDATION CONNECTION

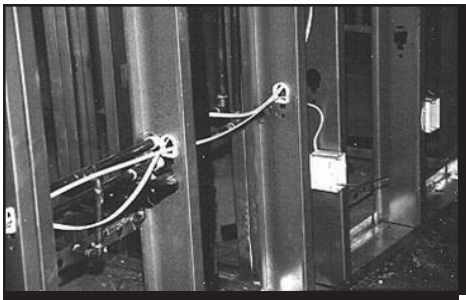


- Track
- Bolt and Washer

FLOOR/FOUNDATION CONNECTION WEB STIFFENER



- Web Stiffener
- Rim Track
- Clip Angle and Bolt



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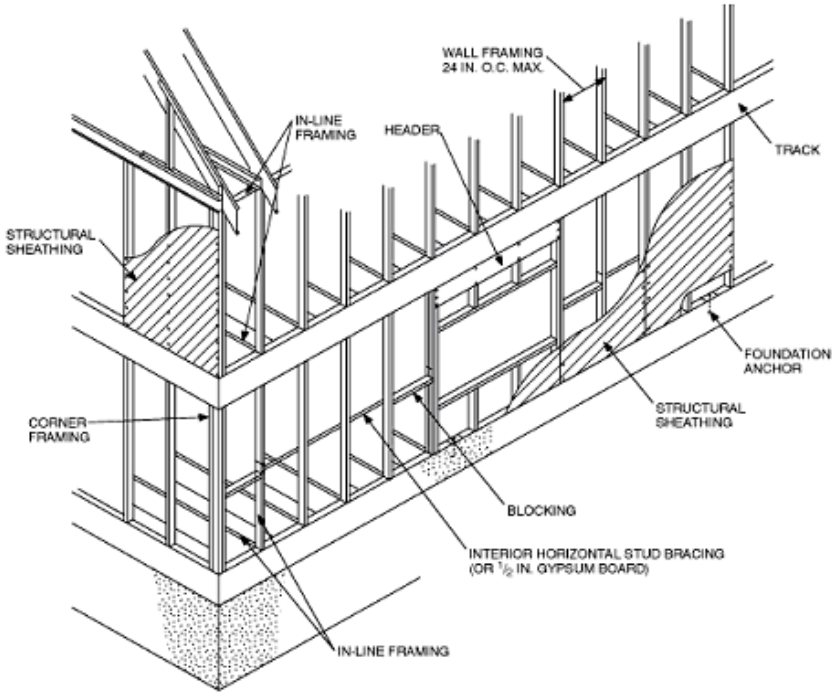
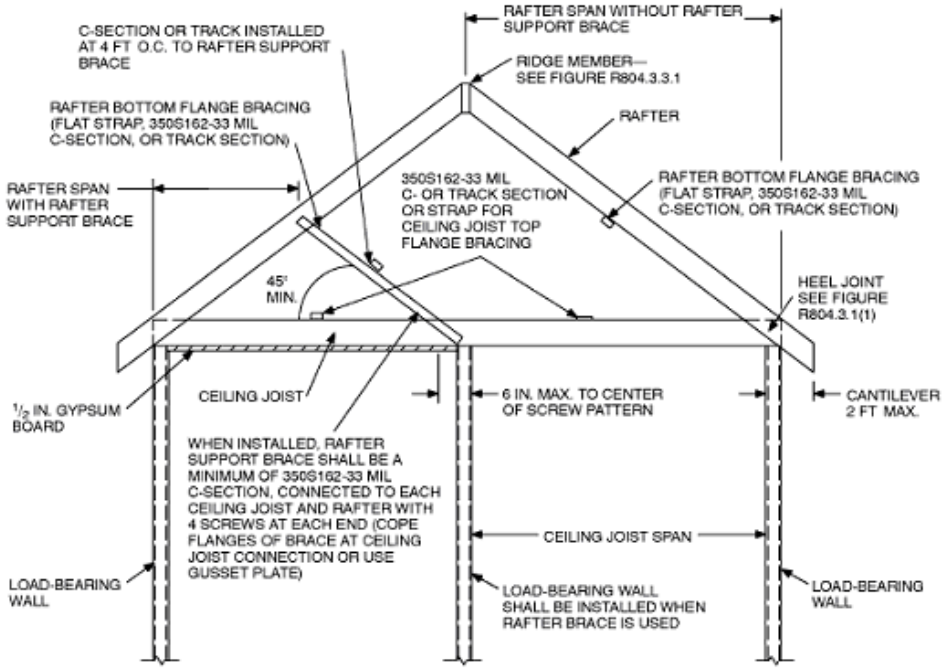


1 inch = 25.4 mm.



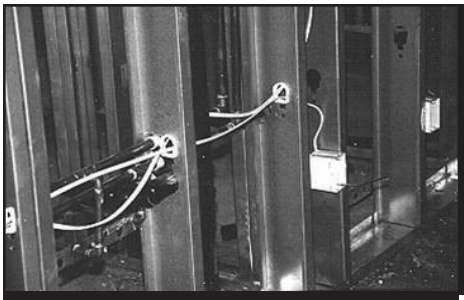
1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mil = 0.0254 mm.

CODE AT A GLANCE – FLOORS

SUBJECT	REFERENCE	IRC	AISI COFS/PM		CONVENTION
Bearing stiffener	R505.3.4 Bearing stiffeners	118	B2-1	13	Bearing stiffeners installed at all bearing locations for steel floor joists. Stiffeners minimum 33mil C-section or 43 mil track section.
Blocking	R505.3.1	112	D5-1 D5-2	25 26	Blocking can be solid joists or x-brace strapping at mid-span of joist with maximum spacing of 12'.
Bracing top flange, floor joists	R505.3.3 Joist bracing	113		18	Top flanges of steel joists laterally braced with floor sheathing fastened to the joists.
Bracing bottom flange, floor joist		113		18	Laterally brace floor joist bottom flanges where spans exceed 12' with gypsum board or continuous steel strapping, blocking or bridging.
Cantilevers, floor joists	R505.3.7 Floor cantilevers	121	D2-4 …D2-7	22-24	Cantilevers cannot exceed 24" with a min. of 6' back span. Only one story of cantilevers is allowed.
Cutting/notching, floor joists	R505.3.5 Cutting and notching	113			Flanges and lips of load-bearing steel floor framing members shall not be cut or notched.
Dimensions, floor joist	R505.2 Structural framing	109			Joists comply with TABLE R505.2(1); 5.5" to 12" webs; 1.625" to 2" flanges; minimum lip size .5".
Holes or punchouts	R505.2.1	110	A4-1 A4-2	8	Holes (in generic shape) shall conform to Figure R505.2(3). (Max. length 4.5 inches and max. depth lesser of 2.5 inches or half web depth.)
	R505.3.6 Hole patching		A4-3 A4-4	9 1	Holes may be patched with steel of the same thickness with No. 8 screws at 1" o.c.
In-line framing	R505.1.2	108 & 148			Floor joists supported by walls in accordance with R603.1 should be in-line with studs.
Fastening, all	R505.2.4 Fastening requirements	110			Screws shall be self-drilling tapping and conform to SAE J78 with a minimum edge distance of .5". Screws shall extend through the steel a minimum of three threads.
Fastening, floor sheathing					Minimum No. 8 with a minimum head diameter of .292" with countersunk heads and minimum edge distance of 3/8".
Fastening, gypsum board					Minimum No. 6 screws to ASTM C954.
Material, floor joist	R505.2.1-3 Material. Identification and Corrosion protection	109	A4.3	5	Joists to be cold-formed and comply with ASTM A653, A792, A875, or A1003 and marked with manufacturer, size, shape, thickness, coating, and yield strength.
Openings, floor	R505.3.9 Framing of openings	121	D7	19	Openings shall be framed with header and trimmer joists. Header joist spans not to exceed 8' and shall be fabricated from joist and track sections of a minimum size and thickness as the adjacent floor joists.
Tie-down connections, floor joists	R505.3.1 Floor to foundation or bearing wall connections. Fig. R503.3.1(1)&2	120	E2-2 to E2-4	46 thru 47	Cold-formed steel floors shall be anchored to foundations, wood sills or load-bearing walls in accordance with Table R505.3.1(1) fo r wind speed zones up to 110 mph.
Span tables, floor joists	TABLE 505.3.2(1) TABLE 505.3.2(2) TABLE 505.3.2(2)	118 119 120	D3-1 D3-2a D3-2b	31 32 33	Single spans with 33 KSI steel. Multiple spans with 33 KSI steel. Multiple spans with 50 KSI steel.
Splicing, floor joists	R505.3.8 Splicing Figure R505.3.8	120 149	D7-1 thru D7-3	28 thru 29	Joists cannot be spliced. Rim track can be spliced.

CODE AT A GLANCE – WALLS

SUBJECT	REFERENCE	IRC	AISI COFS/PM		CONVENTION
Bracing, studs	R603.3.3	145	E4	35	Laterally brace walls with gypsum board or steel strapping at mid-height of 8' walls or 1/3 height of 9' walls. Sheath opposite side of wall.
Braced walls		148	E11	39-41	Braced wall lines are required in high wind and seismic areas.
Blocking, walls			E11.6	41	Blocking required at each end of Type I braced wall panels and Type II braced wall lines.
Connections, walls	R603.3.2 Load-bearing walls	144			Studs connected to track with No. 8 screw each flange, each edge of stud, top and bottom. Track connected to floor joist with two No. 8 screws per joist. Structural sheathing fastened to studs with No. 8 screws at 6" o.c. at edges and 12" o.c. at intermediate supports.
Cutting/notching, studs	R603.3.4 Cutting and notching	145			Flanges and lips of studs and headers may not be cut.



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Framing, corners	R603.4 Corner framing	149		35 50	Corner studs and the top tracks shall be installed in accordance with Figure R603.4.
Bracing, walls	603.3.3	145		38	Flanges of studs shall be braced by; gypsum board or horizontal steel strapping (min. 1.5" and 33 mils) at mid-height in 8', third height in 9' and 10', or
Material, walls	R603.2.1 Material	143	E	34	Structural walls shall be sized a minimum of 350S162 with a maximum flange size of 200 (2").
Fastening, walls	R603.2.4 Fastening requirements	148		12	Screws shall be self-drilling tapping and conform to SAE J78 with a minimum installed edge distance of .5". Screws shall extend through the steel a minimum of three threads, 3/8".
Height, walls	Tables 603.3.2(2) through 603.3.2(21)	150-169		68-101	See Minimum Stud Thickness Tables 603.3.2(2)-(21). Max. 10'.
Headers, wall	R603.6 Headers	170-177		103-184	Headers shall be installed above openings in all exterior walls and interior load-bearing walls or designed in accordance with the AISI Standard for Cold-formed Steel Framing–Header Design (COFS/Header Design).
	TABLE R603.6(1) through R603.3(8) Figure R603.6	170 thru 177 179	E7-1 thru E7-7	51 thru 54	Header designs per IRC pages 170 through 177 or designed in accordance with the AISI Standard for Cold-formed Steel Framing–Header Design (COFS/Header Design).
Jack or King studs	R603.6.1 Jack and King studs, and head track	178	E7-71	185	Sized per Table R603.6(9) and connected per Table R603.6.(10). Use a minimum 2"x2" clip for header/stud attachment with ½ of the prescribed screws in each member.
Minimum stud thickness, walls	TABLE R603.3.2(2) through 603.3.2(21)	150-169		68-101	Per R603.3.2 wall studs sheathed with minimum ½" gypsum on the inside and 7/16" or 15/32" OSB or plywood may use the next thinner stud from the Tables, but not less than 33 mils.
Patching, holes	603.3.5	145	A4.6	5	Holes shall conform to Figure R603.2(3). Holes can be patched per Figure 603.3.5
Sheathing, attachment to walls	R603.5 Exterior wall covering Table R603.3.2(1)	148	E8.3	38	Sheathing shall be attached to walls according to the manufacturer's instructions. No. 8 screws 6" on edge and 12" at intermediate supports.
Sheathing, wall	R603.7 Structural sheathing	148	E9	39	For basic wind speed less than 110 miles per hour, wood structural panel of minimum 7/16-inch-thick oriented-strand board or 15/32-inch-thick plywood. Full height sheathing on exterior walls determined in accordance with Table R603.7, but not less than 20% of the braced wall length in any case.
Track thickness	603.3.2 Load-bearing walls	145	E3	34	Tracks shall be the same thickness as wall studs.
Splicing, studs or track	Fig. R603.3.6	149	E5-1	50	Studs and other structural members may not be spliced. Track may be spliced.
Walls, load-bearing	R603.1.2 In-line framing	143			Steel studs shall be located directly in-line with joists, trusses and rafters with a maximum tolerance of ¾" between their centerlines.
Walls, steel	R603 Steel Wall Framing	143	A1.1	1	Maximum building size 60' x 40'. See Table A1-1. 2-story. Note: AISI COFS/PM 2007 contains provision for 3-story design.
	R603.1.1 Applicability limits				

CODE AT A GLANCE – ROOFS

SUBJECT	REFERENCE	IRC	AISI COFS/PM		CONVENTION
Bearing Stiffeners, ceiling joists	R804.3.8 Bearing stiffener	281	F2-3	214	Bearing stiffeners installed at each bearing location and fabricated from a minimum 33-mil stud or track. Each stiffener fastened to the web of the ceiling joist with a minimum of four No. 8 screws equally spaced.
Blocking, ceiling joists			E11-6	59	Blocking or bridging (X-bracing) installed between joists in line with strap bracing at a maximum spacing of 12 feet perpendicular to the joists. The third-point bracing span values from Tables R804.3.1(1) through R804.3.1(8) shall be used for straps installed at closer spacings than third-point bracing, or when sheathing is applied to the top of the ceiling joists.
Bracing, ceiling joist bottom flange	R804.3.2 Ceiling joist bracing	281		207	Joist bottom flanges shall be braced with ½" gypsum in accordance with section R702.
Bracing, ceiling joist top flange	R804.3.2 Ceiling joist bracing	281		207	The top flanges of steel ceiling joists to be laterally braced with a minimum of 33 mil stud or track shape or 1-1/2" x 33 mil steel strapping. Studs and tracks or straps shall be fastened to the top flange at each joist with at least one and fastened to blocking with at least two No. 8 screws.
Bracing, rafter bottom flange	R804.3.4 Rafter bottom flange bracing	281		209	The bottom flanges of steel rafters to be continuously braced with a minimum 33-mil stud or track or 1-1/2" by 33-mil steel strapping at a maximum spacing of 8 feet as measured parallel to the rafters.

Cantilevers	R804.3.3.2 Roof cantilevers	281			Roof cantilevers not to exceed 24". Roof cantilevers supported by a header in accordance with Section R603.6 or supported by the floor framing in accordance with Section R505.3.7.
Cutting/notching rafters and ceiling joists	R804.3.5 Cutting and notching	281			Flanges and lips of load bearing steel roof framing members shall not be cut or notched.
Fastening, roof members	R804.2.4 Fastening requirements	270		12	Screws for steel-to steel connections shall be installed with a minimum edge distance and center-to-center spacing of 1/2 inch
Fastening, roof sheathing		270		12	Structural sheathing shall be attached to roof rafters with minimum No. 8 self-drilling tapping screws that conform to SAE J78.
Fastening, gypsum board to ceiling joists		270		12	Gypsum board ceilings shall be attached to steel joists with minimum No. 6 screws conforming to ASTM C 954.
Framing, in-line	R804.1.2 In-line framing	268			Steel roof framing shall be located directly in-line with load-bearing studs below with a maximum tolerance of 3/4 inch.
General	R804.3 Roof construction	271		207	Construct in accordance with Figure R804.3.
Holes, generic rafters/joists	R804.2 Structural framing	269			Holes to be along web member centerline, have a width not greater than 0.5 times the member depth, or 2 1/2 inches, and have a center to center spacing of 24" or greater.
Interior bearing supports	R804.3.1 Allowable ceiling joist spans	271		208	Locate mid-span ceiling joist support within 24" of the middle of the span.
Material, rafters/joists	R804.2.1 Material R804.2.2 Identification R804.2.3 Corrosion protection	269		207	Rafters and ceiling joists to be cold-formed and comply with ASTM A653, A792, A875, or A1003 and marked with manufacturer, size, shape, thickness, coating, and yield strength (Figures 2 and 3).
Openings, framing of	R804.3.10 Framing of opening	281	F5	210	Use headers and trimmers to frame roof and ceiling openings between ceiling joists or rafters. Header joist spans shall not exceed 4 feet and joists shall be fabricated from joist and track sections of a minimum size and thickness in accordance with Figures R804.3.10(1) and R804.3.10(2).
Rafter support brace	R804.3.3 Allowable rafter spans	281	F3.2	208	When required, a rafter support brace shall be a minimum of 350S162-33 C-section with maximum length of 8 feet and connected to a ceiling joist and rafter with four No. 10 screws at each end. (Figure 804.3.)
Rafters and ceiling joists required	R804.3.3.1 Rafter framing				Rafters shall be connected to a parallel ceiling joist to form a continuous tie between exterior walls.
Ridge member	R804.3.3.1 Rafter framing	283	F3-2	218	Rafters shall be connected to a ridge member with a minimum 2-inch by 2-inch clip angle fastened with minimum No. 10 screws to the ridge member. The clip angle shall have a minimum steel thickness as the rafter member and shall extend the full depth of the rafter member. Ridge member to be fabricated from a C-section and a track section, of a minimum size and steel thickness as the adjacent rafters and installed in accordance with Figure R804.3.3.1.
Size, rafters and ceiling joists	R804.2 Structural framing	269			Load-bearing steel roof framing members to have minimum dimensions of 350S162 with 1.5" to 2" flanges and minimum thickness of 33 mils per Tables 804.2(1) and (2), p. 269. Tracks to comply with Figure R804.2(2) and shall have a minimum flange width of 1-1/4".
Slope, roof	R804.1.1 Applicability limits	268			Roof slopes of 3/12 to 12/12. Loading as per Table A1-1.
Span, ceiling joists	R804.3.1 Allowable ceiling joist spans Tables R804.3.1(1)-R804.3.1(8)	272-279		207	Tables R804.3.1(1) through R804.3.1(8), p. 272-279. Minimum bearing 1-1/2".
Span, rafter	R804.3.3 Allowable rafter spans				The horizontal projection of the rafter span, as shown in Figure R804.3, not to exceed the limits set forth in Table R804.3.3(1), p. 282.
Splicing	R804.3.7 Splicing	281			Rafters and other structural members, except ceiling joists, not to be spliced. Splices in ceiling joists permitted at interior bearing points in accordance with Figure R804.3.7(1).
Tie-downs	R804.4 Roof tie-down				Roof assemblies subject to wind uplift pressures of 20 pounds per square foot or greater, as established in Table R301.2(2), to have rafter-to-bearing wall ties provided in accordance with Table R802.11.
Truss, roof	R804.1.3 Roof trusses	269			The design of cold-formed steel trusses to be in accordance with the AISI Standard for Cold-formed Steel Framing-Truss Design (COFS/Truss).
Wind speed	R804.3.3 Allowable rafter spans	281			Wind speeds to be converted to equivalent ground snow loads in accordance with Table R804.3.3(2), p. 282. Rafter spans shall be selected based on the higher of the ground snow load or the equivalent snow load converted from the wind speed.

REFERENCES

From the International Building Code:

2001 North American Specification for the Design of Cold-formed Steel Structural Members, including 2004 Supplement referenced in 1604.3.3, 2209.1and 2210.

2004 Standard for Cold-formed Steel Framing—General Provisions referenced in 1604.3.3, 2210.1.

2004 Standard for Cold-formed Steel Framing—Header Design referenced in 2210.2.

2004 Standard for Cold-formed Steel Framing—Lateral Design referenced in 2210.5.

2001 Standard for Cold-formed Steel Framing—Prescriptive Method for One- and Two-family Dwellings, including 2004 Supplement referenced in 210.6.

2004 Standard for Cold-formed Steel Framing—Truss Design referenced in 1604.3.3, 2210.3.

2004 Standard for Cold-formed Steel Framing—Wall Stud Design referenced in .2210.4.

From the International Residential Code:

2004 Standard for Cold-formed Steel Framing-Header Design referenced in R603.6.

2001 Standard for Cold-formed Steel Framing-Prescriptive Method for One- and Two-family Dwellings (including 2004 Supplement) referenced in R301.1.1, R301.2.1.1(4), R301.2.2.4.1, and R301.2.2.4.5. (COFS/Pm)

2004 Standard for Cold-formed Steel Framing-Truss Design referenced in R804.1.3 and R505.1.3.

A 36/A 36M—04 Specification for Carbon Structural Steel referenced in the IBC 1809.3.1and 2103.13.5, and the IRC section R606.15.

A 123/A 123M—02 Specification for Zinc (Hot-dip Galvanized) Coating on Iron and Steel Products referenced in IBC section 2103.13.7.2.

A 153—03 Specification for Zinc Coating (Hot-dip) on Iron and Steel Hardware referenced in IBC 2103.13.7.2 and 2304.9.5.

A 463/A 463M—02a Specification for Steel Sheet, Aluminum-coated, by the Hot Dip Process referenced in IBC Table 1507.4.3(2).

A 480/A480M—02 Specification for General Requirements for Flat-rolled Stainless and Heat-resisting Steel
Plate, Sheet, and Strip referenced in IBC 2103.13.5.

A 653/A 653M—04a Specification for Steel Sheet, Zinc-coated Galvanized or Zinc-iron Alloy-coated Galvannealed by the Hot-dip Process referenced in IBC Table 1507.4.3(1), Table 1507.4.3(2), 2103.13.7.1

A 792/A 792M—03 Specification for Steel Sheet, 55% Aluminum-zinc Alloy-coated by the Hot-dip Process referenced in IBC Table 1507.4.3(1), Table 1507.4.3(2).

A 875/A 875M—02a Standard Specification for Steel Sheet Zinc-5 percent, Aluminum Alloy-coated by the Hot-dip Process referenced in IBC Table 1507.4.3(2).

A924—04 Standard Specification for General Requirements for Steel Sheet, Metallic-coated by the Hot-dip Process referenced in IBC Table 1507.4.3(1).

A 1008/A1008M—04b Specification for Steel, Sheet, Cold-rolled, Carbon, *Structural, High-strength Low-alloy and High-strength Low-alloy with Improved Formability* referenced in IBC 2103.13.5.

B 695—00 Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel referenced in IBC 2304.9.5.

C 954—00 Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 inch (0.84 mm) to 0.112 inch (2.84 mm) in Thickness referenced in IBC Table 2506.2 and Table 2507.2.

C 955—03 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 Bases referenced in IBCTable 2506.2 and Table 2507.2.

C1002—01 Specification for Steel Self-piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs referenced in IBC Table 2506.2 and Table 2507.2.

C1007—04 Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories referenced in Table 2508.1 and Table 2511.1.

American Iron and Steel Institute
http://www.steel.org
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ASTM International
http://www.astm.org

Cold-Formed Steel Engineers Institute
http://www.cfsei.org/

International Code Council
http://www.iccsafe.org

National Electrical Code®
http://www.nfpa.org/index.asp?cookie%5Ftest=1

Society of Automotive Engineers
400 Commonwealth Drive
Warrendale, PA 15096
http://www.sae.org

J78—(1998) Steel Self-drilling Tapping Screws, referenced in R505.2.4, R603.2.4, R804.2.4

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Information in this publication is based on the "Prescriptive Method," basis of the steel requirements in the International Residential Code (IRC) and International Building Code (IBC). Some information has been summarized from the Steel Framing Alliance's (SFA) "National Training Curriculum." For more information or to obtain these publications, visit www.steelframing.org.