

MASTER GUIDE SPECIFICATION

COLD-FORMED METAL FLOOR JOIST FRAMING SECTION 05 42 13



TOTALJOIST (TJ) GUIDE NOTE: This master specification section includes TOTALJOIST GUIDE NOTES identified as "TJ GUIDE NOTE" for information purposes and to assist the specification writer in making appropriate decisions. The TJ GUIDE NOTE always immediately precedes the text to which it is referring. The section serves as a guideline only and should be edited with deletions and additions to meet specific project requirements.

TJ GUIDE NOTE: This specification section follows the recommendations of Construction Specifications Canada's, Manual of Practice including MasterFormat™, SectionFormat™, and PageFormat™. Optional text is indicated by square brackets []; delete the optional text including the brackets in the final copy of the specification. Delete the TJ GUIDE NOTES in the final copy of the specification. Trade/brand names with appropriate product model numbers, styles and types are used in TJ GUIDE NOTES and in the specification text Article or Paragraph titled AAcceptable Material@.

iSPAN GUIDE NOTE: A separate master guide specification for project work in Canada is available from your TJ representative.

PART 1 - GENERAL

1.01 SUMMARY OF WORK

- .1 This Section specifies cold-formed floor joist framing.

1.02 RELATED REQUIREMENTS

iSPAN GUIDE NOTE: Include in this Paragraph only those sections and documents that directly affect the work of this section. If a reader of this section could reasonably expect to find a product or component specified in this section, but it is actually specified elsewhere, then the related section number(s) should be listed in the Paragraph below. Do not include Division 00 Documents or Division 01 Sections since it is assumed that all technical sections are related to all project Division 00 Documents and Division 01 Sections to some degree. Refer to other documents with caution since referencing them may cause them to be considered a legal part of the Contract. Edit the following paragraphs to suit specific project conditions.s.

- .1 Section [06 10 00 - Rough Carpentry].
- .2 Section [_____].

TJ GUIDE NOTE: In the following Article, include only those reference standards which appear in the finished version of the project specification.

1.03 REFERENCE STANDARDS

- .1 American National Standards Institute/American Iron and Steel Institute (ANSI/AISI).
 - .1 ANSI/AISI S100-[2007], Specification for the Design of Cold-Formed Steel Structural Members.
- .2 American National Standards Institute/Steel Deck Institute (ANSI/SDI).
 - .1 ANSI/SDI-NC1.0-[2006], Non-Composite Steel Floor Deck.
- .3 ASTM International (ASTM).
 1. ASTM C39/C39M-[2010], Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 - .2 ASTM A653/A653M-[2010], Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - .3 ASTM A780/A780M-[2009], Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.

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- .4 National Institute of Standards and Technology (NIST).
 - .1 NIST PS 1-[2009], Structural Plywood.
 - .2 NIST PS 2-[2010], Performance Standard for Wood-Based Structural-Use Panels.
- .5 Underwriter's Laboratories (UL).
 - .1 UL 263-[2011], Standard for Fire Tests of Building Construction and Materials.
- .6 US Green Building Council (USGBC).
 - .1 LEED® NC Version 2.2-[2009], LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.

TJ GUIDE NOTE: Article below includes submittal of relevant data to be furnished by Contractor.

1.04 SUBMITTALS

- .1 Make submittals in accordance with Contract Conditions and Section 01 33 00 Submittal Procedures.
- .2 Product Data: Submit product data including manufacturer's literature for joist components and accessories.
- .3 Shop Drawings: Submit shop drawings indicating member type, location, spacing, and size of members, method of attachment to supporting members, bridging, blocking, and other accessories and details required for proper installation.
 - .1 Show calculated dimensions on shop drawings.
 - .2 Scaling of drawings is not permitted.
- .4 Sustainable Design (LEED).
 - .1 LEED Submittals: In accordance with Section [01 35 21 - LEED Requirements]
- .5 Installer Qualifications:
 - .1 Installer must be experienced with work similar to work of this Section or
 - .2 Installer must be trained by a TJ representative on method for installation

1.05 CLOSEOUT SUBMITTALS

- .1 Record Documentation: In accordance with Section 01 78 00 Closeout Submittals.
 - .1 List materials used in cold-formed floor joist framing work.
 - .2 Warranty: Submit warranty documents specified.

TJ GUIDE NOTE: The following Article although not part of Quality Assurance, can be used to enhance the quality of materials by ensuring that they are delivered and handled properly at the work site.

1.06 DELIVERY STORAGE AND HANDLING

- .1 Delivery and Requirements:
 - .1 Deliver material in accordance with Section 01 61 00 Common Product Requirements.
 - .2 Deliver materials and components in manufacturer's original packaging with identification labels intact and in sizes to suit project.
 - .1 Include tracking number and joist mark on joists.

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- .2 Storage and Handling Requirements: Store materials off ground and protected from exposure to harmful weather conditions.
 - .1 Exercise care to avoid damage during unloading, storing, handling, and installation.
 - .2 Do not stack joists.

1.07 WARRANTY

- .1 Project Warranty: Refer to Contract Conditions for special project warranty provisions if applicable.
- .2 Manufacturer's warranty: Provide a one year warranty free from manufacturer defects.
- .3 Warranty period: 1 year commencing on Date of Delivery of Work.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- .1 Manufacturer: iSPAN® Systems LP, 70 Brentwood Drive; Princeton, Ontario, NOJ 1VO, Canada, Phone: (519) 458-4222, FAX: (519) 458-4460, e-mail: info@totaljoist.com , URL: www.totaljoist.com.

2.02 DESCRIPTION

- .1 Lightweight, cold-formed steel fire rated floor joist with [OSB] [plywood] [fiber reinforced cement board] [steel] deck [and] [concrete topping] [gypsum concrete topping] [lightweight concrete topping].
- .2 Acceptable Material: TotalJoist by iSPAN Systems LP, Floor Framing.

2.03 DESIGN CRITERIA

- .1 Design joists [and deck] to ANSI/AISI S100.

TJ GUIDE NOTE: Edit the following paragraph to suit project conditions.

- .4 Design joists to withstand service loads including:
 - .1 Self-weight of floor framing including joists, [plywood][OSB][steel deck], [gypsum concrete topping][concrete topping], bridging, blocking, [resilient channels] and gypsum board as indicated.
 - .2 Superimposed dead loads and live loads as indicated.
- .5 Design joists to withstand design loads with deflections as follows:
 - .1 Live Load Deflection: [L / 480] maximum.
 - .2 Total Service Load Deflection: [L / 240] maximum.
- .6 Fire and Acoustical Characteristics:
 - .1 FRR: [1] hour.
 - .2 STC: [50].
 - .3 IIC: [45].

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2.04 MATERIALS

- .1 Steel Joists: To ASTM A653/A653M Grade 50, G60 galvanized coating.
 - .1 Joist type: As indicated.
 - .2 Joist depth: As indicated
 - .3 Joist Web Holes: [Standard web holes with first hole located 4 feet minimum from end of joist to center of first hole and remaining holes spaced at 4 feet on center], [left aligned] [centered in joists] [Custom web holes as indicated] [No web holes].
- .2 Sub-Floor:

TJ GUIDE NOTE: Retain one only of the following four paragraphs.

- .1 Type 1: 3/4 inch thick minimum tongue and groove oriented strand board (OSB) to NIST PS 2 [and in accordance with Section [06 10 00 - Rough Carpentry].
- .2 Type 2: 3/4 inch thick minimum tongue and groove plywood to NIST PS 1 [and in accordance with Section [06 10 00 - Rough Carpentry].
- .3 Type 3: 19 mm thick minimum tongue and groove fiber reinforced cement board.
 - .1 Acceptable material: [Ameriform Armoroc].
- .4 Steel deck: To ASTM A653/A653M Grade 50, galvanized coating G90.
 - .1 Acceptable Material: [Total-Lewis-Deck].

TJ GUIDE NOTE: Retain the following paragraph only if a topping is required. Retain only the appropriate topping.

- .3 Topping:
 - .1 [In accordance with Section 03 30 00 - Cast in Place Concrete].
 - .2 [In accordance with Section 03 54 00 - Cementitious Underlayment].

2.05 ACCESSORIES

- .1 End Connectors: To ASTM A653/A653M Grade 50, galvanized coating G60.
 - .1 Acceptable material: iSPAN Systems LP, TotalJoist End Connector.
- .2 Bridging: To ASTM A653/A653M Grade 33, galvanized coating G60.
 - .1 Acceptable material: iSPAN Systems LP, TotalJoist Bridging.
- .3 Blocking: To ASTM A653/A653M Grade 33, galvanized coating G60.
 - .1 Acceptable material: iSPAN Systems LP, TotalJoist Blocking.
- .4 Rim Joists:
 - .1 Acceptable material: SSMA Type Track Sections matching joist depth: To ASTM A653/A653M Grade 50, galvanized coating G60
 - .2 Acceptable material: OSB, LSL, or LVL Rim Board in accordance with Section [06 10 00 - Rough Carpentry].

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2.06 PRODUCT SUBSTITUTIONS

- .1 Ensure all accessories come from same source as cold-formed floor joist framing.
- .2 Substitutions: [In accordance with Section 01 23 13 - Product Substitution Procedures] [No substitutions permitted].

PART 3 - EXECUTION

3.01 INSTALLERS

TJ GUIDE NOTE: iSPAN authorized installers use only iSPAN Systems LP manufactured or approved components.

- .1 Use only installers experienced in performing work of this section, who have specialized in the installation of work similar to that required for this project, or who have been trained by a TJ representative.

3.02 EXAMINATION

- .1 Verification of Conditions: Verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for cold-formed floor joist framing installation in accordance with manufacturer's written recommendations.
 - .1 Inform Consultant of unacceptable conditions immediately upon discovery.
 - .2 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.

3.03 INSTALLATION

TJ GUIDE NOTE: TotalJoist cold-formed steel joists come complete with modular components such as bridging and blocking. The joists themselves are delivered to site manufactured to length and marked for location as indicated on the joist drawings.

- .1 Install cold-formed steel joist framing level, plumb and at locations and elevations indicated in accordance with manufacturer's, installation guide and written recommendations.
- .2 Do not overload joists or subfloor with construction loads:
 - .1 Do not place loads on the floor, such as bundles of gypsum board, exceeding design load of the joists or subfloor.
 - .2 If loads which exceed design loads must be placed on the floor, the loads must be fully supported and shored to grade.
- .3 Joist Installation: Install joists in accordance with manufacturer's literature.
 - .1 Do not install damaged joists.
 - .2 Locate joists aligned with bearing studs or provide distribution members.
 - .1 Fasten joists and accessories as indicated on the joist drawings.
 - .3 Install and space bridging along length of joists as indicated on the joist drawings.
 - .4 Install blocking at locations indicated on the joist drawings.
- .4 Subfloor Installation: Install subfloor in accordance with subfloor manufacturer's literature and joist manufacturer's literature.
 - .1 Install [plywood decking in accordance with Section 06 10 00 - Rough Carpentry] [OSB decking in accordance with Section 06 10 00 - Rough Carpentry] [cement board decking in accordance with board manufacturer's written recommendations] and as indicated.

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- .2 For fire rated floors: Install subfloor in accordance with manufacturer's installation guide and written recommendations and [UL 263].
- .3 Ensure fasteners are not aligned with joist web by offsetting fasteners from center of joist; maintain minimum screw edge distance in accordance with AISI S100.

TJ GUIDE NOTE: Use the following Paragraph only where topping is specified.

- .5 Topping placement: Do topping work: In accordance with Section [03 30 00 - Cast in Place Concrete] [Section 03 54 00 - Cementitious Underlayment].
 - .1 Place topping to thickness indicated. Do not place topping in excess of specified thickness at any location in the floor.
 - .2 Do not place large quantities of topping in concentrated areas over joists or deck.

3.04 FIELD QUALITY CONTROL

- .1 Field Inspection: Site Contractor to Coordinate field inspection in accordance with Section [01 45 00 Quality Control].
- .2 Site Installation Tolerances:
 - .1 Installed sweep in joist: 1/8 inch in 10 feet maximum.

3.06 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Touch-Up Paint: Repair damage in joist or accessory coating with paint complying with ASTM A780.

END OF SECTION 05 42 13 - COLD-FORMED METAL FLOOR JOIST FRAMING