

## SECTION 05210

### STEEL JOISTS

#### PART 1 - GENERAL

##### 1.01 SECTION INCLUDES

- A. Furnish labor, materials and equipment necessary for the design, fabrication and installation of steel joists and joist girders and accessories.

##### 1.02 RELATED SECTIONS

- A. Section 03300: Cast-In-Place Concrete.
- B. Section 04200 : Unit Masonry .
- C. Section 05120: Structural Steel.
- D. Section 05310: Steel Roof Deck.
- E. Section 05311: Steel Form Deck and Composite Steel Floor Deck.
- F. Section 05500: Metal Fabrications.

##### 1.03 REFERENCES

- A. SJI-02: "Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders," Steel Joist Institute.
- B. AWS D1.1-02: "Structural Welding Code - Steel," American Welding Society.

##### 1.04 SUBMITTALS

- A. Submittals shall be in accordance with Section 01300.
- B. Furnish certification that the joists as furnished meet the "Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders," published by the Steel Joist Institute, latest edition, and are a product approved by the Steel Joist Institute.
- C. Submit detailed Shop Drawings showing layout of joist units, bearing conditions, panel point spacings, special connections, extended ends, and accessories. Include the mark, number, type, location and spacing of joists and bridging. Indicate that joists have been designed for uplift loading and other special load conditions required on the contract drawings.
- D. For Architect's records, submit Shop Drawing with Professional Engineer's stamp for design of joists designated with "SP" on contract drawings, including but not limited to, joists subject to non-uniform loadings and concentrated loadings.
- E. Submit written notification to the Engineer should special joist design require additional bridging not shown on the contract plans.
- F. Submit field repair Drawings with Professional Engineer's stamp for Architect's records.
- G. Submit corrected set of final Shop Drawings for Architect's records.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. Steel Joists: Shall be type K-Series and LH-series and DLH-Series joists, as manufactured by an acceptable manufacturer whose operations and welding methods have been approved and certified by the Steel Joist Institute, and are regularly inspected by the Institute.
- B. Shop Primer: Standard metal-protective paint used by manufacturer of the joists. Exposed joists shall have Wilbur Williams red "Combatit" metal primer, Tnemec "10-1009 Gray metal primer", or approved equal.
- C. Bridging: ASTM A36, size as noted on the contract drawings.
- D. Headers: Manufacturer's standard, designed for the loads indicated on the contract drawings.

### 2.02 DESIGN AND FABRICATION

- A. Design, detail and fabricate steel joists and accessories in accordance with SJI Standard Specifications.
  - 1. The joist manufacturer shall design and detail the steel joists or non-standard conditions indicated including, but not limited to: depth of bearings, sloped and skewed bearing seats, extended ends, top chord pitch greater than 1/8" per foot, and uniform load, non-uniform load, and concentrated loads on joist top chord.
  - 2. Deflection of joists shall be limited to span in inches divided by 360, under live load.
  - 3. Provide standard camber in joist and joist girders unless noted otherwise.
  - 4. Provide S or R type joist extended end as required for uniform load indicated on SJI load tables of the span of the joist, or for special loads indicated on the contract plans.
- B. Provide bridging, headers, and clips for a complete installation.
- C. Shop prime with one coat of primer in accordance with SJI.
- D. Drill holes in or weld threaded studs to top chords where necessary for attachment of wood nailers.

## PART 3 - EXECUTION

### 3.01 ERECTION

- A. Set joists true, and so secure as to remain during placing of deck.
- B. Unless specified otherwise, work shall be erected in strict accordance with the SJI Standard Specifications.
- C. Handle joists with care. At all times, joist shall be supported at two or more points and shall be protected from dampness.
- D. Do not use damaged joists.
- E. Space joists accurately. Spacing shall not exceed maximum spacing indicated.
- F. Fasten joists in place and install permanent bridging before any construction load is placed upon joists.

- G. Check joist locations for interference with mechanical trades before erection. Locate joists to accommodate openings, pipes, equipment ducts, conduits and other utility items.
- H. Welding shall be in accordance with AWS D1.1 by a welder licensed for the type of weld they will be performing.
- I. Positive anchorage shall be provided at the ends of each bridging row at both top and bottom chords.
- J. Field modifications or repair shall not be made to joist without written approval from the Architect.
- K. Coordinate proper placement of anchorages in concrete and masonry construction as required for joist bearing, bridging termination, and extended bottom chords.
- L. Locate uplift bridging on joist bottom chord, at first panel point from support.

### 3.02 PAINTING

- A. Spot prime field bolts, welds and abrasions to shop coat with same primer used in shop.

END OF SECTION

