

The Steel Framing Industry Association (SFIA) is dedicated to expanding the market for cold-formed steel in construction through programs and initiatives that Promote the use of cold formed steel framing as a sustainable and cost-effective solution, Advocate the development and acceptance of favorable code provisions, Educate members with reliable data and other critical information that is essential to effective business planning, and create a positive environment for Innovation.

## **SECTION 092216 - NON--STRUCTURAL METAL FRAMING**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

A. Section Includes:

1. Non-Structural steel framing systems for interior partitions.

*Note to Specifier: Delete following paragraph if not used*

B. Related Requirements:

1. Section 054000 "Cold-Formed Steel Framing" for exterior and interior structural steel framing members.

#### **1.2 SUBMITTALS**

A. Product Data: For each type of product.

1. Studs and Runners: Provide documentation that framing members' certification is according to SFIA's "Code Compliance Certification Program for Cold-Formed Steel Structural and Non-Structural Framing Members". SFIA's program certifies that studs and runners comply with the IBC, ASTM C 645, AISI S100, and AISI S220. Mechanical properties, coatings, dimensions, and labeling are checked.

B. Manufacturers' height limiting tables indicating products provided.

C. Evaluation Reports: Submit evaluation reports certified under an independent third party inspection program administered by an agency accredited by IAS to ICC-ES AC98, IAS Accreditation Criteria for Inspection Agencies.

D. Manufacturer's Certification: Submit manufacturer's certification of product compliance with codes and standards along with product literature and data sheets for specified products.

*Note to Specifier: Delete following paragraph if Sustainable Design is not are part of project requirements*

E. Sustainable Design Submittals:

1. Product Data for Credit MR 4.1 [**and Credit MR 4.2**]: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.
2. Product Data for Credit MR 2.1 [**and Credit MR 2.2**]: For products diverted from disposal in landfills and incinerators, and where recycled resources are directed back to the manufacturing process. Include statement indicating percentage of materials diverted and recycled, and the costs associated with each.
3. Product Data for Credit MR 5: For products where product manufacturing is within a 500 mile radius of the jobsite and the point of extraction of the raw materials. Include a statement indicating the location and distances for the manufacturing plant and the point of extraction of raw materials in relation to the jobsite location.

### 1.3 QUALITY ASSURANCE

- A. Provide certification of code compliance with the “Code Compliance Certification Program” implemented by the Steel Framing Industry Association (SFIA).

## PART 2 - PRODUCTS

### 2.1 ACCEPTABLE MANUFACTURERS

- A. Provide products by Steel Framing Industry Association Members in good standing (listing found at [http://www.archtest.com/certification/SFIA\\_SteelFraming\\_Intertek.aspx](http://www.archtest.com/certification/SFIA_SteelFraming_Intertek.aspx) ).

### 2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-structural steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 119 by, and displaying a classification label from, an independent testing agency acceptable to the authority having jurisdiction.
1. Construct fire-resistance rated partitions in compliance with tested assembly requirements [**indicated on drawings**].
  2. Rated assemblies to be substantiated from applicable testing using proposed products, by Contractor.

*Note to Specifier: Delete following paragraph if STC requirements are not required*

- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

- C. Horizontal Deflection: For wall assemblies, limited to [1/240] [1/360] of the wall height based on horizontal loading of [5 lbf/sq. ft. (239 Pa)] [10 lbf/sq. ft. (480 Pa)].
- D. Design framing systems in accordance with American Iron and Steel Institute Publication S220 “North American Specification for the Design of Cold-Formed Steel Framing – Non-Structural Members”, except as otherwise shown or specified.
- E. Design loads: As indicated on the Architectural Drawings or 5 PSF minimum as required by the International Building Code.
- F. Design framing systems to accommodate deflection of primary building structure and construction tolerances and to withstand design loads with a maximum deflection of <insert number> inches.

## 2.3 FRAMING SYSTEMS

*Note to Specifier: Delete following if not required by Sustainable Design*

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
- B. Framing Members, General:
  - 1. Protective Coating: Comply with ASTM C 645. Coatings shall have a protective coating meeting the requirements of ASTM A653/A653M, G40, or shall have a protective coating with an equivalent corrosion resistance.
    - a. Coatings providing equivalent corrosion resistance to a G40 shall demonstrate equivalent corrosion resistance with an evaluation report acceptable to the authority having jurisdiction.

*Note to Specifier: Any coating other than a G40 coating (such as an AZ-50, GF-30, conversion coating, etc., or any other coating are all considered to provide equivalent corrosion protection and must meet the above provision)*

- C. Studs and Runners: Comply with manufacturers’ for conditions indicated.
  - 1. Steel Studs and Runners: ASTM C 645.
    - a. Minimum Base-Steel Thickness: indicated in the physical properties table of the submitted manufacturers literature, and cross referenced with the appropriate height determination table to meet required performance.
    - b. Depth: As Specified on the Architectural Drawings, and cross referenced with the appropriate height determination table to meet required performance.

- D. Slip-Type Head Joints: Where indicated, provide **[one of]** the following:
1. Single Long-Leg Runner System: top runner with **2-inch** deep flanges **(or as required)** in thickness not less than indicated for studs, installed with studs friction fit into top runner and with continuous bridging located within **12 inches** of the top of studs to provide lateral bracing.
  2. Double-Runner System: top runners, inside runner with **2-inch** deep flanges **(or as required)** in thickness not less than indicated for studs and fastened to studs, and outer runner sized to friction fit inside runner.
  3. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
- E. Firestop Tracks: Top runner manufactured to allow partition heads to expand and contract with movement of the structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.
- F. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
1. Minimum Base-Steel Thickness: As indicated on Drawings.
- G. U-Channel Bridging: Steel, **0.054-inch** minimum base-steel thickness, with minimum **1/2-inch** wide flanges.
1. Depth: As indicated on Drawings.
  2. Clip Angle: Not less than **1-1/2 by 1-1/2 inches**, **0.0538-inch** thick, galvanized steel.
- H. Hat-Shaped, Rigid Furring Channels: ASTM C 645.
1. Minimum Base-Steel Thickness: **[0.018 inch] [0.0296 inch]**.
  2. Depth: **[7/8 inch] [1-1/2 inches]**.
- I. Resilient Furring Channels: **1/2-inch** deep, steel sheet members designed to reduce sound transmission.
- J. Carrying Channels: **0.054-inch** uncoated-steel thickness, with minimum **1/2-inch** wide flanges.
1. Depth: **3/4 inch**.
  2. Furring Brackets: Adjustable, corrugated-edge type of steel sheet with minimum uncoated-steel thickness of **0.0296 inch**.
  3. Tie Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, **0.062-inch** diameter wire, or double strand of **0.048-inch** diameter wire.
- K. Z-Shaped Furring: With slotted or nonslotted web, face flange of **1-1/4 inches**, wall attachment flange of **7/8 inch**, minimum uncoated-steel thickness of **0.018 inch**, and depth required to fit insulation thickness indicated.

## 2.4 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards.
  - 1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
- B. Isolation Strip at Exterior Walls: Provide the following:
  - 1. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, **1/8 inch** thick, in width to suit steel stud size.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

*Note to Specifier delete following paragraph if SFRM is not specified*

- A. Coordination with Sprayed Fire-Resistive Materials:
  - 1. Before sprayed fire-resistive materials are applied, attach offset anchor plates, z-furring members, or ceiling runners (tracks) to surfaces indicated to receive sprayed fire-resistive materials. Where offset anchor plates are required, provide continuous plates fastened to building structure not more than **24 inches** o.c.
  - 2. After sprayed fire-resistive materials are applied, remove them only to extent necessary for installation of non-load-bearing steel framing. Do not reduce thickness of fire-resistive materials below that required for fire-resistance ratings indicated. Protect adjacent fire-resistive materials from damage. Repair or replace any fire-resistive materials as required.

### 3.3 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C754.
- B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- C. Install bracing at terminations in assemblies.
- D. Do not bridge building control and expansion joints with non-structural steel framing members. Frame both sides of joints independently.

### 3.4 INSTALLING FRAMED ASSEMBLIES

- A. Install framing system components to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
1. Single-Layer Application: **[16 inches] [24 inches]** o.c. unless otherwise indicated.
  2. Multilayer Application: **[16 inches] [24 inches]** o.c. unless otherwise indicated.
  3. Tile Backing Panels: 16 inches o.c. unless otherwise indicated.

*Note to Specifier delete following paragraph if not required*

- B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- C. Install studs so flanges within framing system point in same direction.
- D. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at or above suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.
1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
  2. Door Openings: Securely fasten vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs. Fasteners shall not exceed height from face of framing members more than specified in ASTM C840.
    - a. Install two studs at each jamb unless a framing member has been specifically engineered for the jamb.
    - b. Extend jamb studs through suspended ceilings and attach to underside of overhead structure if suspended ceiling system cannot withstand forces imposed by door swings.
    - c. If jamb studs cannot be attached to the overhead structure, the Design Professional should be consulted for bracing design.
  3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
  4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.
    - a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.

*Note to Specifier delete following if not required*

5. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
6. Curved Partitions:
  - a. Bend track to uniform curve and locate straight lengths so they are tangent to arcs.
  - b. Begin and end each arc with a stud, and space intermediate studs equally along arcs. On straight lengths of no fewer than two studs at ends of arcs, place studs **6 inches** o.c. (or as required).

*Note to Specifier delete following paragraph if not required*

- E. Direct Furring:
  1. Screw to wood framing.
  2. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.

*Note to Specifier delete following paragraph if not required*

- F. Z-Furring Members:
  1. Erect insulation, specified in Section 07210 "Building Insulation," vertically and hold in place with Z-furring members spaced 24 inches o.c.
  2. Except at exterior corners, securely attach narrow flanges of furring members to wall with concrete stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced **24 inches** o.c.
  3. At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw-attach short flange of furring channel to web of attached channel. At interior corners, space second member no more than **12 inches** from corner and cut insulation to fit.
- G. Installation Tolerance: Install framing members plumb within ¼ inch in 10 ft-0 in.
- H. Installation Tolerance: Install each framing member so fastening surfaces vary not more than **1/8 inch** from the plane formed by faces of adjacent framing.

**END OF SECTION 092216**