
SECTION 09 22 16 - NON-STRUCTURAL METAL FRAMING**PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. Metal partition, ceiling, and soffit framing.
- B. Framing accessories.

1.2 REFERENCE STANDARDS

- A. AISI S100-12 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2012.
- B. AISI SG02-1 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2001 with 2004 supplement. (replaced SG-971)
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2017.
- D. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2014, with Editorial Revision (2015).
- E. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2017.
- F. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2017.
- G. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2016.
- H. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); 2002 (Ed. 2004).

1.3 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings:
 - 1. Indicate prefabricated work, component details, framed openings, anchorage to structure, acoustic details, type and location of fasteners, accessories, and items of other related work.
 - 2. Describe method for securing studs to tracks, splicing, and for blocking and reinforcement of framing connections.
- C. Product Data: Provide data describing framing member materials and finish, product criteria, load charts, and limitations.
- D. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.
- E. LEED Report: Accurately document the use of recycled materials and local/regional materials, as required by Section 01 35 14, Section 01 35 15, Section 01 35 16 and appropriate forms, and Section 01 60 00.
- F. LEED Submittals: Provide documentation of VOC content in g/L for acoustical sealant applied within the building waterproofing envelope; comply with VOC limits of Section 01 61 16.

1.4 PROJECT CONDITIONS

- A. Coordinate the placement of components to be installed within framing system.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Metal Framing, Connectors, and Accessories:
 - 1. ClarkDietrich Building Systems LLC: www.clarkdeitrich.com.
 - 2. Marino: www.marinoware.com/#sle.
 - 3. Telling Industries: www.buildstrong.com.
- B. Slip-Type Head Joints:
 - 1. Steel Network Inc. (The); VertiClip SLD or VertiTrack VTD Series.
 - 2. Superior Metal Trim; Superior Flex Track System (SFT).
 - 3. Dietrich Metal Framing; Fast Top Clip.
- C. Grid Suspension System for Gypsum Board Ceilings and Bulkheads:
 - 1. Armstrong World Industries, Inc.; Drywall Grid Systems.
 - 2. Chicago Metallic Corporation; Drywall Furring System.
 - 3. USG Corporation; Drywall Suspension System.

2.2 FRAMING MATERIALS

- A. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf.
 - 1. Studs: C shaped with flat or formed webs with knurled faces.
 - a. Typical: Minimum 0.0283 inch, 22 gauge (27 mil) except when reference standard states a more stringent requirement.
 - b. At door and glazed opening jambs, and framing supporting ceramic tile: Minimum 0.0312 inch, 20 gauge (30 mil) except when reference standard states a more stringent requirement.
 - c. (Equivalent Gauge Thickness) Steel Studs and Runners: Members that can show certified third party testing with gypsum board in accordance with ICC ES AC86 need not meet the minimum thickness limitation or minimum section properties set forth in ASTM C 645-09. The submission of a recognized evaluation report is acceptable to show conformance to this requirement.
 - 2. Runners: U shaped, sized to match studs.
 - 3. Ceiling Channels: C shaped.
 - 4. Furring: Hat-shaped sections, minimum depth of 7/8 inch.
- B. Loadbearing Studs: As specified in Section 05 40 00.
- C. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
- D. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection using slotted holes, screws and anti-friction bushings, preventing rotation of studs while maintaining structural performance of partition.
 - 1. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI S100-12.
 - 2. Material: ASTM A653/A653M steel sheet, SS Grade 50, with G60/Z180 hot dipped galvanized coating.

3. Provide components UL-listed for use in UL-listed fire-rated head of partition joint systems indicated on drawings.
4. Provide top track preassembled with connection devices spaced to fit stud spacing indicated on drawings; minimum track length of 12 feet.
- E. Tracks and Runners: Same material and thickness as studs, bent leg retainer notched to receive studs with provision for crimp locking to stud.
- F. Furring and Bracing Members: Of same material as studs; thickness to suit purpose; complying with applicable requirements of ASTM C754.
- G. Fasteners: ASTM C1002 self-piercing tapping screws.
- H. Acoustic Insulation: ASTM C665; preformed glass fiber, friction fit type, unfaced.
 1. Comply with low-emitting requirements specified in Section 01 61 16.
- I. Acoustic Sealant: Non-hardening, non-skinning, for use in conjunction with gypsum board.
 1. Comply with low-emitting requirements specified in Section 01 61 16.
- J. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic.

2.3 FABRICATION

- A. Fabricate assemblies of framed sections to sizes and profiles required.
- B. Fit, reinforce, and brace framing members to suit design requirements.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that rough-in utilities are in proper location.

3.2 INSTALLATION OF STUD FRAMING

- A. Comply with requirements of ASTM C754.
- B. Extend partition framing to structure where indicated and to ceiling in other locations.
- C. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
- D. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.
- E. Align and secure top and bottom runners at 24 inches on center.
- F. Place one bead of acoustic sealant between runners and substrate, studs and adjacent construction.
- G. Fit runners under and above openings; secure intermediate studs to same spacing as wall studs.
- H. Install studs vertically at spacing indicated on drawings.
- I. Align stud web openings horizontally.
- J. Install bridging in the following locations at 48 inches on center vertical:
 1. All partitions or chase walls that have gypsum wall board on one side only.
 2. All partitions that do not extend to deck.

- 3. All partitions that are installed to deck, but where gypsum wall board does not run to deck; bridging is required in the portion of the wall that does not have gypsum wall board on it.
- K. Secure studs to tracks using crimping method. Do not weld.
- L. Stud splicing is not permissible.
- M. Fabricate corners using a minimum of three studs.
- N. Double stud at wall openings, door and window jambs, not more than 2 inches from each side of openings.
- O. Coordinate erection of studs with requirements of door frames; install supports and attachments.
- P. Coordinate installation of bucks, anchors, and blocking with electrical, mechanical, and other work to be placed within or behind stud framing.
- Q. Furring: Install at spacing and locations shown on drawings. Lap splices a minimum of 6 inches.
- R. Provide metal backup plates as required to accommodate the wall hung casework, millwork, railings or other items mounted to metal stud and wallboard walls and partitions; provide plates up to 8 feet in length as one-piece units.

3.3 CEILING AND SOFFIT FRAMING

- A. Install furring after work above ceiling or soffit is complete. Coordinate the location of hangers with other work.
- B. Install furring independent of walls, columns, and above-ceiling work.
- C. Securely anchor hangers to structural members or embed in structural slab. Space hangers as required to limit deflection to criteria indicated. Use rigid hangers at exterior soffits.
- D. Space main carrying channels at maximum 72 inch on center, and not more than 6 inches from wall surfaces. Lap splice securely.
- E. Securely fix carrying channels to hangers to prevent turning or twisting and to transmit full load to hangers.
- F. Place furring channels perpendicular to carrying channels, not more than 2 inches from perimeter walls, and rigidly secure. Lap splices securely.
- G. Reinforce openings in suspension system that interrupt main carrying channels or furring channels with lateral channel bracing. Extend bracing minimum 24 inches past each opening.
- H. Laterally brace suspension system.
- I. Contractor Option - Grid Suspension System for Gypsum Board Ceilings and Bulkheads: ASTM C 645, direct-hung system composed of main beams and cross-furring members that interlock.

3.4 TOLERANCES

- A. Maximum Variation From True Position: 1/8 inch in 10 feet.
- B. Maximum Variation From Plumb: 1/8 inch in 10 feet.

END OF SECTION