SECTION 09 22 16 - NON-STRUCTURAL METAL FRAMING

1. GENERAL
   * + 1. DESCRIPTION OF WORK
          1. Furnish and install all components and related items pertaining to non-structural steel framing interior gypsum board wall assemblies.
       2. RELATED DOCUMENTS

Retain or delete this article in all Sections of Project Manual.

* + - * 1. Drawings, general provisions of the Contract, General and Supplementary Conditions and the requirements of Division 01 apply to all work in this Section.
      1. RELATED SPECIFICATION SECTIONS
         1. 05 41 00 Cold-Formed Metal Framing
         2. 05 50 00 Metal Fabrications
         3. 06 10 00 Rough Carpentry
         4. 07 21 00 Thermal Insulation
         5. 07 92 00 Joint Sealants
         6. 07 80 00 Fire and Smoke Protection
         7. 09 29 00 Gypsum Board
         8. 09 81 00 Acoustic Insulation
      2. REFERENCES
         1. International Building Code as published by the International Code Council (ICC).
         2. AISI North American Specification for the Design of Cold-Formed Steel Members, 2007 Edition.
         3. ASTM E 119 Standard Test Methods for Fire Tests of Building Construction Materials.
         4. ASTM E 1966 Standard Test Methods for Fire-Resistive Joint Systems.
         5. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
         6. ASTM A 645 Standard Specification for Non-Structural Steel Framing Members
         7. ASTM C 754 Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
         8. ICC-ES AC 46 Acceptance Criteria for Cold-Formed Steel Framing Members
         9. ICC-ES AC 86 Acceptance Criteria for Cold-Formed Steel Framing Members – Interior Nonload-Bearing Wall Assemblies.
         10. ASTM E 72 Standard test Methods of Conducting Strength Tests of Panels for Building Construction.
      3. QUALITY ASSURANCE
         1. Contractor shall provide effective quality control and oversight over the erection of all interior wall assemblies to assure compliance with the project performance requirements specified in Paragraph 2.1 of this specification section, Intertek Design Listings and all applicable codes and regulations.
      4. SUBMITTALS
         1. Manufacturer’s Certification: Submit manufacturer’s certification of product compliance with codes and standards along with technical product data sheets for the steel framing system, including section properties and limiting wall heights for each component to be used on the project.
         2. Evaluation Reports: Submit copy of current International Code Council–Evaluation Service (ICC-ES) Report No. ESR-1464 documenting that the steel framing system complies with the requirements of the International Building Code.
         3. Quality Assurance: Submit evidence that the manufacturer’s quality assurance program is audited by an independent third-party inspection agency approved by ICC-ES.
         4. Design Listings: Submit copies of Intertek Design Listings for both one and two-hour fire-rated construction to provide evidence that the steel framing system has been tested and listed by an ICC-ES approved testing laboratory and complies with the fire testing requirements of ASTM E 119. Submit copies of Intertek Design Listings for both one and two-hour fire-rated Head-of-Wall joint construction to provide evidence that the steel framing system has been tested and listed by an ICC-ES approved testing laboratory and complies with the cyclic movement, fire-testing and hose stream testing requirements of ASTM E 1966.
         5. Recycled Content: Submit information from manufacturer of steel framing system indicating the percentage of pre-consumer and post-consumer recycled content per unit weight of products.
      5. Delivery Storage and Handling
         1. Protect metal framing products from rusting and damage.
         2. Deliver materials to the project site in the manufacturer’s original bundles properly labeled to identify the product name, web size and mil thickness.
         3. Products should be kept dry, preferably by being stored inside a building under a roof. Where necessary to store materials outside they shall be stored off the ground.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design: TRAKLOC® Steel Framing Stud and Track Deflection Wall System as manufactured by ClarkDietrich Building Systems www.clarkdietrich.com

2.2 MATERIALS

* + - * 1. Steel used for the manufacture of non-structural steel framing shall be hot-dipped galvanized steel complying with ASTM A 653 with a minimum yield stress of 33,000 KSI (228 Mpa) and ASTM A 645 with a minimum of G40 galvanization. Galvannealed steel products are not acceptable.
        2. Minimum steel thickness shall be 0.0296 mils. Web depth as indicated on drawings. Stud or track manufactured from steel less than the specified minimum mil thickness is not acceptable.
        3. Gypsum wallboard used as part of a fire-rated assembly shall be 5/8 inch Type X as required by the applicable Intertek Design Listings for both one and two-hour fire-rated construction.
        4. Joint sealant caulk for head-of-wall joints shall be 3M Interam FireDam 150+, or approved equal.

2.3 PERFORMANCE REQUIREMENTS

* + - * 1. Fire-Test Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide an assembly of materials and components that have been tested in accordance with ASTM E 119 for both one and two-hour fire-rated wall construction by an ICC-ES approved testing laboratory.
        2. Head-of-Wall Joints: Wall system shall be designed and installed to allow movement to occur independently from the supporting structure, without damage or failure of joint seals, or other detrimental effects. For fire-rated walls, head-of-wall joints shall be designed and installed to allow compression and or extension of the joint with the deflection of the building structural members while maintaining the integrity of the fire-rating of the wall assembly. Provide an assembly of materials and components that have been tested for both one and two-hour fire-rated wall construction in accordance with ASTM E 1966 by an ICC-ES approved testing laboratory.
        3. STC Rated Assemblies: Provide an assembly of materials and components similar to those tested in accordance with ASTM E 90 and classified according to ASTM E 413.
        4. Design Parameters: Framing system calculations shall be performed in accordance with the American Iron and Steel Institute North American Specification for the Design of Cold-Formed Steel Members, 2007 Edition.
        5. Design Loads: Loads on interior walls shall be as indicated on the drawings or 5 PSF minimum lateral load as required by the International Building Code.

PART 3 - EXECUTION

3.1 INSPECTION

1. Prior to the start of steel framing installation inspect adjacent and supporting structures and substrates to ensure proper conditions for installation and performance of cold-formed steel framing system. Verify that attachment surfaces are plumb, level and properly aligned to receive steel framing system.
2. Proceed with work only after any non-compliant conditions have been corrected.

3.2 INSTALLATION

1. Installation standard methodology is described in ASTM C 754 and in the applicable Intertek Design Listings. In the case of a conflict between these documents the Intertek design listing will govern. Install steel framing track runners and studs in accordance with the manufacturer’s instructions, the design listings and the project drawings.
2. Securely anchor continuous track runners to the supporting structure at top and bottom of the wall assembly, sized to match studs and located as indicated in drawings.
3. Twist and lock telescoping studs into the horizontal track runners at top and bottom. Install studs vertical and plumb with flanges normally facing in the same direction. Spacing of the studs will be as required to meet the interior wall design loads for the specific wall height.
4. For one-hour fire-rated walls: Affix one layer of Type X 5/8 inch thick gypsum board to each side of the telescoping stud assemblies. Drywall to be attached using #8 1-1/2 inch bugle head screws spaced nominally eight inches on-center in the field and around the perimeter. Place no screws nominally within four inches down from the top of the track. Install top drywall attachment screw four inches down from the top of the track such that the fastener passes through near the center of the slot in the flange of the telescoping extension stud end (TSE). Do not attach the drywall in a manner that would restrict independent movement of the TSE extension stud and TSO primary stud. See manufacturer’s instructions and detail drawings. Create a nominal one-inch head-of-wall joint at the top of the wall assembly by cutting the Type X 5/8 inch thick gypsum board one-inch short of the top of the wall assembly. Fill the joint created at the top of the wall with 4 pcf mineral wool 3/8 inch thick. Leave nominal 1/4 inch recess from exposed face of gypsum board. Fill nominal 1/4 inch recess with 3M Interam FireDam 150+ joint sealant caulking, or approved equal. Installation shall be in accordance with applicable Intertek Design Listings.
5. For two-hour fire-rated walls: Affix two layers of Type X 5/8 inch thick gypsum board to each side of the telescoping stud assemblies. Attach base layer of gypsum board to each side of the wall using #8 1 inch bugle head screws spaced nominally sixteen inches on-center in the field and around the perimeter. Attach second layer of gypsum board to each side of the wall using #8 1-5/8 inch bugle head screws spaced nominally sixteen inches on-center in the field and around the perimeter. Stagger face screws 8 inches from base screws. Place no screws nominally within four inches down from the top of the track. Install top drywall attachment screws four inches down from the top of the track such that the fastener passes through near the center of the slot in the flange of the telescoping extension stud end (TSE). Do not attach the drywall in a manner that would restrict independent movement of the TSE extension stud and TSO primary stud. See manufacturer’s instructions and detail drawings. Create a nominal one-inch head-of-wall joint at the top of the wall assembly by cutting the Type X 5/8 inch thick gypsum board one-inch short of the top of the wall assembly. Fill the joint created at the top of the wall with a foam backer rod cut into filler strips nominally measuring 3/4 inches less in depth than the joint. Fill nominal 3/4 inch recess with 3M Interam FireDam 150+ joint sealant caulking, or approved equal. Installation shall be in accordance with applicable Intertek Design Listings.
6. Install supplementary blocking, straps or framing as required to provide support for equipment, furnishings, services, casework or other accessories requiring attachment to wall.

3.3 PROTECTION

1. Provide protection of installed assemblies until the project has been completed.
2. Replace or repair any damaged products prior to substantial completion.

END OF SECTION