**SECTION 26 05 29**

#  HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

**PART 1 – GENERAL**

* 1. WORK INCLUDED
1. This section specifies the requirements necessary to furnish and install slotted channel, accessories and fasteners as shown on the drawings.
	1. RELATED WORK
2. This section shall be used in conjunction with the following other specifications and related contract documents to establish the total requirements for the referenced slotted channel framing systems:
3. Division 1 sections included in the project specifications.
4. The Contract.
5. Division 23 and 23 Mechanical sections.
6. Division 26 Electrical sections.
7. CAUTION! Use of this section without including all the above listed items may result in omission of the basic requirements.
8. In the event of conflict regarding slotted channel framing system requirements between this section and any other section, the provisions of this section shall govern.
	1. CONSTRUCTION STANDARDS
9. All work and materials listed in this section shall conform to the following in addition to the contract documents:
10. Federal, State and Local codes.
11. American Iron and Steel Institute (AISI), specification for the Design of Cold Formed Steel Structural Members.
12. American Society of Testing and Materials (ASTM).
	1. DELIVERY, STORAGE AND HANDLING
13. All material shall be delivered to the work site in original factory packaging with tags or labels calling out manufacturer and product.
14. All material shall be protected from the elements at the work site by a shelter or other covering.

**PART 2 – PRODUCTS**

* 1. ACCEPTABLE MANUFACTURERS
1. Subject to comply with requirements, use products by Hilti Inc. as Basis of design.
2. Modular channel and girder support shall be the MT System supplied by Hilti, Inc.
	1. MATERIALS
3. Modular channel and girder support shall be the MT System, designed, supplied and assembled in accordance with manufacturers’ instructions.
	1. ACCESSORIES
4. Modular channel and girder support accessories shall be designed and used in accordance with the manufacturers’ instructions including appropriate connection members, fasteners and attachment accessories.
5. All connectors shall be installed as designed and properly fastened as per the manufacturers’ instructions.
	1. FABRICATION
6. Modular C-channels must enable stepless positioning, with fixation steps allowing less than 1mm positioning increments along the open face of the C-section.
7. Modular C-section profiles should not require serrations (teeth) in order to provide the required shear force capacity after applying final torque, nor initial positioning stability (without slipping) prior to applying final torque, via fixation along the open face of the channel. Connectivity to the open face of C-section profiles must provide a shear capacity of not less than 7 kN.
8. For the closed profiles (girders) fixation must be possible with access from a single side, and not require the positioning of a nut (or any other element) to receive the bolt being used. For the closed profiles (girders) through-bolting is not permitted.
9. The modular support system should enable, wherever viable, the direct profile-to-profile connectivity thus avoiding the need for additional connectors.
10. All connections must be possible to be tightened by a power tool that enables a verification that the required torque is achieved during installation such as the Hilti MT modular support system using Hilti SIW 6AT-A22 cordless impact wrench with SI-AT-A22 module for automated tightening or equivalent system. Every tightening must be documented via Hilti AT Documentation Software as a proof of correct installation.
	1. FINISHES
11. Corrosion protection coating for profiles should be applied via a pre-galvanization process, avoiding the need for post treatment (e.g. hot dipped galvanization in a zinc bath) of manufactured sections.
12. Slotted channel shall be finished in accordance with one of the following standards:
13. All profiles within the modular support system must be coated by a zinc magnesium protective layer, according to ASTM A1046.
14. Fittings shall be electro-galvanized to a zinc thickness of 13 microns.
15. In selecting the modular support system used, consideration must be given to ensuring that environmental impacts are limited as best as viably feasible.

**PART 3 – EXECUTION**

* 1. EXAMINATION
1. Areas and conditions under which work is to be performed shall be examined to identify conditions detrimental to proper or timely completion.
2. Beginning of installation shall mean acceptance of existing conditions.
	1. ERECTION AND INSTALLATION
3. Slotted channel shall be located and installed true to line, level, and plumb so as to conform accurately to the drawings. Connections and splices not shown on the drawings shall be subject to prior review by the Architect or Engineer of record.
4. Cutting of slotted channel shall be performed using a circular or band saw. Flame cutting is not permitted.
5. Fabrication (holes, notches, etc.) not shown on the drawings shall be subject to prior review by the Architect or Engineer of record.
6. Connection parts shall be properly drawn together and tightly fitted, and the bolts tightened to the snug-tight conditions using proper torque in accordance with the manufacturer’s written instructions and specifications.
7. The methodology used to fasten the modular support system to the base material (both concrete or steel) should be provided by the same manufacturer as the support system.
8. All connections must be possible to be tighten by a power tool that enables a verification that the required torque is achieved during installation.
	1. CLEANUP
9. All packaging materials and debris shall be removed upon completion of work.
10. Any damage due to installation of slotted channel framing systems shall be repaired.
	1. PROTECTION
11. The installer shall be responsible for protecting the work from damage during the installation process.
12. Once installation has been completed, the general contractor shall be responsible for protecting the work from damage for the remainder of construction on the project.

**END OF SECTION**