

SECTION 16710
INTERIOR PATHWAYS

PART 1 - GENERAL

1.1 SCOPE

- A. Continuous Cable Support System Mesh Option (CatTrax™) (2.3A)
- B. Strut Mount Continuous Cable Support System (CAT-CM™) (2.3B)
- C. Strut Mount Continuous Cable Support System Double J-hook (CAT100CM) (2.3C)

1.2 SUMMARY

- A. The work covered under this section consists of the furnishings of all necessary labor; supervision, materials, equipment, and services to completely execute the interior pathway system as described in this specification.
- B. This section includes minimum requirements for the following:
 - 1. Horizontal Telecommunication Pathways
- C. Minimum composition requirements and installation methods for the following pathway:
 - 1. Continuous Cable Support System

1.3 DEFINITIONS

- A. UTP: Unshielded twisted pair.
- B. ANSI: American National Standards Institute
- C. ASTM: American Society for Testing and Materials
- D. EIA: Electronic Industries Alliance
- E. TIA: Telecommunications Industry Association
- F. cULus: Listed by Underwriters Laboratories based on both Canadian and US (United States) standards requirements.

1.4 SUBMITTALS

- A. Submit product data for Continuous Cable Support System. Product data to include, but not limited to materials, finishes, approvals, load ratings, and dimensional information.

1.5 QUALITY ASSURANCE

- A. Continuous Cable Support System shall be listed by Underwriters Laboratories based on both Canadian and US standards (cULus).
- B. Continuous Cable Support System shall be marked with the manufacturer's name and part number where applicable.
- C. Manufacturer: Company specializing in manufacturing products specified in this section with a minimum of five years documented experience in the industry, and certified ISO 9000.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with these specifications, the Continuous Cable Support System shall be as manufactured by ERICO, Inc. or approved equal.

2.2 REFERENCES

- A. The following Articles of the National Electric Code (NFPA 70)
250 - Grounding
770 - Optical Fiber Cables and Raceways
800 - Communications Circuits
- B. The following ANSI/TIA/EIA standards:
568-B1-B3 - Commercial Building Telecommunications Cabling Standards.
569-A - Commercial Building Standards for Telecommunications Pathways and Spaces.
607 - Commercial Building Grounding and Bonding Requirements for Telecommunications.
- C. The following UL Standards:
UL 94HB Flammability of Plastic Materials for Products in Devices and Appliances
UL 723 Test for Surface Burning Characteristics of Building Materials
UL 2043 Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories
Installed in Air Handling Places
- D. The following Canadian Standards Association (CSA) documents and standards:
CSA - T529 Design Guidelines for Telecommunications Wiring Systems in Commercial Buildings
CSA -T530 Commercial building standards for telecommunications pathways and spaces.
CSA -T527 Grounding and bonding for telecommunications in commercial buildings
CSA - C22.1-1998 Canadian Electrical Code, Part 1,1998 (Sections; 10 – Grounding and Bonding,
56 – Optical Fiber Cables, 60 – Electrical Communication Systems)
- E. The following National Building Code of Canada requirements:
Combustible building construction – Article 3.1.4.3.
Noncombustible building construction – Article 3.1.5.17.
Plenum spaces in buildings – Article 3.5.4.3.
- F. ASTM A568 Standard Specification for Steel, Sheet, Carbon, and High-Strength, Low-Alloy Hot-Rolled and Cold-Rolled
ASTM A682 Standard Specification for Steel, Strip, High-Carbon, Cold-Rolled, Spring Quality
A653 G60-Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-coated (Galvannealed) by the Hot-Dip process
ASTM A109 Standard Specification for Steel, Strip, Carbon, Cold-Rolled
- G ASTM B117 Standard Method of Salt Spray (Fog) Testing
ASTM D610 Standard test Method for Evaluating Degree of Rusting on Painted Steel Surfaces

2.3 CONTINUOUS CABLE SUPPORT SYSTEMS

A. Continuous Cable Support System Mesh Option (CatTrax™)

1. Steel support brackets shall be galvanized steel and capable of supporting a minimum of 200 pounds with a safety factor of 3.
2. Steel support brackets shall have a removable galvanized steel retaining strap.
3. Steel support brackets shall accept 3/8" (or 10mm) threaded rod for attachment to building structure or sub structure.
4. Cable support shall be of a flexible mesh design that is extruded from polyethylene. The sections shall be available in standard length of 25 feet with special orders of up to 500 feet. The flexible mesh shall be suitable for use in air handling spaces.
5. Flexible mesh sections shall be connected together by non-metallic splice clips. The non-metallic splice clips shall be suitable for use in air handling spaces

6. Cable support shall provide 32 square inches of cable containment area.
7. Shall have steel transition pieces for radius bends and elevation changes with a steel retaining strap that is removable.
8. All parts shall be cULus listed.
9. Plastic (non-metallic) parts shall have a zero detectable halogen content as substantiated by an independent test laboratory.
10. Acceptable products: ERICO CADDY CatTrax™ or approved equal

B. Strut Mount Continuous Cable Support System U-hooks (CAT-CM™)

1. U-hooks shall be galvanized steel.
2. The system shall offer optional rollers and retainers for use on U-hooks to retain cables and support cable pulls.
3. U-hooks shall have a pre-assembled quick attachment nut for mounting to half-slot strut.
4. U-hooks shall be able to utilize readily available half-slot strut.
5. U-hooks shall allow for customized support spacing.
6. Shall have steel transition pieces for elevation and directional changes.
7. Shall have protective tubes for threaded rod to eliminate scraping and cutting of cable sheath during pulling
8. U-hooks shall be listed as cable supports.
9. ERISTRUT A12H1000PG (12GA 1-5/8 X 1-5/8) .538 sq. in. evaluated and found to be compliant to NEMA Class “C” requirements.
ERISTRUT D12H1000PG (12GA 1-5/8 X 2-7/16) .705 sq. in. evaluated and found to be compliant to NEMA Class “D” requirements
10. Acceptable products: ERICO CADDY CAT-CM™ U-hooks CAT200CM, CAT300CM; CATTBCM protective tube; CATLCCM, CATSLCM, CATSLTCM, CATSLXCM transition pieces and A12 or D12 ERISTRUT™; or approved equal.

C. Strut Mount Continuous Cable Support System Double J-hook (CAT100CM)

1. Double J-hooks shall be galvanized steel.
2. The system shall offer retainers for use on Double J-hooks to retain cables.
3. Double J-hooks shall be able to utilize readily available half-slot strut.
4. Double J-hooks shall allow for customized support spacing.
5. Double J-hooks shall be listed.
6. Acceptable products: ERICO CADDY Double J-hook: CAT100CM; and A12 ERISTRUT™ or approved equal.

2.4 FINISHES

- A. ASTM B633 Standard Specification for Electro-deposited Coatings of Zinc on Iron and Steel
ASTM B 695 Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel
ASTM A123 Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

PART 3 - EXECUTION

3.1 INSTALLATION

- A. System to be installed per manufacturer's installation instructions.
- B. Install CatTrax™ and CAT-CM™ using threaded rods attached to support structure or sub structure. Installer is responsible for the integrity of the structures to which the system is attached, including their capability of safely accepting the loads imposed as evaluated by a qualified engineer.
- C. CatTrax support brackets and CAT-CM support rods are to be placed at a maximum distance of 5' apart. When fully loaded, flexible mesh shall not exceed more than a 12" deflection between support brackets. Strut-Mount U-hook spacing may be varied to reduce or eliminate sag.
- D. CatTrax flexible mesh at full deflection shall not rest upon any other structure.
- E. Flexible mesh must be attached to steel support brackets with spring steel bracket clips per manufacturer's specifications.
- F. CatTrax and Strut Mount U-hook splices shall be per manufacturer's specifications.
- G. Use CatTrax transition piece for corners and elevation changes in excess of 10 degrees. Use the appropriate transition fittings for Strut Mount U-hooks.
- H. Bend CatTrax transition piece prior to installation of flexible mesh. Maintain bend radius of all cables to be installed in transition piece.
- I. Support pathway from building support structure or sub structure. Do not support pathway from ductwork, piping, or other equipment hangers.
- J. Coordinate all pathway runs with other trades prior to installation.
- K. CatTrax and Strut Mount U-hooks shall not pass through any firewall, fire-rated soffits or assemblies. Both systems shall end before the firewall, fire-rated soffits or assemblies and transition to a minimum of two (2) 4" EMT sleeves with connectors and insulated bushings as called for in this specification section. The 4" sleeves shall be part of a Firestop System, which meets applicable local building and fire codes.
- L. All pathways shall be installed a minimum of 12 in. away from any light fixture or other source of EMI (Electro-magnetic interference).
- M. All horizontal pathways shall be bonded and grounded per the NEC Article 250 (CEC Section 10) if required by local code or regulation.
- N. In all cases horizontal pathways shall be sized for a minimum of 50% future growth.
- O. To avoid sway, guy wires maybe installed.
- P. Load Strut Mount U-hooks evenly.
- Q. Install cables using techniques, practices, and methods that are consistent with cable manufacturer's recommendations.