



SECTION 27xxx
NON-CONTINUOUS CABLE SUPPORTS FOR HIGH-SPEED TRANSMISSION CABLES
(CAT5E, CAT6, CAT6A AND HIGHER, AND FIBER CABLES)
HIGH PERFORMANCE NON-CONTINUOUS CABLE SUPPORT SYSTEMS (HPNCCS)

PART 1 – GENERAL

1.1 SCOPE

- A. High Performance Non-Continuous Cable Support (HPNCCS) Systems – (2.3A)
- B. Multi-tiered HPNCCS assemblies (2.3B)
- C. Factory Assembled Multi-Tier HPNCCS assemblies (2.3C)
- D. HPNCCS assemblies from tee bar (2.3D)
- E. HPNCCS assemblies from drop wire/ceiling (2.3E)
- F. HPNCCS assemblies from beam, flange (2.3F)
- G. HPNCCS assemblies from C & Z Purlin (2.3G)
- H. HPNCCS assemblies from wall, concrete, or joist (2.3H)
- I. HPNCCS assemblies from threaded rod (2.3I)
- J. HPNCCS assemblies from raised floor pedestals (2.3J)
- K. HPNCCS assemblies from strut (2.3K)
- L. Installation accessory for HPNCCS (2.3L)

1.2 SUMMARY

- A. The work covered under this section consists of the furnishing of all necessary labor, supervision, materials, equipment, and services to properly execute the system of HPNCCS as described in this specification.

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 on HPNCCS devices, including attachment methods. Product data to include, but not limited to materials, finishes, approvals, load ratings, and dimensional information.

1.5 QUALITY ASSURANCE

- B. HPNCCS and HPNCCS assemblies shall be listed by Underwriters Laboratories for both Canadian and US standards (cULus). UL listing shall be 2239/CSA C22.2 No. 18.4-04
- C. HPNCCS shall have the manufacturers name and part number stamped on the part for identification.
- D. 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, HPNCCS shall be as manufactured by nVent, (formerly known as ERICO, Inc.) or approved equal. Material shall be manufactured in the United States of America.

2.2 REFERENCES

- A. Zinc Coating Standards
 - 1) ASTM B633 Standard Specification for Electro-deposited Coatings of Zinc on Iron and Steel
 - 2) ASTM A924/A924M Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
- B. Steel Material Standards
 - 1) ASTM A109 Standard Specification for Steel, Strip, Carbon, Cold-Rolled
 - 2) ASTM A568 Standard Specification for Steel, Sheet, Carbon, and High-Strength, Low-Alloy Hot-Rolled and Cold-Rolled
 - 3) A653 G60-Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-coated (Galvannealed) by the Hot-Dip process
 - 4) ASTM A682 Standard Specification for Steel, Strip, High-Carbon, Cold-Rolled, Spring Quality
- C. Testing Standards
 - 1) ASTM B117 Standard Method of Salt Spray (Fog) Testing
 - 2) ASTM D610 Standard test Method for Evaluating Degree of Rusting on Painted Steel Surfaces
- D. Cable & Support Standards
 - 1) ANSI/TIA 568 Commercial Building Telecommunications Cabling Standard, current revision level.
 - 2) ANSI/TIA 569 Commercial Building Standard for Telecommunications Pathways and Spaces, current revision level.
 - 3) NFPA® 70 National Electrical Code®

2.3 NON-CONTINUOUS CABLE SUPPORT SYSTEMS (HPNCCS)

- A. HPNCCS
 - 1) HPNCCS shall be cULus Listed for Support of Conduit, Tubing, and Cable (UL 2239)
 - 2) HPNCCS shall provide a bearing surface of sufficient width to comply with required bend radii of high-performance cables per ANSI/TIA 568.0-D
 - 3) HPNCCS shall have flared edges to prevent damage while installing cables.
 - 4) HPNCCS shall have a cable retainer to provide containment of cables within the hanger. The cable retainer shall be removable and reusable.
 - 5) HPNCCS shall have a hot-dipped galvanized or G60 finish and shall be rated for indoor use in non-corrosive environments.

- 6) HPNCCS shall be made using a metal thickness of 0.052" and in a finish and hardness outlined in 2.2 & 2.4.
 - 7) Acceptable products: nVent CADDY CAT16HP, CAT21HP, CAT32HP, CAT48HP, CAT64HP or approved equivalent.
- B. Field Assembled
- 1) Multi-tiered HPNCCS assemblies shall be used where separate cabling compartments are required. Assemblies may be created by joining the HPNCCS with snap-on tree-mounting brackets (nVent CADDY CATHPTM). Assemblies can be made single-sided for wall-mount applications or single/double sided for ceiling/beam/threaded rod suspended applications. The assembly is rated for indoor use in non-corrosive environments; cULus Listed.
 - 2) For installation on threaded rod, a snap-on angle bracket must be added on top of the assembly.
 - 3) If required, the multi-tier HPNCCS assembly can be attached to snap-on angle or straight brackets riveted to beam clamps, flange clips, angle brackets, etc.
 - 4) Acceptable products: nVent CADDY CAT16HP, CAT21HP, CAT32HP, CAT48HP, CAT64HP and brackets CATHPAN, CATHPA4, CATHPA6, CATHPS4 and CATHPTM
- C. Factory Assembled
- 1) Multi-tiered HPNCCS assemblies shall be used where separate cabling compartments are required. These assemblies are assembled by the factory. Multi-tier assemblies are available for specific applications including wall mount, ceiling mount, threaded rod mount, and beam/flange mount. The beam/flange mount assembly includes a beam clamp rated to hold the weight of any of the multi-tier configurations. Assembly are rated for indoor use in non-corrosive environments; cULus Listed.
 - 2) Acceptable products: nVent CADDY CAT32HPSCM(2,3,4); CAT64HPSCM(2,3,4); CAT32HPDCM(2,3,4); CAT64HPDCM(2,3,4); CAT32HPSFM(2,3,4); CAT64HPSFM(2,3,4); CAT32HPDFM(2,3,4); CAT64HPDFM(2,3,4); CAT32HPSWM(2,3,4); CAT64HPSWM(2,3,4); or approved equivalent.
- D. HPNCCS assemblies from acoustic tee bar
- 1) Acoustical tee bar bracket riveted to one 1" HPNCCS, factory assembled; rated for in-door use in non-corrosive environments; cULus Listed. Request permission from local AHJ before using.
 - 2) Acceptable product: nVent CADDY CAT16HPTS or approved equivalent.
- E. HPNCCS assemblies from smooth or threaded drop rod or wire
- 1) Fastener to rod/wire with one HPNCCS, jobsite assembled; rated for indoor use in non-corrosive environments; cULus Listed.
 - 2) Acceptable products: As in 2.3 B. and nVent CADDY CATHP4Z34, CATHP6Z34, CATHP8Z34; or approved equivalent.
 - 3) Attaching the above assemblies to a wire supporting the ceiling grid is not allowed per NEC 300.11
- F. HPNCCS assemblies from beam, flange
- 1) Fastener to beam or flange with one HPNCCS, jobsite assembled; rated for indoor use in non-corrosive environments; cULus Listed.
 - 2) Acceptable products: As in 2.3 B. and nVent CADDY CATHP24, CATHP58, CATHP912, CATHPBCB, CATHPBC200B, CATHP24SM, CATHP58SM, CATHP912SM, CATHPBC, CATHPBC200; or approved equal.
- G. HPNCCS assemblies from C & Z Purlin
- 1) Fastener to C or Z Purlin with one HPNCCS, jobsite assembled; rated for indoor use in non-corrosive environments, cULus Listed.
 - 2) Acceptable products: As in 2.3 B. and nVent CADDY CATHPAF14 and CATHPVF14; or approved equal.
- H. HPNCCS assemblies from wall, concrete, or joist
- 1) Fastener to wall, concrete, or joist with one HPNCCS, jobsite assembled; rated for indoor use in non-corrosive environments, cULus Listed.

- 2) Acceptable products: As in 2.3 B and CATHPABSF; CATHPAN; CATHPA4; CATHPA6; or approved equal.
- I. HPNCCS assemblies from threaded rod
 - 1) Fastener to threaded rod with one HPNCCS, jobsite assembled, rated for indoor use in non-corrosive environments, cULus Listed.
 - 2) Acceptable products: As in 2.3 and nVent CADDY CATHPABSF; CATHPAN; CATHPA4; CATHPA6; or approved equal.
- J. HPNCCS assemblies from raised floor pedestals.
 - 1) Fastener to raised (access) floor pedestal with one HPNCCS, jobsite assembled, rated for indoor use in non-corrosive environments; cULus Listed.
 - 2) Acceptable products: As in 2.3 B. and nVent CADDY CATHPCD0B, CATHPCD1B or CATHPCD2B; CATHPCD2.5B; CATHPCD3B; or approved equivalent.
- K. HPNCCS assembly from strut
 - 1) Fastener to strut with one HPNCCS, jobsite assembled, rated for indoor use in non-corrosive environments; cULus Listed
 - 2) Acceptable products: As in 2.3 B. and nVent CADDY CATHPESC or approved equal.
- L. Installation accessory for HPNCCS (Cable Pulley)
 - 1) Cable Pulley may be used as an installation tool. The Cable Pulley shall be made of steel and plastic and be without sharp edges. The Cable Pulley must be removed after cables are installed.
 - 2) Acceptable products: nVent CADDY CATHPLR or approved equivalent.

2.4 HPNCCS FINISHES

- A. ASTM B633 Standard Specification for Electro-deposited Coatings of Zinc on Iron and Steel
- B. ASTM A924/A924M Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process

2.5 HPNCCS Base Material

- A. Base material of the HPNCCS shall be metal (at least a 0.052" thickness) and not plastic or other similar material that will potentially fail to support cabling in a fire event. Any fasteners used to affix the HPNCCS shall also be metal and shall be fastened to the metal of the HPNCCS support. This is to provide added safety to building occupants and emergency responders in areas of egress to ensure that the cabling remains in the pathway in the ceiling during a fire event.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Installation and configuration shall conform to the requirements of the current revision levels of ANSI/EIA/TIA Standards 568 & 569, NFPA 70 (National Electrical Code), applicable local codes, and to the manufacturer's installation instructions.
- B. Install cables using techniques, practices, and methods that are consistent with Category 5e or higher requirements and that supports Category 5e or higher performance of completed and linked signal paths, end to end.
- C. Install cables without damaging conductors, shield, or jacket.
- D. Do not bend cables, in handling or in installing, to smaller radii than minimums recommended by manufacturer or by TIA 568.
- E. Pull cables without exceeding cable manufacturer's recommended pulling tensions or outlined in TIA 569. Use pulling means that will not damage media.
- F. Do not exceed load ratings specified by manufacturer.
- G. Follow manufacturer's recommendations for allowable fill capacity for each size of HPNCCS.

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