Frequently Asked Questions

J-PRO™ Cable Support System

Question:

What references define how and where J-hooks are used?

Answer:

J-hooks are a horizontal pathway promoted in the BICSI® TDM manual as a means to route small to medium cable bundles (see Appendix A). Furthermore, the TIA-569-B standard promotes non-continuous supports as a means to route cable bundles as well (see Appendix B). According to Underwriters Laboratories Inc. (UL), the portion of the *NEC*® that defines the requirements of this cabling pathway is found in Section 300 of the *NEC* (see Appendix C).

Question:

What is the difference between plenum space and air handling space?

Answer:

The industry wide confusion regarding the definition of a *plenum space* verses an *air handling space* is very common as the area above a drop ceiling is mistakenly referred to as a plenum (see Appendix C)**.** Simply stated, the *NEC* defines a *plenum area* as, "a compartment or chamber to which one or more air ducts are connected and that forms part of the air distribution system." They also reference, "the space over a hung ceiling used for environmental air-handling purposes," and, "areas beneath raised floors for information technology equipment," as *air handling space* (*NEC* pg. 70-135 and 70-136). Often, the *NEC* definition of these terms differs from their common use in the industry – however, UL is compatible with the *NEC* terms and definitions. Therefore, the space above a hung (or drop/suspended) ceiling utilized as an air return to the HVAC unit is considered an air handling space. Additionally, the area below a raised floor used to supply conditioned air is also considered an air handling space.

Question:

Is the *J-PRO*™ Cable Support System approved by UL for use in air handling spaces in the United States?

Answer:

Yes, during the development of the *J-PRO*™ Cable Support System, *PANDUIT* coordinated testing and evaluation with UL for approval of the following statement on all the *J-PRO*™ Cable Support System products to reduce confusion in the market: "Suitable for use in air handling spaces in accordance with Section 300.22 (c) and (d) of the *NEC*." This statement is engraved and is visible on the side or bottom of each part. **According to this phrase, the *J-PRO*™ Cable Support System can be utilized in the area above the suspended ceiling (300.22 (c)) or below a raised floor (300.22 (d)), but it cannot be utilized within ductwork (300.22 (a) and 300.22 (b))** (see Appendix C). Approval to use *J-PRO*™ Cable Support System above the suspended ceiling and below the raised floor was a result of completing/passing testing of the *J-PRO*™ Cable Support System per the UL standard UL2043, *Fire Test for Visible Heat and Smoke Release for Discrete Products and their Accessories Installed in Air-Handling Spaces* (see Appendix D). This test requires product to meet certain criteria for heat release and smoke density and the values measured correlate back to the maximum flame spread and smoke index of the mechanical code. The basic standard used to investigate products in this category is ANSI/UL 1565, "Positioning Devices," (see Appendix E). The *J-PRO*™ Cable Support System product line is UL listed within UL file number E136577.

Question:

Is the *J-PRO*™ Cable Support System approved by Underwriters' Laboratories of Canada (ULC) for use in air handling spaces?

Answer:

Yes, for applications within Canada, the *J-PRO*™ Cable Support System was tested and evaluated by ULC for approval of the following statement, "In accordance with CAN/ULC S102.2 in single units or pairs. 4 foot minimum spacing, FSR = 0, SDC = 20." This statement is engraved and visible on the side or bottom of each part. According to this phrase, the *J-PRO*™ Cable Support System is approved for the same air handling spaces as defined by the *NEC* Section 300.22 (c) and (d) (above the suspended ceiling or below a raised floor) and meets the S102.2 (*Standard Method of Test for Surface Burning Characteristics of Floor Coverings, and Miscellaneous Material and Assemblies)* requirements as stated in the National Building Code of Canada (see Appendix F). The *J-PRO*™ Cable Support System product line is ULC listed within ULC file number R21673.

Appendix A

2006 BISCI® TDM Manual, 11th edition
Chapter 4: Horizontal Distribution Systems
Section 1: Horizontal Pathway Systems
Pages 4-41 to 4-42

Pathway and Cable Support
Every ceiling distribution system must provide proper support for cables from the TR to the work areas it serves. Ceiling panels, support channels (T-bars), and vertical supports are not proper supports.

Ceiling conduits, raceways, cable trays, and cabling must be suspended from or attached to the structural ceiling or walls with hardware or other installation aids specifically designed to support their weight.

The pathways must:

- Have adequate support to withstand pulling the cables.
- Be installed with at least 76 mm (3 in) of clear vertical space above the ceiling tiles and support channels (T-bars) to ensure accessibility.

Horizontal pathways or cables should not rest directly on or be supported by:

- Ceiling panels.
- Support channels (T-bars).
- Vertical supports.
- Other components of the suspended ceiling.

It is important to provide sufficient space between the suspended ceiling structure and the telecommunications pathways/cables to install, maneuver, and store ceiling tiles during service.
When sufficient space is available above the pathway, up to 152 mm (6 in) should be provided between the suspended ceiling and the cabling pathways.
Where building codes permit telecommunications cables to be placed in suspended ceiling spaces without conduit, ceiling zone distribution pathways may consist of:

- Cable trays
- Open-top cable supports (e.g., J-hooks).

NOTE: J-hooks should be located 1.52 m (5 ft) apart at the maximum to adequately support and distribute the cable's weight. The manufacturer's specifications for cable loading should be followed.

Appendix B

Telecommunications Industry Association
TIA-569-B
Page 62
Section 8.7 of TIA-569-B reproduced under written permission from Telecommunications Industry Association. Complete copies of all TIA standards can be purchased through IHS at 1-800-854-7179 or 303-397-7956 (www.ihs.com).

8.7 Non-continuous support
Non-continuous supports shall be located at intervals not to exceed 1.5 m (5 ft). Non-continuous supports shall be selected to accommodate the immediate and anticipated quantity, weight, and performance requirements of cables.

Steel, masonry, independent rods, independent support wires or other structural parts of the building shall be used for cable support attachment points up to the total weight for which the fastener is approved. Rods or wires that are currently employed for other functions (e.g. suspended ceiling grid support) shall not be utilized as attachment points for non-continuous supports.

NOTE – A weight of 1 kg (2.2 lb) (or 0.7 kg/m with spacing of support wire/rod at 1.5 m (5 ft)) is equivalent to a bundle of sixteen 4-pair 24 AWG UTP cables, including fasteners.

Appendix C

National Electrical Code®
2008 Edition
Article 300.22 (C) and (D)
Pages 70-135 and 70-136

(C) Other Space Used for Environmental Air. This section applies to space used for environmental air-handling purposes other than ducts and plenums as specified in 300.22 (A) and (B). It does not include habitable rooms or areas of buildings, the prime purpose of which is not air handling.

FPN: The space over a hung ceiling used for environmental air-handling purposes is an example of the type of other space to which this section applies.

Exception: This section shall not apply to the joist or stud spaces of dwelling units where the wiring passes through such spaces perpendicular to the long dimension of such spaces.

(1) Wiring Methods. The wiring methods for such other space shall be limited to totally enclosed, nonventilated, insulated busway having no provisions for plug-in connections, Type MI cable, Type MC cable without an overall nonmetallic covering, Type AC cable, or other factory-assembled multiconductor control or power cable that is specifically listed for the use, or listed prefabricated cable assemblies of metallic manufactured wiring systems without nonmetallic sheath. Other types of cables and conductors, and raceways shall be permitted to be installed in electrical metallic tubing, flexible metallic tubing, intermediate metal conduit, rigid metal conduit without an overall nonmetallic covering, flexible metal conduit, or, where accessible, surface metal raceway or metal wireway with metal covers or solid bottom metal cable tray with solid metal covers.

(2) Equipment. Electrical equipment with a metal enclosure, or with a nonmetallic enclosure listed for the use and having adequate fire-resistant and low-smoke-producing characteristics, and associated wiring material suitable for the ambient temperature shall be permitted to be installed in such other space unless prohibited elsewhere in this *Code.*

Exception: Integral fan systems shall be permitted where specifically identified for such use.

(D) Information Technology Equipment. Electric wiring in air-handling areas beneath raised floors for information technology equipment shall be permitted in accordance with Article 645.

Appendix D

UL
File E136577
Volume 2, Section 2
Page 1

DESCRIPTION

PRODUCT COVERED:

USL, CNL – Positioning devices – Model JP2, JP4, JP75, JP131

GENERAL DESCRIPTION:

USL, CNL – Indicates that the products have been evaluated in accordance with the requirements in UL 1565 and CAN/CSA C22.2 No. 18.5-02 Standards for Positioning Devices.

These devices are a J-Pro, J-hook, and are used in applications where zone conduit, cable trays, or ladder racks are not available or applicable.

The J-Pro, J-Hook contains a family of parts. This system has several other brackets and/or components, manufactured from a high carbon plated steel, riveted to the JP2, JP4, JP75, and JP131 for a variety of applications.

Table I

FAMILY OF PART	J-PRO™ CABLE SUPPORT SYSTEM
NUMBER (S)	DESCRIPTION
JP2	J-PRO J-HOOK

RATINGS:
These devices are rated 60ºC, for indoor use, suitable for use in air handling spaces in accordance with Sec. 300-22 (c) and (d) of the National Electrical Code, and 30 lb maximum load rating.

Table III

FAMILY OF PART	J-PRO™ CABLE SUPPORT SYSTEM
NUMBER (S)	DESCRIPTION
JP4	J-PRO J-HOOK

RATINGS:
These devices are rated 60ºC, for indoor use, suitable for use in air handling spaces in accordance with Sec. 300-22 (c) and (d) of the National Electrical Code, and 100 lb maximum load rating in single unit configuration only.

Table IV

FAMILY OF PART	J-PRO™ CABLE SUPPORT SYSTEM
NUMBER (S)	DESCRIPTION
JP75	J-PRO J-HOOK

RATINGS:
These devices are rated 60ºC, for indoor use, suitable for use in air handling spaces in accordance with Sec. 300-22 (c) and (d) of the National Electrical Code, and 15 lb maximum load rating.

Table V

FAMILY OF PART	J-PRO™ CABLE SUPPORT SYSTEM
NUMBER (S)	DESCRIPTION
JP131	J-PRO J-HOOK

RATINGS:
These devices are rated 60ºC, for indoor use, suitable for use in air handling spaces in accordance with Sec. 300-22 (c) and (d) of the National Electrical Code, and 20 lb maximum load rating.

Appendix E

Scope for UL 1565
Positioning Devices

1 Scope

1.1 This standard applies to those metallic and nonmetallic devices used for positioning – which may include bundling and securing – or to a limited extent supporting cable, wire, conduit, or tubing of a wiring system in electrical installations, to reduce the risk of fire, electric shock, or injury to persons. This standard applies to, but is not limited to, cable ties, cable tie mounting blocks, cable clamps, cable and conduit clips, and non-raceway ducts.

Appendix F

Standard Method of Test for Surface Burning Characteristics of Floor Coverings, and Miscellaneous Material and Assemblies, CAN/ULC-S102.2-M88.

On April 1, 2004, fire tests were conducted at our ULC Toronto facilities in accordance with the Standard CAN/ULC-S102.2-03, Standard Method of Test for Surface Burning Characteristics of Floor Covering, and Miscellaneous Materials and Assemblies.

LISTED
Plastic
Materials
15KH

Listed in accordance with CAN/ULC-S102.2

Flame Spread	Smoke Developed
0	30

15KH = The control number assigned by ULC.
0 = The Flame Spread rating assigned by ULC.
30 = The Smoke Developed value assigned by ULC.

The J-Pro (JP2 and JP2W) products may be marked with the Flame Spread and Smoke Developed values as shown above when mounted as single units or pairs with a minimum spacing of 1220 mm.

These parts may be fastened to metal clips to product the following part number (with the same mounting requirements above), which may also bear the ULC Mark:

JP2CM18	JP2HBC25R-	JP75DW-	JP75SBC87-	JP131CP-	JP4HBC50R-
JP2CM25	JP2HBC50R-	JP75SBC50-	JP75SBC87R-	JP131UF100-	JP4HBC4R-
JP2CM30	JP2HBC75R-	JP75SBC50R-	JP131CM-	JP131WP-	JP4ZP-
JP2HBC25R	JP2ZP-	JP75HBC25R-	JP131DW-	JP131SBC87-	JP4CP-
JP2HBC50R	JP2CP-	JP75HBC50R-	JP131SBC50-	JP131SBC87R-	JP4UF100-
JP2HBC75R	JP2UP100-	JP75HBC75R-	JP131SBC50R-	JP4W-	JP4WP-
JP2CM-	JP2WP-	JP75ZP-	JP131HBC25R-	JP4CM-	JP4SBC87-
JP2DW-	JP2SBC87-	JP75CP-	JP131HBC50R-	JP4SBC50-	JP4SBC87R-
JP2SBC50-	JP2SBC87R-	JP75UP100-	JP131HBC75R-	JP4SBC50R-	
JP2SBC50R-	JP75CM-	JP75WP-	JP131ZP-	JP4HBC25R-	