

J-Hook Support for StrandWise™

Hybrid Power & Data Cable

Applies to: HYB ISP FMP16 Series Platform: AGILE-CORE® Rev: 1.0 — 2025 Ref: ANSI/TIA-569, ANSI/BICSI N1-2019

Purpose

This application note provides guidance for specifiers and installers on the use of j-hooks as a cable support method for StrandWise™ hybrid cable in AGILE-CORE® distributed edge architecture deployments. It defines compliant hook spacing, bend radius requirements at the hook, and hook selection criteria — all derived from the StrandWise™ published specification sheet and applicable industry standards.

About StrandWise™ Hybrid Cable

StrandWise™ is a plenum-rated (CMP, CL4P, OFNP) hybrid cable that integrates OS2 single-mode fiber strands alongside stranded 16 AWG copper power pairs under a single common jacket. It is rated for Class 2 and Class 4 fault-managed power (FMP) and designed for installation from the AGILE-CORE® HEADEND to BITS™ edge nodes throughout a building.

Because StrandWise™ contains OS2 optical fiber, it must be handled as a fiber optic cable for all installation parameters — including hook spacing, bend radius, pull tension, and securing method. The fiber element is the governing constraint, not the copper.

StrandWise™ is available in configurations from 2-pair / 6-fiber through 8-pair / 12-fiber, with overall cable outer diameters (major axis) ranging from 0.662" to 0.943" depending on the SKU selected.

Applicable Standards

The following standards govern cable support spacing and bend radius requirements referenced in this document:

ANSI/TIA-569	(Commercial Building Standard for Telecommunications Pathways and Spaces) — defines the maximum interval for non-continuous cable supports including j-hooks.
ANSI/BICSI N1-2019	(Installation Practices for Telecommunications and ICT Cabling and Related Cabling Infrastructure) — establishes minimum installation requirements and workmanship standards for ICT cabling, including optical fiber, in commercial buildings.
ANSI/TIA-568.0	(Generic Telecommunications Cabling for Customer Premises) — defines bend radius requirements for optical fiber cable regardless of the pathway type.
StrandWise™ Specification Sheet	(Sinclair Digital, Rev. 09/22/25) — the governing document for all StrandWise™ mechanical, electrical, and environmental performance parameters.

BICSI Reference

ANSI/BICSI N1-2019 describes minimum requirements for installing telecommunications and ICT cabling infrastructure and provides the tenets of a "neat and workmanlike manner" as required by contracts and standards including ANSI/NFPA 70 (NEC). Installations of StrandWise™ cable shall conform to the requirements of ANSI/BICSI N1-2019 in addition to the manufacturer's instructions in this document.

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J-Hook Spacing

ANSI/TIA-569 Section 8.7 establishes the baseline rule for non-continuous supports: "Non-continuous supports shall be located at intervals not to exceed 1.5 m (5 ft)." This is the code-compliant maximum for all limited-energy telecommunications cabling on j-hooks.

However, StrandWise™ contains OS2 optical fiber strands. The fiber optic content introduces a more stringent practical requirement. Sag between support points creates localized mechanical stress at each hook contact. For a cable with static bend radii ranging from 6.6" to 9.4" (depending on SKU), excessive span between hooks can produce a bend radius violation at the contact point even with visually acceptable sag — particularly at the hook edges where the cable transitions from supported to unsupported.

Sinclair Digital Recommendation

StrandWise™ hybrid cable shall be supported on j-hooks at intervals not to exceed **3 feet (914 mm)** on center. This recommendation applies to all horizontal runs and to vertical riser segments. The ANSI/TIA-569 maximum of 1.5 m (5 ft) represents the permissible code ceiling; the 3-foot interval is the StrandWise™ installation requirement necessary to protect fiber strand integrity across all cable configurations.

Tighter spacing is acceptable and is required in the following conditions:

- Within 12 inches of any directional change (horizontal turn, drop, or rise), where contact geometry at the hook is least predictable
- Where multiple StrandWise™ runs share a common hook and combined weight increases sag between supports
- In areas of mechanical activity or vibration where cable movement between supports could produce dynamic bend stress

Bend Radius at the Hook

StrandWise™ has two published bend radius values per the specification sheet. Both must be satisfied during installation:

Static — Cable at Rest

10× OD

The long-term installed bend radius limit. Applies at every j-hook contact point, at all transitions, and at termination service loops.

Dynamic — Under Pull Tension

20× OD

Applies while the cable is being pulled. Any bend, corner, or redirect during installation must maintain this larger radius.

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The table below provides the calculated static (installed) minimum bend radius for each StrandWise™ configuration based on the published major-axis outer diameter. These values define the minimum hook throat radius required for each SKU.

Catalog Number	Pairs / Fibers	Major OD (in.)	Min. Static Bend Radius (10×)	Min. Dynamic Bend Radius (20×)
HYB ISP FMP16 2P OS2 6F	2P / 6F	0.662"	6.6"	13.2"
HYB ISP FMP16 2P OS2 12F	2P / 12F	0.712"	7.1"	14.2"
HYB ISP FMP16 3P OS2 6F	3P / 6F	0.688"	6.9"	13.8"
HYB ISP FMP16 3P OS2 12F	3P / 12F	0.738"	7.4"	14.8"
HYB ISP FMP16 4P OS2 6F	4P / 6F	0.734"	7.3"	14.7"
HYB ISP FMP16 4P OS2 12F	4P / 12F	0.784"	7.8"	15.7"
HYB ISP FMP16 6P OS2 6F	6P / 6F	0.838"	8.4"	16.8"
HYB ISP FMP16 6P OS2 12F	6P / 12F	0.888"	8.9"	17.8"
HYB ISP FMP16 8P OS2 6F	8P / 6F	0.893"	8.9"	17.9"
HYB ISP FMP16 8P OS2 12F	8P / 12F	0.943"	9.4"	18.9"

Note on Hook Throat Radius

The hook itself introduces a bend at the cable contact point. The throat of the j-hook — the curved base where the cable rests — must have a radius equal to or greater than the static minimum bend radius for the StrandWise™ SKU being installed. A flat-bottomed or narrow-throat hook does not satisfy this requirement and will produce a localized bend radius violation at every support point regardless of spacing. Confirm the hook manufacturer's stated throat radius against the values in the table above before installation begins.

Hook Selection

Standard narrow-throat steel j-hooks are not appropriate for StrandWise™ installations. The following criteria must be met by any hook used to support StrandWise™ cable:

Wide-base, smooth-radius throat.

Hooks must provide a smooth curved base — not a flat bottom with sharp edges — to distribute cable weight across a broad contact surface and avoid concentrated stress at the edges. High-Performance Hybrid (HPH) style hooks from qualified manufacturers provide a throat radius suitable for smaller StrandWise™ configurations (2P–4P).

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Throat radius verification.	Confirm the hook's stated throat radius is equal to or greater than the static minimum bend radius for the specific StrandWise™ SKU. For 6P and 8P configurations with static minimum bend radii of 8.4"–9.4", standard j-hooks will not provide compliant support. Cable tray with factory sweep fittings is the recommended support method for these configurations at any point involving a directional change.
Plenum rating.	All hooks used in air-handling plenums must be plenum-rated in compliance with NEC requirements applicable to StrandWise™ CMP/OFNP/CL4P rated cable.
Load capacity.	Verify the hook's static load rating against the weight of the cable bundle. StrandWise™ weights range from 123 lb/1000 ft (2P/6F) to 281 lb/1000 ft (8P/12F). At 3-foot hook spacing, individual hook loads remain well within commercial hook ratings — but bundled multi-run pathways should be evaluated at the design stage.

Larger Configurations — Tray Recommended

For StrandWise™ 6P and 8P configurations, cable tray with fiber-rated sweep fittings is the preferred support method for any run segment that includes a directional change. J-hooks remain appropriate for straight horizontal segments of these larger configurations provided hook throat radius compliance is confirmed.

Securing at J-Hooks

ANSI/BICSI N1-2019 and ANSI/TIA-568.0 both specify that cable bindings shall be loosely fitted — easily moveable — and shall not cause a change in the physical geometry of the cable. This requirement is especially critical for StrandWise™ given the fiber content.

Use hook-and-loop (Velcro) fasteners only.	Nylon zip ties shall not be used to secure StrandWise™ cable. Even when not visibly overtightened, zip ties can apply uneven compressive force that deforms the outer jacket and transmits stress to fiber strands.
Snug, not compressive.	Hook-and-loop fasteners should be installed snug enough to prevent cable lift or lateral movement at the hook, but loose enough that the fastener can be slid along the cable without excessive resistance.
Use hook pre-punch holes where available.	Many j-hook designs include pre-punched holes or integrated cable-tie attachment points. Use these with hook-and-loop to secure the cable to the hook without relying on tight cinching around the cable circumference.

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Quick Reference Summary

Parameter	Requirement	Standard / Source
Maximum j-hook spacing	3 ft (914 mm)	Sinclair Digital AN-SW-001
Code ceiling — non-continuous supports	1.5 m (5 ft)	ANSI/TIA-569 §8.7
Static bend radius (cable at rest)	10× OD (see table)	StrandWise™ Spec Sheet
Dynamic bend radius (under pull)	20× OD (see table)	StrandWise™ Spec Sheet
Hook throat radius	≥ static bend radius for SKU	ANSI/BICSI N1-2019
Hook type	Wide-base, smooth-radius (HPH or equivalent)	ANSI/BICSI N1-2019
Securing method	Hook-and-loop only — no zip ties	ANSI/TIA-568.0 · BICSI N1
Plenum rating required	Yes — CMP/OFNP/CL4P rated hooks	NEC Article 800 / 726

Related Documents

StrandWise™ Hybrid Power and Data Cable — Specification Sheet (Sinclair Digital, Rev. 09/22/25)
AGILE-CORE® System Design Guide
ANSI/TIA-569 — Commercial Building Standard for Telecommunications Pathways and Spaces
ANSI/BICSI N1-2019 — Installation Practices for Telecommunications and ICT Cabling and Related Cabling Infrastructure
ANSI/TIA-568.0 — Generic Telecommunications Cabling for Customer Premises