PREFORMED LINE PRODUCTS

Section 23 – Fiber Optics: FIBERLIGN® Hardware for Aerial FTTP Applications

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FIBERLIGN® Products for ADSS Applications

GENERAL INFORMATION

All Dielectric Self Supporting (ADSS) cables designed for the last mile are relatively small and have very low load requirements for pole-to-pole distribution and pole-to-premise service drops. Distribution span lengths are typically less than 300' and service drops are typically less than 150'. ADSS type drop cables are supported with non-metallic strength members and protected by an outer plastic sheath. This section covers attachment hardware products for ADSS cables followed by similar products for Figure 8 cables.

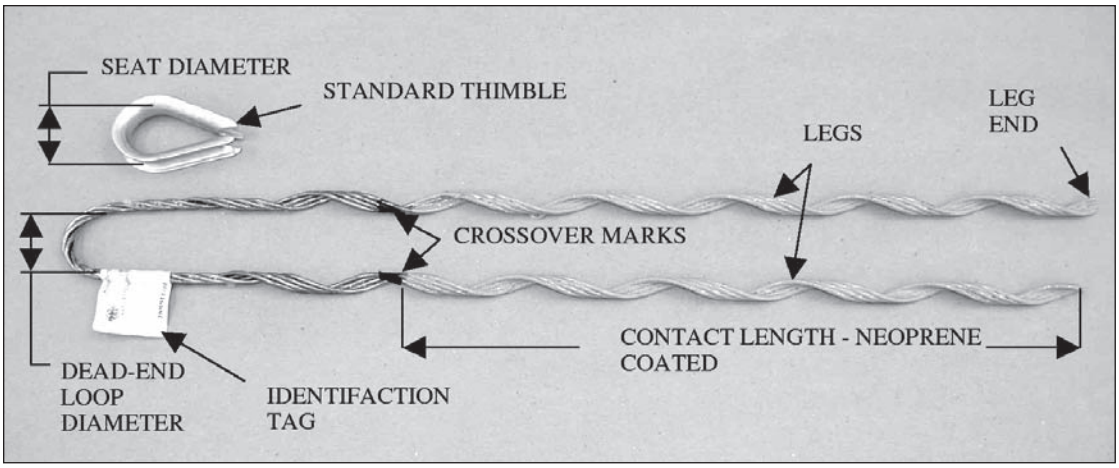
ADSS Drop cables are available in round and flat profile construction. FIBERLIGN® Products for ADSS are designed for both round and flat profile cables.

FIBERLIGN Products for ADSS include:

- FIBERLIGN® ADSS Drop Cable Dead-end
- FIBERLIGN® Midspan Drop
- FIBERLIGN® LITE Support
- FIBERLIGN® Tangent Support

FIBERLIGN® Products for ADSS Applications

FIBERLIGN® ADSS Drop Cable Dead-end



Formed Wire Design

Classified as a formed wire design, The FIBERLIGN® ADSS Drop Cable Dead-end is able to secure the soft pliable surface of a drop cable without causing attenuation. Unlike wedge type dead-ends, the formed wire dead-end effectively transfers the axial load on the cable at the end of the dead-end legs to a low uniform radial compression near the dead end loop. This transition of force is distributed over the length of the product thus allowing secure holding capability with minimized pressure on the cable or messenger.

It was determined through testing that traditional wedge clamps used on copper communications cables can cause fiber attenuation on ADSS drop cables due to concentrated loads from high localized pressure. In addition, the single wire bail of the wedge clamp has much less strength than the multi-wire loop section of the formed wire design. The FIBERLIGN® ADSS Drop Cable Dead-end is applied directly to the pliable surface of the cable without damage to the jacket or fiber signal. The corrosion resistant aluminum alloy dead-ends are neoprene coated to provide a compatible interface with the polyethylene cable jacket.

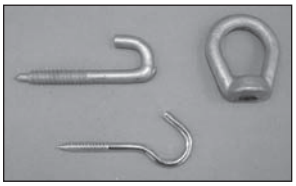
Drop Cable System Characteristics:
Due to the variety of cable designs from various manufacturers, the holding capabilities of drop cable dead-ends will vary as well. The following characteristics are presented for a general idea of the typical requirements for a drop cable application (see Caution Statement below).

- Distribution Max Span Length Approx 300' (91 m)
- Service Drop Max Span Length Approx. 200' (61 m)
- Installation Load Approx. 70# to 100# (311 to 444 N)
- Loaded Tension Approx. 200# to 500# (890 to 2220N)

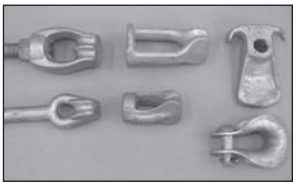
Caution: Contact the cable manufacturer for specific cable capabilities to determine proper sag and tension levels for your system.

Attachment Fittings:
The loop of the FIBERLIGN ADSS Drop Cable Dead-end will fit over a minimum diameter of 1.0" (25 mm) and a maximum diameter of 1-5/8" (41 mm). The dead-end is designed to fit over common guy wire dead-end pole fittings. Thimbles can be used for fittings that may cause high stress in the loop of the dead-end. PLP offers a ½" standard thimble P/N 00065474. Optimal fittings provide proper loop support without a thimble.

Thimble Required



Optimal Fittings – No Thimble Required

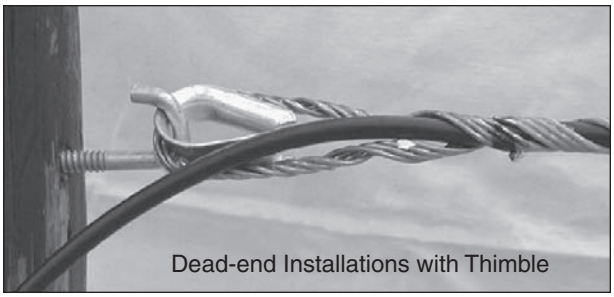


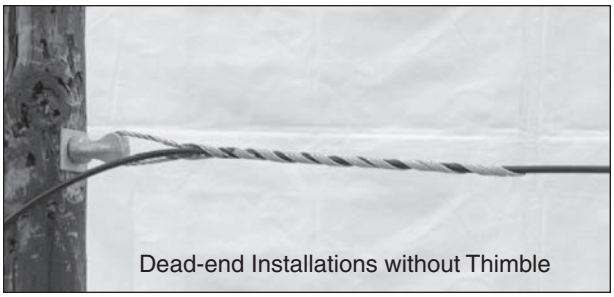
FIBERLIGN® Products for ADSS Applications

FIBERLIGN® ADSS Drop Cable Dead-end continued

ORDERING INSTRUCTIONS

- FIBERLIGN ADSS Drop Cable Dead-end (Round profile) – Select the appropriate FIBERLIGN ADSS Drop cable Dead-end based on the cable diameter – the first catalog table in this section lists the range for each dead-end. If your cable does not fall within any of the published ranges, please contact the PLP for further assistance. Add Suffix code "T" to receive a ½" Galvanized Steel Standard Thimble with the dead-end.
- FIBERLIGN ADSS Drop Cable Dead-end (Flat profile) – FIBERLIGN ADSS Drop Cable dead-ends are listed for the appropriate flat cable design. If your cable does not fall within any of the published ranges, please contact PLP for part number and further assistance. Add Suffix code "T" to receive a ½" Galvanized Steel Standard Thimble with the dead-end.


Dead-end Installations with Thimble


Dead-end Installations without Thimble

FIBERLIGN(R) ADSS Drop Cable Dead-ends – Round Profile

ADSS Drop Dead-end Catalog No.[1]	Cable Diameter Range[2] Inches	mm	Color Code	Length Inches	Units Per Carton	Wt./lbs.
288811285	0.251-0.260	6.4-6.6	Red	18	50	4
288811337	0.301-0.310	7.6-7.9	Red	22	50	8
288811274	0.351-0.360	8.9-9.1	Black	24	50	9
288811269	0.361-0.370	9.2-9.4	Black	22	50	8
288811353	0.371-0.380	9.4-9.6	Yellow	27	50	12

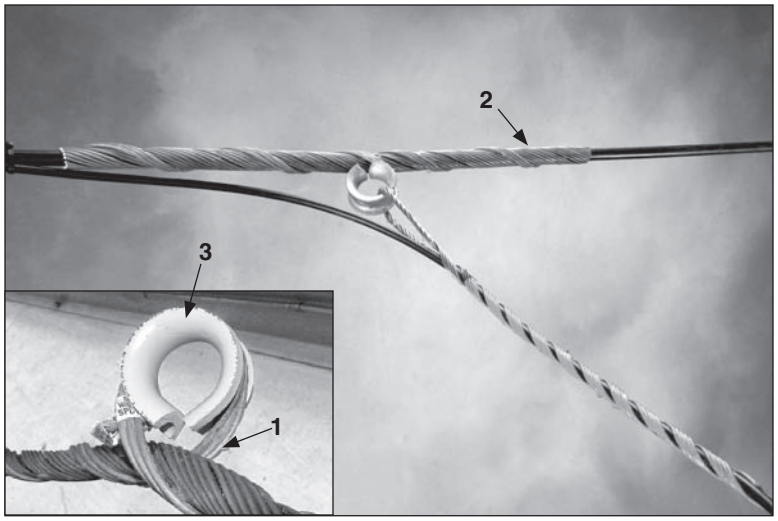
FIBERLIGN(R) ADSS Drop Cable Dead-ends – Flat Profile

ADSS Drop Dead-end Catalog No.[1]	Flat Cable Information[2] Dimension[3] L x W inches (mm)	Mfg.	Color Code	Length Inches	Units Per Carton	Wt./lbs.
288811353	.330 x .172 (8.3 x 4.3)	Corning	Yellow	27	50	12

[1] Add suffix code "T" to dead-end catalog number to receive P/N 00065474 Thimble. P/N 00065474 is a 1/2" standard thimble - weight is 0.12 lbs. each.
[2] Contact PLP for cable applications not shown
[3] Dimensions L x W represent Length x Width of the Flat Cable Cross-section.

FIBERLIGN® Products for ADSS Applications

FIBERLIGN® ADSS Midspan Drop



NOMENCLATURE

1. Midspan Connector
2. Structural Reinforcing Rods
3. Thimble

APPLICATION

If direct attachment from the pole to the premise is obstructed or restricted for clearance reasons, it may be beneficial to re-direct cable drops from mid-span. The FIBERLIGN® ADSS Midspan Drop (FAMD) can be applied anywhere along the backbone cable. The ADSS Backbone cable must be strong enough to endure the system side-load requirements. The FAMD can be loaded to 500# maximum perpendicular load.

The Structural Reinforcing Rods (SRR) protect the ADSS branch cable from excessive bending and allow side-loads without fiber attenuation. The Midspan Connector is installed over the SRR and provides the loop attachment point. A durable PVC thimble reinforces the loop area of the FAMD and provides proper loop support for the joining drop cable dead-ends. No tools are required for installation.

CAPABILITIES

- Connect up to two Cable Drops
- Supports FIBERLIGN® Drop Cable Dead-ends
- Maximum Perpendicular Load 500#

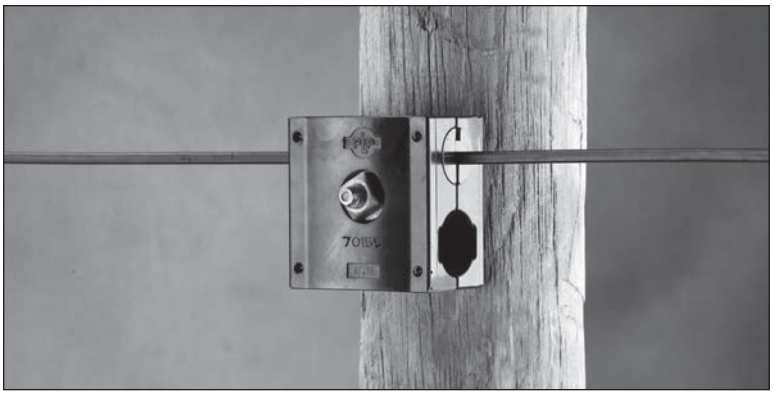
ORDERING INSTRUCTIONS

Select the appropriate FAMD based on the ADSS Branch Cable diameter.

ADSS Midspan Drop			
Catalog Number	Cable Range		Color Code
	Inches	mm	
3800005	.350-.399	8.9-10.1	White
3800006	.400-.450	10.2-11.4	Red
3800007	.451-.509	11.5-12.9	Black
3800008	.510-.575	13.0-14.6	Blue
3800009	.576-.649	14.7-16.5	Orange
3800010	.650-.730	16.6-18.5	Green
3800011	.731-.820	18.6-20.8	Brown
3800012	.821-.920	20.9-23.4	Yellow
3800013	.921-1.007	23.5-25.6	Purple
Overall Length = 27 inches, 685 mm. Thimble Catalog No. 00070253			

FIBERLIGN® Products for ADSS Applications

FIBERLIGN® LITE Support for ADSS Drop Cables



APPLICATION

As referenced in Section 21 of this catalog, the FIBERLIGN® LITE Support (FLS) sizes were expanded to accommodate drop cables. For service drops, the FLS can provide a solution for intermediate pole locations. The FLS is the perfect product for distribution of multiple drop cables in an FTTP system as each FLS can support two cables and the FLS has stackable housings. One 5/8" double arming bolt or through bolt can secure stacked FLS units within the same pole space. This keeps cables neatly secured to the pole.

CAPABILITIES

- Accepts round and flat profile ADSS drop cables
- Span lengths up to 300' nesc heavy
- Line angles up to 20 degrees
- Multi-cable options
- Two cables per housing
- Unbalanced load up to 130 lbs. Depending on cable diameter.
- Stackable housings for 4 or more cables

ORDERING INSTRUCTIONS

- FIBERLIGN LITE SUPPORT (round profile) – Select the appropriate FIBERLIGN ADSS LITE Support based on the cable diameter. For sizes not listed, a table of complete sizes can be found in section 21. Add Suffix code “B1” to receive the banding hardware kit.

- FIBERLIGN LITE SUPPORT (flat profile) – for sizes from (.14" x .28") to (.18" x .44") use Catalog No. 4800107. Metric (3.5mm x 7.1 mm) to (4.5mm x 11.2mm).

Catalog Number	Insert Size	Cable Diameter Range[1]			
		Min. (in)	Max. (in)	Min. (mm)	Max. (mm)
4800107	SMALL	0.250	0.280	6.35	7.12
4800108		0.281	0.304	7.13	7.73
4800109		0.305	0.375	7.74	9.53
480011817	LARGE	0.250	0.280	6.35	7.12
480011818		0.281	0.304	7.13	7.73
480011819		0.305	0.375	7.74	9.53
480011820	DUAL (Small & Large)	0.250	0.280	6.35	7.12
480011821		0.281	0.304	7.13	7.73
480011822		0.305	0.375	7.74	9.53

[1] Round Profile Cable Diameter Range. Flat cables use Catalog No. 4800107.
Sizes up to .700" for the Small Insert and 1.029" for the Large Insert can be found in the earlier section.
Add Suffix Code B1 for banding hardware kit that includes Retaining bolt, washer and lock washer.

FIBERLIGN® Products for ADSS Applications

FIBERLIGN® TANGENT Support for ADSS Drop Cables

APPLICATION

The FIBERLIGN® Tangent Support (FTS) offers another method of supporting ADSS Drop Cables with excellent unbalance load capability and bend relief support. This product is designed to connect directly to J-hooks for a economical alternative. One FTS can reduce pole clutter by replacing two dead-end and j-hook connections.

For multi-cable attachments, a long loop version of the FTS can be provided. This will allow two vertically spaced cables to suspend from the same j-hook.

CAPABILITIES

- Accepts round and flat profile ADSS drop cables
- Span lengths up to 300' NESC heavy
- Line angles up to 20 degrees
- Multi-cable options
- Short loop design standard
- Long loop design for multi-cable
- Unbalanced load
- 100 To 200 lbs. Depending on cable dia.

FEATURES AND MATERIALS

- HIGH Strength Stainless Steel
- Relieved Rod ends – safe against cable jacket
- Elastomer Coating for soft pliable interface

ORDERING INSTRUCTIONS

- FIBERLIGN Tangent Support (Round profile) – Select the appropriate FIBERLIGN Tangent Support based on the cable diameter. Contact PLP technical support for sizes not listed.
- FIBERLIGN Tangent Support (Flat profile) – Select the appropriate FIBERLIGN Tangent Support based on the Cable information referenced. Contact PLP technical support for sizes not listed.

FIBERLIGN® Tangent Supports for Round Cable Profile

Catalog No.	Cable Range (inches)		Cable Range (mm)		Color Code	Overall Length (inches)	Overall Length (mm)
6126001	.251	.260	6.4	6.6	Red	20	508
6126002	.261	.270	6.7	6.9	Blue	21	533
6126003	.271	.280	6.8	7.1	Green	21	533
6126004	.281	.290	7.2	7.4	Black	22	559
6126005	.291	.300	7.5	7.6	Purple	22	559
6126006	.301	.310	7.7	7.9	Yellow	23	584
6126007	.311	.320	8.0	8.1	Orange	24	610
6126008	.321	.330	8.3	8.4	Red	25	635
6126009	.331	.341	8.5	8.7	Blue	25	635
6126010	.342	.350	8.8	8.9	Green	26	660
6126011	.351	.360	9.0	9.1	Black	27	686
6126012	.361	.370	9.2	9.4	Purple	28	711
6126013	.371	.380	9.5	9.7	Yellow	29	737
6126014	.381	.390	9.8	9.9	Orange	30	762

FIBERLIGN® Tangent Supports for Flat Cable Profile

Catalog No.	Flat Cable Information Cable Range (mm)		Color Code	Overall Length (inches)	Overall Length (mm)
	Dimension LxW inches (mm)	Mfg.			
6126009	.31 x .15 (7.8 x 3.7)	DRAKA Comteq	Blue	25	635
6126010	.31 x .15 (7.8 x 4.3)	OFS	Green	24	610
6126012	.33 x .17 (8.5 x 4.3)	Corning	Purple	28	711
6126013	.33 x .20 (8.5 x 5.0)	Pirelli	Yellow	29	736

FIBERLIGN® Products for Figure 8 Drop Cable Applications

GENERAL INFORMATION

Figure 8 cables designed for the last mile are relatively small and have very low load requirements for pole-to-pole distribution and pole-to-premise service drops. Distribution span lengths are typically less than 300' and service drops are typically less than 150'. Figure 8 type drop cables are typically supported with metallic strength members and protected by an outer plastic sheath. A web joins the messenger component to the fiber optic component. This section covers attachment hardware products for Figure 8 Drop cables.

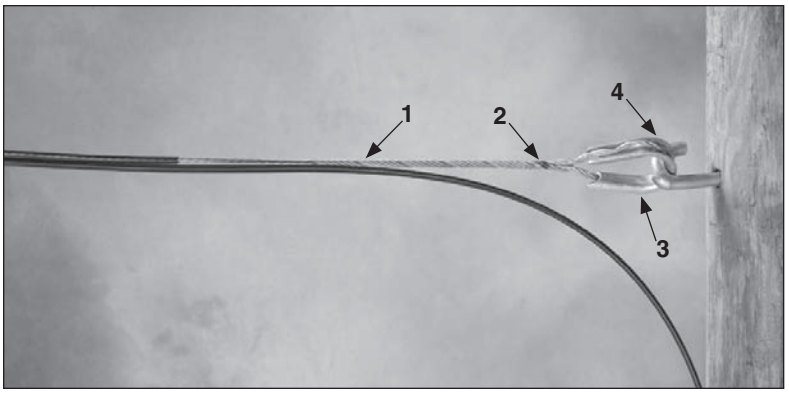
Messenger materials vary from galvanized steel to stainless steel material.

FIBERLIGN Products for ADSS include:

- FIBERLIGN® Drop Cable Dead-end
- FIBERLIGN® LITE Support
- FIBERLIGN® Tangent Support

FIBERLIGN® Products for Figure 8 Drop Cable Applications

FIBERLIGN® Figure 8 Drop Cable Dead-end



NOMENCLATURE

1. Dead-end
2. Crossover Mark
3. Thimble
4. Loop

APPLICATION

The FIBERLIGN® FIGURE 8 Drop Cable Dead-end has high strength in a light-weight package. Simple to install, the dead-end is applied on the messenger component of the Figure 8 cable after separating the fiber component at the web.

Depending on the jacket adherence, the dead-end may be applied over the jacket or onto the bare messenger after the jacket is removed.

Materials:
FIBERLIGN FIGURE 8 Drop Cable dead-ends are made from corrosion resistant materials that match the messenger strand material.

Attachment Fittings:
The loop of the FIBERLIGN FIGURE 8 Drop Cable Dead-end will fit over a minimum diameter of 1.0" (25 mm) and a maximum diameter of 1-5/8" (41 mm). The dead-end is designed to fit over common guy wire dead-end pole fittings. Thimbles can be used for fittings that may cause high stress in the loop of the dead-end. PLP offers a 1/2" standard thimble P/N 00065474. Optimal fittings provide proper loop support without a thimble.

ORDERING INSTRUCTIONS

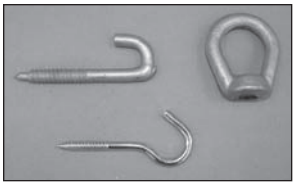
Select the appropriate dead-end based on the cable diameter. If your cable does not fall within any of the published ranges, please contact the PLP for further assistance. Add Suffix code "T" to receive a 1/2" Galvanized Steel Standard Thimble with the dead-end.

FIBERLIGN® Figure 8 Drop Cable Dead-ends

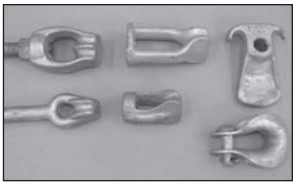
Catalog No.[1]	Cable Information[2] Dimension[3] L x W in. (mm)	Mfg.	Color Code	Length Inches
699911619[4]	.380 x .160 (9.6 x 4.1)	Corn-ing	Yellow	13"
200811230	.300 x .170 (7.6 x 4.3)	Pirelli	Red	8"

[1] Add suffix code "T" to dead-end catalog number to receive P/N 00065474 Thimble. P/N 00065474 is a 1/2" standard thimble – weight is 0.12 lbs. each.
[2] Contact PLP for cable applications not shown
[3] Dimensions L x W represent Length x Width of the Figure 8.
[4] Apply over jacket

Thimble Required

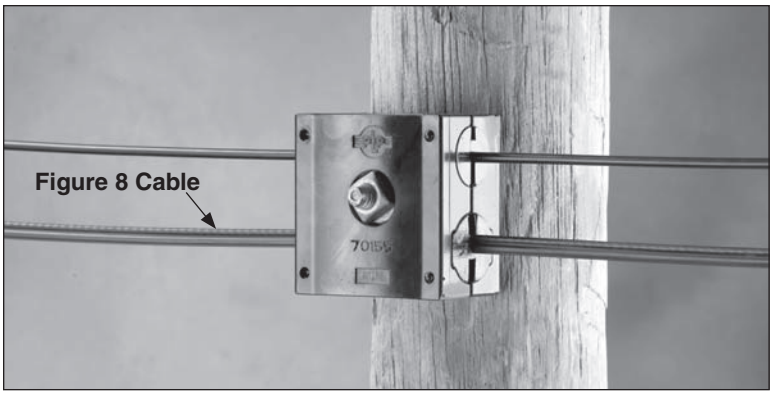


Optimal Fittings – No Thimble Required



FIBERLIGN® Products for Figure 8 Drop Cable Applications

FIBERLIGN® LITE Support for FIGURE 8 Drop Cables



Lite Support with dual inserts showing figure 8 and round drop cables.

APPLICATION

As referenced in Section 21 of this catalog, the FIBERLIGN® LITE Support (FLS) sizes were expanded to accommodate drop cables. For service drops, the FLS can provide a solution for intermediate pole locations. The FLS is the perfect product for distribution of multiple drop cables in an FTTP system as each FLS can support two cables and the FLS has stackable housings. One 5/8" double arming bolt or through bolt can secure stacked FLS units within the same pole space. This keeps cables neatly secured to the pole.

CAPABILITIES

- Secures most figure 8 cable in soft one-piece insert.
- Span lengths up to 300' NESC heavy.
- Line angles up to 20 degrees.
- Two cables per housing.
- Stackable housings for 4 or more cables.

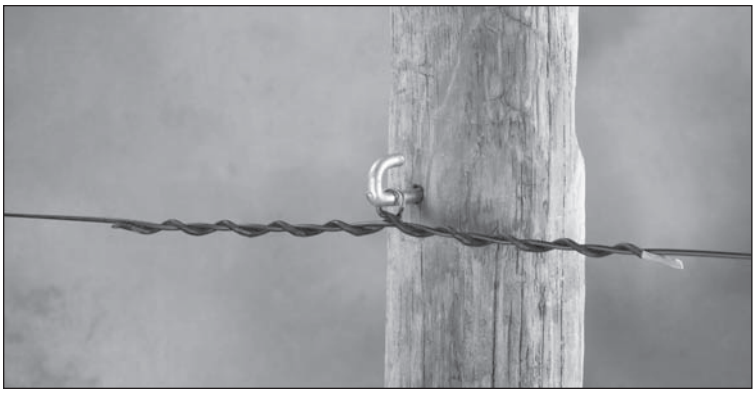
ORDERING INSTRUCTIONS

Small and Large inserts are offered. A Dual insert kit is available as well. Most all available Figure 8 cables can be accomodated with the insert designs listed below.

Catalog Number	Insert Size	Cable Dimension			
		Min. L X W (in)	Max. L X W (in)	Min. L X W (mm)	Max. L X W (mm)
4800107	SMALL	.3 x .16	.44 x .18	7.6 x 4.1	11.2 x 4.6
480011817	LARGE	.3 x .16	.44 x .18	7.6 x 4.1	11.2 x 4.6
480011820	DUAL (Small & Large)	.3 x .16	.44 x .18	7.6 x 4.1	11.2 x 4.6
Add Suffix Code B1 for banding hardware kit that includes retaining bolt, washer and lock washer.					

FIBERLIGN® Products for Figure 8 Drop Cable Applications

FIBERLIGN® Tangent Support for Figure 8 Drop Cables



APPLICATION

The FIBERLIGN® Tangent Support (FTS) offers another method of supporting FIGURE 8 Drop Cables with excellent unbalance load capability and bend relief support. This product is designed to connect directly to J-hooks for a economical alternative. One FTS can reduce pole clutter by replacing two dead-end and j-hook connections.

For multi-cable attachments, a long loop version of the FTS can be provided. This will allow two vertically spaced cables to suspend from the same j-hook.

CAPABILITIES

- Accepts figure 8 cable and flat profile ADSS drop cables
- Span lengths up to 300' NESC heavy
- Line angles up to 20 degrees
- Multi-cable options
- Short loop design standard
- Long loop design for multi-cable
- Unbalanced load
- 100 to 200 lbs. depending on cable dia.

FEATURES AND MATERIALS

- HIGH Strength Stainless Steel
- Relieved Rod ends – safe against cable jacket
- Elastomer Coating for soft pliable interface

ORDERING INSTRUCTIONS

Select the appropriate FIBERLIGN Tangent Support based on the cable diameter. Contact PLP technical support for sizes not listed.

FIBERLIGN® Tangent Supports for Figure 8 Cable

Catalog Number	Cable Information Cable Range (mm) Dimension LxW inches (mm)	Mfg.	Color Code	Overall Length inches (mm)
6126009	.300 x .170 (7.6 x 4.3)	Pirelli	Blue	25 (635)
6126015	.380 x .160 (9.6 x 4.1)	Corn-ing	Red	31 (787)