



FIBERLIGN® Lite Support

For use on all Dielectric Self-Supporting (ADSS) Fiber Optic Cable.

Be sure to read and completely understand this procedure before applying product. Be sure to select the proper PREFORMED™ product before application.

1.00 NOMENCLATURE (Figure 1)

1. Housing Halves (2)
- 2a. Small Cushion Insert (1)
- 2b. Large Cushion Insert (2)
3. Hardware Kit for Banding Applications (optional). Includes: 5/8"-11 x 4" long carriage bolt, 5/8" round washer, lock washer and 5/8"-11 nut.

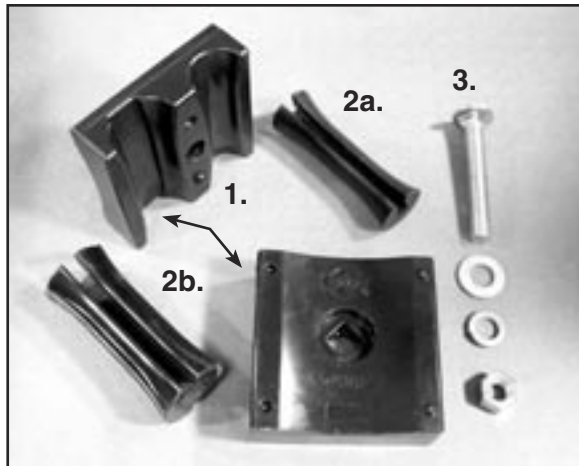


FIGURE 1: KIT CONTENTS & NOMENCLATURE

2.00 DESCRIPTION

2.01 The FIBERLIGN Lite Support (FLS) system is designed for low voltage environment, short span (300' [91.4 m]), low tension ADSS fiber optic applications. Consult PLP for suitability of the FLS unit for each application to determine whether it meets structural loading requirements. NOTE: If loads are too high, PLP has alternative hardware recommendations.

2.02 PLP developed special inserts to accommodate ADSS drop cables in round, flat and figure 8 styles. See the tables in Section 8 of this procedure for cable diameter ranges.

2.03 The FLS housing is made from high strength composite material that is extremely resistant to abrasion. It can be used as a replacement for a stringing traveler during stringing and sagging operations.

3.00 INSTALLATION ISSUES

3.01 The Cushion Insert of an FLS is molded for a specific cable OD range and should be used only on cables within that range. The numeric range is molded in the end of each insert for reference.

3.02 Unbalanced Loading: The FLS cushion inserts provide gentle gripping and low longitudinal holding strength depending upon the specific cable. CONSULT PLP FOR SPECIFICS. PLP can provide other products for increased capability including the FIBERLIGN Dielectric Support, FIBERLIGN MIDspan Support/Suspension, and FIBERLIGN Dielectric Suspension.

3.03 Through-bolt: For mounting the FLS, select a 5/8"-11 (M16) through-bolt of sufficient length and insert into the pole at a right angle to the line for tangent lines, or bisect the angle on angled structures. The FLS has a hole (see Figure 1) through the center of the housing. The assembly is captured with appropriate washers and nut against the pole.

Banding: A banding groove (see Figure 1) is molded in the large cavity of the FLS housing to mount one half of the FLS against the structure. The other housing half is retained with a 4" (100 mm) carriage bolt, round washer, lock washer and nut. Position the housing as described for the through-bolt, i.e., perpendicular to the tangent lines or bisect the angle on an angled structure.

3.04 Stringing Cable: The large molded cavity of the FLS can be used for stringing-in cable. This cavity (without the cushion insert) provides enough clearance for a pulling-in rope and swivel assembly typically used in field installations. The smooth surfaces of the FLS cause little friction, thus enabling use as a stringing device.

3.05 Maximum Line Angle: When used as a stringing device, the maximum recommended sag or line angle of the FLS is approximately 10 degrees for most ADSS cables. When used as a permanent installation, the maximum recommended sag or line angle is approximately 20 degrees for most cables. These recommended sag and angle limits can be effected by cable size, brand, stringing tension and loading conditions. CONSULT PLP FOR EXCEPTIONS WHEN GREATER ANGLES ARE REQUIRED.

3.06 For Safety Considerations please refer to the end of this application procedure.

4.00 APPLICATION: BOLTED INSTALLATION

4.01 Install a standard 5/8" (M16) through-bolt on the pole or structure. The bolt should be long enough to provide a minimum of 4" (100 mm) of exposed thread. (Figure 2)

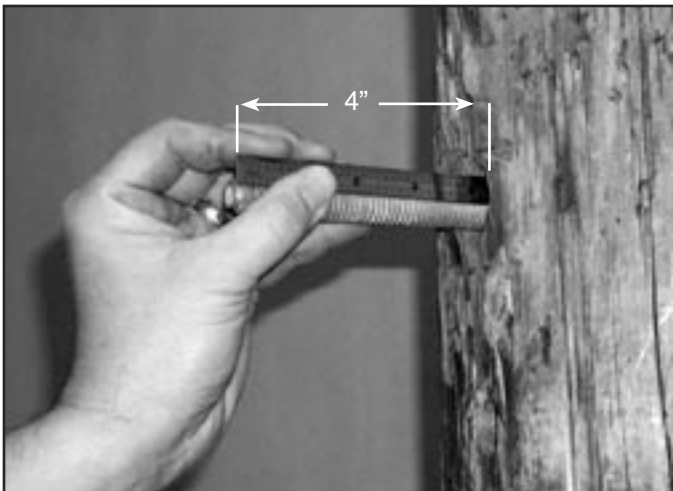


FIGURE 2 - MINIMUM THROUGH-BOLT CLEARANCE

4.02 The FLS housing halves are identical each containing a molded slip-through mounting hole. Slip both housing halves onto the 5/8" (M16) through-bolt. Loosely capture the housing halves with a 5/8" (M16) flat washer, 5/8" (M16) lock washer and 5/8" (M16) nut. (Figure 3)



FIGURE 3 - LEAVE HOUSING HALVES LOOSE

4.03 For permanent installations, align the cushion insert with the FLS housing and ADSS cable to determine the approximate insert location on the cable. The width of the open slot that runs the full length of the insert is slightly smaller than the cable diameter. Place the slot of the insert against the cable and carefully squeeze the insert into position with one hand while supporting the cable with your other hand. (Figure 4)



FIGURE 4 - ONE HAND SQUEEZES CABLE INTO INSERT AND THE OTHER HAND SUPPORTS THE CABLE AND PRESSES INSERT WITH THUMB

Orient the slot of the insert upward. (Figure 5)
Once in place, the insert will hold its position on the cable.

CAUTION: Orienting the slot of the cushion insert upward is designed to provide the proper support for the cable.



FIGURE 5 - ORIENT AND INSERT WITH SLOT UPWARD

4.04 Lift the cushion insert with the cable into the proper cavity of the FLS housing. The small cavity accepts cable diameters up to .699" (17.8 mm) and the large cavity accepts cable diameters up to 1.029" (26.1 mm). Slide the housing halves against the structure to keep the insert and cable in position, and then tighten the nut snug against the housing.

4.05 Torque the nut to 30 ft-lbs (41Nm) maximum against the housing to complete the installation. (Figure 6)



FIGURE 6 - TORQUE TO 30 FT-LB

5.00 APPLICATION: BANDED

5.01 Each housing half has a molded groove (see Figure 1) in the large cavity that will accept a 3/4" (19 mm) metal band. Install the designated band loosely on the pole or structure and apply tape to hold position if necessary.

5.02 Install the carriage bolt into the housing half that will be banded against the structure. The housing hole is molded to accept a standard carriage bolt and prevent it from turning. You may tape over the carriage bolt-hole to keep it in place during assembly. (Figure 7)

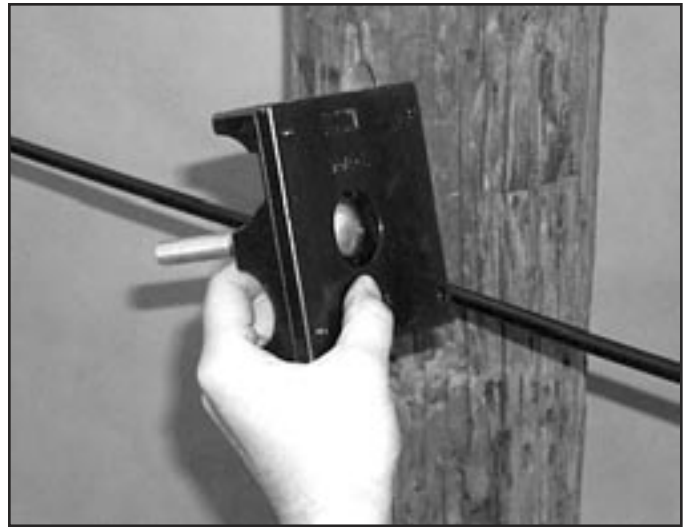


FIGURE 7 - INSTALL CARRIAGE BOLT

- 5.03** Capture the housing half against the structure with the band and tighten the band to the manufacturers' recommended torque level. Be sure that the band rests completely inside the molded groove. (Figure 8)

PLP TIP: You may temporarily tape the band against the housing half during this step, but be sure to remove the tape once the half is tight against the structure.



FIGURE 8 - BAND HOUSING HALF TO POLE

- 5.04** Slip the second housing half onto the protruding carriage bolt and install the flat washer, lock washer and nut. Leave the nut loose near the end of the bolt for installation of the insert. (Figure 9)



FIGURE 9 - INSTALL NUT AND LEAVE HOUSINGS LOOSE

- 5.05** For permanent installations, align the cushion insert with the FLS housing and ADSS cable to determine the approximate insert location on the cable. The width of the open slot that runs the full length of the insert is slightly smaller than the cable diameter. Place the slot of the insert against the cable and carefully squeeze the insert into position with one hand while supporting the cable with your other hand. (Figure 4)

Orient the slot of the insert upward. (Figure 5)
Once in place, the insert will stay on the cable.

CAUTION: Orienting the slot of the cushion insert upward is designed to provide the proper support for the cable.

- 5.06** Lift the cushion insert with the cable into the proper cavity of the FLS housing. The small cavity accepts cable diameters up to .699" (17.8 mm) and the large cavity accepts cable diameters .700" (17.9 mm) and above. Slide the second housing half against the banded housing half to keep the insert and cable in position and then tighten the nut snug against the housing.
- 5.07** Torque the nut to 30 ft-lbs (41 Nm) maximum against the housing to complete the installation. (Figure 10)



FIGURE 10 - TORQUE TO 30 FT-LBS (41Nm)

6.00 STACKING THE FLS

- 6.01 The construction of the FLS allows for another support to be "stacked" against the to hold additional cables. (Figure 11)



FIGURE 11 - STACKED FLS

- 6.02 For a stacked bolted configuration, a standard 5/8" (M16) through-bolt is also required. This bolt must provide 7" (178 mm) of exposed length (i.e. length beyond the pole diameter) to accommodate both FLS housings. To install the first FLS, follow the "Bolted" application in Section 4.0 using the longer through-bolt. Once the first FLS is installed and tightened to the pole, the second FLS can be "stacked" against the first and installed in the same manner.

NOTE: On the exterior face of each housing there are four alignment points near the corners of the housing - two are small bumps (nodules) and two are small holes (divots). After securing the first FLS to the pole, the second FLS is aligned by engaging the corner alignment points. (Figure 12)



FIGURE 12 - SECOND FLS INSTALLATION AGAINST THE FIRST

- 6.03 For a stacked banded configuration, a longer carriage bolt 5/8"-11 x 7" (16 m x 178 mm) is required to attach the second FLS to the first. To install the first FLS, follow the "Banded" application in Section 5.0 using the longer carriage bolt. Once the first FLS is installed and tightened to the pole, the second FLS can be "stacked" against the first and installed according to the "Bolted" application in Section 4.0. See section 6.02 regarding four alignment points.

7.00 FLS USED AS A STRINGING DEVICE

NOTE: The maximum line or sag angle for stringing with the FLS is approximately 10 degrees for most ADSS cables.

- 7.01 After installing the housing halves onto the through-bolt or carriage bolt (for banded applications) lay or feed the cable or stringing rope into the empty housing cavity without the inserts. The housings must be tightened against the structure to keep the cable within the smooth surfaces of the insert cavity (20 ft-lbs is adequate for this step). The largest cable, rope, or pulling-in grip that will move freely though the cavity is approximately 1-1/4" diameter. (Figures 13a & 13b)



FIGURE 13a - STRINGING THROUGH LARGE CAVITY



FIGURE 13b - STRINGING THROUGH LARGE CAVITY WITH BANDED FLS

7.02 Once the cable stringing operation is completed, loosen the 5/8" - 11 (M16) nut to free the cable from the cavity and proceed with cushion insert "permanent installation" as described in Section 4.0 for bolted applications or 5.0 for banded applications

8.00 FLS CATALOG NUMBERS & CABLE RANGES

8.01 FLS's have been designed for various types of ADSS and Fiber Optic Drop Cables. As referenced above, the FLS will support 300' (984 m) span lengths for ADSS Short Span cables. FLS catalog numbers for ADSS Short Span cables are shown in Table 1.

TABLE 1 - FIBERLIGN LITE SUPPORTS FOR ADSS SHORT SPAN CABLE					
Catalog Number	Insert	Cable Diameter Range			
		Size	Min (in)	Max (in)	Min (mm)
4800110	S M A L L	.400	.429	10.2	10.8
4800111		.430	.459	10.9	11.6
4800112		.460	.489	11.7	12.4
4800113		.490	.519	12.5	13.1
4800114		.520	.549	13.2	13.9
4800115		.550	.579	14.0	14.7
4800116		.580	.609	14.8	15.4
4800117		.610	.639	15.5	16.2
4800118		.640	.669	16.3	16.9
4800119		.670	.699	17.0	17.8
4800120	L A R G E	.700	.723	17.9	18.3
4800122		.724	.779	18.4	19.7
4800124		.780	.834	19.8	21.1
4800126		.835	.889	21.2	22.5
4800128		.890	.944	22.6	23.9
4800130		.945	.999	24.0	25.4
4800132			1.00	1.054	25.5

8.02 Aerial Fiber Optic Drop Cables are typically strung directly from the pole to the premise. There are areas however that require pole-to-pole distribution of drop cables. Span lengths are typically 150' maximum (45.7 m) in these areas. Aerial Fiber Optic Drop cables are available in various cross sections including round, flat, and figure 8 styles. Round and flat drops are typically made from all dielectric materials, and the figure 8 drop typically has a metallic strength member. Catalog numbers are listed in tables 2 - 4 according to cable cross section and diameter range.

TABLE 2 - FIBERLIGN LITE SUPPORTS FOR ROUND DROP CABLE					
Catalog Number	Insert Size	Cable Diameter Range			
		Min (in)	Max (in)	Min (mm)	Max (mm)
4800107	SMALL	.250	.280	6.35	7.12
4800108		.281	.304	7.13	7.73
4800109		.305	.375	7.74	9.53
480011817	LARGE	.250	.280	6.35	7.12
480011818		.281	.304	7.13	7.73
480011819		.305	.375	7.74	9.53
480011820	DUAL (Small & Large)	.250	.280	6.35	7.12
480011821		.281	.304	7.13	7.73
480011822		.305	.375	7.74	9.53

TABLE 3 - FIBERLIGN LITE SUPPORTS FOR FLAT DROP CABLE					
Catalog Number	Insert Size	Cable Diameter Range			
		Min L x W (in)	Max L x W (in)	Min L x W (mm)	Max L x W (mm)
4800107	SMALL	.14 x .28	.18 x .44	3.5 x 7.1	4.6 x 11.2

TABLE 4 - FIBERLIGN LITE SUPPORTS FOR FIGURE 8 DROP CABLE					
Catalog Number	Insert Size	Cable Diameter Range			
		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

SAFETY CONSIDERATIONS

This application procedure is not intended to supersede any company construction or safety standards. This procedure is offered only to illustrate safe application for the individual.
FAILURE TO FOLLOW THESE PROCEDURES MAY RESULT IN PERSONAL INJURY OR DEATH.

Do not modify this product under any circumstances.

This product is intended for use by trained technicians only. **This product should not be used by anyone who is not familiar with, and not trained to use it.**

When working in the area of energized lines, extra care should be taken to prevent accidental electrical contact.

For proper performance and personal safety, be sure to select the proper size PREFORMED™ product before application.

PREFORMED products are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.



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P.O. Box 91129, Cleveland, Ohio 44101 • 440.461.5200 • www.preformed.com • e-mail: inquiries@preformed.com

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