



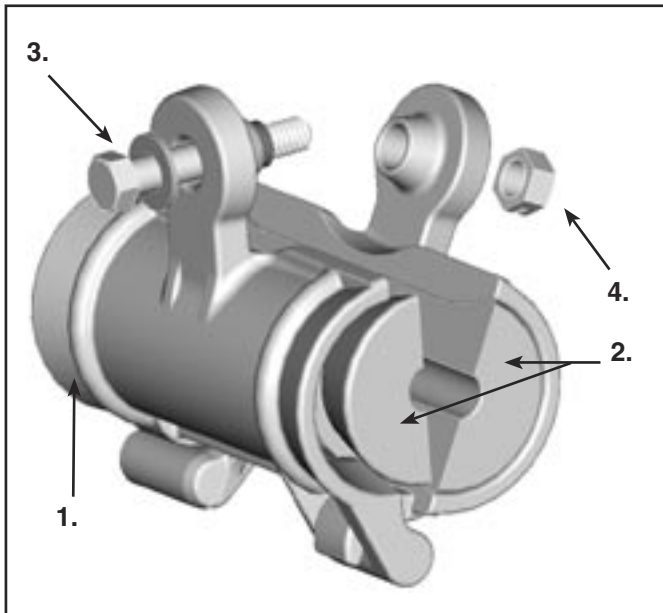
# FIBERLIGN® Aluminum Suspension for ADSS

For use on All-Dielectric Self Supporting (ADSS) Fiber Optic Cables

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

## 1.00 NOMENCLATURE

1. Keeper halves, 1 pair
2. Cushion inserts (with or without grit), 1 pair
3. Captured bolt and washer (captured with grommet)
4. Lock Nut
5. Structural reinforcing rods see [optional, not shown] Figure 2
6. 1/2" (13 mm) shackle with 5/8" eye nut [optional, not shown]



**FIGURE 1 - NOMENCLATURE**

## 2.00 DESCRIPTION

**2.01** The FIBERLIGN Aluminum Suspension (FASN) is a tangent suspension hardware designed for:

- a) Short span, low tension ADSS fiber optic cable installations without SRR; and
- b) Medium span, medium tension ADSS installations with SRR.

The keepers are joined with an interlocking hinge that allows easy access to the cavity area. Cushion inserts made from soft polyurethane, capture and secure the cable firmly without causing excess pressure. SRR allow greater line angles and longer span lengths. (Figure 2)



**FIGURE 2 - FASN WITH RODS, SHACKLE & EYE-NUT**

**2.02** Span Length Capabilities:

1. Without SRR: Maximum Span 600' (183 m)
2. With SRR: Maximum Span 1200' (366 m)

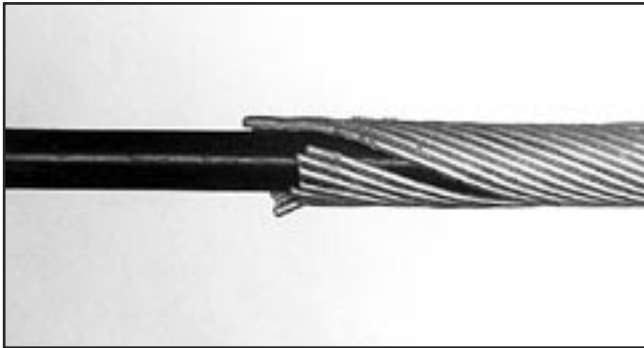
For longer spans and higher longitudinal holding requirements, PLP offers the dual rod layer FIBERLIGN Dielectric Suspension. Consult PLP for further details.

## 3.00 GENERAL NOTES

**3.01** The Cushion insert of an FASN is molded for a specific cable OD range and should be used only on cables within that range. A reference number is cast into the end of each insert for identification of the appropriate cable od range.

**3.02** The SRRs are formed for a specific cable OD range and should be used only on cables within that range. The cushioned inserts of the FASN with SRR are molded and gritted to fit over the applied SRR layer.

**3.03** Rod End Treatment: the SRRs are slightly flared away from the cable surface, which is designed to avoid scratching, gouging, or nicking of the plastic jacket during installation, unbalanced loading, or cable motion. (Figure 3)



**FIGURE 3 - FLARED ROD ENDS**

**3.04** **Unbalanced Loading:**  
Without Rods - The FASN has modest longitudinal holding capability provided via compression of the non-gritted inserts on the cable. Specific values are dependent upon cable brand, internal construction and diameter. CONSULT PLP FOR SPECIFICS.

With Rods - The FASN with SRR has substantial longitudinal holding capabilities provided via insert compression and the reactive radial forces developed by the SRR. Holding is enhanced with grit on the inserts and SRR.

**3.05** **Mounting Options:**  
Upon closing the keepers, a clevis is formed that will accept a 1/2" (13 mm) anchor shackle (e.g. PLP's Catalog No. AS-5L). This anchor shackle can be connected to an eye-bolt on the structure. PLP offers an optional suspension accessory kit that includes an anchor shackle and 5/8" eye nut - which attaches to a 5/8" - 11 through bolt (see ordering instructions for detail). (Figures 4 & 5)



**FIGURE 4 - EYE NUT 5/8" & ANCHOR SHACKLE OPTION**



**FIGURE 5 - FASN INSTALLED WITH EYE NUT 5/8" & ANCHOR SHACKLE OPTION**

**Bolted:** For both eye bolts or double arming bolts drill through the pole at a right angle to the line for tangent lines, and bisect the angle on angled structures. An eye-bolt larger than 5/8" (16 mm) may be used with the anchor shackle.

**Banding:** The FASN can be mounted to a concrete or metal pole with a 1-1/4" (32 mm) wide x .040" (1 mm) thick metal band. A banding bracket accessory can be ordered with 5/8" eye-nut (Figure 6). Consult PLP for specific recommendations. Position the bracket to secure the cable in-line for tangent lines and bisecting the angle on angled structures. (Figure 6)



**FIGURE 6 - BANDED APPLICATION**

**3.06 Maximum Line angle:**

The maximum recommended line angle is 30 degrees. Two units can be used to turn larger angles up to 60 degrees. Double dead-ending is another option for large angles.

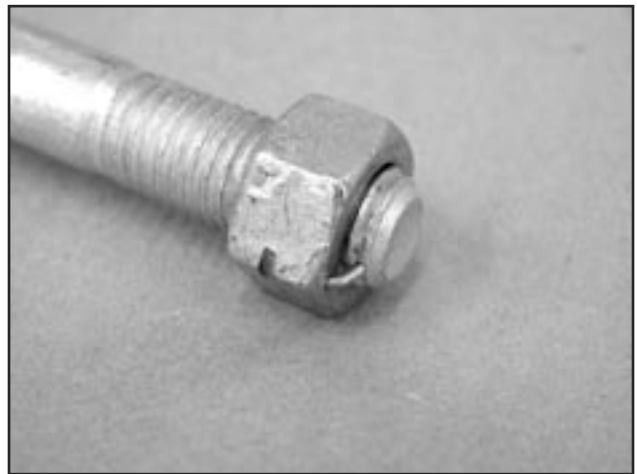
**3.07 Component Reuse:**

**Hardware** - The keepers can be reused if in good condition.

**Fasteners** - The lock-nut has a stiff wire locking mechanism designed to engage with the thread of the mating bolt (Figure 7). This is used once for permanent installation. After permanent installation, it can be removed by deforming the wire, but should be replaced with a similar nut or standard nut and lock washer. The bolt may be reused if in good condition.

**Cushioned Inserts** - If there are any signs of scratches, gouges, tears or other damage to the bore of the insert pair, replace with new inserts.

**Structural Reinforcing Rods** - Do not reuse SRRs after permanent installation. SRRs may be removed and reinstalled once during initial installation to reposition the unit if necessary.



**FIGURE 7: LOCK NUT**

**4.00 APPLICATION: WITHOUT SRR**

**4.01** Determine the location for proper attachment and install the bolt or banding bracket. The shackle may be installed onto the structure by pinning it to the eye-bolt or eye-nut (Figures 4 and 5).

**4.02** The FASN is assembled at the factory with the lock nut partially engaged but not locked against the bolt. Remove the lock nut temporarily to partially open the keepers enough to accept the ADSS cable. Ensure that the cushioned inserts lay flush against the keeper cavities. Figure 8 shows how the inserts can be lifted out of the cavity. Lay the cable into the groove of the cushion insert. (Figure 9)



**FIGURE 8: UNGRITTED CUSHION INSERTS IN OPEN KEEPERS**



**FIGURE 9: LAYING CABLE INTO GROOVE OF INSERT**

**4.03** Position the FASN for proper elevation and close the keepers onto the cable and anchor shackle. Begin installation of the nut by hand. (Figure 10)



**FIGURE 10: INSTALL LOCK NUT**

**4.04** Tighten the nut until fully engaged when the Belleville washer becomes flat or torque reaches 10 ft-lbs (13.6 Nm). (Figure 11)



**FIGURE 11 - INSTALLATION COMPLETED**

## **5.00 APPLICATION: WITH RODS**

**5.01** Determine the location for proper attachment and install the bolt or banding bracket. The shackle may be installed onto the structure by pinning it to the eye-bolt or eye-nut (Figure 4).

**5.02** Mark the ADSS cable at the center of the attachment point on the structure. Use a felt marking pen or lumber crayon; do not scratch the ADSS jacket. This will be the reference mark for positioning the SRR on the cable. (Figure 12)



**FIGURE 12 - MARK ADSS**

**5.03** The SRRs are divided into subsets for ease of application. If subsets have an unequal number of rods, use higher count subsets first. (This will allow easier installation of the last subset). Align the SRR center colormark of the first subset to your applied mark on the cable. (Figure 13)

Proceed to wrap subset around and onto the cable from the center to either side. Once the subset is started, it helps to pull the loose end of the subset away from the cable as you continue to wrap. Continue to wrap the subset completely onto the ADSS cable. (Figure 13)



**FIGURE 13 - ALIGN FIRST SUBSET**

**5.04** Align the center mark of the second subset with the first subset. (Figure 14)



**FIGURE 14 - APPLY SECOND SUBSET**

**5.05** Wrap the second subset on the cable.

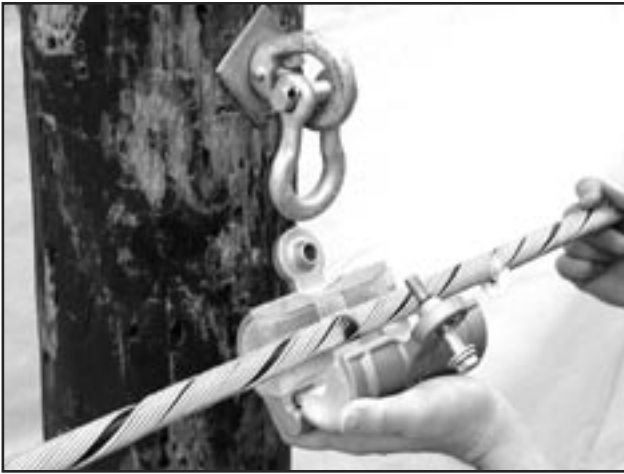
**PLP TIP:** To aid installation, wrap a subset on the cable into the previously applied subset. Wrapping away from the previously applied subset can increase the gap between subsets and cause application problems at the ends of the unapplied subsets.

**5.06** Apply the remaining subsets as outlined in steps 5.04 and 5.05. (Figure 15). For a strong layer of reinforcement, ensure that rods are not crossed and that all rods are evenly spaced. **MAKE SURE ALL ROD ENDS ARE IN PLACE.** Do not use tools that can damage the cable jacket.



**FIGURE 15 - STRUCTURAL REINFORCING RODS INSTALLED**

**5.07** The FASN is assembled at the factory with the lock nut partially engaged but not locked against the bolt. Remove the lock nut temporarily to partially open the keepers enough to accept the ADSS cable. Ensure that the gritted cushion inserts lay flush against the keeper cavities. Lay the SRR protected cable into the groove of the cushion insert. (Figure 16)



**FIGURE 16 - LAYING CABLE INTO INSERTS**

**5.09** Position the FASN for proper elevation, close the keepers onto the cable and anchor shackle. Begin installation of the nut by hand. (Figure 17)



**FIGURE 17 - INSTALL LOCK NUT**

**5.10** Tighten the nut until fully engaged, evident when the Belleville washer becomes flat or torque reaches 10 ft-lbs (13.6 Nm). (Figure 18)



**FIGURE 18 - WRENCH TIGHTEN - FLATTEN LOCK WASHER**

## 6.00 ORDERING INSTRUCTIONS

Refer to the catalog tables below (with or without rods) and select the appropriate FASN for the ADSS cables outside diameter.

Add suffix code "S" to include anchor shackle with 5/8" eye-nut (Cat. No. 710010357) option.

Order Cat. No. 710010577 to receive the Limited Tension Banding Bracket – see paragraph 3.05 for details.

Order Cat. No. 710010016 to receive a 4' (1.3 m) long #4 (7W) copper with terminal on one end.

Order Catalog No. 710010294 to receive a 4' (1.2 m) long 4/0 (7W) aluminum conductor with terminal on one end.

FASN Kit With Structural Reinforcing Rods					
ADSS Cable Range					
Catalog Number*	Min Inches (mm)	Max Inches (mm)	Rod Length Inches (mm)	Rod Diameter (mm) Inches	Color Code
4470199	0.426 (10.8)	0.475 (12.0)	30 (762)	.100 (2.5)	Green
4470200	0.476 (12.1)	0.500 (12.7)	33 (838)	.100 (2.5)	Red
4470201	0.501 (12.8)	0.550 (14.0)	34 (864)	.100 (2.5)	Blue
4470202	0.551 (14.1)	0.625 (15.9)	34 (864)	.100 (2.5)	Black
4470203	0.626 (16.0)	0.700 (17.8)	35 (889)	.100 (2.5)	Orange
4470204	0.701 (17.9)	0.737 (18.7)	36 (914)	.119 (3)	Green
4470205	0.738 (18.9)	0.812 (20.6)	36 (914)	.119 (3)	Pink
4470206	0.813 (20.7)	0.887 (22.5)	37 (940)	.119 (3)	Purple
4470207	0.888 (22.6)	0.962 (24.4)	37 (940)	.119 (3)	White
4470208	0.963 (24.5)	1.037 (26.3)	37 (940)	.119 (3)	Yellow
4470209	1.138 (26.4)	1.112 (28.2)	38 (965)	.119 (3)	Brown
4470210	1.113 (28.3)	1.87 (30.1)	39 (991)	.119 (3)	Red

\*Add suffix "S" to Catalog No to include one #AS-SL anchor shackle and 5/8" eye-nut

FASN Kit Without Structural Reinforcing Rods				
Catalog Number*	ADSS Cable Range			
	Min (in)	Max (in)	Min (mm)	Max (mm)
4450195	0.226	0.275	5.7	6.9
4450196	0.276	0.325	7.0	8.2
4450197	0.326	0.375	8.3	9.4
4450198	0.376	0.425	9.5	10.7
4450199	0.426	0.475	10.8	12.0
4450200	0.476"	0.525"	12.1	13.3
4450201	0.526"	0.575"	13.4	14.6
4450202	0.576"	0.625"	14.7	15.9
4450203	0.626"	0.675"	16.0	17.1
4450204	0.676"	0.750"	17.2	19.1
4450205	0.751"	0.825"	19.2	21.0
4450206	0.826"	0.900"	21.1	22.9
4450207	0.901"	0.975"	23.0	24.8
4450208	0.976"	1.050"	24.9	26.7
4450209	1.051"	1.125"	26.8	28.6
4450210	1.126"	1.200"	28.7	30.5
4450211	1.201"	1.275"	30.6	32.4
4450212	1.276"	1.350"	32.5	34.3
4450213	1.351"	1.425"	34.4	36.2

\*Add suffix "S" to Catalog No. to include one #AS-5L anchor shackle and 5/8" eye-nut

### **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.



## **PREFORMED** LINE PRODUCTS

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