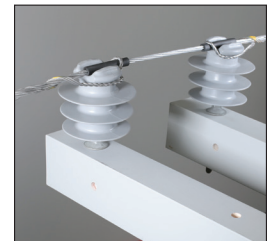
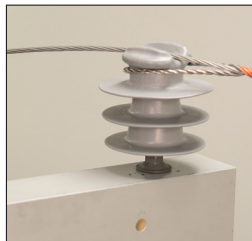
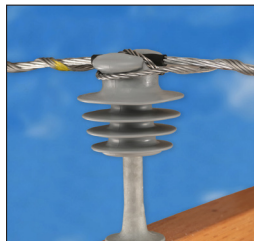




PREFORMED LINE PRODUCTS

Formed Wire Products for Corrosive Environments Catalog





PREFORMED LINE PRODUCTS



PREFORMED LINE PRODUCTS

Formed Wire Products for Corrosive Environments

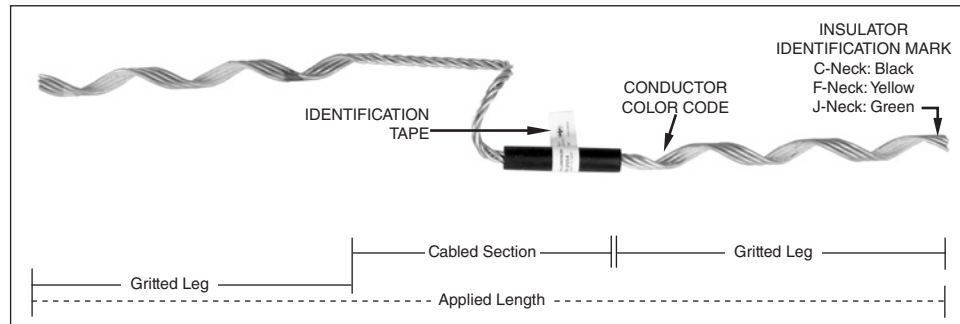
Table of Contents

Alloy Top Tie	2
Alloy Side Tie	7
Double Support Tie	12
Alloy Double Side Tie	16
Alloy Spool Tie	20
Alloy Dead-end Bare	23
Alloy Slack Span Dead-ends	27
Service-Grip Dead-ends - Aluminum Clad Steel	28



Alloy Top Tie

NOMENCLATURE



Insulator Identification Mark: Identifies the correct insulator head-style by colors corresponding to information on Catalog Specification pages.

Color Code: Assists in identification of conductor diameter and indicates starting point for application, corresponding to tabular information appearing on catalog pages.

Applied Length: Assists in identification of conductor size, corresponding to tabular information appearing on catalog pages.

Identification Tape: Shows catalog number, nominal sizes.

GENERAL RECOMMENDATIONS

INTENDED USE: Alloy Top Ties secure conductors in the top groove of interchangeable head-style insulators. The Alloy Top Tie is manufactured from an aluminum alloy material which makes it ideal for corrosive environments.

Alloy Top Ties provide an improved method of securing conductor compared to clamp-top insulators or hand ties over Armor Rods.

VIBRATION DAMPERS: By using Alloy Top Ties, the vibration fatigue life is maximized to the extent that the original endurance limit of the conductor is not reduced by abrasion on its outside surface. However, on selected lines where experience indicates that prolonged periods of vibration might approach the fatigue life of the conductor, or cause inner wire fretting, it will be necessary to supplement with dampers.

The following are guideline definitions for vibration activity. They should be applied to a Utility's own experience on lines in a given area.

“Excessive” Vibration: Areas where abrasion damage has been known to require replacement of both hand tie wire and protective rods, or where fatigue has been found under clamps. Protective rods should be replaced when visual inspection shows approximately half or more of the rod diameter has been abraded.

“Severe” Vibration: Areas where abrasion has required replacement of hand tie wire, but damage to protective rods has not progressed to the point where replacement is necessary.

“Moderate” Vibration: Areas where replacement of hand tie wire has not been required, and damage is minor.

Alloy Top Ties provide protection on areas of **“severe”** or **“moderate”** vibration. For areas experiencing **“excessive”** vibration, supplemental use of dampers is recommended. Spiral Vibration Damper's single purpose is to prevent the unlimited accumulation of aeolian vibration.

Alloy Top Tie

GENERAL RECOMMENDATIONS CONTD.

INTERCHANGEABLE HEAD-STYLE INSULATOR: To ensure proper fit and service life, it is recommended that only insulators corresponding to C-neck, F-neck, or J-neck be used. These neck-diameter and groove-height dimensions appear on ANSI standards.

Consult the Factory for engineering recommendations on non-interchangeable head-style insulators. A sample of the insulator in question is desirable.

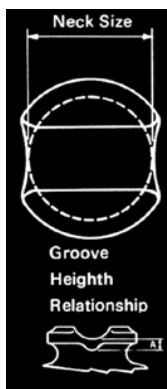
CONDUCTOR SIZE: Conductor sizes up to 1.240" O.D. can be accommodated depending on the insulator's top groove radius.

MECHANICAL STRENGTH: The Alloy Top Tie is designed to provide longitudinal holding strength in excess of values required by the National Electric Safety Code. The maximum holding strength is usually sufficient to contain the broken conductor to a single span, however, the Alloy Top Tie is designed to relieve the load before severe damage is done to the pole's structural components.

The Alloy Top Tie is designed to permit controlled and limited movement of unbroken conductor, reducing cantilever loading at the base of the insulator or bracket, then restore itself. We refer to this unique feature as "resilience." **TR-878-E** covers the mechanical testing of the Alloy Top Tie and is available upon request.

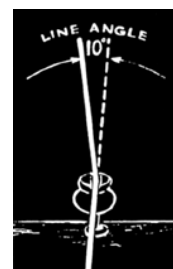
RADIO INTERFERENCE: The RIV characteristics of Alloy Top Ties are equivalent to those of a well-made hand tie when originally installed. During service life the precontoured tie assures continued fit, which would have better RIV than a loosened tie wire.

TAPPING: Compared to the use of protective rods, placing hot-line clamps directly over the applied legs of Alloy Top Ties cannot be recommended. Tapping over protective rods will remain permissible, however, there are now stirrups available that provide a superior method of making hot-line taps.



LINE ANGLES – GENERAL GUIDELINES:

On vertically-mounted insulators, Alloy Top Ties can normally accommodate line angles up to 10°. Larger angles may be accommodated when the insulator is mounted at varying degrees of cant from the vertical, depending upon the actual cant of the insulator. Combining Alloy Side Ties with Alloy Top Ties on a single structure can also affect the acceptable line angles for that structure.



A technical report (**TM-197-E**) is available which describes these various permissible line angles of Alloy Top Ties as a function of the insulator cant.

In all cases the conductor should rest in the preferred insulator groove, independently of the tie, so the tie is not required to force the conductor to remain in that groove. The largest practical angle a tie can accommodate depends upon limiting factors such as conductor size, tension, span lengths, sag angles, insulator style and orientation, etc. Consult PLP for further guidance on line angle issues not covered in the above test report.

DOUBLE SUPPORTS: At double crossarms PREFORMED™ Double-Support Tie can be used to cross major highways and railroads, or turn angles where it is practical to hold the conductor in the top groove during installation.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. **CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.**
2. This product is intended for use by trained craftspeople only. This product **SHOULD NOT BE USED** by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, **EXTRA CARE** should be taken to prevent accidental electrical contact.
4. For **PROPER PERFORMANCE AND PERSONAL SAFETY** be sure to select the proper size Alloy Top Tie before application.
5. Alloy Top Ties are precision devices. To ensure proper performance, they should be stored in cartons under cover and handled carefully.

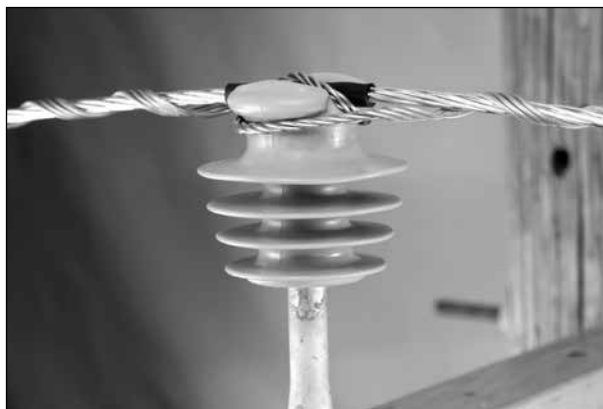


Alloy Top Tie

For use on:
ACSR, Compacted ACSR,
Aluminum Alloy
All-Aluminum, AWAC®
Compacted All-Aluminum

C-Neck Interchangeable
Headstyle Insulators

ANSI 55-2 Pin
ANSI 55-3 Pin **2-1/4" Neck Diameter**



Catalog Number	Diameter Range (Inches)		Nominal Conductor Size	Units	Wt./Lbs.	Applied Length (Inches)	Insulator Identification Mark	Color Code
	Min.	Max.		Per Carton				
9/16" R. GROOVE (See Note 2)								
ALC-1102	.245	.277	#4, 6/1, 7/1 – #4, 7W Alum. Alloy	100	18	26	Black	Orange
ALC-1103	.278	.315	#3, 7W Alum. Alloy – #2, 7W All Alum.	100	18	26	Black	Purple
ALC-1104	.316	.357	#2, 6/1, 7/1 – #2, 7W Alum. Alloy #1, 6/1	100	19	28	Black	Red
ALC-1105	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	100	20	30	Black	Yellow
ALC-1106	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	17	25	Black	Blue
ALC-1107	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	17	25	Black	Orange
ALC-1108	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	18	28	Black	Red
ALC-1109	.589	.665	266.8, 37W All Alum. 266.8, 18/1	50	18	30	Black	Purple
ALC-1110	.666	.755	336.4, 19W All Alum. 336.4, 18/1 397.5, 19W All Alum.	50	19	31	Black	Brown
ALC-1111	.756	.858	477, 19W, 37W All Alum. 477, 18/1, 24/7, 26/7	50	19	32	Black	Red
5/8" R. GROOVE (See Note 2)								
ALC-1112	.859	.968	556.5, 26/7 636, 18/1 700, 37W, 61W All Alum.	50	20	34	Black	Blue
3/4" R. GROOVE (See Note 2)								
ALC-1113	.969	1.096	795, 37W All Alum. 795, 61W All Alum. 715.5, 24/7 795, 54/7	50	21	37	Black	Green
ALC-1114	1.097	1.240	954, 36/1, 54/7 1033.5, 37W, 61W All Alum.	50	22	40	Black	Yellow

Right-hand lay standard

EXPLANATORY NOTES:

- (1) Nominal Conductor size indicates one of various conductors within each range.
- (2) For the succeeding conductors ranges, the insulator's top groove radius should be at least as large as shown above.
- (3) AWAC is a registered trademark of the Copperweld Co.

Alloy Top Tie

For use on:

**ACSR, Compacted ACSR,
Aluminum Alloy, All-Aluminum,
AWAC® Compacted All-Aluminum**

**F-Neck Interchangeable
Headstyle Insulators**

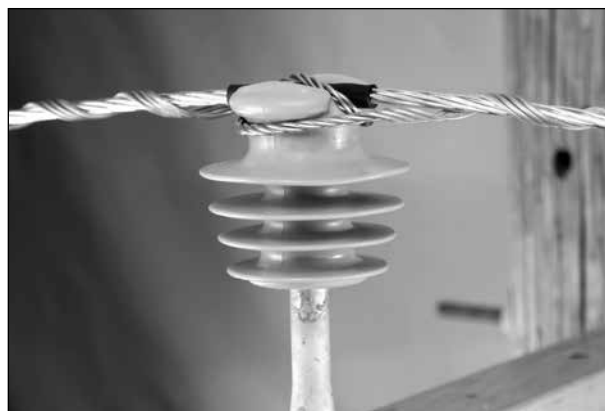
ANSI 55-4 Pin

ANSI 55-5 Pin

ANSI 57-1 Pin 2-7/8" Neck Diameter

ANSI 57-2 Pin

ANSI 57-3 Pin



Catalog Number	Diameter Range (Inches)		Nominal Conductor Size	Units	Wt./ Lbs.	Applied Length (Inches)	Insulator Identification Mark	Color Code
	Min.	Max.		Per Carton				
9/16" R. GROOVE (See Note 2)								
ALF-1202	.245	.277	#4, 6/1, 7/1 #4, 7W Alum. Alloy	100	19	27	Yellow	Orange
ALF-1203	.278	.315	#3, 7W Alum. Alloy #2, 7W All Alum.	100	20	29	Yellow	Purple
ALF-1204	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	100	20	31	Yellow	Red
ALF-1205	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	100	21	32	Yellow	Yellow
ALF-1206	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	18	26	Yellow	Blue
ALF-1207	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	18	27	Yellow	Orange
ALF-1208	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	19	29	Yellow	Red
ALF-1209	.589	.665	266.8, 37W All Alum. 266.8, 18/1	50	19	32	Yellow	Purple
ALF-1210	.666	.755	336.4, 19W All Alum. 336.4, 18/1 397.5, 19W All Alum.	50	20	32	Yellow	Brown
ALF-1211	.756	.858	477, 19W, 37W All Alum. 477, 18/1, 24/7, 26/7	50	20	33	Yellow	Red
5/8" R. GROOVE (See Note 2)								
ALF-1212	.859	.968	556.5, 26/7 636, 18/1 700, 37W, 61W All Alum.	50	21	35	Yellow	Blue
3/4" R. GROOVE (See Note 2)								
ALF-1213	.969	1.096	795, 37W All Alum. 795, 61W All Alum. 715.5, 24/7 795, 54/7	50	22	38	Yellow	Green
ALF-1214	1.097	1.240	954, 36/1 1033.5, 37W, 61W All Alum. 954, 54/7	50	23	41	Yellow	Yellow

Right-hand lay standard

EXPLANATORY NOTES:

- (1) Nominal Conductor size indicates one of various conductors within each range.
- (2) For the succeeding conductors ranges, the insulator's top groove radius should be at least as large as shown above.
- (3) AWAC is a registered trademark of the Copperweld Co.



Alloy Top Tie

For use on:

**ACSR, Compacted ACSR,
Aluminum Alloy, All-Aluminum,
AWAC® Compacted All-Aluminum**

J-Neck Interchangeable Headstyle Insulators

ANSI 55-6

Single Skirt Pin

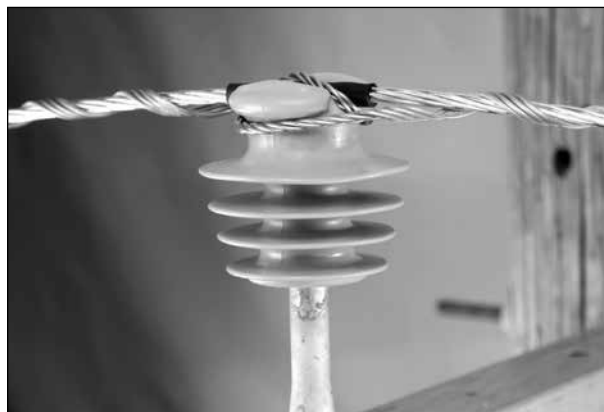
ANSI 55-7

Single Skirt Pin

3-1/2" Neck Diameter

ANSI 56-1

Double Skirt Pin



Catalog Number	Diameter Range (Inches)		Nominal Conductor Size	Units	Wt./Lbs.	Applied Length (Inches)	Insulator Identification Mark	Color Code
	Min.	Max.		Per Carton				
9/16" R. GROOVE (See Note 2)								
ALJ-1302	.245	.277	#4, 6/1, 7/1 #4, 7W Alum. Alloy	100	25	28	Green	Orange
ALJ-1303	.278	.315	#3, 7W Alum. Alloy #2, 7W All Alum.	100	27	30	Green	Purple
ALJ-1304	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	100	29	32	Green	Red
ALJ-1305	.358	.405	1/0, 7W All Alum. 1/0, 6/1, 1/0, 7W Alum. Alloy	100	31	33	Green	Yellow
ALJ-1306	.406	.459	2/0, 7W All Alum. 2/0, 6/1, 2/0, 7W Alum. Alloy	50	20	27	Green	Blue
ALJ-1307	.460	.520	3/0, 7W All Alum. 3/0, 6/1, 3/0, 7W Alum. Alloy	50	21	28	Green	Orange
ALJ-1308	.521	.588	4/0, 7W All Alum. 4/0, 6/1, 4/0, 7W Alum. Alloy	50	22	30	Green	Red
ALJ-1309	.589	.665	266.8, 37W All Alum. 266.8, 18/1	50	22	33	Green	Purple
ALJ-1310	.666	.755	336.4, 19W All Alum. 336.4, 18/1 397.5, 19W All Alum.	50	23	33	Green	Brown
ALJ-1311	.756	.858	477, 19W, 37W All Alum. 477, 18/1, 24/7, 26/7	50	27	34	Green	Red
5/8" R. GROOVE (See Note 2)								
ALJ-1312	.859	.968	556.5, 26/7 636, 18/1 700, 37W, 61W All Alum.	50	27	36	Green	Blue
3/4" R. GROOVE (See Note 2)								
ALJ-1313	.969	1.096	795, 37W All Alum. 795, 61W All Alum. 715.5, 24/7 795, 54/7	50	30	39	Green	Green
ALJ-1314	1.097	1.240	954, 36/1 954, 54/7 1033.5, 37W, 61W All Alum.	50	31	42	Green	Yellow

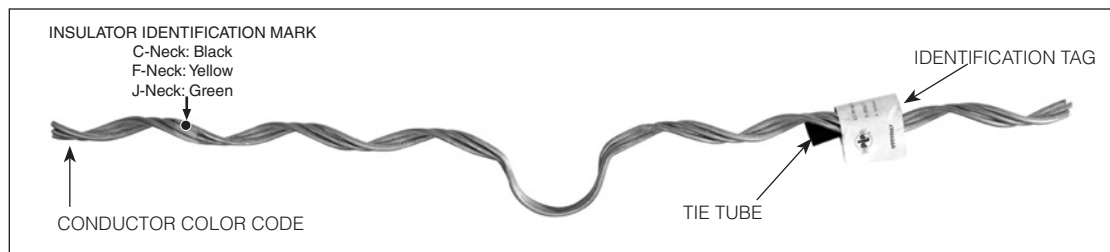
Right-hand lay standard

EXPLANATORY NOTES:

- (1) Nominal Conductor size indicates one of various conductors within each range.
- (2) For the succeeding conductors ranges, the insulator's top groove radius should be at least as large as shown above.
- (3) AWAC is a registered trademark of the Copperweld Co.

Alloy Side Tie

NOMENCLATURE



Tie Tube: For bare conductor, each tie is furnished with a Tie Tube Component. The Tie Tube is detached and applied over the bare conductor.

Identification Tape: Shows catalog number, nominal sizes. This information may be printed on the Tie Tube.

Insulator Identification Mark: Identifies the correct insulator headstyle by colors corresponding to information on catalog pages.

Color Code: Assists in identification of conductor size, corresponding to tabular information appearing on catalog pages.

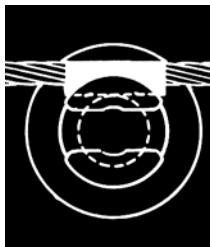
GENERAL RECOMMENDATIONS

INTENDED USE: Alloy Side Ties secure conductors in the side groove of interchangeable headstyle insulators. The Alloy Side Tie is manufactured from an aluminum alloy material which makes it ideal for corrosive environments.

Alloy Side Ties provide an improved method of securing conductor compared to clamp-top insulators or hand ties over Armor Rods.

ALLOY SIDETIE: Alloy Side Ties provide superior abrasion protection over hand tie wire for the conductor under all types of motion, including low-frequency sway oscillation, high-frequency aeolian vibration and galloping.

The tube component surrounds the bare conductor with a resilient cushion where the conductor would come into contact with the insulator. In the case of Alloy Side Ties applied over plastic jacketed conductors, the tube can be discarded because contact with the bare conductor is prevented by the jacketing itself.



VIBRATION DAMPERS: While the Alloy Side Tie is superior to hand tie wire, there may be conditions where excessive conductor movement requires the use of supplemental dampers.

For excessive **aeolian vibration** on conductors up to .760" OD, the Spiral Vibration Damper is recommended. Typically 2 SVD/span on distribution construction is adequate for protection, although more may be required depending upon a number of factors.

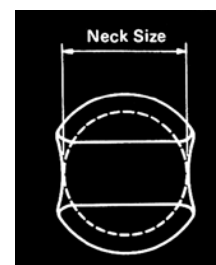
For **conductor galloping**, the Air Flow Spoiler is recommended. Use of the proper size and quantity of AFS per span can eliminate or minimize the effects of galloping. Quantity per span is based upon total span length and other factors.

Review the Motion Control section and/or consult PLP for engineering recommendations for Air Flow Spoilers, and if necessary SVD's.

MECHANICAL STRENGTH: The Alloy Side Tie is designed to provide longitudinal holding strength in excess of values required by the National Electric Safety Code. The holding strength is usually sufficient to contain the broken conductor to a single span, however, the Alloy Side Tie is designed to relieve the load before severe damage is done to the pole's structural components. **TR-880-E** covers the mechanical testing of the Alloy Side Tie and is available upon request.

INTERCHANGEABLE HEADSTYLE INSULATOR:

To ensure proper fit and service life, it is recommended that only insulators corresponding to C-Neck, F-Neck, or J-Neck be used. These neck-diameters and groove-height dimensions appear on ANSI standards.



(Continued)



Alloy Side Tie

GENERAL RECOMMENDATIONS CONTD.

Consult PLP for engineering recommendations on non-interchangeable headstyle insulators. A sample of the insulator in question is desirable.

CONDUCTOR SIZE: The Alloy Side Tie exactly matches the DISTRIBUTION Ties' ranges, which means identical color codes on armless construction. Conductor sizes up to 1.240" O.D. can be accommodated depending on the insulator's side groove radius.

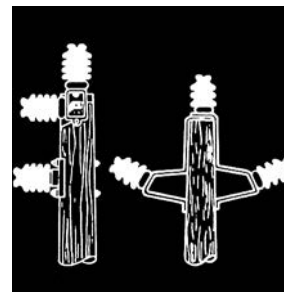
The Alloy Side Tie is designed to permit controlled movement of unbroken conductor, reducing cantilever loading at the base of the insulator or bracket, then restore itself. We refer to this unique feature as "resilience."

1" R.	▶	◀	1.240" Max.
7/8" R.	▶	◀	1.240" Max.
13/16" R.	▶	◀	1.240" Max.
3/4" R.	▶	◀	1.165" Max.
11/16" R.	▶	◀	1.000" Max.
5/8" R.	▶	◀	.968" Max.
9/16" R.	▶	◀	.860" Max.

RADIO INTERFERENCE:

The RIV/TVI characteristics of Alloy Side Ties are equivalent to those of a well-made hand tie when originally installed. During service life the precontoured Alloy Side Tie assures continued fit, which would have better RIV/TVI performance than a loosened tie wire.

TAPPING: Compared to the use of protective rods, placing hot-line clamps directly over the applied legs of Alloy Side Ties cannot be recommended. Tapping over protective rods will remain permissible, however, there are now stirrups available that provide a superior method of making hot-line taps.



LINE ANGLES GENERAL GUIDELINES: On horizontally-mounted insulators, Alloy Side Ties can normally accommodate line angles up to 10°. On vertically-mounted insulators, line angles up to 40° can normally be achieved. When insulators are mounted at various degrees of cant between the horizontal and the vertical, line angles between 0° and 40° may be accommodated depending upon the actual cant of the insulator.

In all cases, the conductor should rest in the preferred insulator groove, independently of the tie, so the tie is not required to force the conductor to remain in that groove. The largest practical angle a tie can accommodate depends upon limiting factors such as conductor size, tension, span lengths, sag angles, insulator style and orientation, etc. Consult PLP® for further guidance on line angle issues not covered in the above test report.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size Alloy Side Tie before application.
5. Alloy Side Ties are precision devices. To ensure proper performance, they should be stored in cartons under cover and handled carefully.

Alloy Side Tie

For use on:
ACAR, ACSR,
All-Aluminum, AWAC®
Compacted ACSR,
Aluminum Alloy

C-Neck Interchangeable
Headstyle Insulators



ANSI 55-2 PIN
ANSI 55-3 PIN **2-1/4" Neck Diameter**

Catalog Number	Diameter Range (Inches)		Nominal Conductor Size	Units	Wt./Lbs.	Approx. Applied Length (Inches)	Insulator Identification Mark	Color Code
	Min.	Max.		Per Carton				
9/16" R. GROOVE (See Note 2)								
ASC-5102	.245	.277	#4, 6/1 7/1 #4, 7W, Alum. Alloy	100	18	23	Black	Orange
ASC-5103	.278	.315	#3, 7W, Alum. Alloy #2, 7W, All Alum.	100	18	24	Black	Purple
ASC-5104	.316	.357	#2, 6/1 - 7/1 #2, 7W, Alum. Alloy #1, 6/1	100	19	25	Black	Red
ASC-5105	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W, Alum. Alloy	100	21	23	Black	Yellow
ASC-5106	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	100	22	25	Black	Blue
ASC-5107	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W, Alum. Alloy	100	24	27	Black	Orange
ASC-5108	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0 7W, Alum Alloy	100	30	28	Black	Red
ASC-5109	.589	.665	266.8, 37W All Alum. 266.8, 18/1 336.4, 19W All Alum.	100	34	31	Black	Purple
ASC-5110	.666	.755	336.4, 37W All Alum. 336.4, 18/1 397.5, 19W All Alum. 400, 19W, 37W All Alum.	100	35	33	Black	Brown
ASC-5111	.756	.858	477, 19W, 37W, All Alum. 477, 18/1, 24/7, 26/7	50	29	35	Black	Red
5/8" R. GROOVE (See Note 2)								
ASC-5112	.859	.968	556.5, 26/7, 636, 18/1 700, 37W, 61W, All Alum.	50	35	36	Black	Blue
11/16" R. GROOVE (See Note 2)								
ASC-5113	.969	1.096	795, 37W, 61W, All Alum. 715.5, 24/7 795, 54/7	50	38	38	Black	Green
3/4" R. GROOVE (See Note 2)								
ASC-5114	1.097	1.240	954, 36/1, 54/7 1033.5, 37W, 61W, All Alum.	50	38	39	Black	Yellow

Right-hand lay standard

EXPLANATORY NOTES:

- (1) Nominal Conductor size indicates one of various conductors within each range.
- (2) For the succeeding ranges, the insulator's side groove radius should be at least as large as shown above.
- (3) AWAC is a registered trademark of the Copperweld Co.



Alloy Side Tie

For use on:

**ACAR, ACSR,
All-Aluminum, AWAC®
Compacted ACSR,
Aluminum Alloy**

**F-Neck Interchangeable
Headstyle Insulators**



ANSI 53-4 Spool

ANSI 53-5 Spool

ANSI 55-4 Pin

ANSI 55-5 Pin

ANSI 57-1 Post

ANSI 57-2 Post

ANSI 57-3 Post

**2-7/8"
Neck Diameter**

Catalog Number	Diameter Range (Inches)		Nominal Conductor Size	Units	Wt./Lbs.	Applied Length (Inches)	Insulator Identification Mark	Color Code
	Min.	Max.		Per Carton				
9/16" R. GROOVE (See Note 2)								
ASF-5202	.245	.277	#4, 6/1, 7/1 – #4, 7W Alum. Alloy	100	18	23	Yellow	Orange
ASF-5203	.278	.315	#3, 7W Alum. Alloy – #2, 7W All Alum.	100	18	24	Yellow	Purple
ASF-5204	.316	.357	#2, 6/1, 7/1 – #2, 7W Alum. Alloy #1, 6/1	100	19	25	Yellow	Red
ASF-5205	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	100	21	23	Yellow	Yellow
ASF-5206	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	100	22	25	Yellow	Blue
ASF-5207	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	100	24	27	Yellow	Orange
ASF-5208	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	100	30	28	Yellow	Red
ASF-5209	.589	.665	266.8, 37W All Alum. 266.8, 18/1 336.4, 19W All Alum.	100	34	31	Yellow	Purple
ASF-5210	.666	.755	336.4, 37W All Alum. 336.4, 18/1 397.5, 19W All Alum. 400, 19W, 37W All Alum.	100	34	34	Yellow	Brown
ASF-5211	.756	.858	477, 19W, 37W, All Alum. 477, 18/1, 24/7, 26/7	50	54	36	Yellow	Red
5/8" R. GROOVE (See Note 2)								
ASF-5212	.859	.968	556.5, 26/7, 636, 18/1 700, 37W, 61W, All Alum.	50	36	37	Yellow	Blue
11/16" R. GROOVE (See Note 2)								
ASF-5213	.969	1.096	795, 37W, 61W, All Alum. 715.5, 24/7 795, 54/7	50	39	39	Yellow	Green
3/4" R. GROOVE (See Note 2)								
ASF-5214	1.097	1.240	954, 36/1, 54/7 1033.5, 37W, 61W, All Alum.	50	40	40	Yellow	Yellow

Right-hand lay standard

EXPLANATORY NOTES:

- (1) Nominal Conductor size indicates one of various conductors within each range.
- (2) For the succeeding ranges, the insulator's side groove radius should be at least as large as shown above.
- (3) AWAC is a registered trademark of the Copperweld Co.

Alloy Side Tie

For use on:
ACSR, ACAR, All-Aluminum, AWAC®,
Compacted ACSR, Aluminum Alloy

J-Neck Interchangeable
Headstyle Insulators

ANSI 55-6

Single Skirt Pin

ANSI 55-7

Single Skirt Pin

ANSI 56-1

Double Skirt Pin

3-1/2"
Neck Diameter



Catalog Number	Diameter Range (Inches)		Nominal Conductor Size	Units	Wt./Lbs.	Applied Length (Inches)	Insulator Identification Mark	Color Code
	Min.	Max.		Per Carton				
9/16" R. GROOVE (See Note 2)								
ASJ-5402	.245	.277	#4, 6/1 - 7/1 #3, 7W, All Alum.	100	19	26	Green	Orange
ASJ-5403	.278	.315	#3, 7W, Alum. Alloy #2, 7W, All Alum.	100	20	27	Green	Purple
ASJ-5404	.316	.357	#2, 6/1 - 7/1 #2, 7W, Alum. Alloy #1, 6/1	100	21	28	Green	Red
ASJ-5405	.358	.405	1/0, 7W, 19W All Alum. 1/0, 6/1 1/0, 7W, Alum. Alloy	100	23	26	Green	Yellow
ASJ-5406	.406	.459	2/0, 7W, 19W, All Alum. 2/0, 6/1	100	25	28	Green	Blue
ASJ-5407	.460	.520	3/0, 7W, 19W, All Alum. 3/0, 6/1 3/0, 7W, Alum. Alloy	100	26	30	Green	Orange
ASJ-5408	.521	.588	4/0, 6/1 4/0, 7W, All Alum. 4/0, 7W, Alum Alloy 250, 19W, 37W All Alum.	100	35	31	Green	Red
ASJ-5409	.589	.665	266.8, 19W-37W All Alum. 300, 19W, 37W, All Alum. 266.8, 26/7	100	38	34	Green	Purple
5/8" R. GROOVE (See Note 2)								
ASJ-5410	.666	.755	336.4, 37W, All Alum. 397.5, 19W, 37W, All Alum.	50	40	36	Green	Brown
ASJ-5411	.756	.858	397.5, 24/7, 26/7 477, 19W, 37W, All Alum. 477, 18/1, 24/7, 26/7	50	31	38	Green	Red
ASJ-5412	.859	.968	556.5, 61W All Alum. 556.5, 26/7 636, 18/1	50	38	39	Green	Blue
ASJ-5413	.969	1.096	636, 24/7, 26/7, 30/19 715.5, 36/1, 24/7, 26/7	50	40	41	Green	Green
ASJ-5414	1.097	1.240	954, 54/7 1033.5, 45/7 1113, 61W All Alum. 954, 37W Alum. Alloy	50	43	42	Green	Yellow

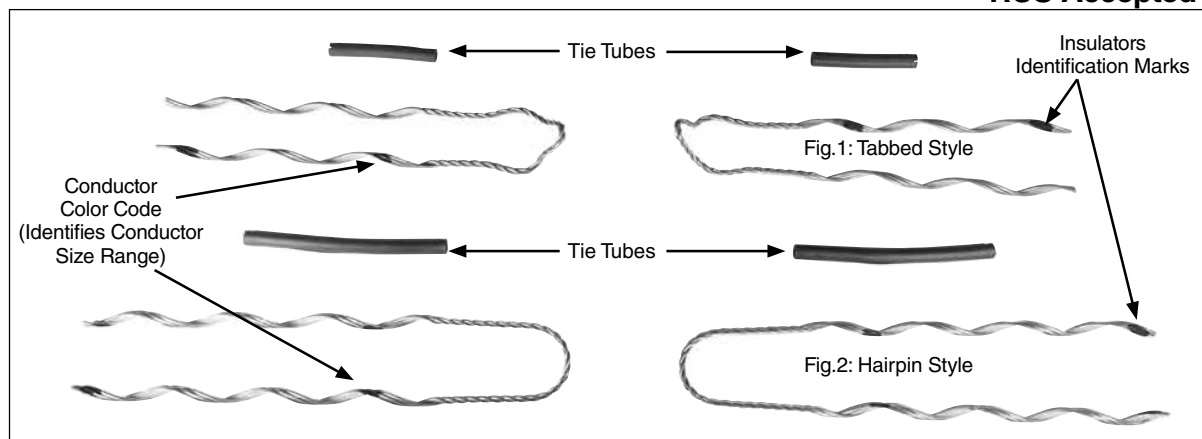
Right-hand lay standard

EXPLANATORY NOTES:

- (1) Nominal Conductor size indicates one of various conductors within each range.
- (2) For the succeeding ranges, the insulator's side groove radius should be at least as large as shown above.
- (3) AWAC is a registered trademark of the Copperweld Co.

Double Support Tie

NOMENCLATURE



Tie Assembly: A Double Support Tie assembly consists of two metal tie components plus two tie tubes.

Tie Tube: Each Double Support Tie assembly is supplied with two elastomeric tie tubes, designed for abrasion protection.

Color Code: Identifies proper conductor size, corresponding to tabular information appearing in this section, and designates leg cross-over location.

Insulator Identification Mark: Identifies the correct insulator headstyle by color corresponding to information on Catalog Specification pages.

Identification Tape: Shows catalog number, proper insulator type, and nominal conductor sizes.

Applied Length: Describes length of each tie component after installation, plus assists in product identification.

GENERAL RECOMMENDATIONS

INTENDED USE: The Double Support Tie is intended for use on aluminum based conductors with diameters from .245" to 1.240". Each Double Support Tie covers a range of conductor diameters as outlined in the catalog tables of this section.

INTERCHANGEABLE Headstyle INSULATORS: Double Support Ties are designed for installation on double insulator construction in the top groove of interchangeable insulators. To insure proper fit and service life, it is recommended only insulators with uniform dimensions as described by the ANSI insulator standards be used. Consult PLP for application on nonstandard insulators.

TIE DESIGN: The loop of the Double Support Tie has been engineered so "C" and "F" insulators can be accommodated by a single tie design. A separate design is required for "J" neck insulators. Each Double Support Tie is supplied with elastomeric tie tubes designed to minimize abrasion to bare conductor and insulators. For applications on jacketed conductors, the tube may be discarded.

MECHANICAL STRENGTH: The Double Support Tie is designed to provide superior mechanical strength and resiliency during conductor motion and cyclic loading conditions. Longitudinal holding strengths consistently exceed the requirements of the National Electric Safety Code. **TM-882-E** covers the mechanical testing of the Double Support Tie and is available upon request.

RADIO INTERFERENCE: The RIV/TVI characteristics of Double Support Ties are equivalent to those of a well made hand tie, as originally installed. The precontoured loop and formed legs of the Double Support Tie assures continued fit, which will provide better RIV/TVI performance than a loosened hand-tie wire.

VIBRATION DAMPERS: The Double Support Tie is designed to outperform other tie devices during conductor motion activity, such as aeolian vibration and galloping. However, on some lines the use of dampers may be required to prevent damage. Utilities that have experienced conductor motion or expect to, should consider adding dampers. Consult PLP® for general guidelines and advice concerning conductor motion and dampers. Also, consult the Motion Control Section in this catalog.

Double Support Tie

GENERAL RECOMMENDATIONS CONTD.

INSULATOR MOUNTING: The Double Support Tie is designed to be used when the conductor is located in the top groove of the insulators, regardless of insulator orientation, as long as the conductor will rest in the top groove by itself. If the conductor will not remain in the top groove by itself, it will be necessary to relocate it to the side groove, and will require an appropriate Side or Double Side Tie.

LINE ANGLES - GENERAL GUIDELINES: On vertically-mounted insulators at double crossarms or brackets, the Double Support Tie can normally accommodate line angles up to a total of **20°**, with no more than a **10°** angle at each insulator. Larger angles may be accommodated when the insulators are mounted at varying degrees of cant from the vertical, depending upon the actual cant of the insulator.

A technical report (**TM-197-E**) is available which describes these permissible line angles for Double Support Ties as a function of the insulator's cant.

In all cases, the conductor should rest in the preferred insulator groove, independently of the tie, so the tie is not required to force the conductor to remain in that groove. The largest practical angle a tie can accommodate depends upon limiting factors such as conductor size, tension, span lengths, sag angles, insulator style and orientation, etc. Consult PLP® for further guidance on line angle issues not covered in the above test report.

TAPPING: Taps should not be made directly over the legs or loop of the Double Support Tie.

CONDUCTOR COMPATIBILITY: Double Support Ties should be used only on the size, type, and lay direction of conductor for which they are designed. When using conductors not mentioned in the Transmission and Distribution Catalogs, consult PLP.

During installation and at all times, care should be taken to avoid gouging or damaging the wires of the Double Support Tie or conductor.

Double Support Ties should not be used as tools, i.e., come-alongs, pulling-grips, etc.

Consult the Double Support Tie Application Procedure for additional installation information.

When in doubt about usage of Double Support Ties, consult your PLP Sales Representative or Preformed Line Products.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. **CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.**
2. This product is intended for use by trained craftspeople only. This product **SHOULD NOT BE USED** by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, **EXTRA CARE** should be taken to prevent accidental electrical contact.
4. For **PROPER PERFORMANCE AND PERSONAL SAFETY** be sure to select the proper size Double Support Tie before application.
5. Double Support Ties are precision devices. To ensure proper performance, they should be stored in cartons under cover and handled carefully.



Double Support Tie

For use on:

ACSR, All-Aluminum, AWAC®, Aluminum Alloy, Compacted All-Aluminum Compacted ACSR

C-Neck & F-Neck Interchangeable Headstyle Insulators

ANSI 55-2 Pin

ANSI 55-3 Pin

ANSI 55-4 Pin

ANSI 55-5 Pin

ANSI 57-1 Post

ANSI 57-2 Post

ANSI 57-3 Post

**2-1/4" & 2-7/8"
Neck Diameters**

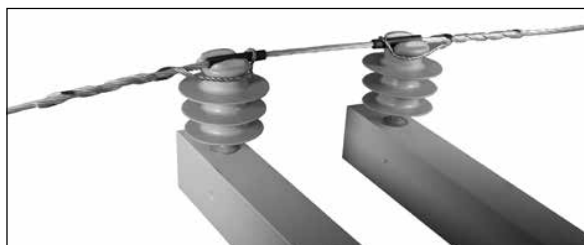


Fig. 1: Tabbed Style



Fig. 2: Hairpin Style

Catalog Number C & F Neck	Diameter Range (Inches)		Nominal Conductor Size	Units	Wt./ Lbs.	Approx. Applied Length- Each Tie (Inches)	Insulator Identification Mark	Color Code	Tie Type	
	Min.	Max.		Per Carton						
9/16" R. GROOVE (See Note 4)										
DST-0150	.245	.277	#4, 6/1, 7/1 #4, 7W Alum. Alloy	50	11	13	Black/Yellow	Orange	Fig. 1	
DST-0151	.278	.315	#3, 7W Alum. Alloy #2, 7W All Alum.	50	11	13	Black/Yellow	Purple		
DST-0152	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	50	15	14	Black/Yellow	Red		
DST-0153	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	50	16	14	Black/Yellow	Yellow		
DST-0154	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	16	15	Black/Yellow	Blue		
DST-0155	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	23	16	Black/Yellow	Orange		
DST-0156	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	23	17	Black/Yellow	Red		
DST-0157	.589	.665	266.8, 37W All Alum. 266.8, 18/1 336.4, 19W All Alum.	50	26	17	Black/Yellow	Purple		
9/16" R. GROOVE (See Note 4)										
DST-0158	.666	.755	336.4, 18/1, 26/7 397.5, 19W, All Alum. 400, 19W, 37W All Alum.	50	28	18	Black/Yellow	Brown	Fig. 1	
DST-0159	.756	.858	477, 19W, 37W All Alum. 477, 18/1, 24/7, 26/7	25	21	20	Black/Yellow	Red	Fig. 2	
5/8" R. GROOVE (See Note 4)										
DST-0160	.859	.968	556.5, 26/7 636, 18/1	25	26	21	Black/Yellow	Blue	Fig. 2	
3/4" R. GROOVE (See Note 4)										
DST-0161	.969	1.096	795, 37W, 61W All Alum. 715.5, 24/7 795, 54/7	25	28	22	Black/Yellow	Green	Fig. 2	
DST-0162	1.097	1.240	954, 54/7, 36/1 1033.5, 45/7 795, 26/7 954, 37W All Alum.	25	28	23	Black/Yellow	Yellow		

Right-hand lay standard

EXPLANATORY NOTES:

- (1) Diameter Range indicates the size of conductors that utilize the same tie.
- (2) "Nominal Conductor Size" indicates one of various conductors within each range.
- (3) The loop of the Double Support Ties on this page can accommodate either C or F neck insulators.
- (4) For the succeeding ranges, the insulator's top groove radius should be at least as large as shown above.
- (5) AWAC is a registered trademark of the Copperweld Co.

Double Support Tie

For use on:

ACSR, All-Aluminum, AWAC®, Aluminum Alloy, Compacted All-Aluminum Compacted ACSR

J-Neck Interchangeable Headstyle Insulators

ANSI 55-6

Single Skirt Pin

ANSI 55-7

Single Skirt Pin

ANSI 56-1

Double Skirt Pin

**3-1/2"
Neck Diameters**

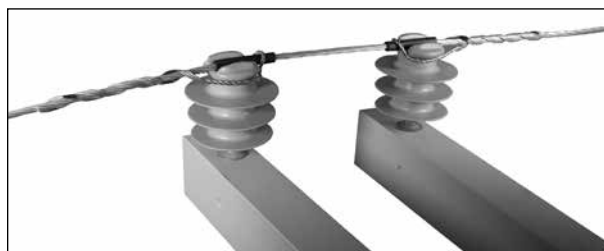


Fig. 1: Tabbed Style



Fig. 2: Hairpin Style

Catalog Number J Neck	Diameter Range (Inches)		Nominal Conductor Size	Units	Wt./ Lbs.	Approx. Applied Length- Each Tie (Inches)	Insulator Identification Mark	Color Code	Tie Type	
	Min.	Max.		Per Carton						
9/16" R. GROOVE (See Note 4)										Fig. 1
DST-0350	.245	.277	#4, 6/1, 7/1 – #4, 7W Alum. Alloy	50	12	14	Green	Orange		
DST-0351	.278	.315	#3, 7W Alum. Alloy – #2, 7W All Alum.	50	12	14	Green	Purple		
DST-0352	.316	.357	#2, 6/1, 7/1 – #2, 7W Alum. Alloy – #1, 6/1	50	16	15	Green	Red		
DST-0353	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	50	17	15	Green	Yellow		
DST-0354	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	17	16	Green	Blue		
DST-0355	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	25	16	Green	Orange		
DST-0356	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	25	18	Green	Red		
DST-0357	.589	.665	266.8, 37W All Alum. 266.8, 18/1 336.4, 19W All Alum.	50	30	18	Green	Purple		
9/16" R. GROOVE (See Note 4)										
DST-0358	.666	.755	336.4, 18/1, 26/7 397.5, 19W, All Alum. 400, 19W, 37W All Alum.	50	30	19	Green	Brown	Fig. 1	
DST-0359	.756	.858	477, 19W, 37W All Alum. 477, 18/1, 24/7, 26/7	50	33	21	Green	Red	Fig. 2	
5/8" R. GROOVE (See Note 4)										
DST-0360	.859	.968	556.5, 26/7 636, 18/1	25	26	22	Green	Blue	Fig. 2	
3/4" R. GROOVE (See Note 4)										
DST-0361	.969	1.096	795, 37W, 61W All Alum. 715.5, 24/7 795, 54/7	25	28	23	Green	Green	Fig. 2	
DST-0362	1.097	1.240	954, 54/7, 36/1 1033.5, 45/7 795, 26/7 954, 37W All Alum.	25	28	24	Green	Yellow		

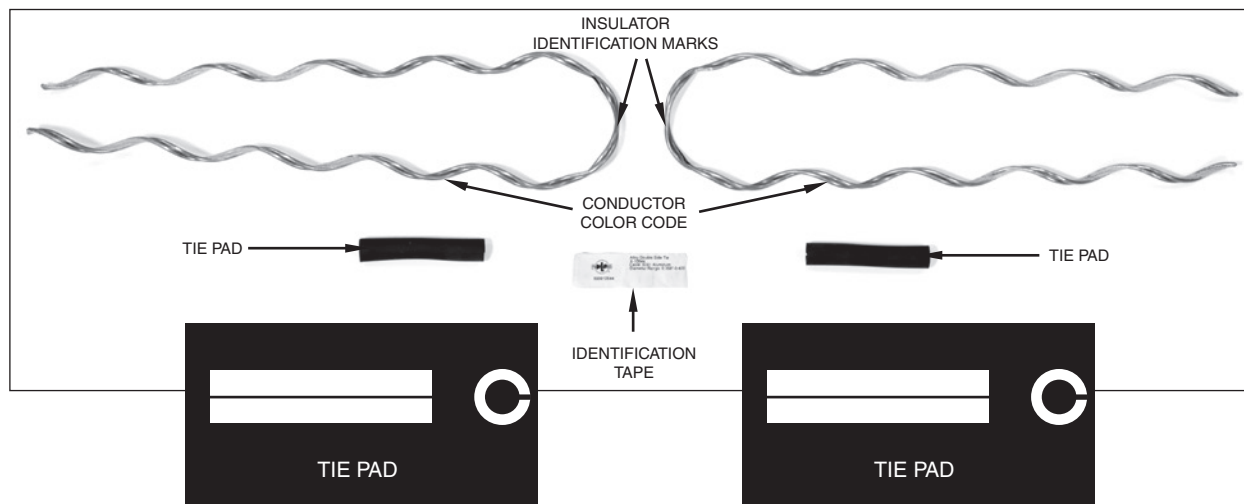
Right-hand lay standard

EXPLANATORY NOTES:

- (1) Diameter Range indicates the size of conductors that utilize the same tie.
- (2) "Nominal Conductor Size" indicates one of various conductors within each range.
- (3) The loop of the Double Support Ties on this page can accommodate J-neck insulators.
- (4) For the succeeding ranges, the insulator's top groove radius should be at least as large as shown above.
- (5) AWAC is a registered trademark of the Copperweld Co.

Alloy Double Side Tie

NOMENCLATURE



Tie Assembly: An Alloy Double Side Tie assembly consists of two aluminum tie components plus two tie tubes.

Tie Tube: Each Double Side Tie assembly is supplied with two elastomeric tie tubes, designed for conductor/insulator abrasion protection.

Conductor Color Code/Cross-Over Marks: Identifies proper conductor size; corresponding to tabular information appearing in this section, and designates leg cross-over location.

Insulator Identification Mark: Identifies the correct insulator headstyle by colors corresponding to information on catalog pages.

Applied Length: Describes the length of each tie component after installation, plus assists in product identification.

Identification Tape: Shows catalog number and nominal conductor sizes.

GENERAL RECOMMENDATIONS

Intended Use: Alloy Double Side Tie, manufactured of aluminum alloy wire, is designed for corrosive environments to secure conductors on double-arm construction in the side groove of interchangeable headstyle insulators. They are intended for larger line angles than top groove style ties, such as, Double-Support Ties.

LINE ANGLES GENERAL GUIDELINES: On vertically mounted insulators at double crossarms or brackets, the Alloy Double Side Tie can normally accommodate line angles of between 0° and 80°, with no more than a 40° angle at each insulator. When insulators are mounted at various degrees of cant from the vertical, various line angles may be accommodated, depending upon the actual cant of the insulators. A technical report (TM-197E) is available which describes these permissible line angles for Double Side Ties as a function of the insulator's cant.

In all cases, the conductor should rest in the preferred insulator groove, independently of the tie, so the tie is not required to force the conductor to remain in that groove. The largest practical angle a tie can accommodate depends upon limiting factors such as conductor size, tension, span lengths, sag angles, insulator style and orientation, etc. Consult PLP® for further guidance on line angle issues not covered in the above test report.

INTERCHANGEABLE Headstyle INSULATORS: Alloy Double Side Ties are designed for installation on double insulator construction in the side groove of interchangeable insulators. To ensure proper fit and service life, it is recommended only insulators with uniform dimensions as described by the ANSI C 29 insulator standards be used. Consult PLP for application on nonstandard insulators.

Alloy Double Side Tie

GENERAL RECOMMENDATIONS CONTD.

ALLOY DOUBLE SIDETIE: Alloy Double Side Ties feature a elastomeric tube which surrounds the bare conductor with a resilient cushion. This tube provides superior abrasion protection for the conductor under all types of motion, including low frequency sway oscillation and high frequency aeolian vibration. As a result, Alloy Double Side Ties provide a vastly improved method of securing conductors compared to hand ties over protective rods, since they eliminate abrasion (and the need for protective rods) rather than sacrificing outside surfaces to abrasion. For applications on jacketed conductors, the tube may be discarded.

MECHANICAL STRENGTH: The Alloy Double Side Tie is designed to provide superior mechanical strength and resiliency during conductor motion and cyclic loading conditions. Longitudinal holding strengths consistently exceed the requirements of the National Electric Safety Code. TR-956-E covers the mechanical testing of the Alloy Double Side Tie and is available upon request.

RADIO INTERFERENCE: The RIV/TVI characteristics of Double Side Ties are equivalent to those of a well made hand tie, as originally installed. The pre-contoured loop and formed legs of the Alloy Double Side Tie assures continued fit, which will provide better RIV/TVI performance than a loosened hand-tie wire.

VIBRATION DAMPERS: The Alloy Double Side Tie is designed to outperform other tie devices during conductor motion activity, such as aeolian vibration and galloping. However, on some lines the use of dampers may be required to prevent damage. Utilities that have experienced conductor motion or expect to, should consider adding dampers. Consult PLP® for general guidelines and advice concerning conductor motion and dampers. Also, consult the Motion Control section.

TAPPING: Taps should not be made directly over the legs or loop of the Alloy Double Side Tie.

CONDUCTOR COMPATIBILITY: Alloy Double Side Ties should be used only on the size, type, and lay direction for which they are designed. Use the conductor diameter to select the proper tie range for the application.

During installation and at all times, care should be taken to avoid gouging or damaging the wires of the Alloy Double Side Tie or conductor.

Double Side Ties should not be used as tools, i.e., come-alongs, pulling-grips, etc.

Consult the Double Side Tie Application Procedure for additional installation information.

When in doubt about usage of Alloy Double Side Ties, consult your PREFORMED™ Sales Representative or Preformed Line Products.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size Alloy Double Side Tie before application.
5. Alloy Double Side Ties are precision devices. To ensure proper performance, they should be stored in cartons under cover and handled carefully.



Alloy Double Side Tie

For use on:

**ACSR, All-Aluminum
AWAC, Aluminum Alloy
Compacted ACSR, ACAR
C-Neck & F-Neck Interchangeable
Headstyle Insulators**

Spool Insulator

ANSI 55-2 PIN

ANSI 55-3 PIN

ANSI 55-4 PIN

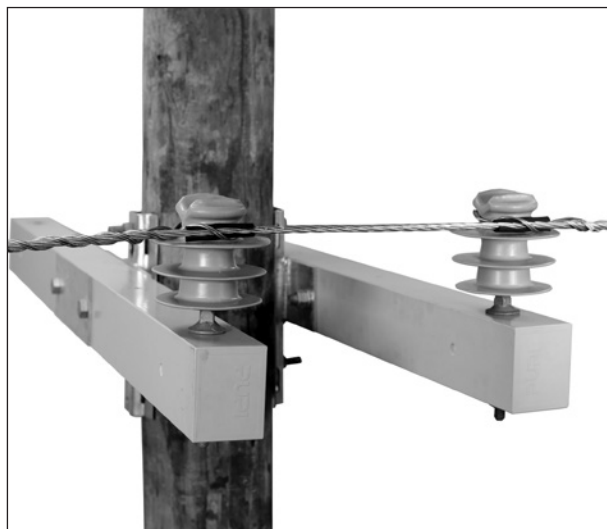
ANSI 55-5 PIN

ANSI 57-1 POST

ANSI 57-2 POST

ANSI 57-3 POST

**2-1/4" & 2-7/8"
Neck Diam.**



Catalog Number	Diameter Range		Nominal Conductor Size	Units	Wt./Lbs.	Applied Length	Insulator Identification Mark	Color Code
	Min.	Max.		Per Carton				
9/16" R. GROOVE (See Note 2)								
ADBST-0100	0.245	0.277	#4, 6/1-7/1 – #4, 7W Alum. Alloy	50	21	16	Black/Yellow	Orange
ADBST-0101	0.278	0.315	#3, 7W Alum. Alloy #2, 7W All Alum.	50	21	16	Black/Yellow	Purple
ADBST-0102	0.316	0.357	#2, 6/1, 7/1 – #2, 7W Alum. Alloy – #1, 6/1	50	21	17	Black/Yellow	Red
ADBST-0103	0.358	0.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	50	21	16	Black/Yellow	Yellow
ADBST-0104	0.406	0.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	21	18	Black/Yellow	Blue
ADBST-0105	0.46	0.52	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	36	19	Black/Yellow	Orange
ADBST-0106	0.521	0.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	36	19	Black/Yellow	Red
ADBST-0107	0.589	0.665	266.8, 37W All Alum. 266.8, 18/1	50	38	20	Black/Yellow	Purple
ADBST-0108	0.666	0.755	336.4, 18/1 336.4, 19W All Alum. 397.5, 19W, All Alum.	50	39	20	Black/Yellow	Brown
ADBST-0109	0.756	0.858	477, 19W, 37W, All Alum. 477, 18/1, 24/7, 26/7	50	39	20	Black/Yellow	Red
5/8" R. GROOVE (See Note 2)								
ADBST-0110	0.859	0.968	556.5, 26/7 636, 18/1 700, 37W, 61W, All Alum.	50	42	22	Black/Yellow	Blue
11/16" R. GROOVE (See Note 2)								
ADBST-0111	0.969	1.096	795, 37W, 61W, All Alum. 715.5, 24/7 795, 54/7"	50	44	24	Black/Yellow	Green
3/4" R. GROOVE (See Note 2)								
ADBST-0112	1.097	1.24	954, 36/1, 54/7 1033.5, 37W, 61W, All Alum	50	44	24	Black/Yellow	Yellow

EXPLANATORY NOTES:

- (1) "Diameter Range" indicates the size of conductors that utilize the same tie.
- (2) For the succeeding ranges, the insulator's side groove radius should be at least as large as shown above.
- (3) The loop of the Double Side Ties on this page can accommodate either C or F neck insulators.
- (4) Nominal Conductor size indicates one of various conductors within each range. Use the conductor diameter to select the proper tie.
- (5) AWAC is a registered trademark of the Copperweld Co.

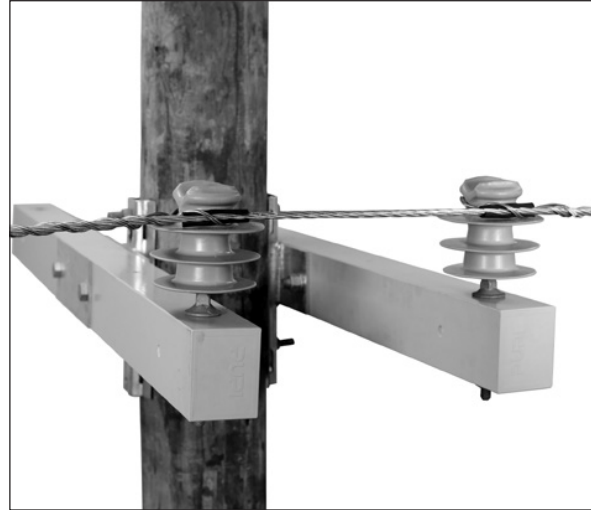
Alloy Double Side Tie

For use on:

**ACSR, All-Aluminum
AWAC, Aluminum Alloy
Compacted ACSR, ACAR
J-Neck Interchangeable
Headstyle Insulators**

Spool Insulator

**ANSI 55-6 Single Skirt PIN 3-1/2"
ANSI 55-7 Single Skirt PIN Neck Diam.
ANSI 56-1 Double Skirt PIN**



Catalog Number	Diameter Range		Nominal Conductor Size	Units	Wt./Lbs.	Applied Length	Insulator Identification Mark	Color Code
	Min.	Max.		Per Carton				
9/16" R. GROOVE (See Note 2)								
ADBST-0300	0.245	0.277	#4, 6/1-7/1 – #4, 7W Alum. Alloy	50	21	19	Green	Orange
ADBST-0301	0.278	0.315	#3, 7W Alum. Alloy #2, 7W All Alum.	50	21	17	Green	Purple
ADBST-0302	0.316	0.357	#2, 6/1, 7/1 – #2, 7W Alum. Alloy – #1, 6/1	50	21	22	Green	Red
ADBST-0303	0.358	0.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	50	21	21	Green	Yellow
ADBST-0304	0.406	0.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	21	19	Green	Blue
ADBST-0305	0.46	0.52	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	36	20	Green	Orange
ADBST-0306	0.521	0.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	36	21	Green	Red
ADBST-0307	0.589	0.665	266.8, 37W All Alum. 266.8, 18/1	50	38	24	Green	Purple
ADBST-0308	0.666	0.755	336.4, 18/1 336.4, 19W All Alum. 397.5, 19W, All Alum.	50	39	25	Green	Brown
ADBST-0309	0.756	0.858	477, 19W, 37W, All Alum. 477, 18/1, 24/7, 26/7	50	39	24	Green	Red
5/8" R. GROOVE (See Note 2)								
ADBST-0310	0.859	0.968	556.5, 26/7 636, 18/1 700, 37W, 61W, All Alum.	50	42	23	Green	Blue
11/16" R. GROOVE (See Note 2)								
ADBST-0311	0.969	1.096	795, 37W, 61W, All Alum. 715.5, 24/7 795, 54/7"	50	44	23	Green	Green
3/4" R. GROOVE (See Note 2)								
ADBST-0312	1.097	1.24	954, 36/1, 54/7 1033.5, 37W, 61W, All Alum	50	44	25	Green	Yellow

EXPLANATORY NOTES:

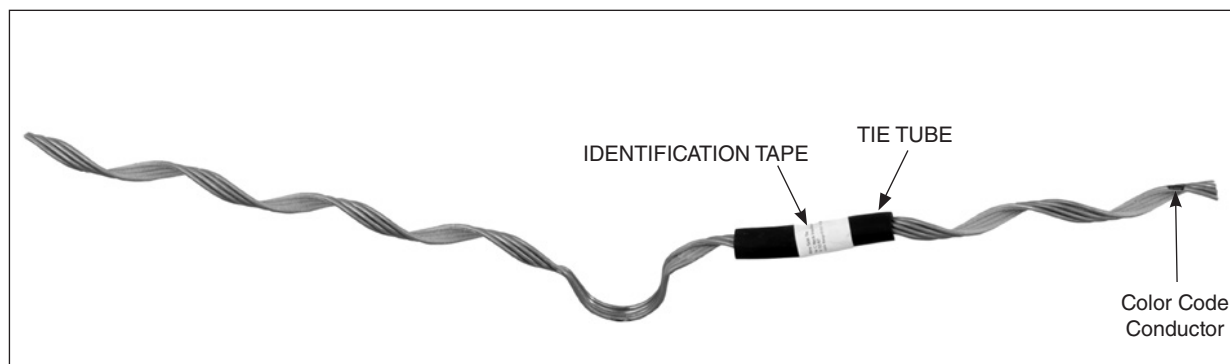
- (1) "Diameter Range" indicates the size of conductors that utilize the same tie.
- (2) For the succeeding ranges, the insulator's side groove radius should be at least as large as shown above.
- (3) The loop of the Double Side Ties on this page can accommodate J neck insulators only. Use the conductor diameter to select the proper tie.
- (4) Nominal Conductor size indicates one of various conductors within each range.
- (5) AWAC is a registered trademark of the Copperweld Co.



Alloy Spool Tie

FOR USE ON BARE AND 1-3/4" DIAMETER SPOOL INSULATORS
(ANSI CLASSES 53-1,53-2,53-3)

NOMENCLATURE



Tie Assembly: An Alloy Spool Tie Assembly consists of one metal tie component plus tie tube.

Tie Tube: Each Alloy Spool Tie is supplied with an elastomeric tie tube designed for abrasion protection with bare conductors.

Color Code: Identifies proper conductor size, corresponding to tabular information appearing in this section.

Identification Tape: Lists catalog numbers, proper insulator type, and nominal conductor sizes.

Applied Length: Describes length of tie after installation, plus assists in product identification.



GENERAL RECOMMENDATIONS

The Alloy Spool Tie is intended for use on aluminum based conductors with diameters from .245" to 1.096". The Alloy Spool Tie is manufactured from an aluminum alloy material which makes it ideal for corrosive environments.

Interchangeable Neck-Style Insulators: Alloy Spool Ties listed in this section are designed to be applied to only ANSI Class 53-1, 53-2 and 53-3 spool insulators which have 1-3/4" neck diameters.

To ensure proper fit and service life of the Alloy Spool Tie, it is recommended only spool insulators with uniform dimensions, as described by the latest (C29.3) ANSI standards, be used.

Each Alloy Spool Tie is supplied with an elastomeric tie tube designed to minimize abrasion to bare conductors and insulators.

Mechanical Strength: The Alloy Spool Tie is designed to provide superior mechanical strength and resiliency during conductor motion and cyclic loading conditions. Longitudinal holding strengths consistently exceed the requirements of the National Electric Safety Code. **TR-879-E** covers the mechanical testing of the Alloy Spool Tie and is available upon request.

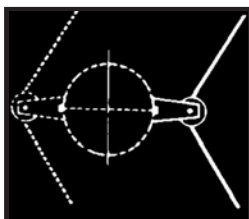
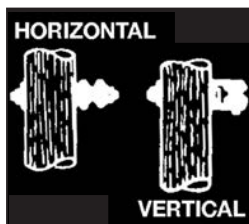
The RIV/TVI characteristics of Alloy Spool Ties are equivalent to those of a well made hand tie as originally installed. The precontoured loop and formed legs of the Alloy Spool Tie assure continued fit, which provide better RIV/TVI performance than a loosened hand tie wire.

Vibration Dampers: The Alloy Spool Tie is designed to outperform the hand tie during conductor motion activity, such as aeolian vibration and galloping. However, on some lines, the use of dampers may be necessary to prevent damage. Utilities that have experienced conductor motion or expect to, should consider adding dampers. Consult PLP® for general guidelines and advice concerning conductor motion and dampers. Also consult the Motion Control section.

Alloy Spool Tie

INSTALLATION GUIDELINES

1. **Insulator Mounting:** When installing an Alloy Spool Tie, the spool insulator may be mounted either horizontally or vertically. Whatever the construction style, the conductor should be positioned so it will bear, as much as possible, into the insulator. During vertical mounted installations, the insulator should be removed from the rack or clevis so the conductor may be positioned inside the insulator. However, when running angles turn *into* the pole, the conductor should be placed on the *outside* of the insulator so the conductor bears against the spool.



2. **Line Angles – General Guidelines:** On horizontally-mounted insulators, Alloy Spool Ties can accommodate line angles up to 10° . On vertically-mounted insulators, line angles up to 40° can be achieved.

In all cases the conductor should rest in the preferred insulator groove, independently of the tie, so the tie is not required to force the conductor to remain in that groove. The largest practical angle a tie can accommodate depends upon limiting factors such as conductor size, tension, span lengths, sag angles, insulator style and orientation, etc. Consult PLP® for further guidance on line angle issues.

3. **Tapping:** Taps should not be made directly over the legs or loop of the Alloy Spool Tie.
4. **Conductor Compatibility:** Alloy Spool Ties should be used only on the size, type, and lay direction for which they are designed. When using conductors not mentioned in this catalog section, consult PLP.
5. During installation and at all times, care should be taken to avoid gouging or damaging the protective coating of the Alloy Spool Tie or the conductor.
6. Alloy Spool Ties should not be used as tools; i.e., come-alongs, pulling-in grips, etc.
7. Consult the Alloy Spool Tie Application Procedure for additional installation information.
8. When in doubt about usage of Alloy Spool Ties, consult your PLP representative or Preformed Line Products.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size Alloy Spool Tie before application.
5. Alloy Spool Ties are precision devices. To ensure proper performance, they should be stored in cartons under cover and handled carefully.



Alloy Spool Tie

For use on:

**ACAR, All-Aluminum
ACSR, Aluminum Alloy
AWAC, Compacted ACSR**

Spool Insulator

ANSI 53-1

ANSI 53-2

ANSI 53-3

**1-3/4"
Neck Diam.**



Catalog Number	Diameter Range (Inches)		Nominal Conductor Size – Bare Conductor	Units	Wt./Lbs.	Applied Length (Inches)	Color Code
	Min.	Max.		Per Carton			
ASP-4300	.190	.215	#4, #6 (3W, 7W Alum. Alloy)	100	16	21	Blue
ASP-4301	.216	.244	#4 (7W Alum. Alloy)	100	16	22	Brown
ASP-4302	.245	.277	#4 (6/1, 7/1) #4 (7W Alum. Alloy)	100	16	24	Orange
ASP-4303	.278	.315	#1, #2, #7	100	16	28	Purple
ASP-4304	.316	.357	#2 (6/1, 7/1) #2 (7W Alum. Alloy) #1 (6/1)	100	16	28	Red
ASP-4305	.358	.405	1/0 (7W All Alum.) 1/0 (6/1) 1/0 (7W Alum. Alloy)	100	17	30	Yellow
ASP-4306	.406	.459	2/0 (7W All Alum.) 2/0 (6/1) 2/0 (7W Alum. Alloy)	100	21	32	Blue
ASP-4307	.460	.520	3/0 (7W All Alum.) 3/0 (6/1) 3/0 (7W Alum. Alloy)	100	21	34	Orange
ASP-4308	.521	.588	4/0 (7W All Alum.) 4/0 (6/1) 4/0 (7W Alum. Alloy)	100	27	36	Red
ASP-4309	.589	.665	266.8 (37W All Alum.) 266.8 (18/1) 336.4 (19W All Alum.)	100	28	38	Purple
ASP-4310	.666	.755	336.4 (18/1) 397.5 (19W All Alum.) 400 (19W, 37W All Alum.)	100	30	40	Brown
ASP-4311	.756	.858	477 (19W, 37W All Alum.) 477 (18/1, 24/7), 26/7	100	35	44	Red
ASP-4312	.859	.968	556.5 (26/7) 636 (18/1) 700 (37W, 61W All Alum.)	100	40	47	Blue

EXPLANATORY NOTES:

- (1) "Diameter Range" indicates the size of conductors that utilize the same tie.
- (2) "Nominal Conductor Size" indicates only a few conductors that have outside diameters within the ranges listed.
- (3) Since all spool insulators do not have neck dimensions suitable for application of the Spool Tie, consult the Insulator Manufacturer's List in this section.
- (4) AWAC is a registered trademark of the Copperweld Co.

Alloy Slack Span Dead-end

NOMENCLATURE

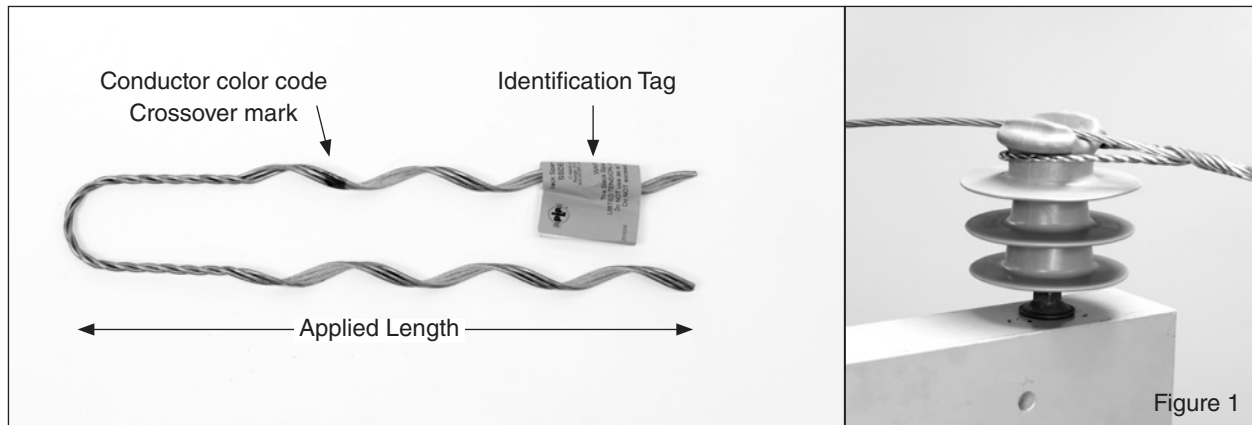


Figure 1

Dead-end Material Helical Leg Section: An aluminum alloy version of the original PLP Slack Span Dead end specifically designed for corrosive environments.

Crossover Marks: Indicates starting point for application on conductor.

Color Code & Length: Assists in identification of conductor diameter, corresponding to tabular information listed on catalog pages.

Product Identification Tag/Warning Label: Identifies catalog number, appropriate conductor types and sizes.

GENERAL RECOMMENDATIONS

The Alloy Slack Span Dead-end is intended for use on all aluminum conductors with diameter ranges from .190" to 1.24". It is specifically designed to terminate primary, secondary and neutral conductors within corrosive environments. Each Alloy Slack Span Dead-end covers a range of conductor diameters as outlined on catalog pages.

Conductor Tension Limitations: The Alloy Alloy Slack Span Dead-end is specifically designed for LIMITED TENSION APPLICATIONS. IT SHOULD NOT BE USED AS A FULL TENSION DEAD-END.

The Alloy Slack Span Dead-end is intended for use where guying (or other) restrictions prevent full tension spans. While individual utility construction and safety practices should dictate actual installations, each Alloy Slack Span Dead-end has a warning label attached suggesting a maximum allowable loaded tension of 1000 lbs. This value does not indicate a holding strength rating for Alloy Slack Span Dead-ends; rather, it suggests a practical limit for tensions in this type of construction.

The Alloy Slack Span Dead-end replaces conventional Dead-ending equipment used in Alloy Slack Span construction.

Dead-end insulators, clamps, and associated hardware when used in this way normally do not offer tight, solid electrical connections between each other. This "looseness" can allow intermittent contact and ultimately produce troublesome RFI (RIV) and TVI. Construction practices utilizing the Alloy Slack Span Dead-end can minimize this problem.

The Alloy Slack Span Dead-end is specifically designed to be installed on pin, line post or spool insulators when used in limited tension construction. Refer to Figure 1 for a typical installation.

The Alloy Slack Span Dead-end is designed to grip the conductor uniformly to prevent distortion. It also offers a unique design that eliminates bolts, nuts, washers and other component parts that may become lost or damaged during installation or in service. Where requirements call for increased tension applications, use the Alloy Dead-end Bare. On jacketed conductors, use Coated Dead-ends.

Where requirements call for Dead-ending conductors associated with bare neutral messengers or self-supporting cable used in making service drops, use Alloy Dead-end Bare.

Alloy Dead-ends (Alloy Slack Span Dead-ends) are not recommended for use with high temperature/low sag conductors such as ACSS, ACSS/AW, ACSS/TW, ACCR or other types of conductors with loose, and/or annealed outer layer strands. Typically THERMOLIGN® Dead Ends are suggested for these applications. Consult PLP for more information.



Alloy Slack Span Dead-end

INSTALLATION GUIDELINES

Conductor Compatibility: Alloy Slack Span Dead-ends should be used only on the size and type of conductor for which they are designed. They must have the same lay as the conductor to which they are being applied. When ordering Alloy Slack Span Dead-ends, make sure to specify the conductor size and type they are to be used on. When using types and/or sizes of conductors not mentioned in these catalog pages, consult Preformed Line Products Company.

During installation, and at all times, care should be taken to avoid gouging or damaging the Alloy Slack Span Dead-end or the conductor itself.

Alloy Slack Span Dead-ends should not be used as tools; i.e., come-alongs, pulling-in grips, etc.

Tools are not required to install Alloy Slack Span Dead-ends, except for hot stick applications.

Tapping: Tapping over the legs of the Alloy Slack Span Dead-end is NOT recommended. Taps can be made beyond the ends of the Dead-end on the conductor or on the conductor tail that extends through the loop.

Alloy Slack Span Dead-ends should not be used on overhead shield wires.

FOR ADDITIONAL INFORMATION REGARDING INSTALLATION, REFER TO THE Alloy Slack Span Dead-end APPLICATION PROCEDURE.

When in doubt about dimensions, fittings, installations, or unusual applications, consult your PREFORMED™ Sales Representative or Preformed Line Products Company.

ACCEPTABLE FITTINGS

Alloy Slack Span Dead-ends are specifically designed to be applied around the necks of certain pin, line post and spool insulators.

Alloy Slack Span Dead-ends can be applied to either:

- a. ANSI "C" and "F" neck insulators and ANSI class 53-1 to 53-5 spool insulators, or
- b. ANSI "J" neck insulators.

Refer to Illustration 1. for nominal insulator neck sizes and appropriate size Alloy Slack Span Dead-end.

Application of Alloy Slack Span Dead-ends to non-insulator fittings is acceptable as long as the fitting:

- a. has smoothly contoured dimensions,
- b. has a seat diameter (Illustration 2, Figure 1) consistent with the insulator neck diameters shown in Illustration 1.,
- c. has a minimum groove width (Illustration 2, Figure 2) of 9/16".

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application, although it may be reapplied twice for retensioning within 90 days of initial installation. **CAUTION: DO NOT MODIFY OR REUSE THIS PRODUCT AFTER 90 DAYS UNDER ANY CIRCUMSTANCES.**
2. This product is intended for use by trained craftspeople only. This product **SHOULD NOT BE USED** by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, **EXTRA CARE** should be taken to prevent accidental electrical contact.
4. For **PROPER PERFORMANCE AND PERSONAL SAFETY** be sure to select the proper size PREFORMED™ product before application.
5. PREFORMED™ products are precision devices. To ensure proper performance, they should be stored in cartons under cover and handled carefully.

Alloy Slack Span Dead-end

Illustration 1. Applicable Pin, Line post and Spool Insulators

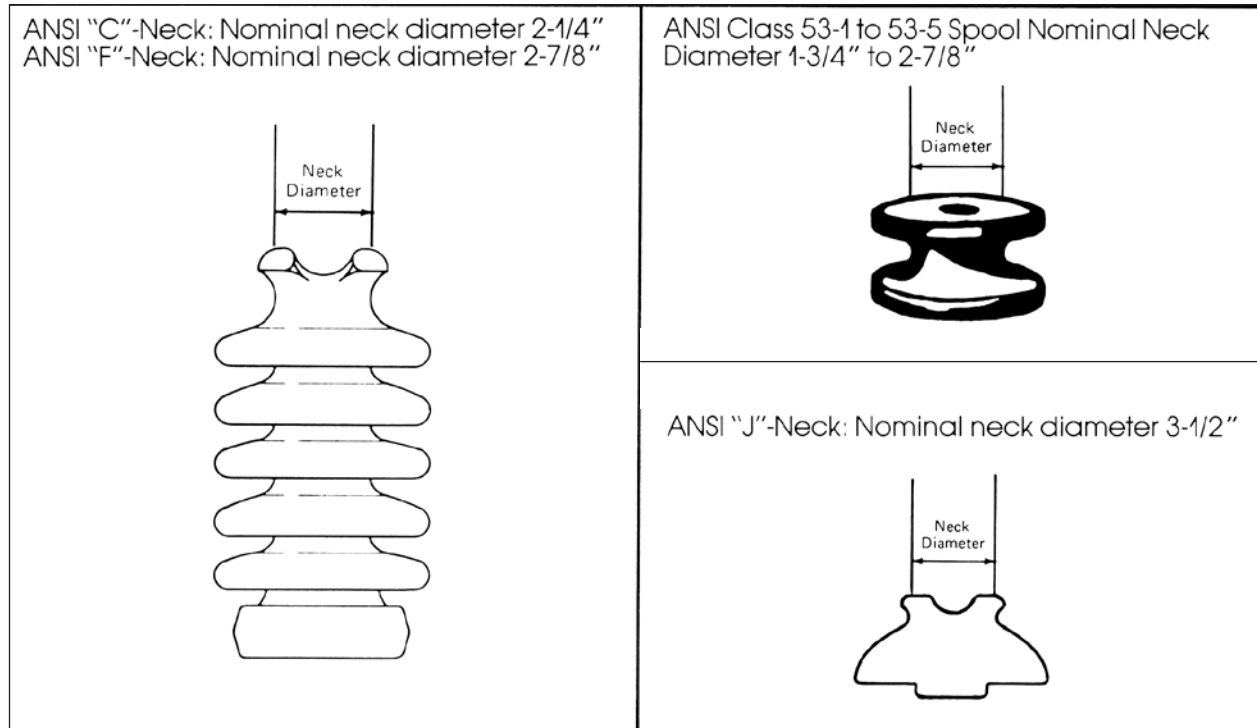
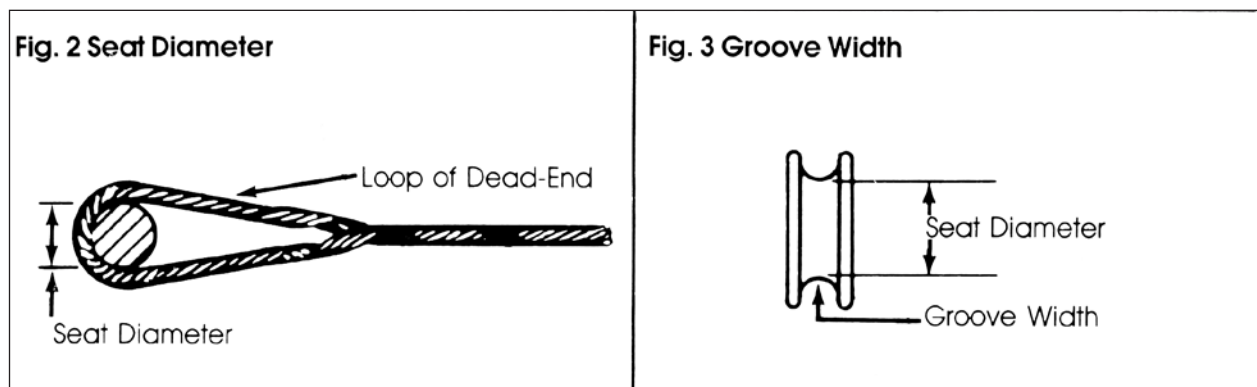


Illustration 2. Acceptable Dimensions for Non-Insulator Fittings





Alloy Slack Span Dead-end

For use on:

ACAR, All-Aluminum

ACSR, Aluminum Alloy

AWAC®, Compacted ACSR

C-Neck and F-Neck Interchangeable

Headstyle Insulators:

2-1/4" Neck Diameter

2-7/8" Neck Diameter

ANSI Class Spool Insulators:

ANSI 53-1, 53-2, 53-3

1-3/4" Neck Diameter

ANSI 53-4, 53-5

2-7/8" Neck Diameter

J-Neck Interchangeable

Headstyle Insulators:

3-1/2" Neck Diameter

ANSI 55-6 Single Skirt Pin

ANSI 55-7 Single Skirt Pin

ANSI 55-8 Double Skirt Pin



Catalog Number C and F-Neck	Catalog Number J-Neck	Diameter Range (Inches)		Nominal Conductor Size	Units	Weight (lbs.)	Applied Length (inches)	Color Code
		Min.	Max.		Per Carton			
SSDE-5200	SSDE-5100	0.190	0.215	#6 ACSR, AAC	25	12	17	Blue
SSDE-5201	SSDE-5101	0.216	0.244	#4 AAC	25	13	17	Brown
SSDE-5202	SSDE-5102	0.245	0.277	#4 ACSR, AAC	25	14	18	Orange
SSDE-5203	SSDE-5103	0.278	0.315	#3 ACSR, AAC	25	15	18	Purple
SSDE-5204	SSDE-5104	0.316	0.357	#2 ACSR, AAC	25	16	19	Red
SSDE-5205	SSDE-5105	0.358	0.405	1/0 ACSR, AAAC, AAC	25	17	21	Yellow
SSDE-5206	SSDE-5106	0.406	0.459	2/0 ACSR, AAAC, AAC	25	18	21	Blue
SSDE-5207	SSDE-5107	0.460	0.520	3/0 ACSR, AAAC, AAC	25	19	19	Orange
SSDE-5208	SSDE-5108	0.521	0.588	4/0 ACSR, AAAC, AAC	25	20	20	Red
SSDE-5209	SSDE-5109	0.589	0.665	266.8 ACSR, AAAC, AAC	25	21	21	Purple
SSDE-5210	SSDE-5110	0.666	0.755	336.4 ACSR, AAAC, AAC	25	22	22	Brown
SSDE-5211	SSDE-5111	0.756	0.858	477 ACSR, AAAC, AAC	25	23	23	Red
SSDE-5212	SSDE-5112	0.859	0.968	556.5 ACSR, AAAC, AAC	25	24	24	Blue
SSDE-5213	SSDE-5113	0.969	1.096	636 ACSR, AAAC, AAC	25	25	27	Green
SSDE-5214	SSDE-5114	1.097	1.240	795 ACSR (26/7) , AAAC	25	26	28	Yellow

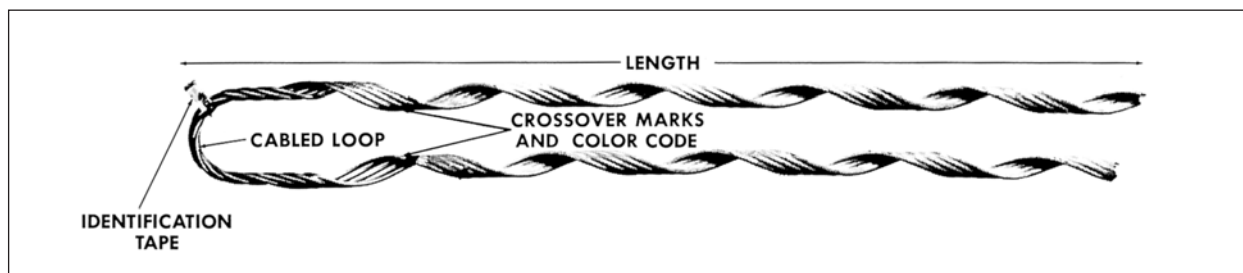
Right-hand lay standard

EXPLANATORY NOTES:

- (1) Where Dead-ending requirements call for other than limited tension requirements, refer to Alloy Dead-end Bare.
- (2) Where Dead-ending requirements call for Service Grip Dead-ends, refer to that section.
- (3) Insulators with C and F neck dimensions can be identified by consulting the manufacturer.
- (4) "Conductor Range" indicates the range of conductors that utilize the same Dead-end.
- (5) Refer to Illustrations 1 and 2 of the Acceptable fittings portion of this section for dimensions of appropriate insulators and fittings.
- (6) When in doubt about dimensions, insulators, fittings, installations, or unusual applications, consult your PREFORMED™ sales representative or Preformed Line Products Co.

Alloy Dead-end Bare

NOMENCLATURE



Crossover Marks: Indicate starting point for application.

Identification Tape: Shows catalog number, nominal sizes.

Color Code and Length: Assist in identification of conductor size, corresponding to tabular information appearing on catalog pages.

GENERAL RECOMMENDATIONS

Alloy Dead-end, manufactured of aluminum alloy, is designed for application in single-pole distribution construction in corrosive environments. Mechanical strength meets the requirements of primaries, secondaries, and substation feeders.

Alloy Dead-end is recommended for direct application over bare aluminum conductor and can be used with plastic jacketed (not fabric covered) conductor. Coated Dead-ends are recommended for jacketed conductor.

The *Alloy Dead-end* is designed to grip the conductor uniformly to prevent distortion of the conductor. It also offers a unique design that eliminates bolts, nuts, washers and other component parts that may become lost or damaged during installation or in service. During installation, and at all times, care should be taken to avoid gouging or damaging the dead-end or the conductor itself.

Alloy Dead-ends should not be used as tools; i.e., come-alongs, pulling-in grips, etc. Tools are not required nor recommended to install Alloy Dead-ends, except for hot stick applications.

RATED HOLDING STRENGTH. In arriving at "Rated Holding Strengths," actual results of tests on unweathered conductor are studied, and consideration is given to dimensional tolerances for the sizes encompassed. These minimum values are conservative when compared to "typical" values, or, actual tests on conductor which has been in service. A test Report is available upon request.

TAPPING. Tapping over the applied legs of *Alloy Dead-end* is not recommended. Taps can be made on the conductor, ahead of the dead-end, or, the conductor can continue through the crossover point of the grip with connectors applied to the continued tail.

VIBRATION DAMPERS. The use of *Spiral Vibration Dampers*, in Motion control section, should be considered for areas experiencing a history of vibration.

APPLICATION-INSPECTION. Dead-ends should not be re-used after original installation. Lay direction of both the Dead-end Bare and the conductor should be the same. Most conductor is right-hand lay. Not recommended for use on overhead shield wires.

Alloy Dead-ends are not recommended for use with high temperature/low sag conductors such as ACSS, ACSS/AW, ACSS/TW, ACCR or other types of conductors with loose, and/or annealed outer layer strands. Typically THERMOLIGN® Dead Ends are suggested for these applications; consult PLP for further information.



Alloy Dead-end Bare

GENERAL RECOMMENDATIONS CONTD.

Illustration 2. Acceptable Dimensions for Non-Insulator Fittings

Fig. 2 Seat Diameter

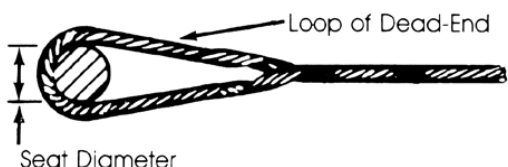
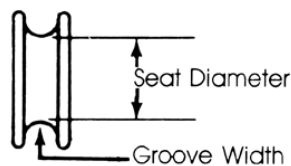


Fig. 3 Groove Width



Dead-end Diameter Range for ASCR		Seat Diameter (inches)		Minimum Groove Width (inches)
Min.	Max.	Min. seat diameter at cross-over mark	Max. seat diameter at cross-over mark	
0.247	0.367	1 - 1/4	2 - 3/8	3/8
0.368	0.462	1 - 1/2	2 - 3/8	7/16
0.463	0.521			1/2
0.522	0.567			5/8
0.568	0.729			3/4
0.730	0.935	1 - 3/4	2 - 5/8	1
0.936	1.035	2	3 - 1/8	1 - 1/4

Loops of the **Alloy Dead-end Bare** are designed for smoothly contoured fittings which have inside groove widths and diameters corresponding to the dimensions appearing in this table.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application, although it may be reapplied twice for retensioning within 90 days of initial installation. CAUTION: DO NOT MODIFY OR REUSE THIS PRODUCT AFTER 90 DAYS UNDER ANY CIRCUMSTANCES.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size Distribution-Grip Dead-end before application.
5. Distribution-Grip Dead-ends are precision devices. To ensure proper performance, they should be stored in cartons under cover and handled carefully.

Alloy Dead-end Bare

For use on:
ACSR, All-Aluminum
Aluminum Alloy, AWAC®
Compacted ACSR

Catalog Number	Diameter Range (inches)		Nominal Conductor Size - Bare Conductor			Units Per Carton	Applied Length (inches)	Color Code
	Min.	Max.	ACSR	All-Aluminum	Aluminum Alloy			
DE-0131	0.247	0.257	#4, 6/1-7/1			100	21	Orange
DE-0132	0.258	0.270		#2 solid #3, 7w		100	22	Green
DE-0134	0.281	0.289	#3, 6/1	#1 Solid		100	22	White
DE-0135	0.290	0.298		#2, 7w		100	22	Purple
DE-0137	0.311	0.325	#2, 6/1 - 7/1		#2, 7w	100	23	Red
DE-0140	0.352	0.367	#1, 6/1		#1, 7w	100	25	Green
DE-0141	0.368	0.380		1/0, 7w 19w		100	25	Black
DE-0142	0.381	0.398	1/0, 5/1 6/1		1/0, 7w	100	27	Yellow
DE-0144	0.414	0.425		2/0, 7w 19w		100	29	Brown
DE-0146	0.444	0.462	2/0, 6/1 7/1		2/0, 7w	50	30	Blue
DE-0147	0.463	0.481		3/0, 7w 19w		50	33	Green
DE-0148	0.482	0.503	3/0, 6/1		3/0, 7w	50	34	Orange
DE-0149	0.504	0.521				50	35	Black
DE-0150	0.522	0.544	4/0, 18/1	4/0, 7w 19w		50	35	Purple
DE-0151	0.545	0.567	4/0, 5/1 6/1		4/0, 7w	50	37	Red
DE-0152	0.568	0.594		266.8, 7w 19w 37w		50	39	Blue
DE-0153	0.595	0.618	266.8, 18/1			25	42	Green
DE-0154	0.619	0.644	266.8 26/1		266.8, 19w	25	45	Orange
DE-0155	0.645	0.671	211.3, 12/7	336.4, 19w 37w		25	47	Brown
DE-0156	0.672	0.700	336.4, 36/1 18/1	350, 19w 37w		25	48	Yellow
DE-0157	0.701	0.729	336.4, 26/7	397.5, 19w 400, 19w 400, 37w		25	50	White
DE-0158	0.73	0.760	397.5, 36/1 18/1			25	51	Black
DEMS4314	0.853	0.86	477, 24/7 26/7	556.5 19w 37w 61 w	477, 19w	25	54	Yellow
DEMS5106	0.921	0.935	556.5, 26/7 636, 36/1	650, 37w 61w	556.5, 19w	25	64	Green
DEMS4219	1.025	1.035		795, 37w 61w		10	66	Black

Right-hand lay standard

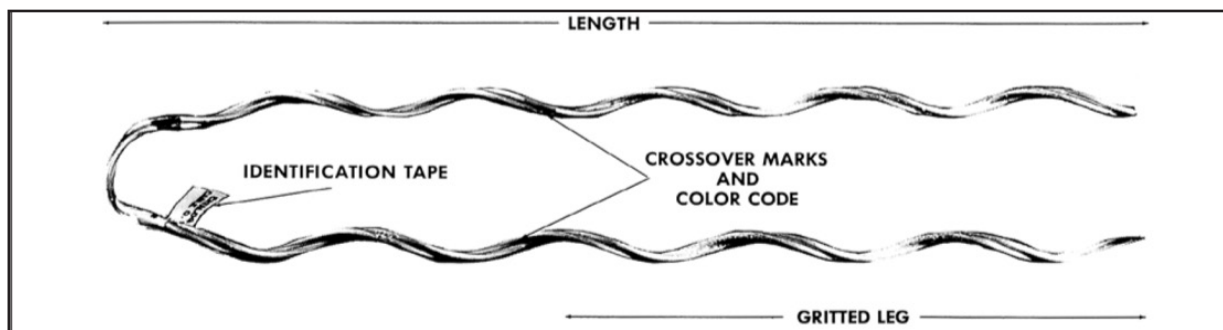
EXPLANATORY NOTES:

- (1) Nominal conductor size indicates a few of the various conductors within each range. Consult PLP for sizes and strandings not shown.



Service-Grip Dead-end – Aluminum Clad Steel

NOMENCLATURE



Crossover Marks: Indicate starting point for application.

Color Code & Length: Assists in identification of conductor size, corresponding to tabular information listed on catalog pages.

Identification Tape: Shows catalog number, nominal sizes.

Dead-end Material: Made from aluminum-clad steel wire for use on aluminum-based conductors within corrosive environments.

GENERAL RECOMENDATIONS

Service-Grip Dead-end, manufactured of aluminum-covered steel, is designed for bare neutral messengers of self-supporting cable used in making service drops. The Dead-end is recommended for service drops by reason of minimum length, economy, and neatness of appearance. Mechanical strength meets the requirements for NESC Grade "N", Rule 263-E, Supply Services, Spans not exceeding 150 feet.

For service drops exceeding 150 feet, Grade "C" Construction, the Distribution-Grip Dead-end is recommended.

Dead-end: Coated is recommended for direct application over plastic jacketed open-wire service drops.

RATED HOLDING STRENGTH. Published for individual sizes on the page following the initial specification page. In arriving at "Rated Holding Strengths", actual results of tests on unweathered conductor are studied, and consideration is given to dimensional tolerances for the sizes encompassed. These minimum values are conservative when compared to "typical" values, or, actual tests on conductor which has been in service.

TAPPING. Tapping over the applied legs of Service-Grip Dead-end is not recommended. Taps can be made on the conductor, ahead of the Dead-end, or, the conductor can continue through the crossover point of the grip with connectors applied to the continued tail.

VIBRATION DAMPERS. No consideration of dampening devices with Service-Grip Dead-ends is made since Distribution-Grip Dead-ends are recommended when vibration is suspected.

APPLICATION-INSPECTION. Dead-ends should not be re-used after original installation.

Lay direction of both the Dead-end and the conductor should be the same. Lay direction of most neutral-messengers is right hand lay.

The loops of Service-Grip Dead-ends should not be criss-crossed, when two or more are applied to the same spool

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application, although it may be reapplied twice for retensioning within 90 days of initial installation. CAUTION: DO NOT MODIFY OR REUSE THIS PRODUCT AFTER 90 DAYS UNDER ANY CIRCUMSTANCES.

2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.

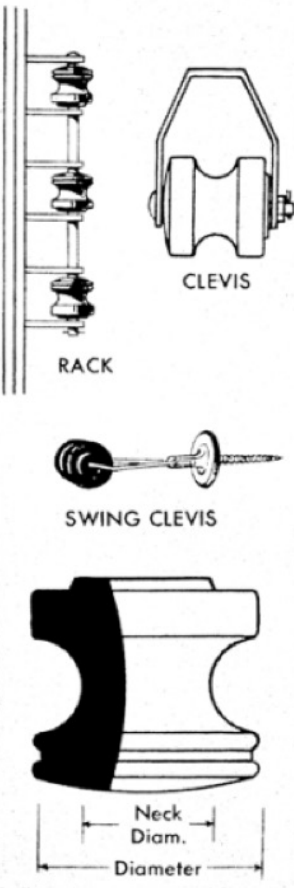
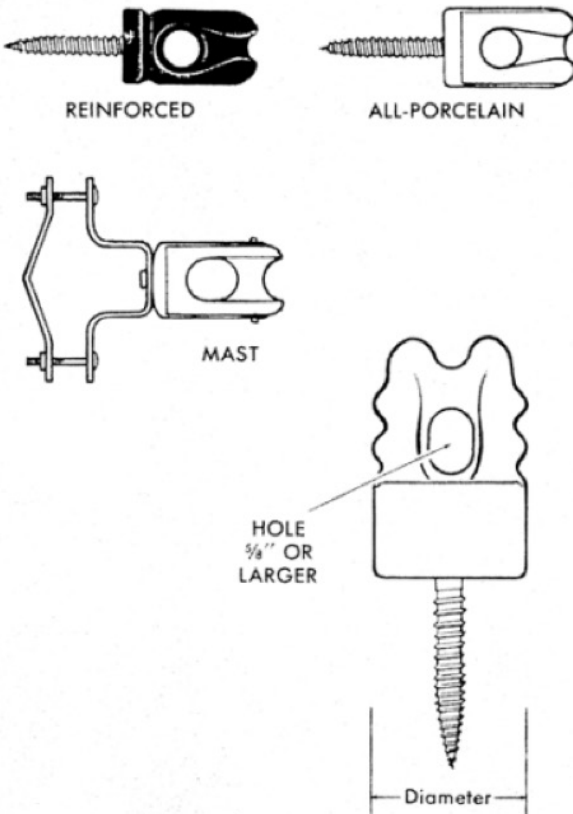
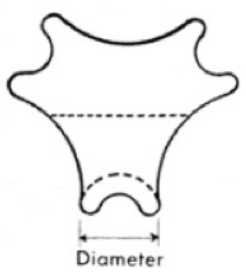
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.

4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED™ product before application.

5. PREFORMED™ products are precision devices. To ensure proper performance, they should be stored in cartons under cover and handled carefully. SAFETY CONSIDERATIONS INSTALLATION GUIDELINES ACCEPTABLE FITTINGS

Service-Grip Dead-end – Aluminum Clad Steel

GENERAL RECOMENDATIONS (continued)

ACCEPTABLE FITTINGS		
SPOOL INSULATORS	WIRE HOLDERS	TRIPLEX SEPARATOR
 <p>RACK</p> <p>CLEVIS</p> <p>SWING CLEVIS</p> <p>Neck Diam. Diameter</p>	 <p>REINFORCED</p> <p>ALL-PORCELAIN</p> <p>MAST</p> <p>HOLE $\frac{5}{8}$" OR LARGER</p> <p>Diameter</p>	 <p>Diameter</p>
DIAMETERS 2¼" to 4"	DIAMETERS 1½" to 3"	DIAMETERS 1½" to 3"
NECK DIAMETERS 1½" Minimum to 3" Maximum	NECK DIAMETERS 1½" Minimum to 3" Maximum	NECK DIAMETERS 1½" Minimum to 3" Maximum

Loops of the Service-Grip Dead-end are designed for use with a variety of porcelain fittings. These fittings are recommended because they have smoothly contoured diameters between 1-1/8" minimum and 3" maximum.

Refer to the catalog pages for maximum neck diameters for specific Service-Grip Dead-ends.

Consult PLP for fittings not appearing in this table.



Service-Grip Dead-end – Aluminum Clad Steel

RATED HOLDING STRENGTHS						
Holding strengths of the applied Dead-ends are shown in pounds. Percentage of conductor RBS shown in parentheses.						
Catalog Number	Size	ACSR	All-Alum.	Alum. Alloy	Compacted	
					ACSR	All-Alum.
SG-4500A	#6	#6, 6/1 585 lbs. (50%)	#6, 7W 488 lbs. (88%)	#6, 7W 840 lbs. (80%)	#6, 6/1 585 lbs. (50%)	#6, 7W 500 lbs. (90%)
	#5		#5 Solid 549 lbs. (88%)			
SG-4501A	#5	#5, 6/1 730 lbs. (50%)		#5, 7W 1,080 lbs. (80%)		
	#4		#4 Solid 772 lbs. (88%)			#4, 7W 788 lbs. (90%)
SG-4502A	#4	#4, 6/1 915 lbs. (50%)	#4, 7W 770 lbs. (88%)	#4, 7W 1,336 lbs. (80%)	#4, 6/1 915 lbs. (50%)	
		#4, 7/1 1,144 lbs. (50%)			#4, 7/1 1,145 lbs. (50%)	
	#3		#3, Solid 854 lbs. (88%)			
SG-4503A	#3	#3, 6/1 1,125 lbs. (50%)	#3, 7W 900 lbs. (88%)	#3, 7W 1,720 lbs. (80%)	#3, 6/1 1,125 lbs. (50%)	
	#2		#2 Solid 1,078 lbs. (88%)			
	#1		#1 Solid 1,331 lbs. (88%)			#2, 7W 1,202 lbs. (90%)
SG-4504A	#2	#2, 6/1 1,395 lbs. (50%)	#2, 7W 1,175 lbs. (88%)	#2, 7W 2,124 lbs. (80%)	#2, 6/1 1,395 lbs. (50%)	
					#2, 7/1 1,763 lbs. (50%)	
	#1					#1, 7W 1,383 lbs. (90%)
SG-4505A	#1	#1, 6/1 1,740 lbs. (50%)	#1, 7W 1,430 lbs. (88%)	#1, 7W 2,736 lbs. (80%)	#1, 6/1 1,740 lbs. (50%)	
	1/0					1/0, 7W 1,773 lbs. (90%)
						1/0, 19W 1,881 lbs. (90%)
SG-4506A	1/0	1/0, 6/1 2,140 lbs. (50%)	1/0, 7W 1,734 lbs. (88%)	1/0, 7W 3,384 lbs. (80%)	1/0, 6/1 2,140 lbs. (50%)	
		5/1 1,688 lbs. (50%)				
	2/0					2/0, 7W 2,232 lbs. (90%)
						2/0, 19W 2,327 lbs. (90%)
SG-4507A	2/0	2/0, 6/1 2,673 lbs. (50%)	2/0, 7W 2,182 lbs. (88%)	2/0, 7W 4,044 lbs. (80%)	2/0, 6/1 2,673 lbs. (50%)	
	3/0					3/0, 7W 2,705 lbs. (90%)
						3/0, 19W 2,880 lbs. (90%)
SG-4508A	3/0	3/0, 6/1 3,338 lbs. (50%)	3/0, 7W 2,644 lbs. (88%)	3/0, 7W 5,092 lbs. (80%)	3/0, 6/1 3,338 lbs. (50%)	
	4/0					4/0, 7W 3,411 lbs. (90%)
						4/0, 19W 3,501 lbs. (90%)
SG-4509A	4/0	4/0, 6/1 4,210 lbs. (50%)	4/0, 7W 3,335 lbs. (88%)	4/0, 7W 6,420 lbs. (80%)	4/0, 6/1 4,210 lbs. (50%)	
		4/0, 5/1 3,300 lbs. (50%)				
		4/0, 18/1 2,923 lbs. (50%)				

EXPLANTORY NOTES:

- (1) Refer to General Recommendations for explanation of “Related Holding Strength”
- (2) Consult PLP for sizes or strandings not shown.

Service-Grip Dead-end – Aluminum Clad Steel

For use on:

**ACSR, All-Aluminum
Aluminum Alloy, Compacted ACSR
Compacted All-Aluminum**



Catalog Number	Diameter Range (in)		Nominal Conductor Sizes (in)				Units	Weight	Length	Color	Max Neck Diameter
	Min	Max	ACSR	All Aluminum	Aluminum Alloy	Comp	Per Carton				
SG-4500A	0.169	0.198	#6, 6/1	#6, 7W	#6, 7W	#6, 6/1 #6, 7W	300	24	11	Blue	2-3/8
SG-4501A	0.199	0.224	#5, 6/1	#4, Solid	#5, 7W	#4, 7W	300	27	12	White	2-3/8
SG-4502A	0.225	0.257	#4, 6/1 #4, 7/1	#4, 7W	#4, 7W	#4, 6/1 #4, 7/1	300	29	13	Orange	2-3/8
SG-4503A	0.258	0.289	#3, 6/1	#3, 7W #2, Solid	#3, 7W	#3, 6/1 #2, 7W	200	27	14	Black	2-5/8
SG-4504A	0.290	0.325	#2, 6/1 #2, 7/1	#2, 7W	#2, 7W	#2, 6/1 #1, 7W	200	28	15	Red	2-5/8
SG-4505A	0.326	0.360	#1, 6/1	#1, 7W	#1, 7W	#1, 6/1 1/0, 7W	200	31	17	Green	2-5/8
SG-4506A	0.361	0.400	1/0, 6/1	1/0, 7W	1/0, 7W	1/0, 6/1 2/0, 7W	100	28	19	Yellow	2-7/8
SG-4507A	0.401	0.450	2/0, 6/1	2/0, 7W	2/0, 7W	2/0, 6/1 3/0, 7W	100	31	21	Blue	2-7/8
SG-4508A	0.451	0.510	3/0, 6/1	3/0, 7W	3/0, 7W	4/0, 7W	100	33	23	Orange	2-7/8
SG-4509A	0.511	0.580	4/0, 6/1 4/0, 18/1	4/0, 7W	4/0, 7W	4/0, 6/1	100	37	26	Red	3

Right-hand lay standard

EXPLANATORY NOTES:

- (1) AWAC is a registered trademark of the Copperweld Co.
- (2) Where Dead-ending requirements call for other than limited tension requirements, refer to Distribution-Grip Dead-ends, Dead-end-Coated, or Overhead Dead-end.
- (3) Where Dead-ending requirements call for Service Grip Dead-ends, refer to that section.
- (4) Insulators with C and F neck dimensions can be identified by consulting the manufacturer.

(5) “Conductor Range” indicates the range of conductors that utilize the same Dead-end.

(6) Refer to Illustrations 1 and 2 and Acceptable fittings portion of this section for dimensions of appropriate insulators and fittings.

(7) When in doubt about dimensions, insulators, fittings, installations, or unusual applications, consult your PREFORMED™ sales representative or Preformed Line Products Co.



PREFORMED
LINE PRODUCTS

Global Headquarters
660 Beta Drive
Cleveland, Ohio 44143

Mailing Address:
P.O. Box 91129
Cleveland, Ohio 44101

Telephone: 440.461.5200
Fax: 440.442.8816
Website: preformed.com
Email: inquiries@preformed.com

© 2020 Preformed Line Products
Printed in U.S.A.
EN-ML-1283-2
11.21.00