

## ALLOY SIDE TIE

**Alloy Side Ties** provide a vastly improved method of securing conductors in the side groove of interchangeable headstyle insulators compared to hand ties and are manufactured from an aluminum alloy material which makes it ideal for corrosive environments. They provide superior abrasion protection for the conductor under all types of motion, including low-frequency sway oscillation, high-frequency aeolian vibration, and galloping. The included tie tube provides an armoring layer that eliminates abrasion damage of the conductor and insulator caused by conductor motion, extending the life of the electrical system and reducing maintenance.

### FEATURES AND BENEFITS

- Superior corrosive-resistance when compared to standard aluminized steel ties
- Ideal for corrosive environments like coastal areas
- Applicable to interchangeable headstyle insulators - C, F, and J-Neck
- Accommodates conductors from 0.245" - 1.240" diameter
- Mitigates long-term issues caused by Radio Influence Voltage (RIV)
- Accommodates line angles up to 40-degrees in the vertical orientation
- Exceeds NESC requirements for unbalanced load
- Reduces abrasion caused by vibration
- Resiliency of the tie protects the conductor
- Test reports available upon request

## DESIGN CONSIDERATIONS

Description	Details
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-diameter and groove-height dimensions appear in the appropriate ANSI C29 standards. Consult PLP for engineering recommendations on non-interchangeable headstyle insulators. A sample of the insulator in question is required.
Conductor Size	Conductor sizes up to 1.240" OD can be accommodated depending on the insulator's side groove radius.
Radio Influence	The Radio Influence Voltage (RIV)/Television Interference (TVI) characteristics of Alloy Side Ties are equivalent to those of a well-made hand tie, as originally installed. During service life the pre-contoured Alloy Side Tie assures continued fit, which would have better RIV/TVI performance than a loosened tie wire.
Line Angles - General Guidelines	<p>On horizontally mounted insulators, Alloy Side Ties can normally accommodate line angles up to 10-degrees. On vertically mounted insulators, line angles up to 40-degrees can normally be achieved. When insulators are mounted at various degrees of cant between the horizontal and the vertical, line angles between 0-degrees and 40-degrees may be accommodated depending upon the actual cant of the insulator.</p> <p>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.</p>
Mechanical Strength	<p>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.</p> <p>The Alloy Side Tie is designed to permit controlled and limited movement of unbroken conductor and, under certain conditions, return the conductor to its original position. The ability of the tie to give and return under differential loading conditions is called "<b>resiliency</b>" and is designed into each Alloy Side Tie.</p>
Vibration Dampers	<p>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 0.760" 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.</p> <p>For conductor galloping, the Air Flow Spoiler is recommended. Use of the proper size and quantity of the 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 catalog and/or consult PLP for engineering recommendations for Air Flow Spoilers, and if necessary SVDs. See the Guidelines in the <b>Overhead Distribution Line Repair Manual</b>.</p>
Tapping	Compared to the use of protective rods, placing hot-line clamps directly over the applied legs of Alloy Side Ties <b>CANNOT</b> be recommended. Tapping over protective rods (Armor Rods, Line Guards, Tap Rods, and Protector Rods) will remain permissible.

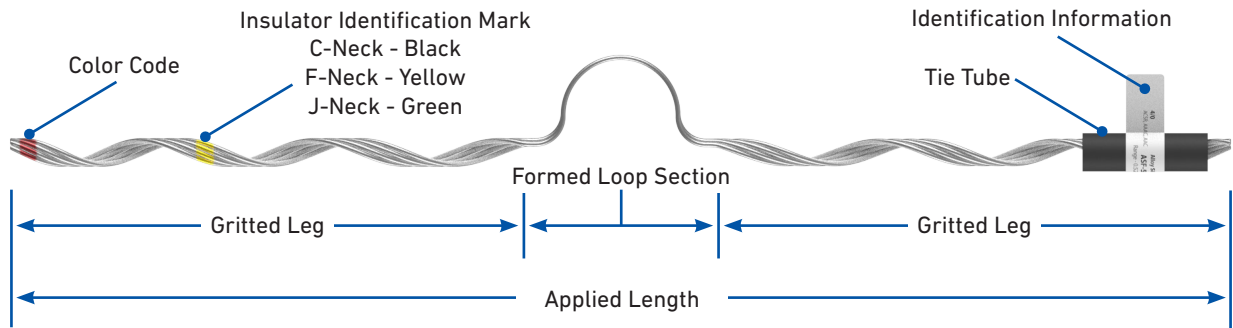
### Additional Resources

For additional information regarding the use and installation of Alloy Side Ties, scan or click the QR code below.



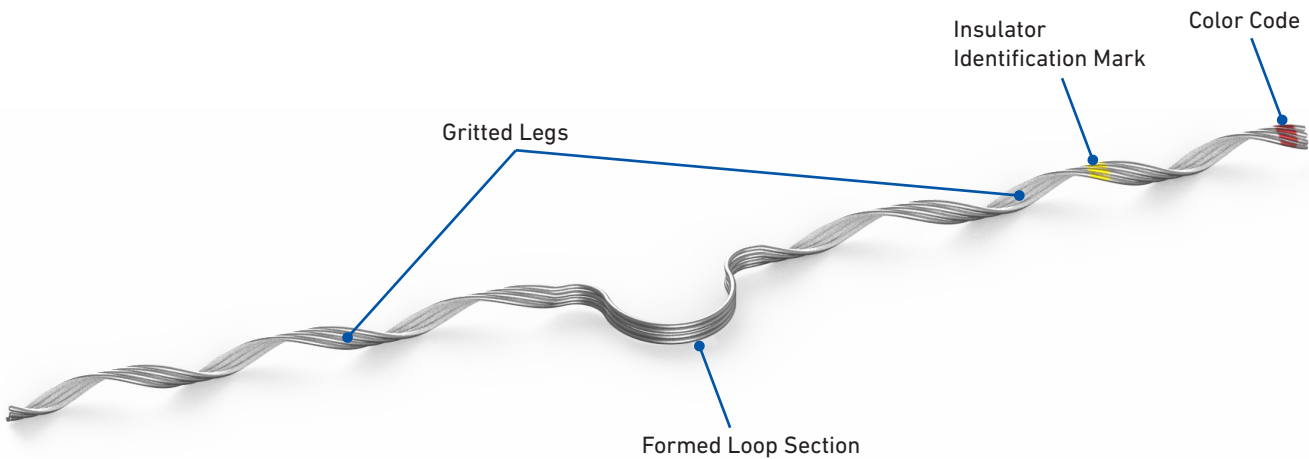
Alloy Side Tie  
Webpage

# SPECIFICATIONS



## Alloy Side Tie

Component	Description
Tie Tube	Each tie is furnished with Tie Tube Component. The Tie Tube is detached and applied over the conductor.
Identification Information	Shows catalog number and pertinent tie information. Printed on a tie flag or printed on the tie tube.
Color Code	Identifies conductor diameter ranges for colors corresponding to tabular information on catalog pages.
Insulator Identification Mark	Identifies the correct insulator headstyle for colors corresponding to information on catalog pages.
Gritted Leg	Gritted helical legs retention the conductor in place and prevent the conductor from shifting over the insulator.
Formed Loop Section	Allows the tie to form properly around the conductor and neck of the insulator.
Applied Length	Assist in identification of conductor size corresponding to tabular information appearing on catalog pages.



**Alloy Side Tie**

## ORDERING INFORMATION

4

CORROSIVE ENVIRONMENT TIES

### Alloy Side Tie: C-Neck and F-Neck Interchangeable Headstyle Insulators

Diameter Range		Nominal Conductor Size <sup>1</sup>	Units per Carton	C-Neck Insulators (Black)		F-Neck Insulators (Yellow)		Conductor Color Code
in				Catalog Number	Applied Length	Catalog Number	Applied Length	
Minimum	Maximum				in		in	
9/16" R. Groove <sup>2</sup>								
0.245	0.277	#4, 6/1, 7/1; #4, 7W Alum. Alloy	100	ASC-5102	23	ASF-5202	23	Orange
0.278	0.315	#3, 7W Alum. Alloy; #2, 7W All Alum.	100	ASC-5103	24	ASF-5203	24	Purple
0.316	0.357	#2, 6/1, 7/1; #2, 7W Alum. Alloy; #1, 6/1 ACSR	100	ASC-5104	25	ASF-5204	25	Red
0.358	0.405	1/0, 7W All Alum.; 1/0, 6/1 ACSR; 1/0, 7W Alum. Alloy	100	ASC-5105	23	ASF-5205	23	Yellow
0.406	0.459	2/0, 7W All Alum.; 2/0, 6/1 ACSR; 2/0, 7W Alum. Alloy	100	ASC-5106	25	ASF-5206	25	Blue
0.460	0.520	3/0, 7W All Alum.; 3/0, 6/1 ACSR; 3/0, 7W Alum. Alloy	100	ASC-5107	27	ASF-5207	27	Orange
0.521	0.588	4/0, 7W All Alum.; 4/0, 6/1 ACSR; 4/0, 7W Alum. Alloy	100	ASC-5108	28	ASF-5208	28	Red
0.589	0.665	266.8, 37W All Alum.; 266.8, 18/1	100	ASC-5109	31	ASF-5209	31	Purple
0.666	0.755	336.4, 19W All Alum.; 336.4, 18/1; 397.5, 19W All Alum.	100	ASC-5110	33	ASF-5210	34	Brown
0.756	0.858	477, 19W, 37W All Alum.; 477, 18/1 24/7, 26/7	50	ASC-5111	35	ASF-5211	36	Red
5/8" R. Groove <sup>2</sup>								
0.859	0.968	556.5, 26/7; 636, 18/1; 700, 37W, 61W All Alum.	50	ASC-5112	36	ASF-5212	37	Blue
11/16" R. Groove <sup>2</sup>								
0.969	1.096	795, 37W All Alum.; 795, 61W All Alum.; 715.5, 24/7; 795, 54/7	50	ASC-5113	38	ASF-5213	39	Green
3/4" R. Groove <sup>2</sup>								
1.097	1.240	954, 36/1, 54/7; 1033.5, 37W, 61W All Alum.	50	ASC-5114	39	ASF-5214	40	Yellow

Right-hand lay standard

#### NOTES:

<sup>1</sup> Nominal Conductor Size indicates one or more of various conductors within each range.<sup>2</sup> For the succeeding ranges the insulator's side groove radius should be at least as large as shown above.

**ORDERING INFORMATION** CONTINUED**Alloy Side Tie: J-Neck Interchangeable Headstyle Insulators**

Diameter Range		Nominal Conductor Size <sup>1</sup>	Units per Carton	J-Neck Insulators (Green)		Conductor Color Code
in				Catalog Number	Applied Length	
Minimum	Maximum				in	
9/16" R. Groove <sup>2</sup>						
0.245	0.277	#4, 6/1, 7/1; #4, 7W Alum. Alloy	100	ASJ-5402	26	Orange
0.278	0.315	#3, 7W Alum. Alloy; #2, 7W All Alum.	100	ASJ-5403	27	Purple
0.316	0.357	#2, 6/1, 7/1; #2, 7W Alum. Alloy; #1, 6/1 ACSR	100	ASJ-5404	28	Red
0.358	0.405	1/0, 7W All Alum.; 1/0, 6/1 ACSR; 1/0, 7W Alum. Alloy	100	ASJ-5405	26	Yellow
0.406	0.459	2/0, 7W All Alum.; 2/0, 6/1 ACSR; 2/0, 7W Alum. Alloy	100	ASJ-5406	28	Blue
0.460	0.520	3/0, 7W All Alum.; 3/0, 6/1 ACSR; 3/0, 7W Alum. Alloy	100	ASJ-5407	30	Orange
0.521	0.588	4/0, 7W All Alum.; 4/0, 6/1 ACSR; 4/0, 7W Alum. Alloy	100	ASJ-5408	31	Red
0.589	0.665	266.8, 37W All Alum.; 266.8, 18/1	100	ASJ-5409	34	Purple
5/8" R. Groove <sup>2</sup>						
0.666	0.755	336.4, 19W All Alum.; 336.4, 18/1; 397.5, 19W All Alum.	50	ASJ-5410	36	Brown
0.756	0.858	477, 19W, 37W All Alum.; 477, 18/1 24/7, 26/7	50	ASJ-5411	38	Red
0.859	0.968	556.5, 26/7; 636, 18/1; 700, 37W, 61W All Alum.	50	ASJ-5412	39	Blue
0.969	1.096	795, 37W All Alum.; 795, 61W All Alum.; 715.5, 24/7; 795, 54/7	50	ASJ-5413	41	Green
1.097	1.240	954, 36/1, 54/7; 1033.5, 37W, 61W All Alum.	50	ASJ-5414	42	Yellow

Right-hand lay standard

**NOTES:**<sup>1</sup> Nominal Conductor Size indicates one or more of various conductors within each range.<sup>2</sup> For the succeeding ranges the insulator's side groove radius should be at least as large as shown above.