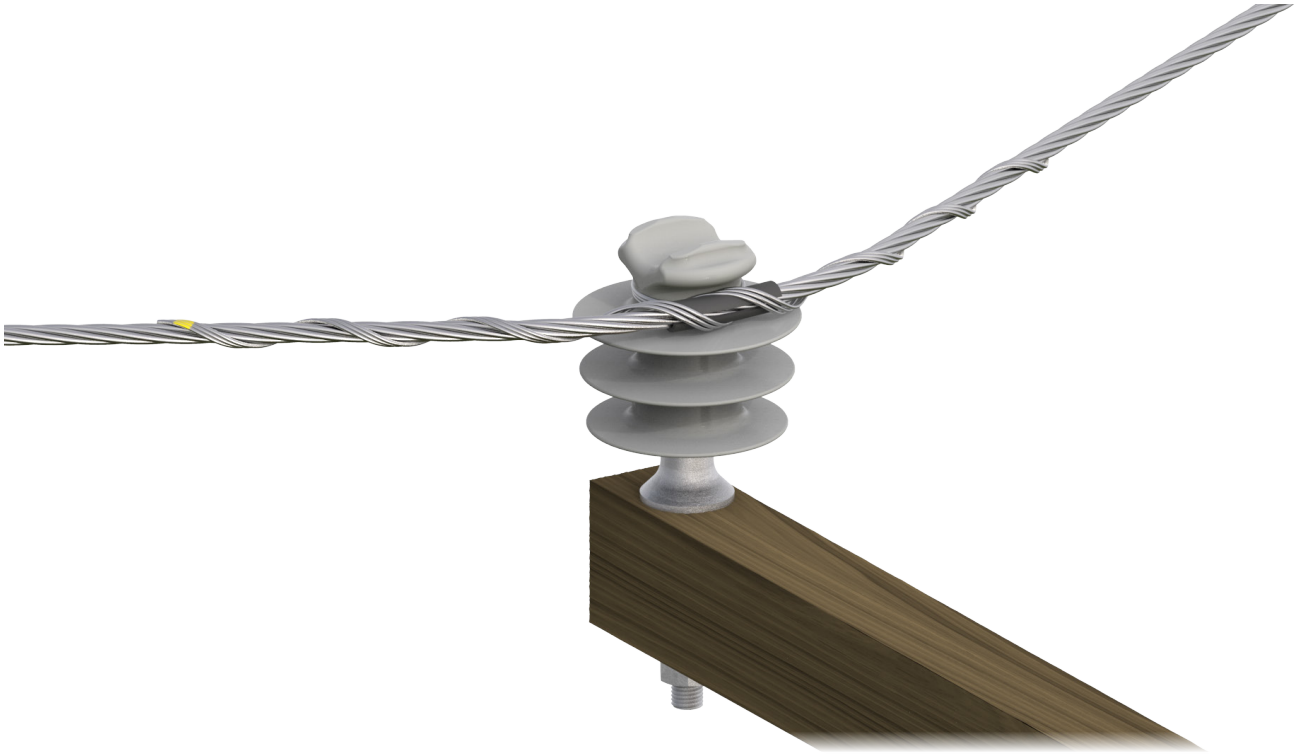


SIDE TIE

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

- Applicable to interchangeable headstyle insulators - C, F, and J-Neck
- Accommodates conductors from 0.245" - 1.240" diameter
- Pre-contoured Tie ensures tight fit
- Mitigates long-term issues caused by Radio Influence Voltage (RIV)
- Accommodates line angles up to 80-degrees (40-degrees per Insulator)
- Exceeds NESC requirements for unbalanced load
- Reduces or eliminates abrasion caused by vibration
- Ideal for severe weather applications and system hardening activities
- Resiliency of the tie protects the conductor
- Test reports available upon request

DESIGN CONSIDERATIONS

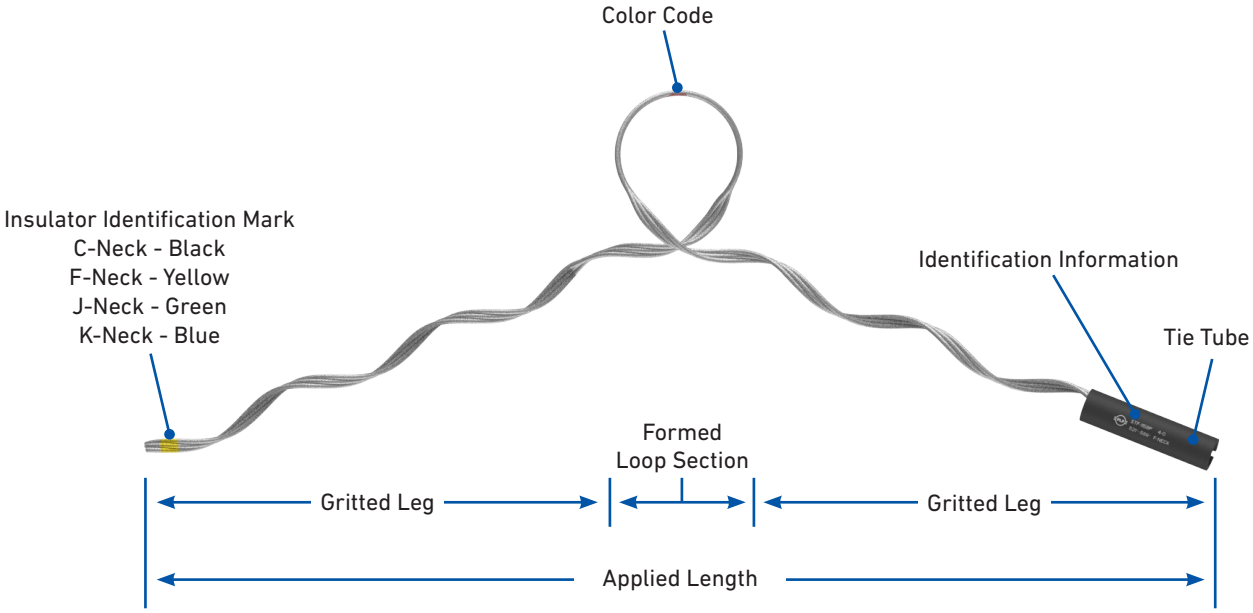
Description	Details
Interchangeable Headstyle Insulator	To ensure proper fit and service life, it is recommended that only insulators corresponding to C-Neck, F-Neck, or J-Neck be used. These neck-diameter and groove-height dimensions appear in the appropriate ANSI C29 standards. Consult PLP for engineering recommendations on non-interchangeable headstyle insulators. A sample of the insulator in question is required.
Conductor Size	The Side Tie exactly matches the Distribution Tie's ranges, which means identical color codes on armless construction. Conductor sizes up to 1.240" OD can be accommodated depending on the insulator's side groove radius. The product tables define minimum groove radii required for the tie and conductor diameter range.
Radio Influence	The Radio Influence Voltage (RIV)/Television Interference (TVI) characteristics of Side Ties are equivalent to those of a well-made hand tie, as originally installed. During service life the pre-contoured Side Tie ensures continued fit, which would have better RIV/TVI performance than a loosened tie wire.
Line Angles - General Guidelines	On horizontally mounted insulators, 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. A technical report (**TM-197-E)** is available which describes these various permissible line angles for 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.
Mechanical Strength	The 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 Side Tie is designed to relieve the load before severe damage is done to the pole's structural components. **TM-167-E** covers the mechanical testing of the Groove Formed Side Tie and is available upon request. The 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 "**resiliency**" and is designed into each Side Tie.
Vibration Dampers	By using Side Ties with the tie tube, conductor abrasion is greatly reduced or eliminated thus stopping fatigue of the conductor due to abrasion. However, for lines where experience indicates that prolonged periods of severe vibration might lead to fatigue of the conductor, cause inner wire fretting, or score the insulator's glaze, vibration dampers (SVD or VORTX™) are recommended. See the Guidelines in the **Overhead Distribution Line Repair Manual**.
Tapping	Compared to the use of protective rods, placing hot-line clamps directly over the applied legs of Side Ties **CANNOT** 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 Side Ties, scan or click the QR code below.

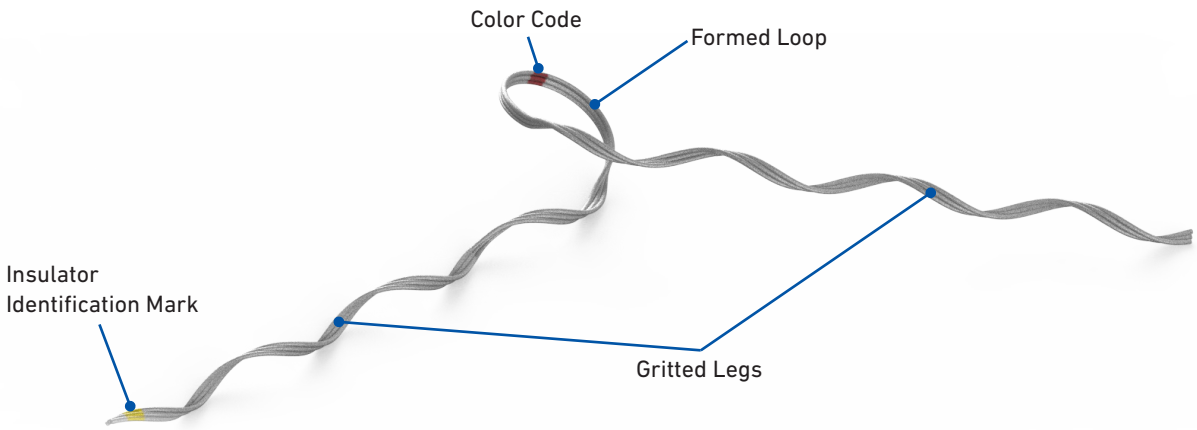
Side Tie
Webpage

SPECIFICATIONS



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 retain the conductor in place and prevent the conductor from shifting over the insulator.
Formed Loop Section	Allows the tie to form properly around the neck of the insulator.
Applied Length	Assists in identification of conductor size corresponding to tabular information appearing on catalog pages.



Side Tie

ORDERING INFORMATION

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

Diameter Range in		Nominal Conductor Size[1]	Units per Carton	C-Neck Insulators (Black)		F-Neck Insulators (Yellow)		Conductor Color Code
				Catalog Number	Applied Length in	Catalog Number	Applied Length in	
Minimum	Maximum							
9/16" R. Groove[2]								
0.190	0.215	#6, 6/1; #4, 7W Comp.	100	STC-1250P	16	STF-1150P	16	Blue
0.216	0.244	#4, 7W All Alum.; #4, 6/1, 7/1 Comp.	100	STC-1251P	17	STF-1151P	17	Brown
0.245	0.277	#4, 6/1, 7/1; #4, 7W Alum. Alloy	100	STC-1252P	19	STF-1152P	19	Orange
0.278	0.315	#3, 7W Alum. Alloy; #2, 7W All Alum.	50	STC-1253P	21	STF-1153P	21	Purple
0.316	0.357	#2, 6/1, 7/1; #2, 7W Alum. Alloy; #1, 6/1 ACSR	50	STC-1254P	24	STF-1154P	24	Red
0.358	0.405	1/0, 7W All Alum.; 1/0, 6/1 ACSR; 1/0, 7W Alum. Alloy	50	STC-1255P	26	STF-1155P	26	Yellow
0.406	0.459	2/0, 7W All Alum.; 2/0, 6/1 ACSR; 2/0, 7W Alum. Alloy	50	STC-1256P	28	STF-1156P	28	Blue
0.460	0.520	3/0, 7W All Alum.; 3/0, 6/1 ACSR; 3/0, 7W Alum. Alloy	50	STC-1257P	31	STF-1157P	30	Orange
0.521	0.588	4/0, 7W All Alum.; 4/0, 6/1 ACSR; 4/0, 7W Alum. Alloy	50	STC-1258P	32	STF-1158P	32	Red
0.589	0.665	266.8, 37W All Alum.; 266.8, 18/1	50	STC-1259P	23	STF-1159P	23	Purple
0.666	0.755	336.4, 19W All Alum.; 336.4, 18/1; 397.5, 19W All Alum. 400, 19W, 37W, All Alum	50	STC-1260P	25	STF-1160P	25	Brown
0.756	0.858	477, 19W, 37W All Alum.; 477, 18/1 24/7, 26/7	50	STC-1261P	26	STF-1161P	26	Red
5/8" R. Groove[2]								
0.859	0.968	556.5, 26/7; 636, 18/1; 700, 37W, 61W All Alum.	50	STC-1262P	28	STF-1162P	28	Blue
11/16" R. Groove[2]								
0.969	1.096	795, 37W All Alum.; 795, 61W All Alum.; 715.5, 24/7; 795, 54/7	50	STC-1263P	29	STF-1163P	29	Green
3/4" R. Groove[2]								
1.097	1.240	954, 36/1, 54/7; 1033.5, 37W, 61W All Alum.	50	STC-1264P	33	STF-1164P	33	Yellow

Right-hand lay standard

NOTES:

[1] Nominal Conductor Size indicates one or more of various conductors within each range.

[2] For the succeeding ranges the insulator's top groove radius should be at least as large as shown above.

ORDERING INFORMATION CONTINUED

Side Tie: J-Neck Interchangeable Headstyle Insulators

Diameter Range in		Nominal Conductor Size[1]	Units per Carton	J-Neck Insulators (Green)		Conductor Color Code
				Catalog Number	Applied Length in	
Minimum	Maximum					
9/16" R. Groove[2]						
0.190	0.215	#6, 6/1; #4, 7W Comp.	100	STJ-1500P	16	Blue
0.216	0.244	#4, 7W All Alum.; #4, 6/1, 7/1 Comp.	100	STJ-1501P	17	Brown
0.245	0.277	#4, 6/1, 7/1; #3, 7W Alum. Alloy	100	STJ-1502P	19	Orange
0.278	0.315	#3, 7W Alum. Alloy; #2, 7W All Alum.	100	STJ-1503P	21	Purple
0.316	0.357	#2, 6/1, 7/1; #2, 7W Alum. Alloy; #1, 6/1 ACSR	100	STJ-1504P	24	Red
0.358	0.405	1/0, 7W-19W All Alum.; 1/0, 6/1 ACSR; 1/0, 7W Alum. Alloy	100	STJ-1505P	26	Yellow
0.406	0.459	2/0, 7W-19W All Alum.; 2/0, 6/1 ACSR; 2/0, 7W Alum. Alloy	50	STJ-1506P	31	Blue
0.460	0.520	3/0, 7W-19W All Alum.; 3/0, 6/1 ACSR; 3/0, 7W Alum. Alloy	50	STJ-1507P	32	Orange
0.521	0.588	4/0, 7W All Alum.; 4/0, 6/1 ACSR; 4/0, 7W Alum. Alloy; 250, 19W-37W All Alum	50	STJ-1508P	34	Red
0.589	0.665	266.8, 19W All Alum.; 266.8, 26/7 300, 19W-37W All Alum	50	STJ-1509P	23	Purple
5/8" R. Groove[2]						
0.666	0.755	336.4, 37W All Alum.; 336.4, 18/1; 397.5, 19W All Alum.	50	STJ-1510P	25	Brown
0.756	0.858	477, 19W, 37W All Alum.; 477, 18/1 24/7, 26/7	50	STJ-1511P	26	Red
0.859	0.968	556.5, 26/7; 636, 18/1; 700, 37W, 61W All Alum.	25	STJ-1512P	28	Blue
0.969	1.096	795, 37W All Alum.; 795, 61W All Alum.; 715.5, 24/7; 795, 54/7	25	STJ-1513P	29	Green
1.097	1.240	954, 36/1, 54/7; 1033.5, 37W, 61W All Alum.	25	STJ-1514P	33	Yellow

Right-hand lay standard

NOTES:

[1] Nominal Conductor Size indicates one or more of various conductors within each range.

[2] For the succeeding ranges the insulator's top groove radius should be at least as large as shown above.