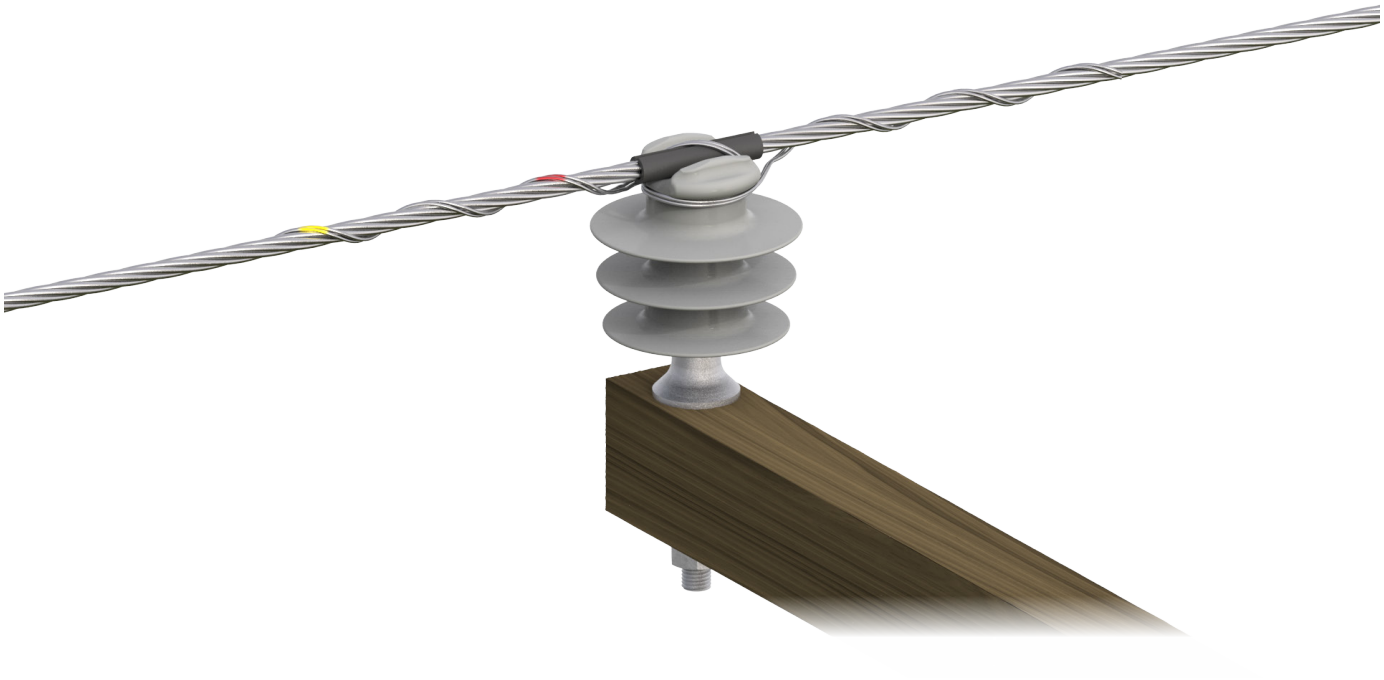


DISTRIBUTION TIE

Distribution Ties provide a vastly improved method of securing the conductor in the top groove of interchangeable headstyle insulators compared to hand ties. These performance ties 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 all interchangeable headstyle insulators
- Accommodates conductors from 0.190" - 1.585"
- Pre-contoured design ensures a tight and secure fit
- Mitigates long-term issues caused by Radio Influence Voltage (RIV)
- Accommodates line angles up to 10-degrees in the vertical orientation
- Exceeds NESC requirements for unbalanced load
- Reduces abrasion caused by vibration
- Ideal solution for system hardening and severe weather applications
- Resiliency of the tie protects the conductor
- Test reports available upon request

DESIGN CONSIDERATIONS

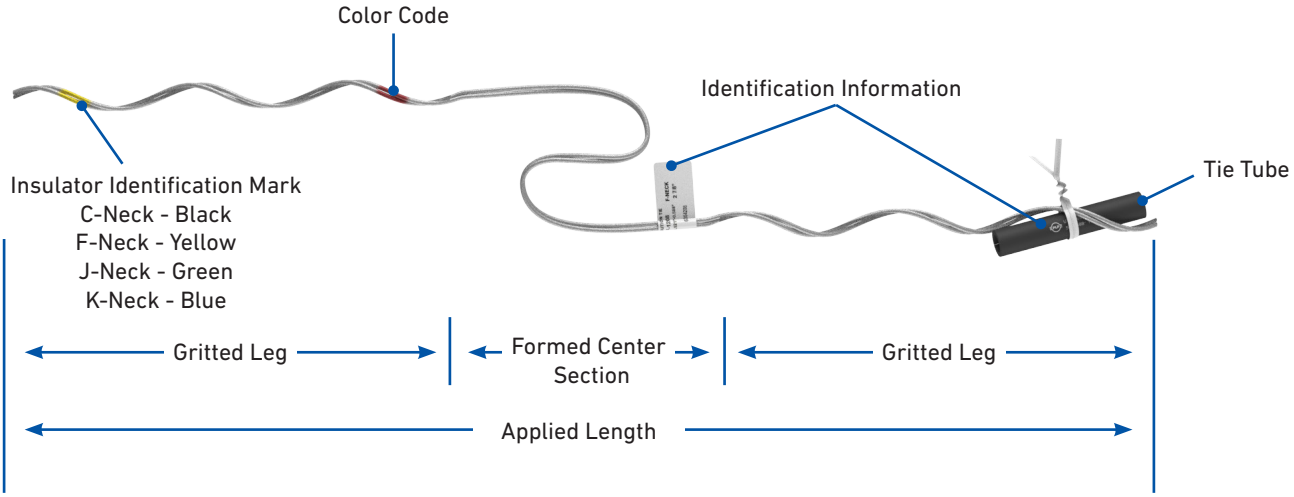
Description	Details
Interchangeable Headstyle Insulator	To ensure proper fit and service life, it is recommended that only insulators corresponding to C-Neck, F-Neck, J-Neck, or K-neck be used. These neck-diameter and groove-height dimensions appear in the appropriate ANSI C29 standards. Contact a PLP representative for engineering recommendations on non-interchangeable headstyle insulators. A sample of the insulator in question is required.
Conductor Size	Distribution Ties can accommodate the conductor diameters defined in the product tables as long as the insulator can accept the conductor/tie tube diameter. The product tables define the minimum groove radii required for the tie and conductor diameter range.
Radio Influence (RIV)	The Radio Influence Voltage (RIV) characteristics of Distribution Ties are equivalent to those of a well-made hand tie, as originally installed. During service life, the Distribution Tie ensures a tight fit, resulting in superior RIV performance compared to hand tie wire.
Line Angles - General Guidelines	On vertically mounted insulators, Distribution Ties can normally accommodate line angles up to 10-degrees. Larger angles may be accommodated when the insulator is mounted at varying degrees of cant from the vertical. A technical report (**TM-197-E)** is available which describes these various permissible line angles of Distribution 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.
Mechanical Strength	The Distribution Tie is designed to provide longitudinal holding strength in excess of values required by the National Electrical Safety Code (NESC). The holding strengths are usually sufficient to contain broken conductors to a single span and minimize damage to the conductor and other structure components. The Distribution 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 Distribution Tie. **TM-166-E** covers the mechanical testing of the Distribution Tie and is available upon request.
Vibration Dampers	By using Distribution 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 Distribution Ties **CANNOT** be recommended. Tapping over protective rods (Armor Rods, Line Guards, Tap Rods, and Protector Rods) will remain permissible.

Alternate Application - Close Crossarm Construction

The Distribution Tie can be installed parallel to the pole when pole or conductor clearance is critical.
For additional information regarding the use and installation of Distribution Ties, scan or click the QR code below.

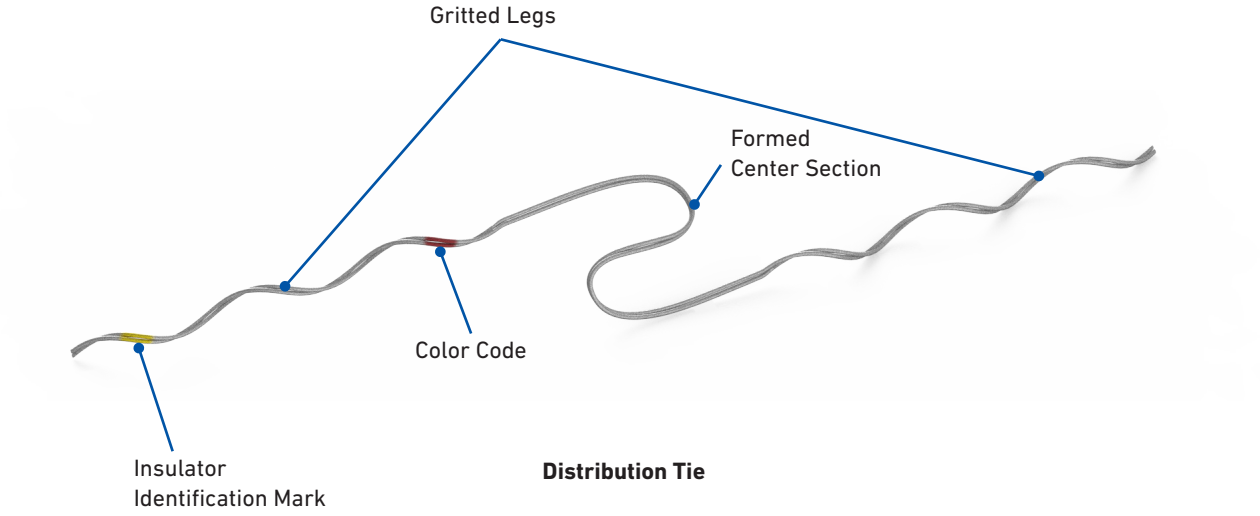
Distribution Tie
Webpage

SPECIFICATIONS



Distribution Tie

Component	Description
Tie Tube	Each tie is furnished with a 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 or hold the conductor in place and prevent the conductor from shifting over the insulator.
Formed Center Section	Allows the tie to form properly around the conductor and neck of the insulator.
Applied Length	Assists in identification of conductor size corresponding to tabular information appearing on catalog pages.



Distribution Tie

ORDERING INFORMATION

Distribution Tie: C-Neck and F-Neck 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							
0.190	0.215	#6, 6/1; #4, 7W Comp.	100	UTC-1100	24	UTF-1200	25	Blue
0.216	0.244	#4, 7W All Alum.; #4, 6/1, 7/1 Comp.	100	UTC-1101	25	UTF-1201	26	Brown
0.245	0.277	#4, 6/1, 7/1; #4, 7W Alum. Alloy	100	UTC-1102	26	UTF-1202	27	Orange
0.278	0.315	#3, 7W Alum. Alloy; #2, 7W All Alum.	100	UTC-1103	26	UTF-1203	29	Purple
0.316	0.357	#2, 6/1, 7/1; #2, 7W Alum. Alloy; #1, 6/1 ACSR	100	UTC-1104	28	UTF-1204	31	Red
0.358	0.405	1/0, 7W All Alum.; 1/0, 6/1 ACSR; 1/0, 7W Alum. Alloy	100	UTC-1105	30	UTF-1205	32	Yellow
0.406	0.459	2/0, 7W All Alum.; 2/0, 6/1 ACSR; 2/0, 7W Alum. Alloy	50	UTC-1106	25	UTF-1206	26	Blue
0.460	0.520	3/0, 7W All Alum.; 3/0, 6/1 ACSR; 3/0, 7W Alum. Alloy	50	UTC-1107	25	UTF-1207	27	Orange
0.521	0.588	4/0, 7W All Alum.; 4/0, 6/1 ACSR; 4/0, 7W Alum. Alloy	50	UTC-1108	28	UTF-1208	29	Red
0.589	0.665	266.8, 37W All Alum.; 266.8, 18/1	50	UTC-1109	30	UTF-1209	32	Purple
0.666	0.755	336.4, 19W All Alum.; 336.4, 18/1; 397.5, 19W All Alum.	50	UTC-1110	31	UTF-1210	32	Brown
0.756	0.858	477, 19W, 37W All Alum.; 477, 18/1 24/7, 26/7	50	UTC-1111	32	UTF-1211	33	Red
5/8" R. Groove[2]								
0.859	0.968	556.5, 26/7; 636, 18/1; 700, 37W, 61W All Alum.	50	UTC-1112	34	UTF-1212	35	Blue
3/4" R. Groove[2]								
0.969	1.096	795, 37W All Alum.; 795, 61W All Alum.; 715.5, 24/7; 795, 54/7	50	UTC-1113	37	UTF-1213	38	Green
1.097	1.240	954, 36/1, 54/7; 1033.5, 37W, 61W All Alum.	50	UTC-1114	40	UTF-1214	41	Yellow
1" R. Groove[2]								
1.241	1.402	1033.5, 54/7; 1272, 45/7	50			UTF-1215	43	Orange
1.403	1.585	1351.5, 54/19; 1590, 45/7	50			UTF-1216	45	Black

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

Distribution Tie: J-Neck and K-Neck Insulators

Diameter Range in		Nominal Conductor Size[1]	Units per Carton	J-Neck Insulators (Green)		K-Neck Insulators (Blue)		Conductor Color Code
				Catalog Number	Applied Length in	Catalog Number	Applied Length in	
Minimum	Maximum							
0.190	0.215	#6, 6/1; #4, 7W Comp.	100	UTJ-1300	26			Blue
0.216	0.244	#4, 7W All Alum.; #4, 6/1, 7/1 Comp.	100	UTJ-1301	27			Brown
0.245	0.277	#4, 6/1, 7/1; #4, 7W Alum. Alloy	100	UTJ-1302	28	UTK-1602	32	Orange
0.278	0.315	#3, 7W Alum. Alloy; #2, 7W All Alum.	100	UTJ-1303	30			Purple
0.316	0.357	#2, 6/1, 7/1; #2, 7W Alum. Alloy; #1, 6/1 ACSR	100	UTJ-1304	32	UTK-1604	36	Red
0.358	0.405	1/0, 7W All Alum.; 1/0, 6/1 ACSR; 1/0, 7W Alum. Alloy	100	UTJ-1305	33	UTK-1605	38	Yellow
0.406	0.459	2/0, 7W All Alum.; 2/0, 6/1 ACSR; 2/0, 7W Alum. Alloy	50	UTJ-1306	27	UTK-1606	31	Blue
0.460	0.520	3/0, 7W All Alum.; 3/0, 6/1 ACSR; 3/0, 7W Alum. Alloy	50	UTJ-1307	28	UTK-1607	32	Orange
0.521	0.588	4/0, 7W All Alum.; 4/0, 6/1 ACSR; 4/0, 7W Alum. Alloy	50	UTJ-1308	30	UTK-1608	34	Red
0.589	0.665	266.8, 37W All Alum.; 266.8, 18/1	50	UTJ-1309	33	UTK-1609	36	Purple
0.666	0.755	336.4, 19W All Alum.; 336.4, 18/1; 397.5, 19W All Alum.	50	UTJ-1310	33	UTK-1610	37	Brown
0.756	0.858	477, 19W, 37W All Alum.; 477, 18/1 24/7, 26/7	50	UTJ-1311	34	UTK-1611	38	Red
5/8" R. Groove[2]								
0.859	0.968	556.5, 26/7; 636, 18/1; 700, 37W, 61W All Alum.	50	UTJ-1312	36	UTK-1612	40	Blue
3/4" R. Groove[2]								
0.969	1.096	795, 37W All Alum.; 795, 61W All Alum.; 715.5, 24/7; 795, 54/7	50	UTJ-1313	39	UTK-1613	43	Green
1.097	1.240	954, 36/1, 54/7; 1033.5, 37W, 61W All Alum.	50	UTJ-1314	42	UTK-1614	46	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.