

Coated Dead-end



General Recommendations

Dead-end: Coated, manufactured of aluminum alloy wire, is designed for direct application over conductors jacketed with neoprene, polyethylene, vinyl, or rubber. The sub-setted rods in each leg, bonded together with neoprene, exert a low radial pressure without damaging the jacket. Because it is not necessary to skin the plastic covering, the same dead-end can be used for either aluminum-base or copper base conductors.

Coated dead-ends should not be used over fabric braided conductor. In this case, the fabric should be skinned and a Distribution-Grip dead-end applied.

RATED HOLDING STRENGTH. Holding values of coated dead-ends are dependent on a combination of several factors:

- Conductor size, type, stranding
- Thickness of jacket
- Type of jacket
- Specific density of various polyethylene

The multiplicity of combinations makes it impractical to publish a table of "Rated Holding Strengths." As a general guide, the following considerations may be adapted for a certain conductor and construction practice.

When tested under static tension (ram speed of two inches per minute), Coated dead-ends will hold the full rated breaking strength of all-aluminum and copper conductors, jacketed with neoprene or medium density polyethylene.

This data indicates that the highest percentage of rated breaking strength is held on medium density polyethylene and vinyl. High density (linear) polyethylene has the lowest percent of RBS.

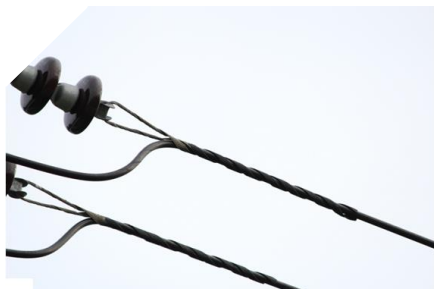
In addition to the specific densities, the data indicates the percent of RBS will also be reduced by increased jacket thickness.

The test results, expressed in actual pounds of sustained load capacity, make it apparent that values between 500 and 1,000 lbs. should be sufficient to meet field requirements on industrial or commercial service drops and messenger aerial spacer cables. Values exceeding 1,000 lbs. are sufficient for primaries and secondaries in urban distribution.

TAPPING. Coated dead-end allows the plastic jacket to remain intact and the conductor continues through the crossover point of the grip. Connectors are applied to the continued tail, with minimum stripping and exposure to corrosion.

RADIO INTERFERENCE. R.I.V. readings and flashover tests indicate Coated dead-ends, applied over plastic jacketed conductors, have the same satisfactory electrical performance as dead-ends applied over bare conductors. This statement does not apply to fabric covered conductor.

Distribution Grip (Slack Span/Overhead) 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.



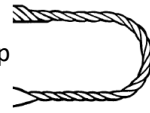
Coated Dead-end

Selection Information

Open Helix Loop



Cable Loop



Catalogue Number	Diameter Range Inches	mm	Nominal Conductor Size	Color Code
AND0615	0.243-0.253	6.17-6.43	#6, 7W, 2/64s	Green
AND0645	0.254-0.264	6.45-6.71	#6, Solid, 3/64s #6, 6/1, 2/64s	Red
AND0675	0.265-0.272	6.73-6.91	#4, Solid, 2/64s	Blue
AND0695	0.273-0.284	6.93-7.21	#6, 7W, 3/64s	Orange
Cabled Loop				
AND0725	0.285-0.297	7.24-7.54	#6, 6/1, 3/64s #4, 7W, 2/64s	Black
AND0755	0.298-0.310	7.57-7.87	#4, Solid, 3/64s #6, 7W, 4/64s	Yellow
AND0790	0.311-0.323	7.90-8.20	#4, 7W, 2/64s, Alum. Alloy #4, 6/1, 2/64s	Blue
AND0825	0.324-0.338	8.23-8.59	#6, 7W, 4/64s, Alum. Alloy #4, 7W, 3/64s	Orange
AND0860	0.339-0.354	8.61-8.99	#4, 7W, 3/64s, Alum. Alloy #4, 6/1, 3/64s	Black
AND0900	0.355-0.374	9.02-9.50	#4, 7W, 4/64s	Yellow
AND0955	0.375-0.397	9.53-10.08	#4, 7W, 4/64s #4, 7W, 5/64s	Red
AND1010	0.398-0.420	10.11-10.67	#2, 6/1, 3/64s #2, 7/1, 3/64s	Green
AND1070	0.421-0.445	10.69-11.30	#2, 7W, 4/64s, Alum. Alloy #1, 7W, 3/64s	Black
AND1135	0.446-0.475	11.33-12.07	#1, 7W, 4/64s #4, 7W, 8/64s	Orange
AND1210	0.476-0.507	12.09-12.88	#1, 19W, 5/64s 1/0, 7W, 4/64s	Blue
AND1290	0.508-0.536	12.90-13.61	1/0, 19W, 6/64s 1/0, 19W, 5/64s	Red
AND1365	0.537-0.571	13.64-14.50	2/0, 7W, 4/64s 2/0, 19W, 6/64s, Compacted	Black
AND1455	0.572-0.608	14.53-15.44	3/0, 19W, 4/64s 2/0, 19W, 5/64s	Yellow
AND1545	0.609-0.648	15.47-16.46	1/0, 7W, 8/64s 4/0, 7W, 4/64s	Red
AND1650	0.649-0.690	16.48-17.53	1/0, 7W, 10/64s 4/0, 19W, 4/64s	Green
AND1755	0.691-0.735	17.55-18.67	250, 19W, 23468 266.8, 18/1, 4/64s	Black
AND1870	0.736-0.783	18.69-19.89	3/0, 7W, 10/64s	Orange
AND1990	0.784-0.834	19.91-21.18	300, 19W, 5/64s 336.4, 19W, 5/64s	Blue
AND2120	0.835-0.888	21.21-22.56	350, 19W, 5/64s 300, 19W, 10/64s, Compacted	Black
AND2260	0.889-0.945	22.58-24.00	250, 19W, 10/64s 300, 19W, 10/64s	Yellow
AND2405	0.946-1.005	24.03-25.53	450, 37W, 6/64s 500, 37W, 6/64s	Green
AND2555	1.006-1.070	25.55-27.18	450, 37W, 8/64s 336.4, 19W, 12/64s	Red
AND2720	1.071-1.138	27.20-28.91	350, 19W, 12/64s 500, 37W, 10/64s	Blue
AND2895	1.139-1.212	28.93-30.78	636, 37W, 10/64s, Compacted 500, 37W, 12/64s	Orange
AND3080	1.213-1.288	30.81-32.72	795, 61W, 6/64s 795, 37W, 10/64s, Compacted	Black
AND3275	1.289-1.372	32.74-34.85	1033.5, 61W, 6/64s	Yellow
AND3485	1.373-1.458	34.87-37.03	715, 37W, 14/64s	Green
AND3705	1.459-1.550	37.06-39.37	795, 37W, 14/64s	Red

Distribution-Grip Dead-end



General Recommendations

Distribution-Grip Dead-end, manufactured of aluminum covered steel, is designed for single-pole distribution construction. Mechanical strength meets the requirements of primaries, secondaries, and substation feeders.

Distribution-Grip Dead-end is recommended for direct application over plastic jacketed (not fabric covered) conductor. Coated Dead-ends are also recommended for jacketed Conductor.

The Distribution-Grip 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 coating of the Distribution-Grip Dead-end or the conductor itself.

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

Tools are not required nor recommended to install Distribution-Grip Dead-ends, except for hot stick applications. Service-Grip Dead-ends are recommended for service drops.

RATED HOLDING STRENGTH. In arriving at "Rated Holding Strengths," actual results of tests on un-weathered 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 Distribution-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. 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 and the conductor should be the same. Most conductor is right-hand lay. Not recommended for use on overhead shield wires. Distribution

Distribution Grip (Slack Span/ Overhead) 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.





Distribution-Grip Dead-end

Selection Information

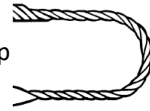
Aluminum Covered Steel

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

Open Helix Loop



Cable Loop



• Open Helix Loop Standard/Right Hand Lay Standard

Catalogue Number	Diameter Range (mm.)		ACSR	All Aluminum	Aluminum Alloy	Comp. ACSR	AWAC 6/1	Color Code
	Min	Max						
AWDG 0505	-	-	#6, 6/1	#6, 7W	#6, 7W	#6, 6/1	-	Blue
AWDG 0635	-	-	#4, 6/1	#4, 7W	#4, 7W	#4, 6/1	#4	Orange
	-	-	#4, 7/1					
AWDG 0805	-	-	#2, 6/1	#2, 7W	#2, 7W	#2, 6/1	#2	Red
	-	-	#2, 7/1					
AWDG 0840	8.38	9.02	-	-	-	-	#2, 5/2, 4/3 #4, 2/5 #3, 3/4	Orange
AWDG 0900	-	-	#1, 6/1	#1, 7W	#1, 7W	#1, 6/1	#-1	Green
AWDG 0940	9.40	9.80	-	-	-	-	#1, 5/2 #2, 3/4 #3, 2/5	Green
AWDG 0990	-	-	1/0, 6/1	1/0, 7W	1/0, 7W	1/0, 6/1	1/0	Yellow
AWDG 1135	11.35	11.85	2/0, 6/1	2/0, 7W	2/0, 7W	2/0, 6/1	2/0	Blue
AWDG 1275	-	-	3/0, 6/1	3/0, 7W	3/0, 7W	3/0, 6/1	3/0	Orange
AWDG 1350	13.32	13.73	-	-	-	-	-	Red
AWDG 1430	-	-	4/0, 6/1	4/0, 7W	4/0, 7W	4/0, 6/1	4/0	Red

Note: The following Dead-ends are designed only for the specific conductors listed.

• Cabled Loop Standard/Right Hand Lay Standard

Catalogue Number	Diameter Range (mm.)		ACSR	All Aluminum	Aluminum Alloy	Comp. ACSR	Color Code
	Min	Max					
AWDG 1470	14.68	16.59	266.8, 18/1	266.8, 19W	266.8, 19W	336.4, 18/1	Black
AWDG 1660	16.60	18.77	336.4, 18/1	336.4, 19W	336.4, 19W	397.5, 18/1	Green
AWDG 1880	18.80	21.26	397.5, 18/1	450, 19W	397.5, 19W	447, 18/1	Orange
			477, 36/1	477, 19W		556, 19W	
			477, 18/1	500, 37W			
AWDG 2130	21.29	24.05	556.5, 36/1	556.5, 7W	477, 19W	636, 18/1	Blue
			605, 36/1	636, 37W	55.9, 19W	795, 19W	
			636, 18/1	650, 61W			
AWDG 2410	-	-	666.6, 36/1	715.5, 37W	636, 37W	874.5, 37W	Brown
			715.5, 36/1	750, 61W		954.37W	
			795, 36/1	795, 61W			
AWDG 2730	-	-	874.5, 36/1	874.5, 61W	795, 37W	-	Orange
			954, 36/1	954, 61W			
			1033.5, 36/1	1033.5, 61W			

Note:

1. The rated holding strengths of the above Distribution End Grip Dead-ends are between 60% and 100% of the conductors RBS Depending on the conductor used
2. Consult PLP for sizes and stranding or holding strengths not listed.

Distribution Tie



General Recommendations

INTENDED USE: Distribution Ties manufactured of aluminum covered steel secure conductors in the top groove of interchangeable headstyle insulators. Distribution Ties provide an improved method of securing conductor compared to clamp-top insulators or hand ties over Armor Rods. Distribution 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 tube component surrounds the bare conductor with a resilient cushion where the conductor would come into contact with the insulator and with the center section of the tie. In the case of Distribution Ties applied over plastic jacketed conductor, the tube can be disposed of because contact with the bare conductor is prevented by the jacketing itself. PREFORMED™ Plastic Line Ties are also offered as an alternate to metal ties applied over plastic jacketed conductor.

INTERCHANGEABLE HEADSTYLE

INSULATOR: To insure 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 on ANSI standard. Consult the Factory for engineering recommendations on non-interchangeable headstyle insulators. A sample of the insulator in question is desirable.

CONDUCTOR SIZE: Distribution Ties can accommodate conductor diameters from .190" to 1.585" for F neck insulators and .190" to 1.240" for other size insulators as long as the insulator top groove is large enough. Consult the tables in this section for minimum groove radii required for a specific tie and conductor diameter range.

RADIO INTERFERENCE: The RIV characteristics of Distribution 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.

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

LINE ANGLES -GENERAL GUIDELINES: On vertically mounted insulators, Distribution 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 Side Ties with Distribution Ties on a single structure can also affect the acceptable line angles for that structure.

MECHANICAL STRENGTH: The Distribution Tie is designed to provide longitudinal holding strength in excess of values required by the National Electric Safety Code. 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-166E covers the mechanical testing of the Distribution Tie and is available upon request.

VIBRATION DAMPERS: By using Distribution Ties, abrasion can not reduce the fatigue life of the conductor. However, for lines where experience indicates that prolonged periods of vibration might lead to fatigue of the conductor, cause inner wire fretting, or score the insulator's glaze, SVD's are recommended. The following are guideline definitions for vibration activity. Application of these guidelines should be based on a utility's field experience.

APPLICATION-INSPECTION: The Distribution Tie can be installed parallel to the pole when pole or conductor clearance is critical. Application Procedures are available.





Distribution Tie

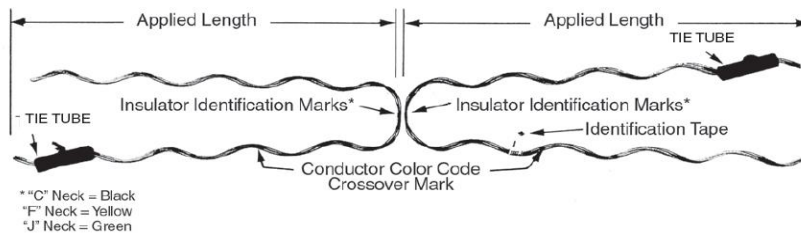
Selection Information

2-7/8" Neck Diameter ANSI Class 55-4 and 55-5 Pin Type / 57-1, 57-2 and 57-3 Post Type Groove Height Relationship 9/16" Min. 7/8" Max.

Insulator Identification Mark: Yellow

Catalogue Number	Diameter Range		Nominal Conductor Size	Color Code
	Inches	mm		
DTF 0485P	0.190-0.215	4.83-5.46	#6, 6/1	Blue
DTF 0550P	0.216-0.244	5.49-6.20	#4, 7W, Comp. #4, 7W, All Alum.	Brown
DTF 0620P	0.245-0.277	6.22-7.04	#4, 6/1, 7/1, Comp. #4, 6/1, 7/1	Orange
DTF 0705P	0.278-0.315	7.06-8.00	#4, 7W, Alum. Alloy #3, 7W, Alum. Alloy	Purple
DTF 0805P	0.316-0.357	8.03-9.07	#2, 7W, All Alum. #2, 6/1, 7/1	Red
DTF 0910P	0.358-0.405	9.09-10.29	#2, 7W, Alum. Alloy #1, 6/1	Yellow
DTF 1030P	0.406-0.459	10.31-11.66	1/0, 7W, All Alum. 1/0, 6/1	Blue
DTF 1170P	0.460-0.520	11.68-13.21	1/0, 7W, Alum. Alloy 2/0, 7W, All Alum.	Orange
DTF 1325P	0.521-0.588	13.23-14.94	2/0, 6/1 2/0, 7W, Alum. Alloy	Red
DTF 1495P	0.589-0.665	14.96-16.89	3/0, 7W, All Alum. 3/0, 6/1	Purple
DTF 1695P	0.666-0.755	16.92-19.18	3/0, 7W, Alum. Alloy 4/0, 7W, All Alum.	Brown
DTF 1920P	0.756-0.955	19.20-24.26	4/0, 6/1 4/0, 7W, Alum. Alloy	Brown
DTF 2175P	0.856-0.968	21.74-24.59	266.8, 37W, All Alum. 266.8, 18/1	Blue
DTF 2460P	0.969-1.096	24.61-27.84	336.4, 19W, All Alum. 336.4 18/1	Green
DTF 2785P	1.097-1.240	27.86-31.50	397.5, 19W, All Alum. 400, 19W, 37W, All Alum.	Yellow
			477, 19W, 37W, All Alum. 477, 18/1, 24/7	
			556.5, 24/7 636, 18/1 700, 37W, 61W, All Alum.	
			795, 37W, All Alum. 795, 61W, All Alum.	
			715.5, 24/7, 795, 54/7	
			954, 36/1, 54/7	
			1,033.5, 37W, 61W, All	

Double Side Tie



General Recommendations

INTENDED USE: Double Side Tie, manufactured of aluminum-covered steel wire, is designed 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 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.

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: Double Side Ties are designed for installation on double insulator construction in the side 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.

DOUBLE SIDE TIE: 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, 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 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. TM-170E covers the mechanical testing of the 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 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 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 Double Side Tie.

CONDUCTOR COMPATIBILITY: Double Side Ties should be used only on the size, type, and lay direction for which they are designed. When using conductors not mentioned in the catalog, consult PLP. During installation and at all times, care should be taken to avoid gouging or damaging the wires of the Double Side Tie or conductor. Double Side Ties should not be used as tools, i.e., comealongs, pulling-grips, etc. Consult the Double Side Tie Application Procedure for additional installation information. When in doubt about usage of Double Side Ties, consult your PREFORMED™ Sales Representative or Preformed Line Products.





Double Side Tie

Selection Information

C Neck 2-1/4" Neck Diameter ANSI Class 55-2 and 55-3

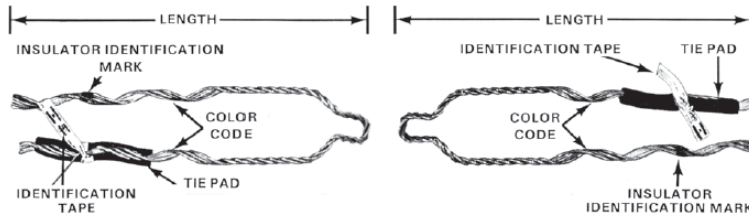
**F Neck 2-7/8" Neck Diameter ANSI Class 55-4 and 55-5 Pin Type
57-1, 57-2 and 57-3 Post Type**

Insulator Identification Mark: Black and Yellow

Catalogue Number	Diameter Range		Nominal Conductor Size	Color Code
	Inches	mm.		
9/16" Minimum Groove Radius				
DBST 0620	0.245-0.277	6.22-7.04	#4, 6/1, 7/1 #4, 7W, Alum. Alloy	Orange
DBST 0705	0.278-0.315	7.06-8.00	#3, 7W, Alum. Alloy #2, 7W, All Alum.	Purple
DBST 0805	0.316-0.357	8.03-9.07	#2, 6/1, 7/1 #2, 7W, Alum. Alloy #11, 6/1	Red
DBST 0910	0.358-0.405	9.09-10.29	1/0, 7W, All Alum. 1/0, 6/1 1/0, 7W, Alum. Alloy	Yellow
DBST 1030	0.406-0.459	10.31-11.66	2/0, 7W, All Alum. 2/0, 6/1 2/0, 7W, Alum. Alloy	Blue
DBST 1170	0.460-0.520	11.68-13.21	3/0, 7W, All Alum. 3/0, 6/1 3/0, 7W, Alum. Alloy	Orange
DBST 1325	0.521-0.588	13.23-14.94	4/0, 7W, All Alum. 4/0, 6/1 4/0, 7W, Alum. Alloy	Red
DBST 1495	0.589-0.665	14.96-16.89	266.8, 37W, All Alum. 266.8,18/1	Purple
DBST 1695	0.666-0.755	16.92-19.18	336.4, 19W, All Alum. 336.4 18/1 397.5, 19W, All Alum. 400, 19W, 37W, All Alum.	Brown
DBST 1920	0.756-0.855	19.20-21.72	477, 19W, 37W, All Alum.	Red
5/8" Minimum Groove Radius				
DBST 2175	0.856-0.968	21.74-24.59	556.5, 19W, All Alum. 636, 18/1 700, 37W, 61W, All Alum.	Blue
11/16" Minimum Groove Radius				
DBST 2460	0.969-1.096	24.61-27.84	795, 37W, All Alum. 795, 61W, All Alum. 715.5, 24/7 795,54/7	Green
3/4" Minimum Groove Radius				
DBST 2785	1.097-1.240	27.86-31.50	954, 36/1, 54/7 1033.5, 37W, 61W, All Alum.	Yellow
DBST 3150	1.241-1.402	31.52-35.61	1033.5(54/7), 1272(45/7)	Orange

Note: Right Hand Lay Standard

Double Support Tie



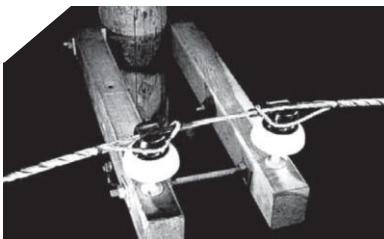
General Recommendations

INTENDED USE: The Double Support Tie is intended for use on aluminum based conductors with diameters from 0.245" to 1.402". 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-171E 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.

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.

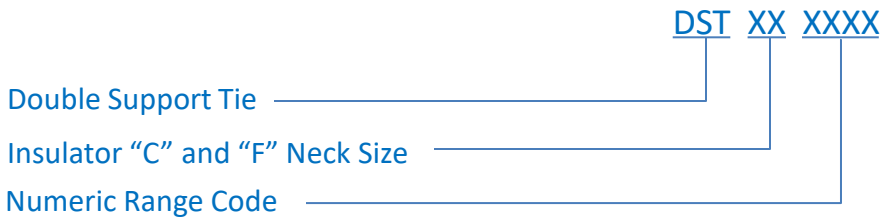
LINE ANGLES - GENERAL GUIDELINES: On vertically mounted insulators at double crossarms or brackets, the Double Support Tie can normally accommodate line angles up to a total of 20°, with no more than a 10° angle at each insulator. Larger angles may be accommodated when the insulators are mounted at varying degrees of cant from the vertical, depending upon the actual cant of the insulator. A technical report (TM-197E) 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 T&D Catalog, 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.

Double Support Tie

Selection Information



C Neck 2-1/4" Neck Diameter ANSI Class 55-2 and 55-3 / F Neck 2-7/8" Neck Diameter ANSI Class 55-4 and 55-5 Pin Type 57-1, 57-2 and 57-3 Post Type

Insulator Identification Mark: Black/Yellow

Catalogue Number	Diameter Range		Nominal Conductor Size	Color Code
	Inches	mm		
DSTCF 0620	0.245-0.277	6.22-7.04	#4 ,6/1, 7/1 #4, 7W, Alum. Alloy	Orange
DSTCF 0705	0.278-0.315	7.06-8.00	#3, 7W, Alum. Alloy #2, 7W, All Alum.	Purple
DSTCF 0805	0.316-0.357	8.03-9.07	#2, 6/1, 7/1 #2, 7W, Alum. Alloy # 1, 6/1	Red
DSTCF 0910	0.358-0.405	9.09-10.29	1/0, 7W, All Alum. 1/0, 6/1 1/0, 7W, Alum. Alloy	Yellow
DSTCF 1030	0.406-0.459	10.31-11.66	2/0, 7W, All Alum. 2/0, 6/1 2/0, 7W, Alum. Alloy	Blue
DSTCF 1170	0.460-0.520	11.68-13.21	3/0, 7W, All Alum. 3/0, 6/1 3/0, 7W, Alum. Alloy	Orange
DSTCF 1325	0.521-0.588	13.23-14.94	4/0, 7W, All Alum. 4/0, 6/1 4/0, 7W, Alum. Alloy	Red
DSTCF 1495	0.589-0.665	14.96-16.89	266.8, 37W, All Alum. 266.8,18/1	Purple
DSTCF 1695	0.666-0.755	16.92-19.18	336.4, 19W, All Alum. 336.4, 18/1 336.4, 37W, All Alum. 397.5, 19W, All Alum. 400, 19W, 37W, All	Brown
DSTCF 1920	0.756-0.855	19.20-21.72	477, 19W, 37W, All 477, 18/1, 24/7	Red
DSTCF 2175	0.856-0.968	21.74-24.59	556.5, 19W, All Alum. 636,18/1 700, 37W, 61W, All	Blue
DSTCF 2460	0.969-1.096	24.61-27.84	795, 37W, 61W, All 715.5,24/7 795,54/7	Green
DSTCF 2785	1.097-1.240	27.86-31.50	954, 36/1, 54/7 1,033.5, 37W, 61W, All	Yellow
DSTCF 3140	1.241-1.402	31.52-35.61	*	Red

GUY-GRIP® Dead-end



General Recommendations

GUY-GRIP® dead-ends are intended for use on single wood poles associated with distribution construction. **GUY-GRIP®** dead-ends were not designed or tested for use on overhead shield wires and not intended for that application. Refer to Big-Grip dead-end, an alternate product recommended for guying transmission construction, or tower and antenna applications. Refer to the Installation Tools section for the **PREFORMED™** Pulling Eye, designed to assist application at the anchor.

RATED HOLDING STRENGTH:

GUY-GRIP® dead-ends are rated at 100% of the strand's published rated breaking strength.

MATERIAL SELECTION: **GUY-GRIP®** dead-ends are made of the same basic material as the strand to which they are applied. This pertains to galvanized, *Bezinal®, Copperweld, Aluminum clad steel, stainless Type 302, and stainless Type 316. Any of these materials can be selected from the catalog tables. The recommended types of strand are also indicated.

TAPPING: **GUY-GRIP®** dead-ends are mechanical devices not designed as current transfer connectors. Consequently, tapping is not recommended over or through the **GUY-GRIP** dead-end.

APPLICATION-INSPECTION: Within the first 3 months after initial application, **GUY-GRIP®** dead-ends may be removed and reapplied two times after initial application for the purpose of retensioning the guy. After 3 months a new dead-end should be used any time removal is required.

GUY-GRIP® dead-ends should be used on hardware that is held in a fixed position; the fitting should not be allowed to rotate or spin about the axis of the strand. They should not be used as tools; that is, come-alongs, pulling-in grips, etc. Lay direction of both the **GUY-GRIP** dead-ends and the strand should be the same. Most strand is left-hand lay.

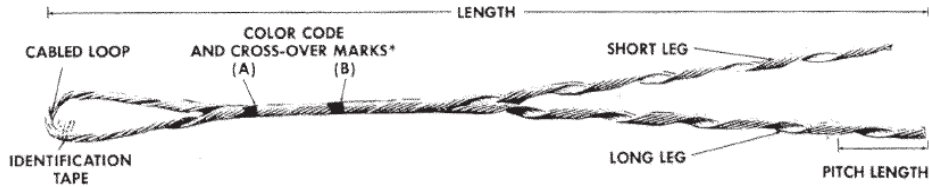
STRAND TAIL: For appearance and safety the strand tail should be cut as close as convenient to the crossover mark and buried inside the crossover mark if possible. If desired, the strand tail can, instead, extend through the loop for grounding purposes. Any tail over 2" or 3" should be restrained and not permitted to rotate during loading of the guy.





GUY-GRIP® Dead-end

Selection Information



- **Galvanized Steel B Coat / Galvanized Steel Strand**
- **For Galvanized Steel "C" Coat add -C suffix to catalog number. (i.e. SGG 1255-C)**

Catalogue Number	Strand Size (Inches)	Strand Construction	Mean Diameter		Color Code
			Inches	mm.	
SGG 0340	1/8	7W	0.124	3.15	Blue
SGG 0470	3/16	7W	0.186	4.72	Red
		7W	0.195	4.95	
SGG 0550	7/32	7W	0.216	5.49	Green
SGG 0610	1/4	3W	0.259	6.58	Yellow
		7W	0.240	6.10	
SGG 0710	9/32	7W	0.279	7.03	Blue
SGG 0790	5/16	3W	0.312	7.92	Black
		7W	0.312	7.92	
		7W	0.327	8.31	
SGG 0915	3/8	3W	0.356	9.04	Orange
		7W	0.360	9.14	
SGG 1105	7/16	7W	0.435	11.05	Green
SGG 1255 (HS)	1/2	7W	0.495	11.66	Blue
		19W	0.500	12.70	
*SGG 1255-C	1/2	7W	0.495	11.66	Blue
		19W	0.500	12.70	
*SGG 1435-C	9/16	7W	0.564	14.33	Yellow
		19W	0.565	14.35	
*SGG 1575-C	5/8	7W	0.621	15.77	Black
		19W	0.625	15.88	
*SGG 1905-C	3/4	19W	0.750	19.05	Orange
*SGG 2250-C	7/8	19W	0.885	22.48	Green
*SGG 2540-C	1	19W	1.000	25.40	Blue
		37W	1.001	25.43	

Note: * "C" Coat Standard, Cabled Loop Standard/Left Hand Lay Standard

Plastic Line Tie



General Recommendations

INTENDED USE: Plastic Line Ties are intended for use with plastic jacketed conductors and tie top ANSI C29 compliant insulators only. They are suitable for use with any plastic covered conductor such as Tree Wire or Spacer Cable.

MATERIAL: Plastic Ties are offered in two versions: Standard "PVC" and "Semi-Con" for higher voltage applications.

PVC Plastic Ties are made from grey polyvinyl chloride. This material was selected for "standard" applications because of its UV resistance, tensile strength, impact strength, flexural strength, low moisture absorption and self-extinguishing properties.

Semi-Con Plastic Ties are made from a base of clear PVC (with similar mechanical properties of the PVC Plastic Ties) with a proprietary black co-extruded outer covering selected for its superior electrical tracking resistance properties. Use of this co-extruded material allows application on higher voltages and/or more stressful electrical environments than with the standard PVC Plastic Ties.

VOLTAGE APPLICATIONS: Electrical performance of any tie for covered conductors made from plastic materials (or metal) is dependent upon a number of factors, such as the line voltage, insulator style, the BIL of the line/pole, atmospheric contamination levels, type and condition of the covered conductor, etc. The design of the insulator being used may particularly affect the electric stress environment of an installation. For example field experience suggests multi skirt porcelain insulators may provide a less stressful electrical environment than similarly rated voltage single skirt porcelain insulators, and thus offer a greater electrical "safety margin". Multi skirt polymer insulators may also provide a less electrically stressful environment due to larger leakage distances vs. porcelain insulators, and the similar dielectric characteristics of the materials used to make polymer insulators, the plastic conductor jacket, and a Plastic Tie. Because of the complex, interwoven nature of these factors, it is difficult to make absolute voltage application recommendations for Plastic Ties on covered conductors. However as a general policy, PLP suggests the following operating line voltage applications may be suitable:

"Standard" PVC Plastic Ties: 13kV or below.

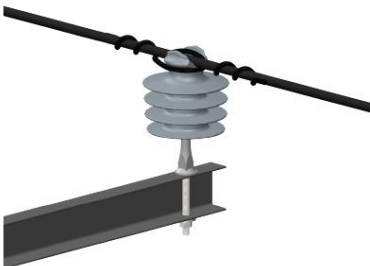
"Semi-Con" Plastic Ties: Up to 30-35kV.

Caution: Because of the line construction and environmental factors noted above, under certain conditions Plastic Ties (particularly the "standard" PVC Ties) may be subjected to burning or tracking, so it is important the product be evaluated by the intended user and PLP to determine if it is suitable for use in a particular installation

MECHANICAL: Testing has shown Plastic Line Ties and Plastic Side Ties will develop unbalanced and lift-off loads equivalent to, or in excess of, a hand tie over jacketed conductor.

INSULATORS: To insure proper fit and performance, it is recommended that only ANSI C29.5 or C29.7 compliant insulators having nominal neck diameters corresponding to 2-1/4" C-Neck or 2-7/8" F-Neck be used. Plastic Ties are suitable for use with either ANSI Compliant Polymer or porcelain insulators.

COLD WEATHER INSTALLATION/REMOVAL: Caution should be exercised when installing or removing any Plastic Tie in very cold weather, as the plastic material may become brittle and break at very low temperatures. It is suggested Plastic Ties be kept in a warm environment before installing at outside temperatures below approximately 25° F, although laboratory installation tests indicate they may remain supple at temperatures as low as -20° F.





Plastic Line Tie

Selection Information

- **Insulator:** *F-Neck 2-7/8" Neck Diameter*
- **For use on:** *Plastic Jacketed conductor*
- **Material:** *PVC (13 kV and below)
Semi-Conductive PVC (Up to 35 kV)*



PVC Ties Catalog Number	Semi-Conductive Ties Catalog Number	Diameter Range		Nominal Conductor Size	Insulator Color ID Mark	Conductor Color Code
		Inches	mm.			
TTF-1205	TTF-1205SC	0.296-0.400	07.52-10.17	#4, 6/1, 2/64s	Yellow	White
TTF-1200	TTF-1200SC	0.401-0.540	10.18-13.73	#2, 6/1, 3/64s #4, 7W, 8/64s	Yellow	Green
TTF-1201	TTF-1201SC	0.541-0.730	13.74-18.55	1/0, 6/1, 10/64s 3/0, 6/1, 4/64s	Yellow	Blue
TTF-1202	TTF-1202SC	0.731-0.920	18.56-23.38	4/0, 6/1, 10/64s 336.4, 18/1, 6/64s	Yellow	Orange
TTF-1203	TTF-1203SC	0.921-1.100	23.39-27.94	336.4, 18/1, 10/64s 447, 19W, 8/64s	Yellow	Red
TTF-1204	TTF-1204SC	1.101-1.300	27.95-33.03	477, 37W, 10/64s 397.5, 19W, 12/64s	Yellow	Black/None
TTF-1206	TTF-1206SC	1.301-1.500	33.04-38.10	7/16"	Yellow	Green
TTF-11373	TTF-11373SC	1.346-1.472	34.20-37.40	-	Yellow	Yellow

Note: Please contact PLP to re-confirm for the codes, sizes, ranges and additional detail.

Plastic Line Tie

Selection Information

- **Insulator:** C-Neck 2-1/4" Insulator
- **For use on:** Plastic Jacketed conductor
- **Material:** PVC (13 kV and below)
Semi-Conductive PVC (Up to 35 kV)



PVC Ties Catalog Number	Semi- Conductive Ties Catalog Number	Diameter Range		Nominal Conductor Size	Insulator Color ID Mark	Conductor Color Code
		Inches	mm.			
TTC-1104	TTC-1104SC	0.296-0.400	07.52-10.17	#4, 6/1, 2/64s	Black/None	White
TTC-1100	TTC-1100SC	0.401-0.540	10.18-13.73	#2, 6/1, 3/64s #4, 7W, 8/64s	Black/None	Green
TTC-1101	TTC-1101SC	0.541-0.730	13.74-18.55	1/0, 6/1, 10/64s 3/0, 6/1, 4/64s	Black/None	Blue
TTC-1102	TTC-1102SC	0.731-0.920	18.56-23.38	4/0, 6/1, 10/64s 336.4, 18/1, 6/64s	Black/None	Orange
TTC-1103	TTC-1103SC	0.921-1.100	23.39-27.94	336.4, 18/1, 10/64s 447, 19W, 8/64s	Black/None	Red
TTC-1105	TTC-1105SC	1.101-1.300	27.95-33.03	477, 37W, 10/64s 397.5, 19W, 12/64s	Black/None	Black/None
TTC-1106	TTC-1106SC	1.301-1.500	33.04-38.10	7/16"	Black/None	Green

Note: Please contact PLP to re-confirm for the codes, sizes, ranges and additional detail.

Plastic Angle Side Tie



General Recommendations

INTENDED USE: Plastic Angle Side Ties are intended for use with plastic jacketed conductors and tie top ANSI C29 compliant insulators only. They are suitable for use with any plastic covered conductor such as Tree Wire or Spacer Cable.

MATERIAL: Plastic Ties are offered in two versions: Standard "PVC" and "Semi-Con" for higher voltage applications.

PVC Plastic Ties are made from grey polyvinyl chloride. This material was selected for "standard" applications because of its UV resistance, tensile strength, impact strength, flexural strength, low moisture absorption and self-extinguishing properties.

Semi-Con Plastic Ties are made from a base of clear PVC (with similar mechanical properties of the PVC Plastic Ties) with a proprietary black co-extruded outer covering selected for its superior electrical tracking resistance properties. Use of this co-extruded material allows application on higher voltages and/or more stressful electrical environments than with the standard PVC Plastic Ties.

VOLTAGE APPLICATIONS: Electrical performance of any tie for covered conductors made from plastic materials (or metal) is dependent upon a number of factors, such as the line voltage, insulator style, the BIL of the line/pole, atmospheric contamination levels, type and condition of the covered conductor, etc. The design of the insulator being used may particularly affect the electric stress environment of an installation. For example field experience suggests multi skirt porcelain insulators may provide a less stressful electrical environment than similarly rated voltage single skirt porcelain insulators, and thus offer a greater electrical "safety margin". Multi skirt polymer insulators may also provide a less electrically stressful environment due to larger leakage distances vs. porcelain insulators, and the similar dielectric characteristics of the materials used to make polymer insulators, the plastic conductor jacket, and a Plastic Tie. Because of the complex, interwoven nature of these factors, it is difficult to make absolute voltage application recommendations for Plastic Ties on covered conductors. However as a general policy, PLP suggests the following operating line voltage applications may be suitable:

"Standard" PVC Plastic Ties: 13kV or below.

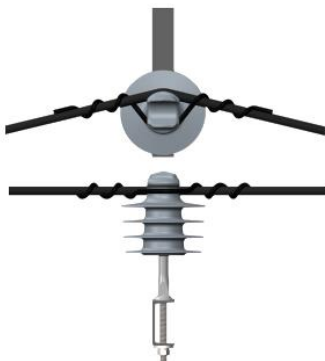
"Semi-Con" Plastic Ties: Up to 30-35kV.

Caution: Because of the line construction and environmental factors noted above, under certain conditions Plastic Ties (particularly the "standard" PVC Ties) may be subjected to burning or tracking, so it is important the product be evaluated by the intended user and PLP to determine if it is suitable for use in a particular installation

MECHANICAL: Testing has shown Plastic Line Ties and Plastic Side Ties will develop unbalanced and lift-off loads equivalent to, or in excess of, a hand tie over jacketed conductor.

INSULATORS: To insure proper fit and performance, it is recommended that only ANSI C29.5 or C29.7 compliant insulators having nominal neck diameters corresponding to 2-1/4" C-Neck or 2-7/8" F-Neck be used. Plastic Ties are suitable for use with either ANSI Compliant Polymer or porcelain insulators.

COLD WEATHER INSTALLATION/REMOVAL: Caution should be exercised when installing or removing any Plastic Tie in very cold weather, as the plastic material may become brittle and break at very low temperatures. It is suggested Plastic Ties be kept in a warm environment before installing at outside temperatures below approximately 25° F, although laboratory installation tests indicate they may remain supple at temperatures as low as -20°F.



Plastic Angle Side Tie

Selection Information

- **Insulator:** *F-Neck 2-7/8" Neck Diameter*
- **For use on:** *Plastic Jacketed conductor*
- **Material:** *PVC (13 kV and below)
Semi-Conductive PVC (Up to 35 kV)*



PVC Ties Catalog Number	Semi- Conductive Ties Catalog Number	Diameter Range		Nominal Conductor Size	Insulator Color ID Mark	Conductor Color Code
		Inches	mm.			
SSF-2205	SSF-2205SC	0.296-0.400	07.52-10.17	#4, 6/1, 2/64s	Yellow	White
SSF-2200	SSF-2200SC	0.401-0.540	10.18-13.73	#2, 6/1, 3/64s #4, 7W, 8/64s	Yellow	Green
SSF-2201	SSF-2201SC	0.541-0.730	13.74-18.55	1/0, 6/1, 10/64s 3/0, 6/1, 4/64s	Yellow	Blue
SSF-2202	SSF-2202SC	0.731-0.920	18.56-23.38	4/0, 6/1, 10/64s 336.4, 18/1, 6/64s	Yellow	Orange
SSF-2203	SSF-2203SC	0.921-1.100	23.39-27.94	336.4, 18/1, 10/64s 447, 19W, 8/64s	Yellow	Red
SSF-2204	SSF-2204SC	1.101-1.300	27.95-33.03	477, 37W, 10/64s 397.5, 19W, 12/64s	Yellow	Black/None

Note: Please contact PLP to re-confirm for the codes, sizes, ranges and additional detail.

Plastic Angle Side Tie

Selection Information

- **Insulator:** C-Neck 2-1/4" Insulator
- **For use on:** Plastic Jacketed conductor
- **Material:** PVC (13 kV and below)
Semi-Conductive PVC (Up to 35 kV)



PVC Ties Catalog Number	Semi- Conductive Ties Catalog Number	Diameter Range		Nominal Conductor Size	Insulator Color ID Mark	Conductor Color Code
		Inches	mm.			
SSC-2105	SSC-2105SC	0.296-0.400	07.52-10.17	#4, 6/1, 2/64s	Black/None	White
SSC-2100	SSC-2100SC	0.401-0.540	10.18-13.73	#2, 6/1, 3/64s #4, 7W, 8/64s	Black/None	Green
SSC-2101	SSC-2101SC	0.541-0.730	13.74-18.55	1/0, 6/1, 10/64s 3/0, 6/1, 4/64s	Black/None	Blue
SSC-2102	SSC-2102SC	0.731-0.920	18.56-23.38	4/0, 6/1, 10/64s 336.4, 18/1, 6/64s	Black/None	Orange
SSC-2103	SSC-2103SC	0.921-1.100	23.39-27.94	336.4, 18/1, 10/64s 447, 19W, 8/64s	Black/None	Red
SSC-2104	SSC-2104SC	1.101-1.300	27.95-33.03	477, 37W, 10/64s 397.5, 19W, 12/64s	Black/None	Black/None

Note: Please contact PLP to re-confirm for the codes, sizes, ranges and additional detail.

Tangent Side Tie



General Recommendations

INTENDED USE: Tangent Side Ties are intended for use with plastic jacketed conductors and tie top ANSI C29 compliant insulators only. They are suitable for use with any plastic covered conductor such as Tree Wire or Spacer Cable.

MATERIAL: Plastic Ties are offered in two versions: Standard "PVC" and "Semi-Con" for higher voltage applications.

PVC Plastic Ties are made from grey polyvinyl chloride. This material was selected for "standard" applications because of its UV resistance, tensile strength, impact strength, flexural strength, low moisture absorption and self-extinguishing properties.

Semi-Con Plastic Ties are made from a base of clear PVC (with similar mechanical properties of the PVC Plastic Ties) with a proprietary black co-extruded outer covering selected for its superior electrical tracking resistance properties. Use of this co-extruded material allows application on higher voltages and/or more stressful electrical environments than with the standard PVC Plastic Ties.

VOLTAGE APPLICATIONS: Electrical performance of any tie for covered conductors made from plastic materials (or metal) is dependent upon a number of factors, such as the line voltage, insulator style, the BIL of the line/pole, atmospheric contamination levels, type and condition of the covered conductor, etc. The design of the insulator being used may particularly affect the electric stress environment of an installation. For example field experience suggests multi skirt porcelain insulators may provide a less stressful electrical environment than similarly rated voltage single skirt porcelain insulators, and thus offer a greater electrical "safety margin". Multi skirt polymer insulators may also provide a less electrically stressful environment due to larger leakage distances vs. porcelain insulators, and the similar dielectric characteristics of the materials used to make polymer insulators, the plastic conductor jacket, and a Plastic Tie. Because of the complex, interwoven nature of these factors, it is difficult to make absolute voltage application recommendations for Plastic Ties on covered conductors. However as a general policy, PLP suggests the following operating line voltage applications may be suitable:

"Standard" PVC Plastic Ties: 13kV or below.

"Semi-Con" Plastic Ties: Up to 30-35kV.

Caution: Because of the line construction and environmental factors noted above, under certain conditions Plastic Ties (particularly the "standard" PVC Ties) may be subjected to burning or tracking, so it is important the product be evaluated by the intended user and PLP to determine if it is suitable for use in a particular installation

MECHANICAL: Testing has shown Plastic Line Ties and Plastic Side Ties will develop unbalanced and lift-off loads equivalent to, or in excess of, a hand tie over jacketed conductor.

INSULATORS: To insure proper fit and performance, it is recommended that only ANSI C29.5 or C29.7 compliant insulators having nominal neck diameters corresponding to 2-1/4" C-Neck or 2-7/8" F-Neck be used. Plastic Ties are suitable for use with either ANSI Compliant Polymer or porcelain insulators.

COLD WEATHER INSTALLATION/REMOVAL: Caution should be exercised when installing or removing any Plastic Tie in very cold weather, as the plastic material may become brittle and break at very low temperatures. It is suggested Plastic Ties be kept in a warm environment before installing at outside temperatures below approximately 25° F, although laboratory installation tests indicate they may remain supple at temperatures as low as -20°F.



Tangent Side Tie

Selection Information

- **Insulator:** *F-Neck 2-7/8" Neck Diameter*
- **For use on:** *Plastic Jacketed conductor*
- **Material:** *PVC (13 kV and below)
Semi-Conductive PVC (Up to 35 kV)*



PVC Ties Catalog Number	Semi- Conductive Ties Catalog Number	Diameter Range		Nominal Conductor Size	Insulator Color ID Mark	Conductor Color Code
		Inches	mm.			
SSF-2250	SSF-2250SC	0.296-0.400	07.52-10.17	#4, 6/1, 2/64s	Yellow	White
SSF-2251	SSF-2251SC	0.401-0.540	10.18-13.73	#2, 6/1, 3/64s #4, 7W, 8/64s	Yellow	Green
SSF-2252	SSF-2252SC	0.541-0.730	13.74-18.55	1/0, 6/1, 10/64s 3/0, 6/1, 4/64s	Yellow	Blue
SSF-2253	SSF-2253SC	0.731-0.920	18.56-23.38	4/0, 6/1, 10/64s 336.4, 18/1, 6/64s	Yellow	Orange
SSF-2254	SSF-2254SC	0.921-1.100	23.39-27.94	336.4, 18/1, 10/64s 447, 19W, 8/64s	Yellow	Red
SSF-2255	SSF-2255SC	1.101-1.300	27.95-33.03	477, 37W, 10/64s 397.5, 19W, 12/64s	Yellow	Black/None

Note: Please contact PLP to re-confirm for the codes, sizes, ranges and additional detail.



Tangent Side Tie

Selection Information

- **Insulator:** C-Neck 2-1/4" Insulator
- **For use on:** Plastic Jacketed conductor
- **Material:** PVC (13 kV and below)
Semi-Conductive PVC (Up to 35 kV)

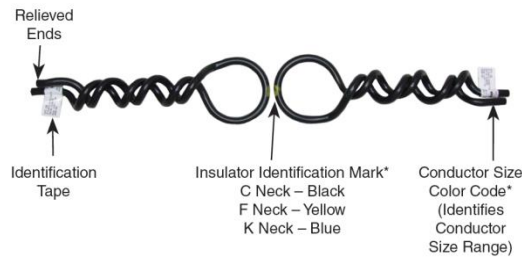


PVC Ties Catalog Number	Semi- Conductive Ties Catalog Number	Diameter Range		Nominal Conductor Size	Insulator Color ID Mark	Conductor Color Code
		Inches	mm.			
SSC-2150	SSC-2150SC	0.296-0.400	07.52-10.17	#4, 6/1, 2/64s	Black/None	White
SSC-2151	SSC-2151SC	0.401-0.540	10.18-13.73	#2, 6/1, 3/64s #4, 7W, 8/64s	Black/None	Green
SSC-2152	SSC-2152SC	0.541-0.730	13.74-18.55	1/0, 6/1, 10/64s 3/0, 6/1, 4/64s	Black/None	Blue
SSC-2153	SSC-2153SC	0.731-0.920	18.56-23.38	4/0, 6/1, 10/64s 336.4, 18/1, 6/64s	Black/None	Orange
SSC-2154	SSC-2154SC	0.921-1.100	23.39-27.94	336.4, 18/1, 10/64s 447, 19W, 8/64s	Black/None	Red
SSC-2155	SSC-2155SC	1.101-1.300	27.95-33.03	477, 37W, 10/64s 397.5, 19W, 12/64s	Black/None	Black/None

Note: Please contact PLP to re-confirm for the codes, sizes, ranges and additional detail.



Semi-Conductive Double Top Tie - 35kV Rated



General Recommendations

INTENDED USE: Semi-Conductive Double Top Ties are intended for use with jacketed conductors and vertically mounted tie top insulators on cross-arms or pole-top mounted insulators. When utilized within double crossarm construction as illustrated, line angles from 0° to 30° can be comfortably accommodated.

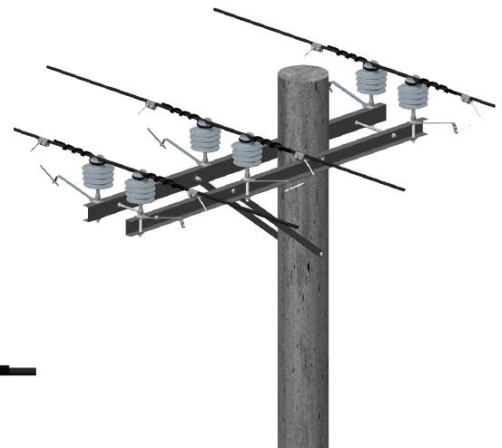
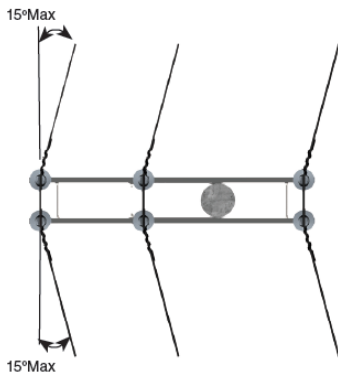
MATERIAL: Semi-Con Plastic Ties are made from a base of clear PVC with a proprietary black co-extruded outer covering selected for its superior electrical tracking resistance properties. Use of this co-extruded material allows application on higher voltages and/or more stressful electrical environments. This material was selected because of its UV resistance, tensile strength, impact strength, flexural strength and self extinguishing properties.

VOLTAGE APPLICATIONS: Electrical performance of any tie for covered conductors made from plastic materials (or metal) is dependent upon a number of factors, such as the line voltage, insulator style, the BIL of the line/pole, atmospheric contamination levels, type and condition of the covered conductor, etc.

The design of the insulator being used will affect the electric stress environment of an installation. PLP HDPE type polymer pin insulators provide a less electrically stressful environment due to the similar dielectric characteristics of the materials used to make polymer insulators, the plastic conductor jacket, and a plastic tie. Because of the complex, interwoven nature of these factors, it is difficult to make absolute voltage application recommendations for plastic ties on covered conductors. However as a general policy, PLP suggests that plastic semi-conductive line ties can be applied up to 35kV.

MECHANICAL: Testing has shown Plastic Side Ties will develop unbalanced and lift-off loads equivalent to, or in excess of, a hand tie over jacketed conductor.

INSULATORS: To ensure proper fit and performance, it is recommended that only ANSI C29.5 or C29.7 compliant insulators having nominal neck diameters corresponding to Ø 57.2mm (C Neck), Ø 73.0mm (F Neck) and Ø 101.6mm (K Neck) be used. Plastic Ties are suitable for use with either ANSI Compliant Polymer or porcelain insulators.





Semi-Conductive Double Top Tie / Top Tie - 35kV Rated

Selection Information

- **Insulator:** F-Neck 2-7/8" Neck Diameter
- **For use on:** Plastic Jacketed conductor
- **Material:** PVC (13 kV and below)
Semi-Conductive PVC (Up to 35 kV)



Semi-Conductive Ties Catalog Number	Diameter Range		Nominal Conductor Size	Insulator Color ID Mark	Conductor Color Code
	Inches	mm.			
DTTF-1201SC	0.541-0.730	13.74-18.55	1/0, 6/1, 10/64s 3/0, 6/1, 4/64s	Yellow	Blue
DTTF-1202SC	0.731-0.920	18.56-23.38	4/0, 6/1, 10/64s 336.4, 18/1, 6/64s	Yellow	Orange
DTTF-1203SC	0.921-1.100	23.39-27.94	336.4, 18/1, 10/64s 447, 19W, 8/64s	Yellow	Red
DTTF-1204SC	1.101-1.300	27.95-33.03	477, 37W, 10/64s 397.5, 19W, 12/64s	Yellow	None
DTTF-1206SC	1.301-1.500	33.04-38.10	7/16"	Yellow	Green

Note: Please contact PLP to re-confirm for the codes, sizes, ranges and additional detail.

- **Insulator:** C-Neck 2-1/4" Insulator
- **For use on:** Plastic Jacketed conductor
- **Material:** PVC (13 kV and below)
Semi-Conductive PVC (Up to 35 kV)

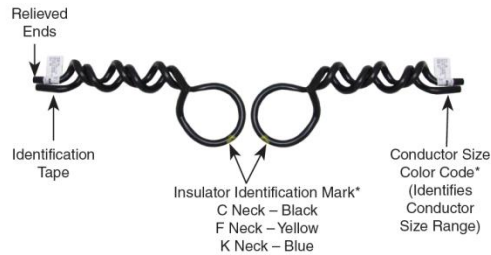


Semi-Conductive Ties Catalog Number	Diameter Range		Nominal Conductor Size	Insulator Color ID Mark	Conductor Color Code
	Inches	mm.			
DTTC-1101SC	0.541-0.730	13.74-18.55	1/0, 6/1, 10/64s 3/0, 6/1, 4/64s	Black	Blue
DTTC-1102SC	0.731-0.920	18.56-23.38	4/0, 6/1, 10/64s 336.4, 18/1, 6/64s	Black	Orange
DTTC-1103SC	0.921-1.100	23.39-27.94	336.4, 18/1, 10/64s 447, 19W, 8/64s	Black	Red
DTTC-1105SC	1.101-1.300	27.95-33.03	477, 37W, 10/64s 397.5, 19W, 12/64s	Black	None
DTTC-1106SC	1.301-1.500	33.04-38.10	7/16"	Black	Green

Note: Please contact PLP to re-confirm for the codes, sizes, ranges and additional detail.



Semi-Conductive Double Side Line Tie - 35kV Rated



General Recommendations

INTENDED USE: Semi-Conductive Double Side Line Ties are intended for use with jacketed conductors and vertically mounted tie top insulators on cross-arms or pole-top mounted insulators. When utilized within double crossarm construction as illustrated, line angles from 22° to 60° can be comfortably accommodated.

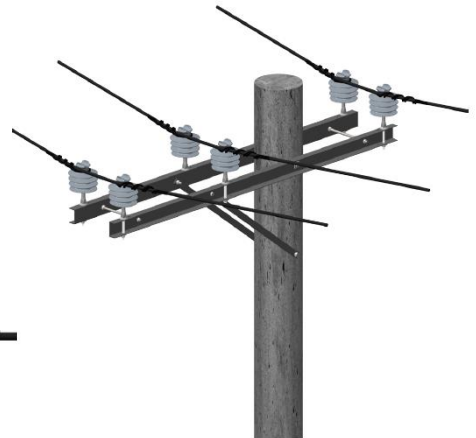
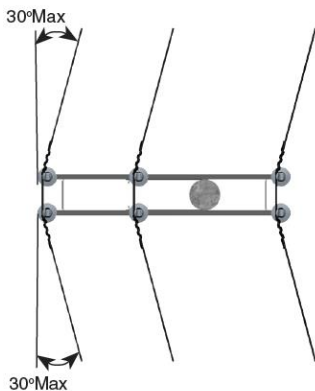
MATERIAL: Semi-Con Plastic Ties are made from a base of clear PVC with a proprietary black co-extruded outer covering selected for its superior electrical tracking resistance properties. Use of this co-extruded material allows application on higher voltages and/or more stressful electrical environments. This material was selected because of its UV resistance, tensile strength, impact strength, flexural strength and self extinguishing properties.

VOLTAGE APPLICATION: Electrical performance of any tie for covered conductors made from plastic materials (or metal) is dependent upon a number of factors, such as the line voltage, insulator style, the BIL of the line/pole, atmospheric contamination levels, type and condition of the covered conductor, etc.

The design of the insulator being used will affect the electric stress environment of an installation. PLP HDPE type polymer pin insulators will provide a less electrically stressful environment due to the similar dielectric characteristics of the materials used to make polymer insulators, the plastic conductor jacket, and a plastic tie. Because of the complex, interwoven nature of these factors, it is difficult to make absolute voltage application recommendations for plastic ties on covered conductors.

However as a general policy, PLP suggests that plastic semi-conductive line ties can be applied up to 35kV.

MECHANICAL: Testing has shown Plastic Angle Side Ties will develop unbalanced and lift-off loads equivalent to, or in excess of, a hand tie over jacketed conductor. Insulators: To ensure proper fit and performance, it is recommended that only ANSI C29.5 or C29.7 compliant insulators having nominal neck diameters corresponding to Ø 57.2mm (C Neck), Ø 73.0mm (F Neck) and Ø 101.6mm (K Neck) be used. Plastic Ties are suitable for use with either ANSI Compliant Polymer or porcelain insulators.





Semi-Conductive Double Side Line Tie - 35kV Rated

Selection Information

- **Insulator:** *F-Neck 2-7/8" Neck Diameter*
- **For use on:** *Plastic Jacketed conductor*
- **Material:** *PVC (13 kV and below)*
Semi-Conductive PVC (Up to 35 kV)



Semi-Conductive Ties Catalog Number	Diameter Range		Nominal Conductor Size	Insulator Color ID Mark	Conductor Color Code
	Inches	mm.			
DSSF-1201SC	0.541-0.730	13.74-18.55	1/0, 6/1, 10/64s 3/0, 6/1, 4/64s	Yellow	Blue
DSSF-1202SC	0.731-0.920	18.56-23.38	4/0, 6/1, 10/64s 336.4, 18/1, 6/64s	Yellow	Orange
DSSF-1203SC	0.921-1.100	23.39-27.94	336.4, 18/1, 10/64s 447, 19W, 8/64s	Yellow	Red
DSSF-1204SC	1.101-1.300	27.95-33.03	477, 37W, 10/64s 397.5, 19W, 12/64s	Yellow	None
DSSF-1206SC	1.301-1.500	33.04-38.10	7/16"	Yellow	Green

Note: Please contact PLP to re-confirm for the codes, sizes, ranges and additional detail.

- **Insulator:** *C-Neck 2-1/4" Insulator*
- **For use on:** *Plastic Jacketed conductor*
- **Material:** *PVC (13 kV and below)*
Semi-Conductive PVC (Up to 35 kV)



Semi-Conductive Ties Catalog Number	Diameter Range		Nominal Conductor Size	Insulator Color ID Mark	Conductor Color Code
	Inches	mm.			
DSSC-2101SC	0.541-0.730	13.74-18.55	1/0, 6/1, 10/64s 3/0, 6/1, 4/64s	Black	Blue
DSSC-2102SC	0.731-0.920	18.56-23.38	4/0, 6/1, 10/64s 336.4, 18/1, 6/64s	Black	Orange
DSSC-2103SC	0.921-1.100	23.39-27.94	336.4, 18/1, 10/64s 447, 19W, 8/64s	Black	Red
DSSC-2105SC	1.101-1.300	27.95-33.03	477, 37W, 10/64s 397.5, 19W, 12/64s	Black	None
DSSC-2106SC	1.301-1.500	33.04-38.10	7/16"	Black	Green

Note: Please contact PLP to re-confirm for the codes, sizes, ranges and additional detail.