



WRAPLOCK[®] TIE

WRAPLOCK Ties provide an improved method of securing conductor compared to clamp-top insulators or hand ties and armor. They provide superior abrasion protection for the conductor and insulator under all types of motion, including low-frequency sway oscillation, high-frequency aeolian vibration, and galloping. The elastomer components surround 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. The WRAPLOCK Tie provides superior protection by eliminating abrasion rather than sacrificing outside surfaces to abrasion. This extends the life of the electrical system and reduces maintenance. WRAPLOCK Ties are manufactured from aluminum alloy wire.

FEATURES AND BENEFITS

- Applicable to interchangeable headstyle insulators - C, F, and J-Neck
- Accommodates conductors from 0.248" - 1.240" diameter
- 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
- 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. Contact a PLP representative 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 top groove radius.
Radio Influence (RIV)	The Radio Influence Voltage (RIV) characteristics of WRAPLOCK Ties are equivalent to those of a well-made hand tie, as originally installed. During service life, the pre-contoured tie ensures a tight fit, resulting in superior RIV performance compared to a loosened tie wire.
Line Angles - General Guidelines	<p>On vertically mounted insulators, WRAPLOCK 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, depending upon the actual cant of the insulator. Combining Side Ties with WRAPLOCK Ties on a single structure can also affect the acceptable line angles for that structure.</p> <p>A technical report (TM-197-E) is available which describes these various permissible line angles of WRAPLOCK Ties as a function of the insulator cant.</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, insulator style, orientation, etc. Consult PLP for further guidance on line angle issues not covered in the above test report.</p>
Mechanical Strength	<p>The WRAPLOCK 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 WRAPLOCK Tie is designed to relieve the load before severe damage is done to the pole's structural components.</p> <p>The WRAPLOCK 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 "resiliency" and is designed into each WRAPLOCK Tie. TM-169-E covers the mechanical testing of the WRAPLOCK Tie and is available upon request.</p>
Vibration Dampers	By using WRAPLOCK 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, vibration dampers 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 WRAPLOCK Ties is not recommended. Tapping over protective rods will remain permissible, however, there are now stirrups available that provide a superior method of making hot-line taps.

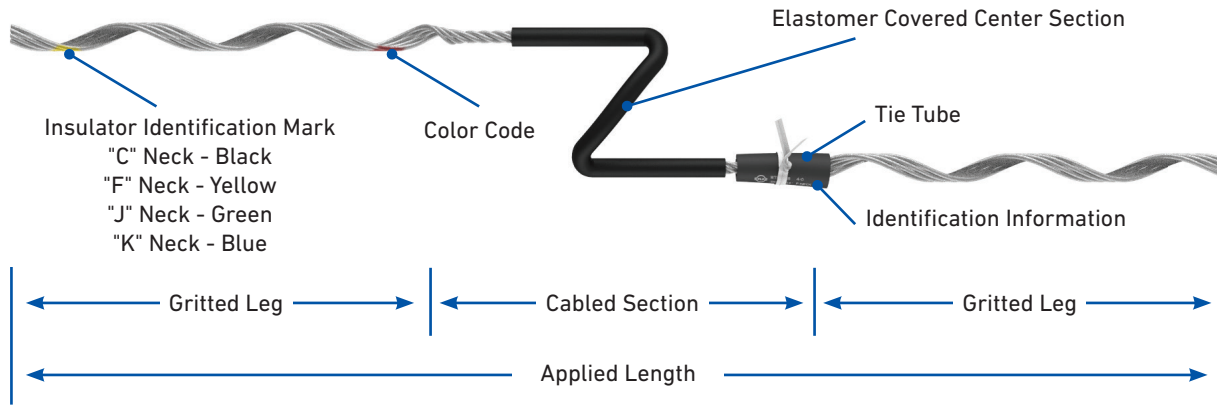
Additional Resources

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



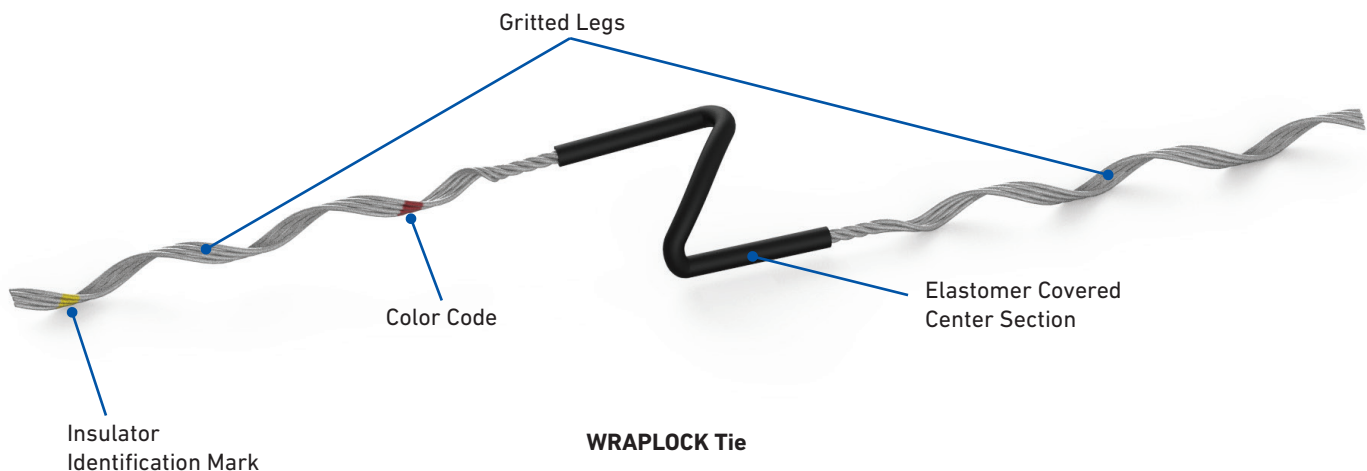
WRAPLOCK Tie
Webpage

SPECIFICATIONS



WRAPLOCK 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.
Elastomer Covered Center Section	Together with the tie tube, this elastomer coated area provides a protective cushion that completely surrounds the conductor.
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.
Cabled 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.



ORDERING INFORMATION

WRAPLOCK® Tie: C-Neck and F-Neck Interchangeable Headstyle Insulators

Diameter Range		Nominal Conductor Size ¹	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. Groove²								
0.248	0.259	#4, 6/1-7/1; #4, 7W, Aluminum Alloy	100	WTC-0100	19	WTF-0200	21	Orange
0.260	0.269	#4, AWAC, 5/2; #3, 7W, All Aluminum; #2, 7W, Comp.	100	WTC-0101	19	WTF-0201	21	Green
0.270	0.280	#3, 7W, Aluminum Alloy; #3, AWAC, 6/1	100	WTC-0102	19	WTF-0202	21	Yellow
0.281	0.291	#4, AWAC, 4/3; #3, 6/1; #2, 6/1, Comp.	100	WTC-0103	21	WTF-0203	22	White
0.292	0.303	#3, AWAC, 5/2; #2, 7W, All Aluminum; #2, 7/1, Comp.	100	WTC-0104	21	WTF-0204	22	Purple
0.304	0.314	#4, AWAC, 3/4; #2, AWAC, 6/1	100	WTC-0105	22	WTF-0205	23	Brown
0.315	0.327	#2, 6/1-7/1; #2, 7W, Aluminum Alloy	100	WTC-0106	22	WTF-0206	23	Red
0.328	0.340	#2, AWAC, 5/2; #1, 7W, Aluminum Alloy; 1/0, 7W, Comp.	100	WTC-0107	23	WTF-0207	24	Blue
0.341	0.353	#3, AWAC, 3/4; #1, 7W, Aluminum Alloy	100	WTC-0108	23	WTF-0208	24	Orange
0.354	0.367	#2, AWAC, 4/3; #1, 6/1, 1/0, 6/1, Comp.	100	WTC-0109	24	WTF-0209	25	Green
0.368	0.381	1/0, 7W, All Aluminum; 2/0, 7W, Comp.	100	WTC-0110	20	WTF-0210	22	Black
0.382	0.394	#2, AWAC, 3/4; 1/0, AWAC, 6/1	100	WTC-0111	21	WTF-0211	23	White
0.395	0.411	1/0, 6/1; 1/0, 7W, Aluminum Alloy	100	WTC-0112	21	WTF-0212	23	Yellow
0.412	0.437	2/0, 7W-19W, All Aluminum; 3/0, 7W-19W, Comp.	100	WTC-0113	22	WTF-0213	24	Brown
0.438	0.463	2/0, 6/1-7/1; 2/0, 7W, Aluminum Alloy	100	WTC-0114	23	WTF-0214	25	Blue
0.464	0.492	3/0, 7W-19W, All Aluminum; 4/0, 7W-19W, Comp.	50	WTC-0115	25	WTF-0215	26	Green
0.493	0.522	3/0, 6/1; 3/0, 7W, Aluminum Alloy; 4/0, 7W, All Aluminum	50	WTC-0116	25	WTF-0216	26	Orange
0.523	0.554	3/0, AWAC, 5/2; 4/0, 19W, All Aluminum; 266.8, 7W-19W, Comp.	50	WTC-0117	27	WTF-0217	26	Black
0.555	0.594	4/0, 6/1; 4/0, 7W, Aluminum Alloy; 266.8, 7W-19W, All Aluminum	50	WTC-0118	28	WTF-0218	27	Red
0.595	0.630	266.8, 18/1; 300, 18W-37W, All Aluminum	50	WTC-0119	29	WTF-0219	28	Purple

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

WRAPLOCK® Tie: C-Neck and F-Neck Interchangeable Headstyle Insulators

Diameter Range		Nominal Conductor Size ¹	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	
5/8" R. Groove²								
0.631	0.664	266.8, 26/7; 266.8, 19W, Aluminum Alloy	50	WTC-0120	29	WTF-0220	29	Yellow
0.665	0.705	336.4, 18/1-36/1; 336.4, 19W, All Aluminum; 350, 19W-37W, All Aluminum	50	WTC-0121	30	WTF-0221	29	Brown
0.706	0.747	366.4, 26/7-30/7; 397.5, 19W, All Aluminum	50	WTC-0122	31	WTF-0222	30	Green
3/4" R. Groove²								
0.748	0.795	397.5, 24/7, 26/7; 397.5, 19W, Aluminum Alloy; 477, 19W, 37W, All Aluminum	50	WTC-0123	33	WTF-0223	33	Orange
0.796	0.846	477, 18/1, 36/1; 500, 19W, All Aluminum	50	WTC-0124	37	WTF-0224	37	Purple
0.847	0.900	556.5, 18/1, 36/1; 556.5 19W, 37W All Aluminum	50	WTC-0125	39	WTF-0225	39	Blue
0.901	0.958	636, 18/1, 36/1; 636, 37W, All Aluminum; 556.5M, 19W, Aluminum Alloy	50	WTC-0126	41	WTF-0226	41	Green
0.959	1.018	666.6, 24/7, 54/7; 750, 37W, All Aluminum; 636, 37W, Aluminum Alloy	50	WTC-0127	43	WTF-0227	43	White
13/16" R. Groove²								
1.019	1.083	795, 36/1, 45/7; 795, 37W, Aluminum Alloy	50	WTC-0128	45	WTF-0228	45	Brown
7/8" or 1" R. Groove²								
1.084	1.151	954, 36/1; 954, 37W All Aluminum; 795, 37W Aluminum Alloy	50	WTC-0129	47	WTF-0229	47	Orange
1.152	1.223	954, 45/7, 54/7; 1033.5, 37W All Aluminum; 954, 37W Aluminum Alloy	50	WTC-0130	49	WTF-0230	49	Purple
1.224	1.240		50	WTC-0131	59	WTF-0231	59	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

WRAPLOCK® Tie: J-Neck Interchangeable Headstyle Insulators

Diameter Range		Nominal Conductor Size ¹	Units per Carton	J-Neck Insulators (Green)		Conductor Color Code
in				Catalog Number	Applied Length	
Minimum	Maximum				in	
9/16" R. Groove²						
0.248	0.259	#4, 6/1-7/1; #4, 7W, Aluminum Alloy	100	WTJ-0400	21	Orange
0.260	0.269	#4, AWAC, 5/2; #3, 7W, All Aluminum; #2, 7W, Comp.	100	WTJ-0401	21	Green
0.270	0.280	#3, 7W, Aluminum Alloy; #3, AWAC, 6/1	100	WTJ-0402	21	Yellow
0.281	0.291	#4, AWAC, 4/3; #3, 6/1; #2, 6/1, Comp.	100	WTJ-0403	21	White
0.292	0.303	#3, AWAC, 5/2; #2, 7W, All Aluminum; #2, 7/1, Comp.	100	WTJ-0404	22	Purple
0.304	0.314	#4, AWAC, 3/4; #2, AWAC, 6/1	100	WTJ-0405	22	Brown
0.315	0.327	#2, 6/1-7/1; #2, 7W, Aluminum Alloy	100	WTJ-0406	23	Red
0.328	0.340	#2, AWAC, 5/2; #1, 7W, Aluminum Alloy; 1/0, 7W, Comp.	100	WTJ-0407	23	Blue
0.341	0.353	#3, AWAC, 3/4; #1, 7W, Aluminum Alloy	100	WTJ-0408	24	Orange
0.354	0.367	#2, AWAC, 4/3; #1, 6/1, 1/0, 6/1, Comp.	100	WTJ-0409	24	Green
0.368	0.381	1/0, 7W, All Aluminum; 2/0, 7W, Comp.	100	WTJ-0410	25	Black
0.382	0.394	#2, AWAC, 3/4; 1/0, AWAC, 6/1	100	WTJ-0411	23	White
0.395	0.411	1/0, 6/1; 1/0, 7W, Aluminum Alloy	100	WTJ-0412	24	Yellow
0.412	0.437	2/0, 7W-19W, All Aluminum; 3/0, 7W-19W, Comp.	100	WTJ-0413	25	Brown
0.438	0.463	2/0, 6/1-7/1; 2/0, 7W, Aluminum Alloy	100	WTJ-0414	26	Blue
0.464	0.492	3/0, 7W-19W, All Aluminum; 4/0, 7W-19W, Comp.	50	WTJ-0415	28	Green
0.493	0.522	3/0, 6/1; 3/0, 7W, Aluminum Alloy; 4/0, 7W, All Aluminum	50	WTJ-0416	28	Orange
0.523	0.554	3/0, AWAC, 5/2; 4/0, 19W, All Aluminum; 266.8, 7W-19W, Comp.	50	WTJ-0417	28	Black
0.555	0.594	4/0, 6/1; 4/0, 7W, Aluminum Alloy; 266.8, 7W-19W, All Aluminum	50	WTJ-0418	29	Red
0.595	0.630	266.8, 18/1; 300, 19W-37W, All Aluminum	50	WTJ-0419	30	Purple

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

WRAPLOCK® Tie: J-Neck Interchangeable Headstyle Insulators

Diameter Range		Nominal Conductor Size ¹	Units per Carton	J-Neck Insulators (Green)		Conductor Color Code
in				Catalog Number	Applied Length	
Minimum	Maximum				in	
5/8" R. Groove²						
0.631	0.664	266.8, 26/7; 266.8, 19W, Aluminum Alloy	50	WTJ-0420	31	Yellow
0.665	0.705	336.4, 18/1-36/1; 336.4, 19W, All Aluminum; 350, 19W-37W, All Aluminum	50	WTJ-0421	31	Brown
0.706	0.747	366.4, 26/7-30/7; 397.5, 19W, All Aluminum	50	WTJ-0422	32	Green
3/4" R. Groove²						
0.748	0.795	397.5, 24/7, 26/7; 397.5, 19W, Aluminum Alloy; 477, 19W, 37W, All Aluminum	50	WTJ-0423	34	Orange
0.796	0.846	477, 18/1, 36/1; 500, 19W, All Aluminum	50	WTJ-0424	40	Purple
0.847	0.900	556.5, 18/6, 36/1; 556.5 19W, 37W All Aluminum	50	WTJ-0425	41	Blue
0.901	0.958	636, 18/1, 36/1; 636, 37W, All Aluminum; 556.5, 19W, Aluminum Alloy	25	WTJ-0426	43	Green
0.959	1.018	666.6, 24/7, 54/7; 750, 37W, All Aluminum; 636, 37W, Aluminum Alloy	50	WTJ-0427	45	White
13/16" R. Groove²						
1.019	1.083	795, 36/1, 45/7; 795, 37W, Aluminum Alloy	25	WTJ-0428	47	Brown
7/8" R. Groove or 1" Groove²						
1.084	1.151	954, 36/1; 954, 37W All Aluminum; 795, 26/7; 37W Aluminum Alloy	25	WTJ-0429	49	Orange
1.152	1.223	954, 45/7, 54/7; 1033.5, 37W All Aluminum; 954, 37W Aluminum Alloy	25	WTJ-0430	51	Purple
1.224	1.240		25	WTJ-0431	60	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.