



EZ-WRAP® TWIN TIE

EZ-WRAP Twin 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 tube component surrounds the bare conductor with a resilient cushion where the conductor would come into contact with the insulator.

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 10-degrees in the vertical orientation
- 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
- Non-rotational tie for installing on insulators with limited clearance

DESIGN CONSIDERATIONS

Description	Details
Interchangeable Headstyle Insulator	<p>To ensure proper fit and service life, it is recommended that only insulators with dimensions consistent with ANSI C29 Insulator Standards, corresponding to C-Neck, F-Neck, and J-Neck, be used with EZ-WRAP Twin Ties.</p> <p>Loop Design: The loop of the EZ-WRAP Twin Tie has been designed so multiple insulators with dimensions consistent with ANSI C29 Insulator Standards can be accommodated by a single tie design for most conductors and insulators. One design will accommodate most C-Neck to F-Neck insulators while another will accommodate most F-Neck to J-Neck insulators. See notes on tabular pages for exceptions.</p>
Conductor Size	EZ-WRAP Twin Tie can accommodate conductor diameters as defined in the product tables as long as the insulator can accept the conductor/tie tube diameter. The product tables define minimum groove radii required for the tie and conductor diameter range.
Radio Influence (RIV)	The Radio Influence Voltage (RIV) characteristics of EZ-WRAP Twin Ties are equivalent to those of a well-made hand tie, as originally installed. During service life the pre-contoured tie ensures continued fit, resulting in superior RIV performance compared to hand tie wire.
Line Angles - General Guidelines	<p>On vertically mounted insulators, EZ-WRAP Twin 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 EZ-WRAP Twin Ties on a single structure can also affect the acceptable line angles for that structure.</p> <p>In all cases the conductor should rest in the preferred insulator groove, independently of the tie, so the tie is not required to force the conductor to remain in that groove. The largest, practical angle a tie can accommodate depends upon limiting factors such as conductor size, tension, span lengths, sag angles, insulator style and orientation, etc. Consult PLP for further guidance on line angle issues.</p>
Mechanical Strength	<p>The EZ-WRAP Twin 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. TR-729-E covers the mechanical testing of the EZ-WRAP Twin Tie and is available upon request.</p>
Vibration Dampers	<p>By using EZ-WRAP Twin Ties with the tube, the possibility of abrasion or fatigue during conductor movement is minimized. However, for lines with excessive aeolian vibration, the use of vibration dampers such as Spiral Vibration Dampers (SVD) may be required. Typically two SVDs per span on distribution construction (less than 800 ft spans) will reduce aeolian vibration to acceptable levels.</p> <p>In addition, conductor galloping can produce extreme stress and damage to support points regardless of the tie device. Consequently, the use of galloping dampers such as the Air Flow Spoiler (AFS) is recommended where galloping has occurred or is expected. Consult PLP for engineering recommendations for application of either the SVDs or AFS.</p>
Tapping	Compared to the use of protective rods, placing hot-line clamps directly over the applied legs of EZ-WRAP Twin Tie CANNOT be recommended. Tapping over protective rods (Armor Rods, Line Guards, Tap Rods, and Protector Rods) will remain permissible.
Application Helix	Each metal component of the EZ-WRAP Twin Tie has an Application Helix formed on one side of the legs which aids application by identifying the "top" of each component and the first leg to install. This Application Helix must face "UP" during installation and should be the first leg applied to ensure proper fit and service life.

Additional Resources

For additional information regarding the use and installation of EZ-WRAP Twin Ties, scan or click the QR code below.



EZ-WRAP Twin Tie
Webpage

Color Code

Insulator Identification Mark

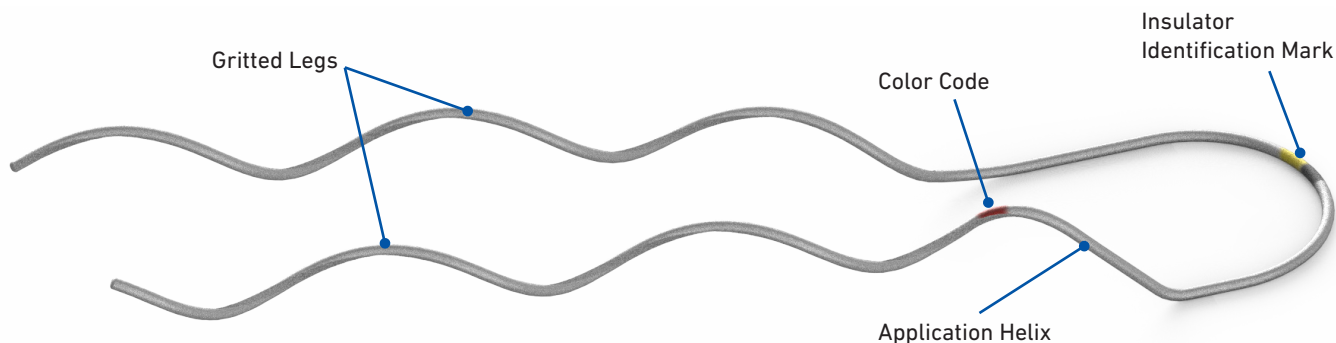
Identification Information

Applied Length

Tie Tube

EZ-WRAP Twin Tie Assembly

Component	Description
Tie Tube	Each tie is furnished with Tie Tube Component. The Tie Tube is detached and applied over the conductor.
Tie Assembly	An EZ-WRAP Twin Tie assembly consists of two metal tie components plus a tie tube.
Applied Length	Assists in identification of conductor size corresponding to tabular information appearing on catalog pages and is the length of a single tie component.
Identification Information	Shows catalog number and pertinent tie information. Printed on a tie flag or printed on the tie tube.
Color Code	Assists in identification of conductor diameter corresponding to tabular information on the catalog pages and starting point for leg application.
Insulator Identification Mark	Identifies the correct insulator(s) head style. Black/yellow are for C and F-Neck insulators. Yellow is for F-Neck insulators only. Yellow/green for F and J-Neck insulators. Green is for J-Neck insulators only.
Application Helix	Indicates the "top" of tie and the first leg to install.
Gritted Leg	Gritted helical legs retention the conductor in place and prevent the conductor from shifting over the insulator.



ORDERING INFORMATION

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TOP TIES

EZ-WRAP® Twin Tie: C-Neck, F-Neck, and J-Neck Interchangeable Headstyle Insulators

Diameter Range		Nominal Conductor Size ¹	Units per Carton	C- and F-Neck Insulators (Black and Yellow)		F- and J-Neck Insulators (Yellow and Green)		Conductor Color Code
in				Catalog Number	Applied Length	Catalog Number	Applied Length	
Minimum	Maximum				in		in	
0.245	0.277	#4, 6/1, 7/1; #4, 7W Alum. Alloy	50	TTCF-102	13	TTFJ-202	14	Orange
0.278	0.315	#3, 7W Alum. Alloy; #2, 7W All Alum.	50	TTCF-103	13	TTFJ-203	14	Purple
0.316	0.357	#2, 6/1, 7/1; #2, 7W Alum. Alloy; #1, 6/1 ACSR	50	TTCF-104	14	TTFJ-204	15	Red
0.358	0.405	1/0, 7W All Alum.; 1/0, 6/1 ACSR; 1/0, 7W Alum. Alloy	50	TTCF-105	14	TTFJ-205	16	Yellow
0.406	0.459	2/0, 7W All Alum.; 2/0, 6/1 ACSR; 2/0, 7W Alum. Alloy	50	TTCF-106	15	TTFJ-206	16	Blue
0.460	0.520	3/0, 7W All Alum.; 3/0, 6/1 ACSR; 3/0, 7W Alum. Alloy	50	TTCF-107	16	TTFJ-207	17	Orange
0.521	0.588	4/0, 7W All Alum.; 4/0, 6/1 ACSR; 4/0, 7W Alum. Alloy	50	TTCF-108	16	TTFJ-208	17	Red
0.589	0.665	266.8, 37W All Alum.; 266.8, 18/1	50	TTCF-109	17	TTFJ-209	18	Purple
9/16" R. Groove ²								
0.666	0.755	336.4, 19W All Alum.; 336.4, 18/1; 397.5, 19W All Alum.	50	TTCF-110	18	TTFJ-210	19	Brown
0.756	0.858	477, 19W, 37W All Alum.; 477, 18/1 24/7, 26/7	50	TTCF-111	18	TTFJ-211	19	Red
5/8" R. Groove ²								
0.859	0.968	556.5, 26/7; 636, 18/1; 700, 37W, 61W All Alum.	50	*TTF-112	20	*TTJ-212	21	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	*TTF-113	21	**TTJ-213	22	Green
1.097	1.240	954, 36/1, 54/7; 1033.5, 37W, 61W All Alum.	50	*TTF-114	22	**TTJ-214	23	Yellow

* These sizes are recommended for use with F-Neck insulators **ONLY** due to C-Neck insulator top groove space limitations.

** These sizes are recommended for use with J-Neck insulators **ONLY**.

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.