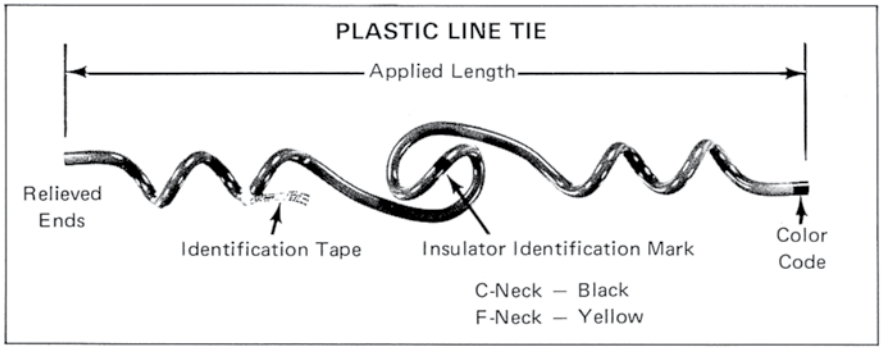
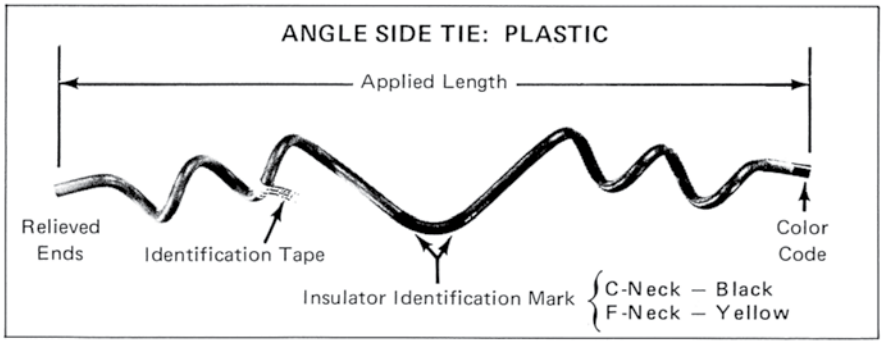
Plastic Ties; PVC and Semi-Con

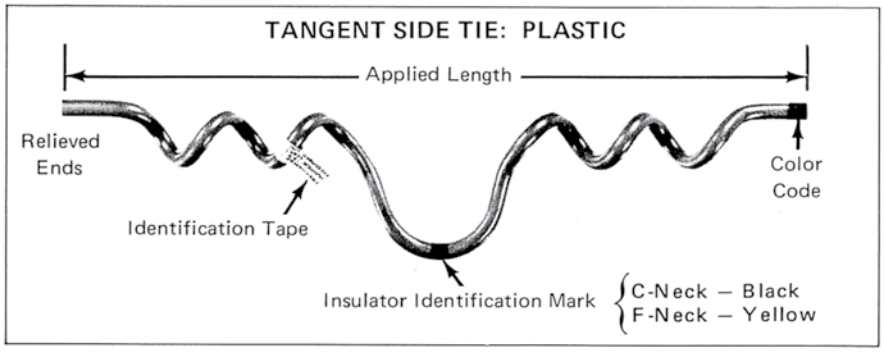
NOMENCLATURE



Plastic Line Ties are intended for use on "tangent" construction with jacketed conductors and vertically mounted tie top insulators on cross-arms, pole-top mounted insulators, or Spacer Cable brackets. Line angles of up to 15° are recommended.

Plastic Angle Side Ties are intended for use on "angle" construction with jacketed conductors and vertically mounted tie top insulators on cross-arms, pole-top mounted insulators, or Spacer Cable brackets. Line angles from 11° to 40° are recommended.





Plastic Tangent Side Ties are intended for use on "tangent" construction with jacketed conductors and side mounted tie top insulators on armless construction. Line or sag angles of up to 15° are recommended.

Relieved Ends: Assist in hot stick application.

Color Code (where applicable) and Applied Length:* Assists in identification of conductor size, corresponding to tabular information appearing on catalog pages.

*Since SC ties are all black, where an insulator or conductor color code normally would be black, no additional black mark is applied to SC ties. Additionally no identification printing is applied to SC ties.

Insulator Identification Mark: Identifies the correct insulator head-style by colors corresponding to information on the catalog pages.

Identification Printing (where applicable): Shows catalog number and conductor diameter range, as an alternate to identification tape on PUC ties.

Plastic Ties; PVC and Semi-Con

GENERAL RECOMMENDATIONS

INTENDED USE: Plastic Line Ties and Plastic 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.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact. Although made from plastic materials, Plastic Ties should not be considered as insulated devices.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size Plastic Tie before application.
5. Plastic Ties are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Plastic Line Ties

For use on:
Plastic Jacketed Conductor

C-Neck Interchangeable Headstyle Insulators

ANSI 55-2 Pin
ANSI 55-3 Pin

2-1/4" Neck Diameter

PVC Plastic Ties Catalog Number	Semi-Con Plastic Ties Catalog Number	OD Range (in.)		Nominal Conductor Size	Units per carton	Approx. Wt./Lbs.	Approx. Applied Length (in.)	Insulator Color ID Mark (PVC/SC)	Conductor Color Code (PVC/SC)
		Min.	Max.						
TTC-1104	TTC-1104SC	0.296	0.400	#4, 6/1, 2/64s	50	15	20	Black/None	White
TTC-1100	TTC-1100SC	0.401	0.540	#2, 6/1, 3/64s #4, 7W, 8/64s	50	15	19	Black/None	Green
TTC-1101	TTC-1101SC	0.541	0.730	1/0, 6/1, 10/64s 3/0, 6/1, 4/64s	50	16	19	Black/None	Blue
TTC-1102	TTC-1102SC	0.731	0.920	4/0, 6/1, 10/64s 336.4, 18/1, 6/64s	50	17	20	Black/None	Orange
TTC-1103	TTC-1103SC	0.921	1.100	336.4, 18/1, 10/64s 447, 19W, 8/64s	50	18	22	Black/None	Red
TTC-1105	TTC-1105SC	1.101	1.300	477, 37W, 10/64s 795, 61W, 6/64s	50	20	24	Black/None	Black/None

Determine exact Conductor OD over the jacket for correct tie selection.

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For quantities less than 25 pieces, consult PLP.

Plastic Line Ties

For use on:
Plastic Jacketed Conductor

F-Neck Interchangeable Headstyle Insulators

ANSI 55-4 Pin
ANSI 55-5 Pin
ANSI 57-1 Post
ANSI 57-2 Post
ANSI 57-3 Post

2-7/8" Neck Diameter

PVC Plastic Ties Catalog Number	Semi-Con Plastic Ties Catalog Number	OD Range (in.)		Nominal Conductor Size	Units per carton	Approx. Wt./Lbs.	Approx. Applied Length (in.)	Insulator Color ID Mark (PVC/SC)	Conductor Color Code (PVC/SC)
		Min.	Max.						
TTF-1205	TTF-1205SC	0.296	0.400	#4, 6/1, 2/64s	50	15	20	Yellow	White
TTF-1200	TTF-1200SC	0.401	0.540	#2, 6/1, 3/64s #4, 7W, 8/64s	50	15	19	Yellow	Green
TTF-1201	TTF-1201SC	0.541	0.730	1/0, 6/1, 10/64s 3/0, 6/1, 4/64s	50	16	19	Yellow	Blue
TTF-1202	TTF-1202SC	0.731	0.920	4/0, 6/1, 10/64s 336.4, 18/1, 6/64s	50	17	20	Yellow	Orange
TTF-1203	TTF-1203SC	0.921	1.100	336.4, 18/1, 10/64s 447, 19W, 8/64s	50	19	22	Yellow	Red
TTF-1204	TTF-1204SC	1.101	1.300	477, 37W, 10/64s 397.5, 19W, 12/64s	50	21	24	Yellow	Black/None

Determine exact Conductor OD over the jacket for correct tie selection.

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