# Side Tie

## General Recommendations

Side Ties are designed and manufactured to secure conductors to the side groove of the insulator.

Side Ties provide an improved method of securing conductors compared to hand ties. Side 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 neoprene component surrounds the bare conductor with a resilient cushioning where the conductor would come into contact with the insulator and with the centre section of the tie. In the case of Side Ties being applied over Armor Rods, the tube can be disposed of, as contact with the bare conductor is prevented by the Armor Rod.

On vertically mounted insulators, Side Ties can normally accommodate line angles of up to 40° depending upon the angle of the insulator and orientation. 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 the groove.

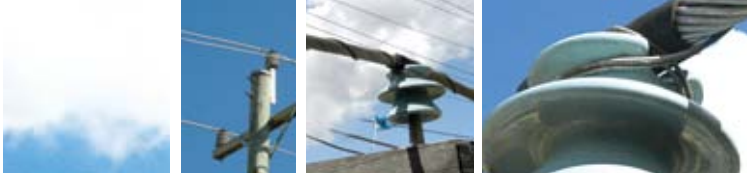
Due to the construction of Side Ties, if an impact load is applied to one side of the insulator and then released, the side ties retains a memory and will return to its original position.

For Application Procedures, visit the PLP website.
**www.preformed.com.au**

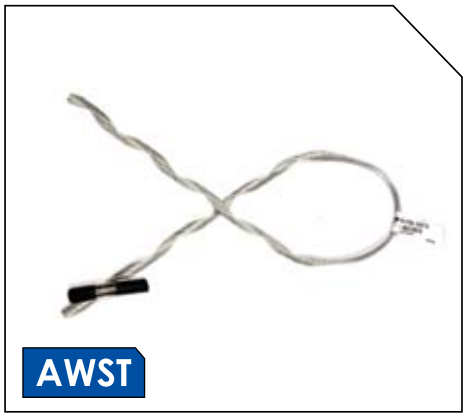
**SAFETY CONSIDERATIONS**

- This product is intended for a single (one-time) use and for the specified application, although it may be re-applied twice for retensioning within 90 days from initial installation.
- Do not modify this product in any way.
- This product is intended for use by qualified linesmen only.
- When working in the area of energised line with this product, extra care should be taken to prevent accidental electrical contact.
- For proper performance and personal safety, be sure to select the proper size PREFORMED™ products before application.
- PREFORMED™ products are precision devices. To ensure proper performance, they should be stored in cartons under cover and handled carefully.

# Side Tie



## For AAC, AAAC and ACSR over Bare Conductor




Fittings to suit 112mm neck insulators are available, substitute suffix -76 for -112

| Part Number | Conductor Diameter Range (mm) | | Colour Code |
|---|---|---|---|
| AWST-053-76 | 4.80 - 5.49 | | Purple |
| AWST-060-76 | 5.50 - 6.19 | | Brown |
| AWST-068-76 | 6.20 - 7.03 | | Brown |
| AWST-075-76 | 7.04 - 7.99 | | Blue |
| AWST-090-76 | 8.00 - 9.06 | | Red |
| AWST-102-76 | 9.07 - 10.29 | | Purple |
| AWST-113-76 | 10.30 - 11.65 | | Purple |
| AWST-125-76 | 11.66 - 13.19 | | Orange |
| AWST-140-76 | 13.20 - 14.99 | | Blue |
| AWST-163-76 | 15.00 - 17.19 | | Orange |
| AWST-180-76 | 17.20 - 19.19 | | Black |
| AWST-210-76 | 19.20 - 21.69 | | Red |
| AWST-220-76 | 21.70 - 22.59 | | Green |
| AWST-240-76 | 22.60 - 24.59 | | Red |
| AWST-255-76 | 24.60 - 25.60 | | Orange |
| AWST-290-76 | 27.80 - 31.40 | | Black |

**Insulator Colour Codes:**
76mm neck - Yellow
112mm neck - Blue

## For SC/GZ Conductors over Bare Conductor


These Side Ties are designed to be applied over PLP Preformed Armor Rods. These are the preferred package for the support point on medium to long spans in distribution and medium voltage line designs. The package gives maximum protection and holding capacity at the support point, where wind sway or arc-over could be considered a problem. Where there is a known vibration issue, it is highly recommended that a PLP spiral damper (SVD) be installed.

Fittings to suit 76mm and 112mm neck insulators are available, substitute suffix -54 for -76 or 112 respectively.

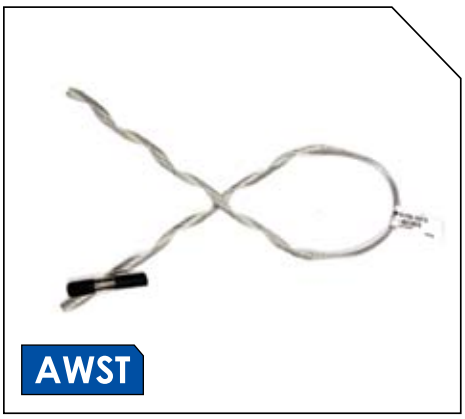
| Part Number | Conductor Stranding | Conductor Diameter (mm) | | Colour Code |
|---|---|---|---|---|
| GST-043-54 | 3/2.00 | 4.31 | | Yellow |
| GST-048-54 | 7/1.60 | 4.80 | | Black |
| GST-055-54 | 3/2.75 | 5.93 | | White |
| GST-060-54 | 3/2.75<br>7/2.00 | 5.91<br>6.00 | | White<br>Yellow |
| GST-083-54 | 7/2.75 | 8.25 | | White |
| GST-098-54 | 7/3.25 | 9.75 | | Orange |
| GST-102-54 | 19/2.00 | 10.00 | | Yellow |
| GST-113-54 | 7/3.75 | 11.30 | | Black |
| GST-120-54 | 7/4.00 | 12.00 | | Black |
| GST-138-54 | 19/2.75 | 13.80 | | White |

**Insulator Colour Codes:**
54mm neck - Red
76mm neck - Yellow
112mm neck - Blue


ph: (02) 8805 0000

# Side Tie

## For AAC, AAAC and ACSR over Armoured conductor




Fittings to suit 112mm neck insulators are available, substitute suffix -76 for -112

| Part Number (Side Tie) | Part Number (Armor Rods) | Conductor Stranding | Conductor Diameter (mm) |
|---|---|---|---|
| AWST-113A-76 | AAR-053 | 7/1.75 | 5.25 |
| AWST-125A-76 | AAR-063 | 7/2.00 | 6.00 |
| AWST-140A-76 | AAR-075 | 7/2.50 | 7.50 |
| AWST-163A-76 | AAR-090 | 7/3.00 | 9.00 |
| AWST-210A-76 | AAR-113 | 7/3.75 | 11.25 |
| AWST-220A-76 | AAR-135 | 7/4.50 | 13.50 |
| AWST-240A-76 | AAR-143 | 7/4.75 | 14.25 |
| AWST-255A-76 | AAR-163 | 19/3.25 | 16.25 |
| AWST-270A-76 | AAR-175 | 30/7/2.50 | 17.50 |
| AWST-290A-76 | AAR-188 | 19/3.75 | 18.75 |

**Insulator Colour Codes:**
76mm neck - Yellow
112mm neck - Blue

**NOTE:** The range of a tie for armoured conductor is the diameter with armouring not the bare conductor.

**Note:** Typical Armor-Rods to be used with the above ties.

## For Galvanised Steel Conductors (SC/GZ)


Fittings to suit 76mm and 112mm neck insulators are available, substitute suffix -54 for -76 or -112 respectively.

| Part Number (Side Tie) | Part Number (Armor Rods) | Conductor Stranding | Conductor Diameter (mm) |
|---|---|---|---|
| GST-083A-54 | GAR-038 | 3/2.00 | 4.31 |
| GST-090A-54 | GAR-043 | 7/1.60 | 4.80 |
| GST-102A-54 | GAR-055 | 3/2.75 | 5.93 |
| GST-104A-54 | GAR-060 | 7/2.00 | 6.00 |
| GST-138A-54 | GAR-083 | 3/4/2.50 | 7.50 |
| GST-160A-54 | GAR-098<br>GAR-100 | 7/3.25<br>19/2.00 | 9.75<br>10.00 |

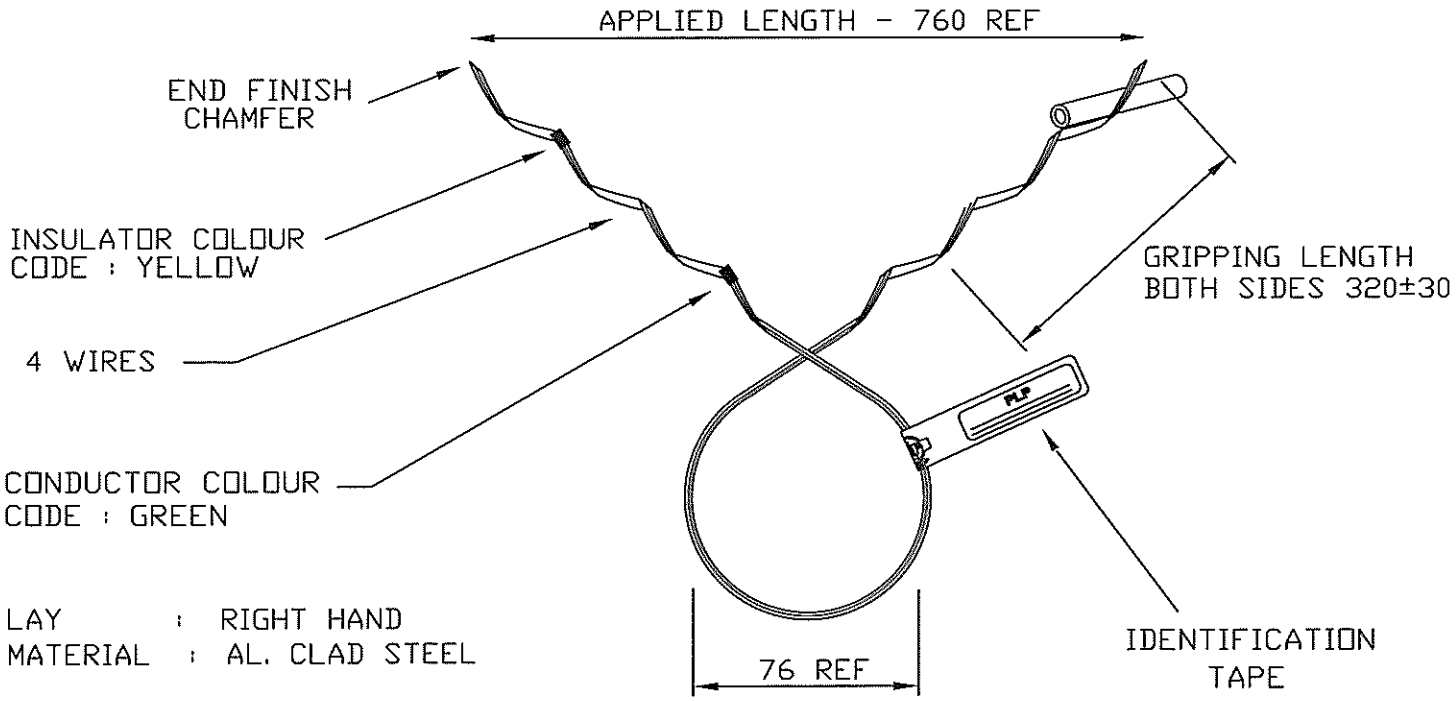
**Insulator Colour Codes:**
54mm neck - Red
76mm neck - Yellow
112mm neck - Blue

**NOTE:** The range of a tie for armoured conductor is the diameter with armouring not the bare conductor.

**Note:** Typical Armor-Rods to be used with the above ties.

NOTES

1. ALL DIMENSIONS IN MILLIMETRES.




PRODUCT TAPE COLOUR : GREEN

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| A | DP | 11/8/97 | B | DG | 1/9/05 | THIS DRAWING IS THE EXCLUSIVE PROPERTY OF PREFORMED LINE PRODUCTS (AUSTRALIA). REPRODUCTION THEREOF IS PROHIBITED AND IS TO BE USED ONLY WITH THE EXPRESSED PERMISSION OF THE COMPANY | PART No: AWST-220A-76 AL. CLAD STEEL SIDE TIE | PREFORMED LINE PRODUCTS (AUSTRALIA) PTY. LTD. | | |
| CHK | DM | 12/8/97 | CHK | | | | | | |
| INITIAL ISSUE DSC NO.A1506 | | A6889 | | | | DRAWN DP | PASSED | DATE | ISSUE A B / SCALE N.T.S. / DRAWING NUMBER 084-014-RD |

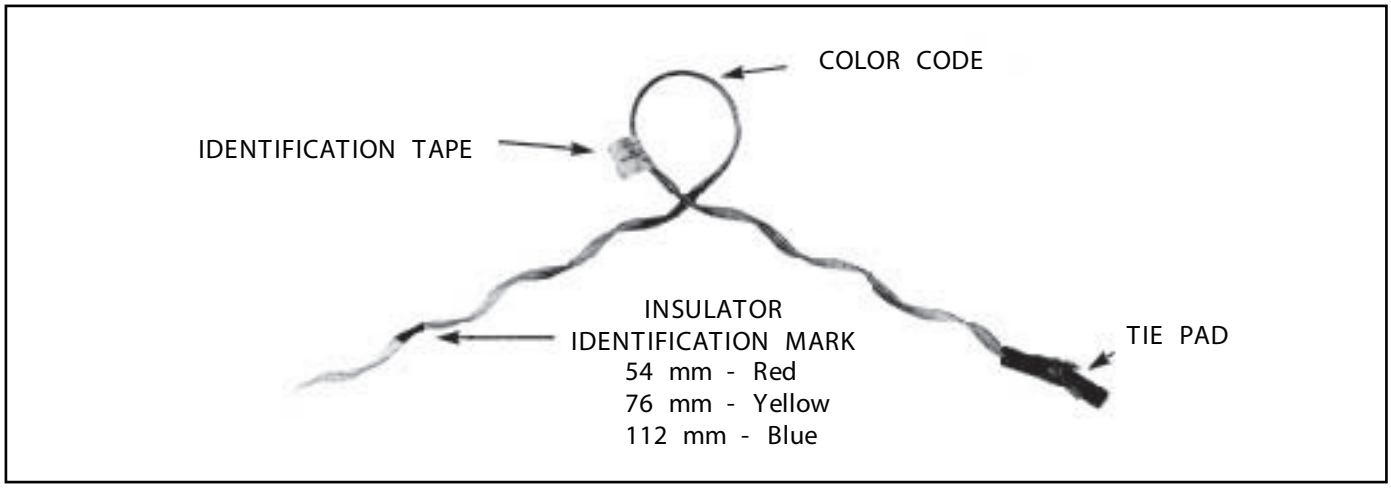
# Application Procedure & Safety Considerations

## PREFORMED LINE PRODUCTS

# SIDE TIE

Completely read and understand this procedure before applying products. Special attention should be given to the Safety Considerations located on the last page. We advise the reader to review those considerations now, and then again during the general review of this procedure.

These products are designed and tested to be used only on insulators complying with the dimensional requirements of AS2947.2 – 1989.

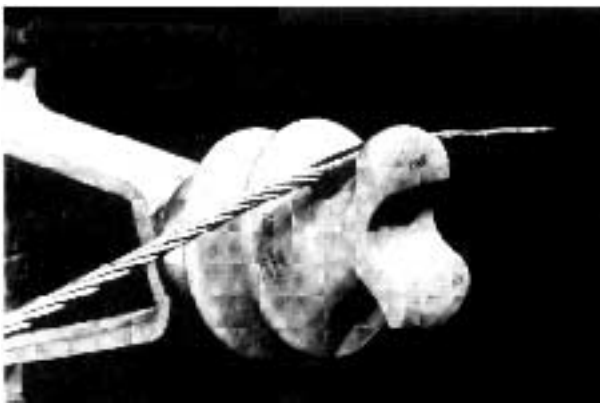



SIDE TIE as received in the field.
NOTE: Tie pad may be covering insulator identification mark.

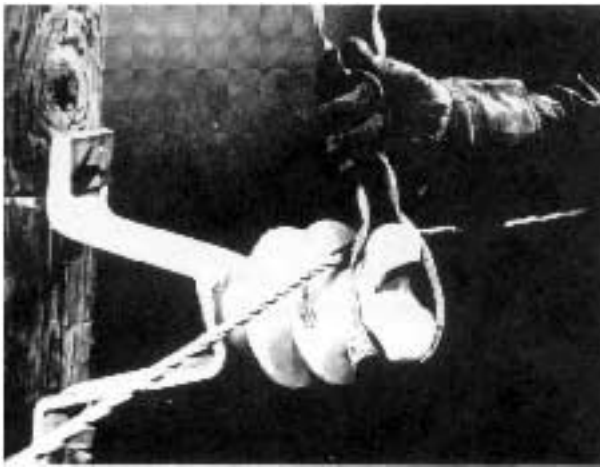
## COLD APPLICATION

1) PREFORMED Side Tie and Tie Pad.

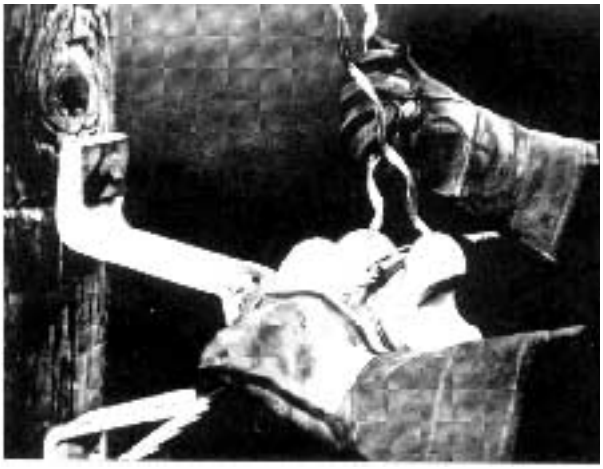

2) Apply Tie Pad conductor, slit facing up, so that conductor does not come into direct contact with the insulator.



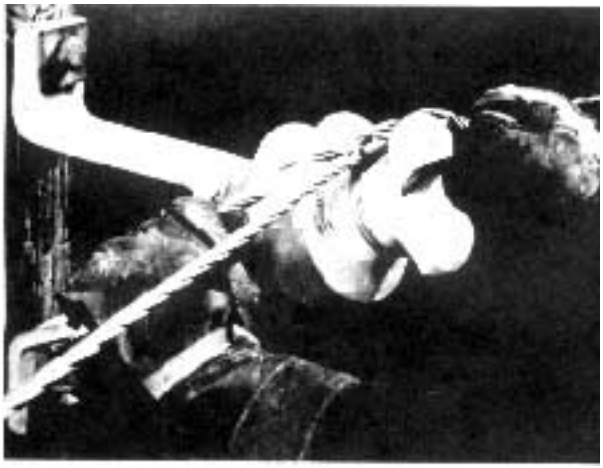
3) Tie Pad in position. Note that the conductor does not touch the insulator.



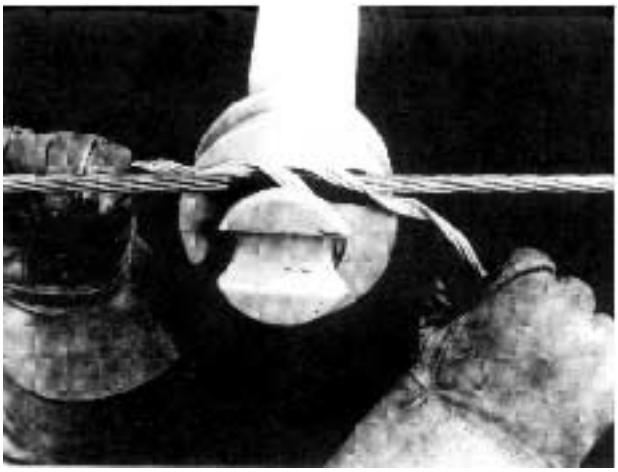
4) Squeeze the legs of the Side Tie together. This will enlarge the loop enabling it to be pushed over the head of the insulator.



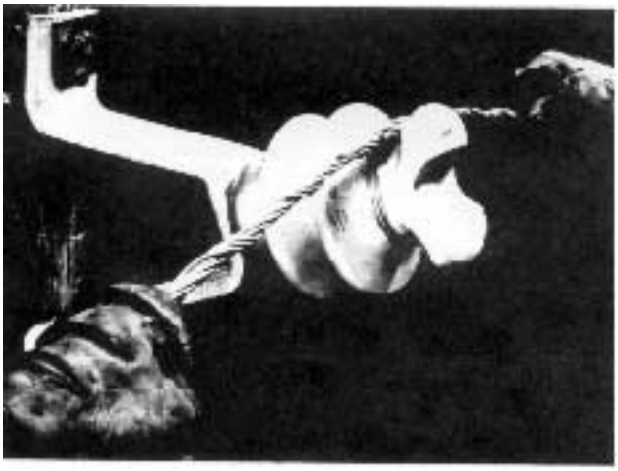
5) Position the Side Tie around the neck of the insulator, making certain the conductor is between the legs of the Side Tie.



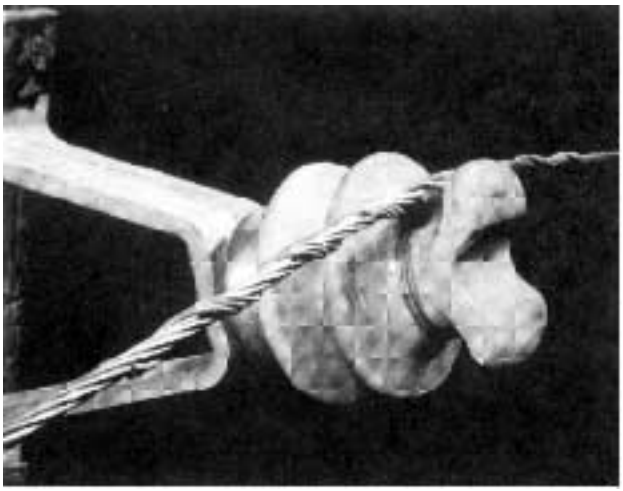
6) Pull the legs of the Side Tie firmly in opposite directions and start to wrap onto the conductor. On larger size conductors, it is optional whether the legs of the tie go under or over the tie pad.



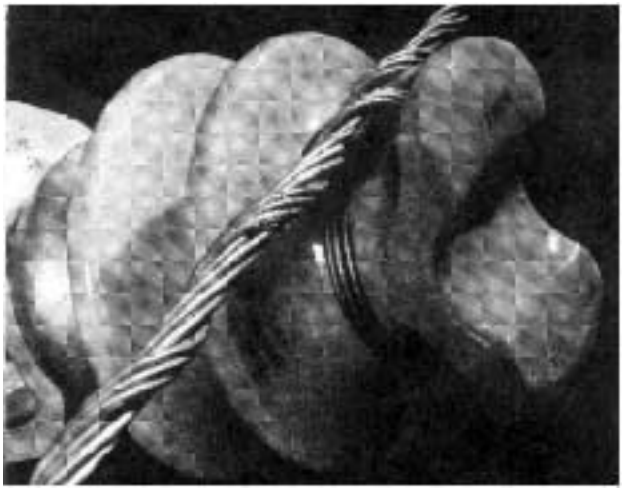
6a) On smaller sizes, the leg of the Side Tie should be tucked under the corner of the Tie Pad as shown.



7) Wrap on both legs completely, snapping in the ends with thumb pressure.



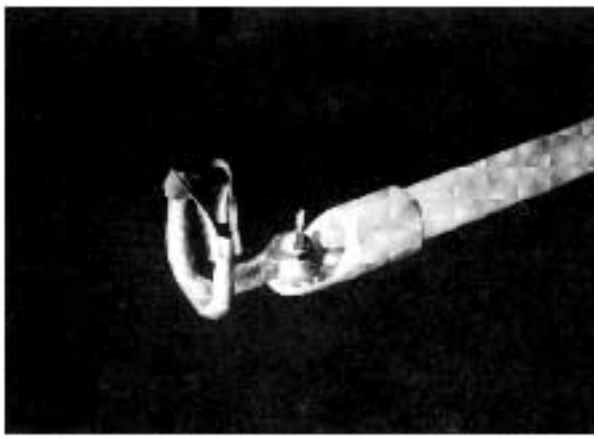
8) Completed application of PREFORMED Side Tie and Tie Pad on a larger size conductor.



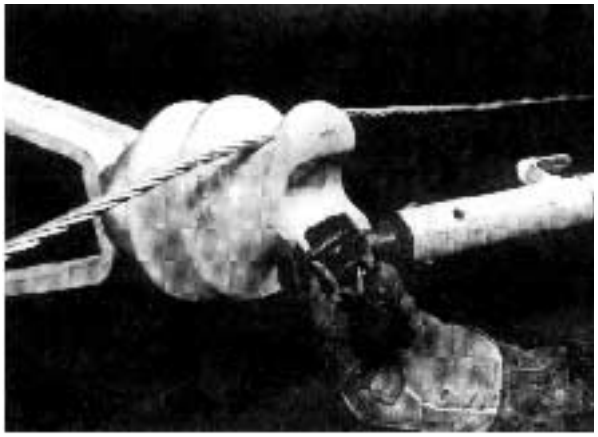
8a) Completed application of PREFORMED Side Tie and Tie Pad on a smaller size conductor.

# HOT APPLICATION

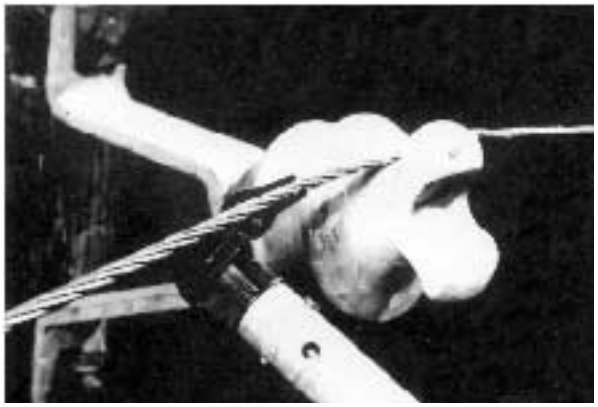
Optional Tools which may be used to apply Tie Pad



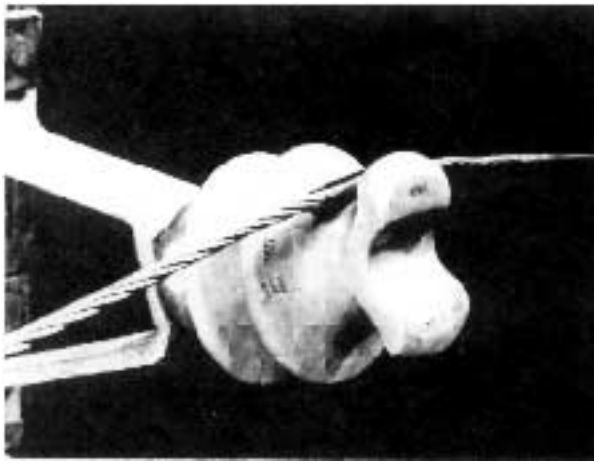
1a) With either a Fixed Prong...



1b) ...or a Jumper Holding stick...



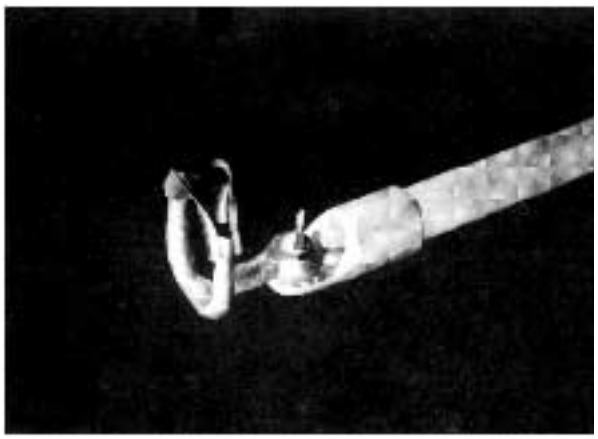
2) ...apply the Tie Pad to conductor, slit facing up, so that conductor does not come into direct contact with the insulator.



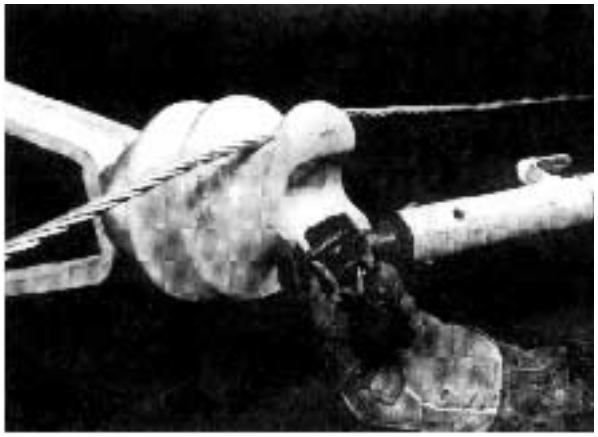
3) Tie Pad in position. Note that the conductor does not touch the insulator.

# HOT APPLICATION

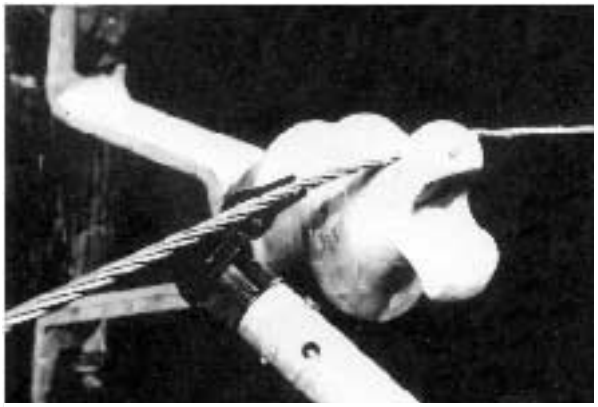
Optional Tools which may be used to apply Tie Pad



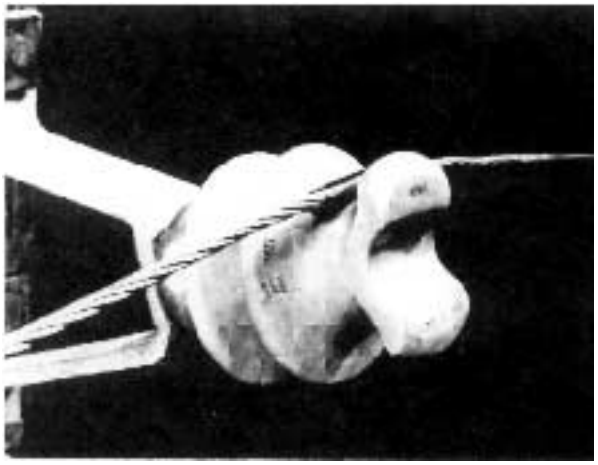
1a) With either a Fixed Prong...



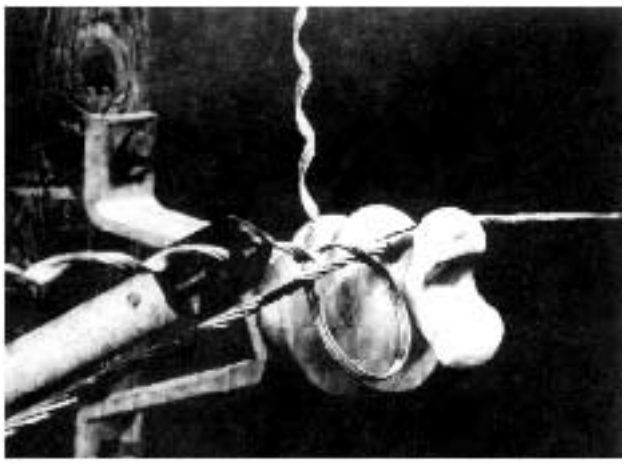
1b) ...or a Jumper Holding stick...



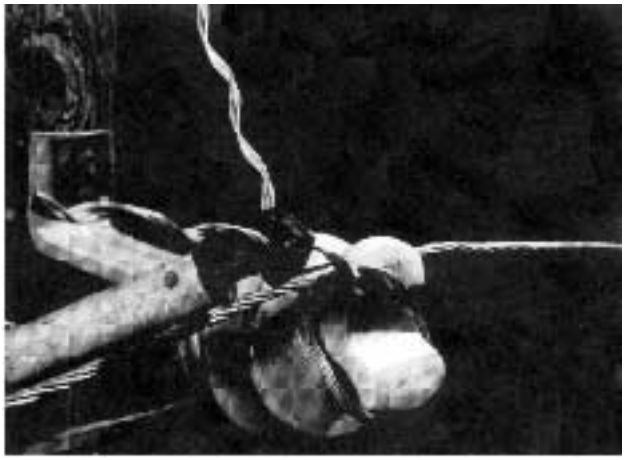
2) ...apply the Tie Pad to conductor, slit facing up, so that conductor does not come into direct contact with the insulator.



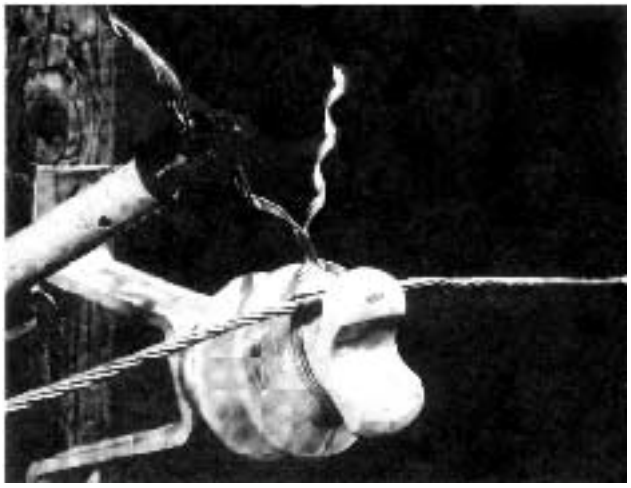
3) Tie Pad in position. Note that the conductor does not touch the insulator.



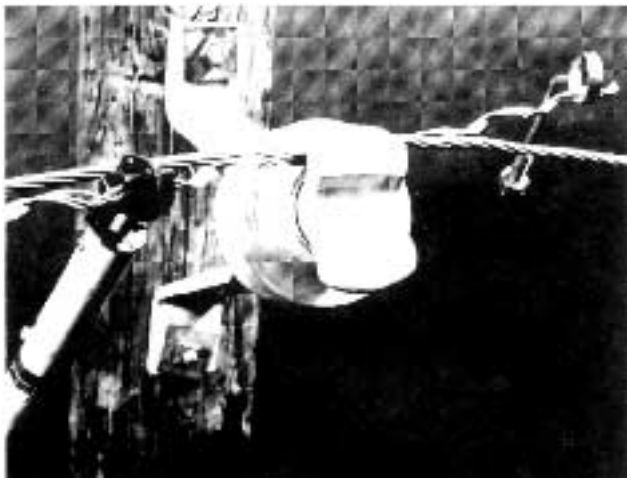
4) The Side Tie application must be started to the lineman's right. Grasp the leg of the side tie with hold stick and place it on the conductor as shown, making certain the conductor is between the legs of the side tie.



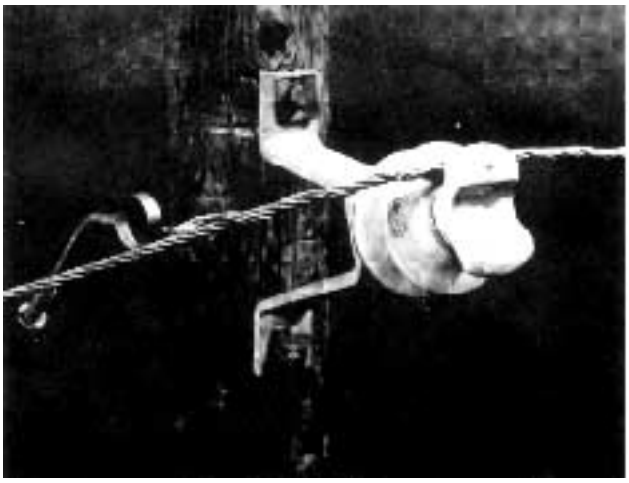
5) Slide the Side Tie over the head of the insulator.



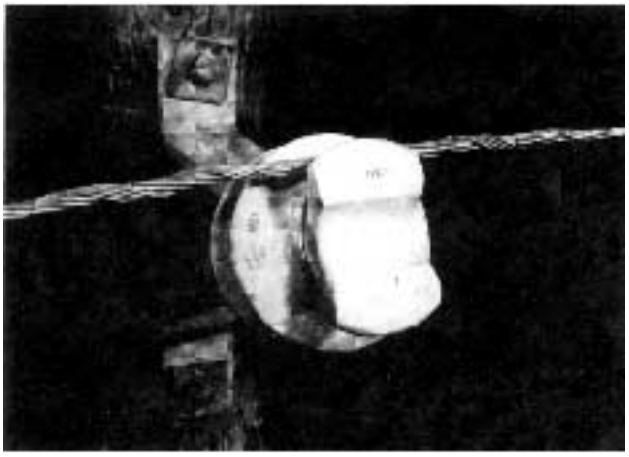
6) Side Tie in position to begin wrapping legs onto conductor.



7) Place the applicator Ring on the other leg. Pull the legs in opposite directions and start the wrapping motion.



8) Wrap on both legs of the Side Tie Completely, snapping in the ends with the Applicator Ring.



9) Completed hot stick application of Preformed Side Tie and Tie Pad.

## GENERAL NOTES

1) Tools should not be used to snap the ends of legs into position during hand application.
2) Taps should not be made over the applied legs of the PREFORMED Side Tie.
3) PREFORMED Side Ties and Tie Pads are designed and manufactured for 54 mm - 76 mm and 112 mm Neck distribution insulators as noted on identification tape.
4) The following maximum lines angles should be observed:

| | Vertically Mounted | Horizontally Mounted |
|---|---|---|
| MAX. Turning Angle | 20° | 15° |
| MAX. Sag Angle | 15° | 20° |

# SAFETY CONSIDERATIONS

1) For proper performance and personal safety be sure to select the proper size Side Tie before application.

2) Side Ties are precision devices. To ensure tight assembly, they should be stored in cartons under cover and handled carefully.

3) This application procedure is not intended to supersede any company construction or safety standards. This procedure is offered only to illustrate safe application for the individual. Failure to follow these procedures and restrictions may result in personal injury.

4) When working in the area of energized lines, extra care should be taken to prevent accidental electrical contact.

5) This product is intended for use by trained linesmen only. This product should not be used by any one who is not familiar with and trained in the use of it.

PREFORMED
LINE PRODUCTS
(AUSTRALIA) PTY LTD
A.B.N. 27 004 533 877

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Phone: (02) 8805 0000 intl 61 2 8805 0000 Fax: (02) 8805 0090 intl 61 2 8805 0090
Email: plpaus@preformed.com.au
Web: www.preformed.com.au

# TYPE TEST CERTIFICATE

## PLP (AUSTRALIA) PTY LTD

### ENGINEERING DEPARTMENT

**DATE – 29th OCTOBER, 2014**

**TYPE TEST REPORT NO: NATATT039**
**TEST REFERENCE NO: F14/104**
**PAGE 1 of 6**

**MECHANICAL STRENGTH TYPE TEST**

**ON:**

**ALUMINIUM CLAD STEEL SIDE TIE**
**OVER ALUMINIUM ARMOUR RODS**

**PART NOS. AWST-220A-76 + AAR-135**

**Testing Officer:** _____ (Jose-elmer Simeon)

**Approved by:** _____ (Florian de Celis, Compliance Manager)

**Date Approved:** 30/10/2014

**190 Power Street Glendenning NSW 2761 AUSTRALIA**
**Phone: 8805 0000, INTL (612) 88050000**
**Fax: 8805 0090, INTL (612) 88050090**

**Fittings and Accessories for Power and Communication.**
**Engineered Plastics and Extrusions.**
**Data Communication Products.**