Side and Spool Ties

General Recommendations

Side-Ties for bare conductor include a neoprene tie pad interspaced between the insulator and conductor. Because of the very small contact area afforded, high pressure and bending stresses may accelerate abrasion damage at the insulator-conductor interface if the conductor is not protected. In the case of plastic covered conductor it is unnecessary to use a Side-Tie pad since the plastic covering itself provides the necessary conductor protection at the insulator.

Maximum Size: The factors which determine the absolute maximum diameter of conductor allowable for specific pin insulator Side-Tie combination are, the dimensions of the side groove in insulator; diameter of rods in manufacture of Side-Tie and clearance for application dictated by helical loop geometry. Because the clearance for application is the same whether or not the Tie-Pad is installed, the maximum allowable conductor outside diameter is not reduced by the addition of the Tie-Pad.

SIDE-TIE is recommended as being superior to Armour-Rod – Hand tie combinations for protection against abrasion damage. The Side-Tie is equivalent to a well made Armour Rod – hand tie combination in regard to conductor fatigue.

Vibration Dampers: By using Side-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 it will be necessary to supplement with dampers. The following are guideline definitions for vibration activity. They should be applied to a Utility's own experience on lines in a given area.

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Side and Spool Ties

"Excessive" Vibration: Areas where abrasion damage has been known to require replacement of both hand tie wire and protective rods, or where fatigue has been found under clamps. Protective rods should be replaced when visual inspection shows approximately ¼ of the rods diameter has been worn away.

"Severe" Vibration: Areas where abrasion have required replacement of hand-tie wire, but less than ½ of the protective rod's diameter has been worn away.

"Moderate" Vibration: Areas where replacement of hand-tie wire has not been required, and damage is minor. Side-Ties provide protection in areas of "severe" or "moderate" vibration.

For areas experiencing "excessive" vibration supplemental use of damper is recommended. Spiral Vibration Damper's single purpose is to prevent the unlimited accumulation of aeolian vibration.

Insulators: Side-Ties are suitable for use on only those insulators which correspond to C-neck, F-neck H-neck, designs. Details of these designs appear in the I.E.C. 720 publication. When an insulator is not suited to the WRAPLOCK® Ties, then the PREFORMED™ TWIN-TIES can be used. Consult the factory for engineering recommendation when in doubt.

Mechanical Strength: Maximum holding strength is usually sufficient to contain the broken conductor to a single span, however, the WRAPLOCK® Ties is designed to relieve the load before severe damage is done to the pole's structural components.

The WRAPLOCK® Ties is designed to permit controlled 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 "resilience."

Radio Interference: The RIV characteristics of the Side-Tie 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.

Tapping: Compared to the use of protective rods, placing hot-line clamps directly over the applied leg of the Side-Ties cannot be recommended. Yapping over protective rods will remain permissible; however, there are stirrups available now that provide a superior method of making hot-line taps.

Line Angles: On vertically-mounted insulators, Side-Ties are recommended for running line angles up to 10 degrees. Larger angles can be turned when the Side-Tie is combined with DISTRIBUTION Ties, or insulator or brackets having various degrees of cant. A technical report is available which describes turning angles as a function of the brackets cant.

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Galvinised Steel Side & Spool Ties for Alunminum Based Conductors

Right Hand Lay Standard. Always quote Insulator type and neck diameter.

CATALOGUE NO. GSST	CONDUCTOR DIAMETER (mm)	COLOUR CODE	SETS PER PACK	APPROX PACK MASS(kg)
192 – 201	4.88 – 5.10	Blue	100	7.5
202 – 212	5.11 – 5.38	Green	100	7.5
213 – 223	5.39 – 5.66	White	100	7.5
224 – 235	5.67 – 5.97	Grey	100	7.5
236 – 247	5.98 – 6.27	Red	100	8
248 – 259	6.28 – 6.57	Orange	100	8
260 – 269	6.58 – 6.83	Green	100	8
270 – 280	6.84 – 7.11	Yellow	100	8
281 – 291	7.12 – 7.39	Blue	50	6
292 – 303	7.40 – 7.70	Red	50	6
304 – 314	7.71 – 7.97	Brown	50	6
315 – 327	7.98 – 8.30	Grey	50	6
328 – 340	8.31 – 8.63	Blue	50	7
341 – 353	8.64 – 8.97	Orange	50	7
354 – 367	8.98 – 9.32	Green	50	7
368 – 381	9.33 – 9.67	Brown	50	7.5
382 – 394	9.68 – 10.00	Grey	50	7.5
395 – 411	10.01 – 10.44	Yellow	50	7.5
412 – 437	10.45 – 11.10	Red	50	8
438 – 463	11.11 – 11.76	Blue	50	8
464 – 492	11.77 – 12.50	Green	50	8.5
493 – 522	12.51 – 13.27	Black	50	9.5
523 – 554	13.28 – 14.07	Grey	50	10.3
555 – 594	14.08 – 15.09	Brown	05	10.3
595 – 630	15.10 – 16.00	Orange		
631 – 664	16.01 – 16.86	Brown		
665 – 705	16.87 – 17.91	Green		
706 – 747	17.92 – 18.97	White		

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Galvanised Steel Side & Spool Ties for Copper Conductors

Right Hand Lay Standard. Always quote Insulator type and neck diameter.

CATALOGUE NO. CTT	CONDUCTOR DIAMETER (mm)	COLOUR CODE	SETS PER PACK	APPROX PACK MASS(kg)
192 – 201	4.88 – 5.10	Red	100	7.5
202 – 212	5.11 – 5.38	Yellow	100	7.5
213 – 223	5.39 – 5.66	Green	100	7.5
224 – 235	5.67 – 5.97	Blue	100	7.5
236 – 247	5.98 – 6.27	White	100	8
248 – 259	6.28 – 6.57	Brown	100	8
260 – 269	6.58 – 6.83	Red	100	8
270 – 280	6.84 – 7.11	Green	100	8
281 – 291	7.12 – 7.39	Orange	50	6
292 – 303	7.40 – 7.70	Yellow	50	6
304 – 314	7.71 – 7.97	Blue	50	6
315 – 327	7.98 – 8.30	Black	50	6
328 – 340	8.31 – 8.63	Red	50	7
341– 353	8.64 – 8.97	White	50	7
354 – 367	8.98 – 9.32	Brown	50	7
368 – 381	9.33 – 9.67	Black	50	7.5
382 – 394	9.68 – 10.00	Red	50	7.5
395 – 411	10.01 – 10.44	Orange	50	7.5
412 – 437	10.45 – 11.10	Green	50	8
438 – 463	11.11 – 11.76	Blue	50	8

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