

## ROME PRIMARY UNDERGROUND DISTRIBUTION CABLE

.220" Rome TR-XLP, Full Neutral, LLDPE Jacket  
15 kV 133% Insulation Level

**APPLICATION:** Intended for use on single phase and three phase primary underground distribution systems operating at 15000 volts phase to phase at 100% and 133% insulation level. Suitable for either direct burial or installation in ducts.

**STANDARDS:**

1. Conforms to ANSI/ICEA S-94-649 for Concentric Neutral Cables Rated 5 Through 46 kV.
2. Conforms to AEIC CS8 for Extruded Dielectric, Shielded Power Cables Rated 5 Through 46 kV.
3. Meets the requirements of RUS Specification U-1.

**CONSTRUCTION:** Copper or aluminum conductor, extruded conductor shield, Rome TR-XLP tree-retardant crosslinked polyethylene insulation, extruded insulation shield, solid bare copper wires uniformly spaced around the cable as a concentric neutral, encapsulated LLDPE jacket with three extruded longitudinal red stripes, surface printed.

Size AWG or kcmil	Strand- ing	Thickness in Mils			Diameter, Inches					Neutral No./ AWG Size	Approx. Net Wgt. Lb./1000 Ft.	Ampacity <sup>(1)</sup>	
		Insula- tion <sup>(2)</sup>	Insula- tion Shield <sup>(2)</sup>	Jacket <sup>(2)</sup>	Insulation		Insulation Shield		Overall			Direct Burial	Duct
					Min.	Max.	Min.	Max.					
<b>15000 VOLTS, 100% INSULATION LEVEL, FULL NEUTRAL, JACKETED</b>													
<b>COPPER CONDUCTOR</b>													
2	7	210	30	45	.725	.815	.785	.915	1.100	16 x 14	755	200	143
1	19	210	30	45	.765	.855	.825	.955	1.170	13 x 12	915	230	164
1/0	19	210	30	45	.805	.895	.865	.995	1.210	16 x 12	1055	263	187
2/0	19	210	30	45	.850	.935	.910	1.035	1.255	20 x 12	1445	298	214
3/0	19	210	30	45	.900	.985	.960	1.085	1.305	25 x 12	1470	343	244
4/0	19	210	30	45	.955	1.045	1.015	1.145	1.360	32 x 12	1795	390	279
<b>ALUMINUM CONDUCTOR</b>													
2	Solid	210	30	45	.700	.790	.760	.890	1.075	10 x 14	535	163	116
2	7	210	30	45	.725	.815	.785	.915	1.100	10 x 14	545	163	116
1	Solid	210	30	45	.735	.820	.795	.920	1.105	13 x 14	605	183	130
1	19	210	30	45	.765	.855	.825	.955	1.135	13 x 14	615	183	130
1/0	Solid	210	30	45	.770	.855	.830	.955	1.140	16 x 14	675	208	148
1/0	19	210	30	45	.805	.895	.865	.995	1.175	16 x 14	700	208	148
2/0	19	210	30	45	.850	.935	.910	1.035	1.255	13 x 12	845	238	170
3/0	19	210	30	45	.900	.985	.960	1.085	1.305	16 x 12	945	269	191
4/0	19	210	30	45	.955	1.045	1.015	1.145	1.360	20 x 12	1120	309	220
250	37	210	40	45	1.010	1.100	1.090	1.220	1.440	25 x 12	1285	340	243
300	37	210	40	45	1.065	1.150	1.145	1.270	1.535	18 x 10	1475	383	278
350	37	210	40	45	1.115	1.200	1.195	1.320	1.585	20 x 10	1610	420	301

<sup>(1)</sup> Ampacity based upon single phase operation, 90°C conductor, 20°C ambient, 100% load factor. Multiplying correction factors for 75% load factor are: direct burial (1.08); duct (1.04) and for 50% load factor: direct burial (1.16); duct (1.07).

<sup>(2)</sup> Minimum point thickness per ANSI/ICEA 649 Standard.

<sup>(3)</sup> Water-blocked strand available on request.

## Specification

### ROME PRIMARY UNDERGROUND DISTRIBUTION CABLE

.220" Rome TR-XLP, Full Neutral, LLDPE Jacket

15kV 133% Insulation Level

#### 1. SCOPE

1.1 This specification describes Rome TR-XLP tree-retardant crosslinked polyethylene insulated power cables with full concentric neutral for direct burial or installation in ducts. They are intended for use on single phase and three phase primary underground distribution systems not exceeding 15000 volts phase to phase at maximum conductor temperatures of 90°C for continuous normal operation, 130°C for emergency overload conditions and 250°C for short circuit conditions.

#### 2. STANDARDS

2.1 The following standards shall form a part of this specification to the extent specified herein:

2.1.1 ANSI/ICEA S-94-649 for Concentric Neutral Cables Rated 5 Through 46 kV.

2.1.2 AEIC CS8 for Extruded Dielectric, Shielded Power Cables Rated 5 Through 46 kV.

2.1.3 Rural Utilities Service (RUS) Specification U-1.

#### 3. CONDUCTOR

3.1 Class B stranded annealed copper, or Class B stranded or solid aluminum 1350 per Part 2 of ANSI/ICEA S-94-649.

#### 4. CONDUCTOR SHIELD

4.1 Conductors shall be covered with a layer of extruded conducting crosslinked polyethylene compound with a minimum point thickness in accordance with Table 3-1 of ANSI/ICEA S-94-649.

4.2 The extruded layer shall be firmly bonded to the insulation and shall be in accordance with Par. 3.5 and meet the resistivity requirements of Par. 3.6 of ANSI/ICEA S-94-649.

#### 5. INSULATION

5.1 Directly over the conductor shield shall be applied a homogeneous wall of Rome TR-XLP tree-retardant crosslinked polyethylene insulation. The minimum thickness shall be 210 mils and the maximum thickness shall be 250 mils in accordance with Table 4-11 of ANSI/ICEA S-94-649.

5.2 Physical and electrical properties of the insulation shall be in accordance with Par. 4.3.1 of ANSI/ICEA S-94-649.

#### 6. INSULATION SHIELD

6.1 Over the insulation shall be applied an extruded thermosetting insulation shield conforming with Part 5 of ANSI/ICEA S-94-649. It shall be in intimate contact with the outer surface of the insulation and shall be free-stripping, leaving no conducting particles or other residue on the insulation surface. This layer shall be legibly identified as being conducting.

6.2 The thickness of this layer shall be in accordance with Par. 5.2 of ANSI/ICEA S-94-649

6.3 The insulation shield shall meet the resistivity requirements of Par. 5.4.1 of ANSI/ICEA S-94-649.

#### 7. CONCENTRIC NEUTRAL

7.1 A concentric neutral consisting of annealed bare copper wires in accordance with ICEA shall be spirally applied over the extruded insulation shield with uniform spacing between wires.

7.2 The number and size of the neutral wires shall be as specified in Table 6-2 of ANSI/ICEA S-94-649. The length of lay shall be not less than 6 nor more than 10 times the diameter over the concentric wire layer.

#### 8. JACKET

8.1 An insulating linear low density polyethylene (LLDPE) encapsulated jacket shall be applied overall. The jacket shall meet the requirements of Par. 7.1.1 of ANSI/ICEA S-94-649.

8.2 Minimum point and maximum jacket thickness over the wires shall be as specified in Table 7-10 of ANSI/ICEA.

8.3 Three equally spaced longitudinal red stripes shall be extruded in the jacket.

#### 9. IDENTIFICATION

9.1 All cable shall be identified by means of surface printing indicating manufacturer, size, metal, insulation type and nominal thickness, voltage rating, year of manufacture, and sequential footage marking.

#### 10. TESTS

10.1 Cable shall be tested in accordance with ANSI/ICEA S-94-649, AEIC CS8, and RUS Spec U-1. Certified Test Reports may be furnished, if requested prior to production of the cable.