Rome Cable
CORPORATION

SPEC 7655

January 1, 2002

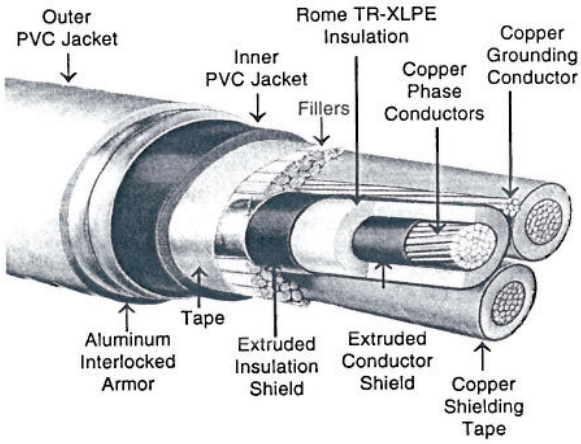
ROME TECK-HV MINUS 40°C, HL, FT4, 5KV 100% & 133% IL

3 Conductor, Rome TR-XLPE Insulation, Shielded
Inner PVC Jacket, Aluminum Armor, Outer PVC Jacket

APPLICATION: As flame retardant three conductor power cable rated 5kV, 90°C in wet or dry locations. Widely used in the pulp and paper, petroleum, petrochemical, mining industries where cables with outstanding resistance to mechanical abuse, chemical attack and high reliability are required. Suitable for use in direct burial, open wiring, ventilated flexible cableways, and in non-ventilated, ventilated or ladder type cable trays. Inner and outer PVC jacket have low acid gas evolution and low flame spread properties along with excellent low temperature properties.

STANDARDS:
1. Listed as Power Cable per CSA Std. C68.3.
2. Minus 40°C rated per CSA Std. C68.3.
3. Passes FT-4 70000 BTU/hr cable tray flame test of CSA Std. C22.2 No. 0.3.
4. Complies with Acid Gas Evolution Test of Ontario Hydro Provisional Spec L-891 SM-77. Less than 14% acid gas evolution.
5. HL approved for use in hazardous locations per CSA Std. C22.2 No. 174.

CONSTRUCTION: Three conductors of Class B stranded uncoated compact copper, extruded conductor shield, Rome TR-XLPE (tree retardant crosslinked polyethylene) insulation, extruded insulation shield, uncoated copper shielding tape. Three conductors twisted together with one uncoated copper grounding conductor and suitable fillers, tape, PVC inner jacket, aluminum interlocked armor, PVC outer jacket, surface printed.



Size AWG or kcmil		Thickness		Diameters						Weight		AMP*	Connectors	
Phase	Ground	Insul.	Inner Jkt.	Inner Jkt.		Armor		Outer Jkt.		lb/k ft.	kg/km		T & B	Crouse-Hinds
		Mils	Mils	In.	mm	In.	mm	In.	mm					
5KV 100% or 133% INSULATION LEVEL														
4	8	90	80	1.32	33.5	1.52	38.6	1.63	41.4	1530	2277	122	10471	0100226
2	6	90	80	1.44	36.6	1.64	41.7	1.77	45.0	1905	2835	159	10472	0100227
1	6	90	80	1.51	38.4	1.71	43.4	1.84	46.7	2125	3162	184	10472	0100227
1/0	6	90	80	1.59	40.4	1.82	46.2	1.95	49.5	2400	3572	211	10473	0100227
2/0	6	90	80	1.68	42.7	1.91	48.5	2.04	51.8	2865	4264	243	10551	0100568
3/0	4	90	110	1.85	47.0	2.08	52.8	2.21	56.1	3340	4971	279	10474	0100229
4/0	4	90	110	1.96	49.8	2.19	55.6	2.32	58.9	4045	6020	321	10474	0100229
250	4	90	110	2.08	52.8	2.31	58.7	2.47	62.7	4615	6868	355	10552	0100565
300	4	90	110	2.20	55.9	2.43	61.7	2.59	65.8	5230	7783	395	10553	0100565
350	3	90	110	2.28	57.9	2.51	63.8	2.67	67.8	5825	8669	435	10553	0100565
400	3	90	110	2.39	60.7	2.62	66.6	2.78	70.6	6400	9524	468	10477	0100232
500	3	90	110	2.55	64.8	2.78	70.6	2.94	74.7	7565	11258	536	10554	0100566
600	2	90	140	2.94	74.7	3.17	80.5	3.36	85.3	9315	13863	589	10479	0100234
750	2	90	140	3.17	80.5	3.40	86.4	3.58	90.9	10920	16251	668	10481	0100236
1000	1	90	140	3.49	88.6	3.72	94.5	3.91	99.3	14100	20984	768	10484	0100239

*AMPACITY in accordance with ICEA P-46-426/IEEE S135-1, 90°C conductor temperature, 40°C ambient, in free air or cable tray with a minimum of one cable diameter spacing. Agreement from the electrical inspection department is required for use of these ampacities. See CEC Part 1, Appendix B, Note to Rule 4-004(1).

NOTES:
1. Cable weight based upon aluminum armor. Galvanized steel armor available on request.
2. Cables with ribbed inner PVC jacket for vertical support applications available on request.

Information on this sheet subject to change without notice.

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Specification
ROME TECK-HV MINUS 40°C, HL, FT4, 5KV 100% & 133% IL
3 Conductor, Rome TR-XLPE Insulation, Shielded
Inner PVC Jacket, Aluminum Armor, Outer PVC Jacket

1. SCOPE
1.1 This specification describes three conductor Rome TR-XLPE insulated, PVC inner jacketed, aluminum interlocked armored, PVC outer jacketed TECK-HV cable for use in circuits not exceeding 5kV 100% or 133% insulation level, at conductor temperatures of 90°C for normal operation, 130°C for emergency overload conditions, and 250°C for short circuit conditions. Cables are suitable for use indoors or outdoors in wet or dry conditions in open wiring, ventilated flexible cableways, cable trays and direct burial installations, in commercial or industrial applications.

2. STANDARDS
2.1 The following standards shall form a part of this specification to the extent specified herein:
- 2.1.1 CSA Std. C68.3 Power Cable.
- 2.1.2 CSA Std. C22.2 No. 0.3 Clause 4.11.4 FT4 flame test.
- 2.1.3 Ontario Hydro Provisional Spec L891 SM-77.
- 2.1.4 CSA Std. C22.2 No. 174 Cables and Cable Glands for Use in Hazardous Locations.

3. CONDUCTORS
3.1 Shall be Class B stranded uncoated compact copper conforming to CSA C68.3.

4. CONDUCTOR SHIELD
4.1 Shall be an extruded conducting crosslinked polyethylene compound with a minimum thickness in accordance with CSA C68.3, Table 2.

5. INSULATION
5.1 Shall be Rome TR-XLPE tree-retardant crosslinked polyethylene meeting the requirements of CSA C68.3. Average thickness shall be 90 mils. Minimum thickness at any point shall be not less than 90% of the specified thickness.

6. SHIELDING
6.1 Over the insulation shall be applied an extruded conducting thermosetting insulation shield. It shall be in intimate contact with the insulation and shall be free stripping leaving no conducting particles or other residue on the insulation surface. The minimum point thickness of this layer shall comply with CSA C68.3, Table 6.

6.2 An uncoated 5 mil copper tape shall be helically applied over the extruded insulation shield with a minimum lap of 20%. The tape shall meet the requirements of CSA C68.3. A colored tape shall be applied longitudinally under the copper shielding tape to provide phase identification.

7. ASSEMBLY
7.1 Three phase conductors shall be cabled together with a Class B stranded uncoated copper grounding conductor and suitable nonhygroscopic fillers to make round. Length of lay shall not exceed 35 times the phase conductor diameter. The grounding conductor shall comply with the requirements of CSA C68.3. A nonhygroscopic cable tape shall be applied over the assembly.

8. INNER PVC JACKET
8.1 Shall be PVC meeting the requirements of CSA C68.3 including requirements for low temperature classification of -40°C. Thickness of jacket shall be as specified in CSA C68.3, Table 15.

9. INTERLOCKED ARMOR
9.1 An aluminum alloy interlocked armor shall be applied over the inner PVC jacket meeting the requirements of CSA C68.3, Clause 4.8.2.

10. OUTER PVC JACKET
10.1 Cables shall have an overall orange PVC jacket meeting the requirements of CSA C68.3 including requirements for low temperature classification of -40°C. Thickness of jacket shall comply with CSA C68.3, Table 22.

11. IDENTIFICATION
11.1 Cables shall be provided with a legend identifying the manufacturer, number of conductors, size, voltage rating and insulation level, TECK-HV, MINUS 40°C, TR-XLPE, FT4, HL, power cable symbol, year of manufacture and length markings in meters.

12. TESTS
12.1 Completed cable shall meet requirements for 5 kV cable in CSA C68.3 including MINUS 40°C low temperature classification, FT4 flame test requirement of C22.2 No. 0.3, HL requirements of C22.2 No. 174 and the acid gas evolution test of OH L891 SM-77.