



# Product Data Sheet

AL CABLE  
 345 MILS TR-XLPE (35 KV 100% INSULATION LEVEL)  
 CONCENTRIC NEUTRAL  
 105°C XLPE JACKET (MV-105)

## SCOPE:

This specification describes aluminum, concentric-neutral power-cable having Tree-Retardant Cross-Linked Polyethylene (TR-XLPE) insulation and a Cross-Linked Polyethylene (XLPE) jacket. The cable is designed for use in three-phase systems with voltage not exceeding 35000 volts phase to phase and conductor temperatures not exceeding 105°C for normal operation, 140°C for emergency overload conditions, and 250°C for short circuit conditions. The cables are suitable for direct burial and installation in ducts.

## APPLICABLE STANDARDS:

The cable produced under this specification will comply with all applicable requirements of the following standards, which are the principal standards of this product:

- **ICEA S-94-649** – Standard for Concentric Neutral Cables Rated 5 through 46 KV
- **AEIC CS8** – Specification for Extruded Dielectric, Shielded Power Cables Rated 5 through 46 KV
- **UL1072 – MV90** and **MV105** – Standard for Medium-Voltage Power Cables
- **CSA 68.10** – Shielded Power Cable for Commercial and Industrial Applications, 5-46 KV

Cable components, raw materials, and testing procedures shall meet the requirements of publications referenced in relevant parts of the principal standards including, but not limited to

- **ASTM B 231** – Standard Specification for Concentric-Lay-Stranded Aluminum 1350 Conductors
- **ASTM B 3** – Standard Specification for Soft or Annealed Copper Wire
- **ASTM B 5** – Standard Specification for High Conductivity Tough-Pitch Copper Refinery Shapes
- **ICEA T-31-610** – Test Method for Conducting Longitudinal Water Penetration Resistance Tests

## CONSTRUCTION:

A "DISCHARGE-FREE" design concept underpins the manufacture of this cable. Conductor shield, insulation, and insulation shield are extruded simultaneously over the conductor by using triple-extrusion and dry-curing technology. The insulation shield is designed to be strippable.

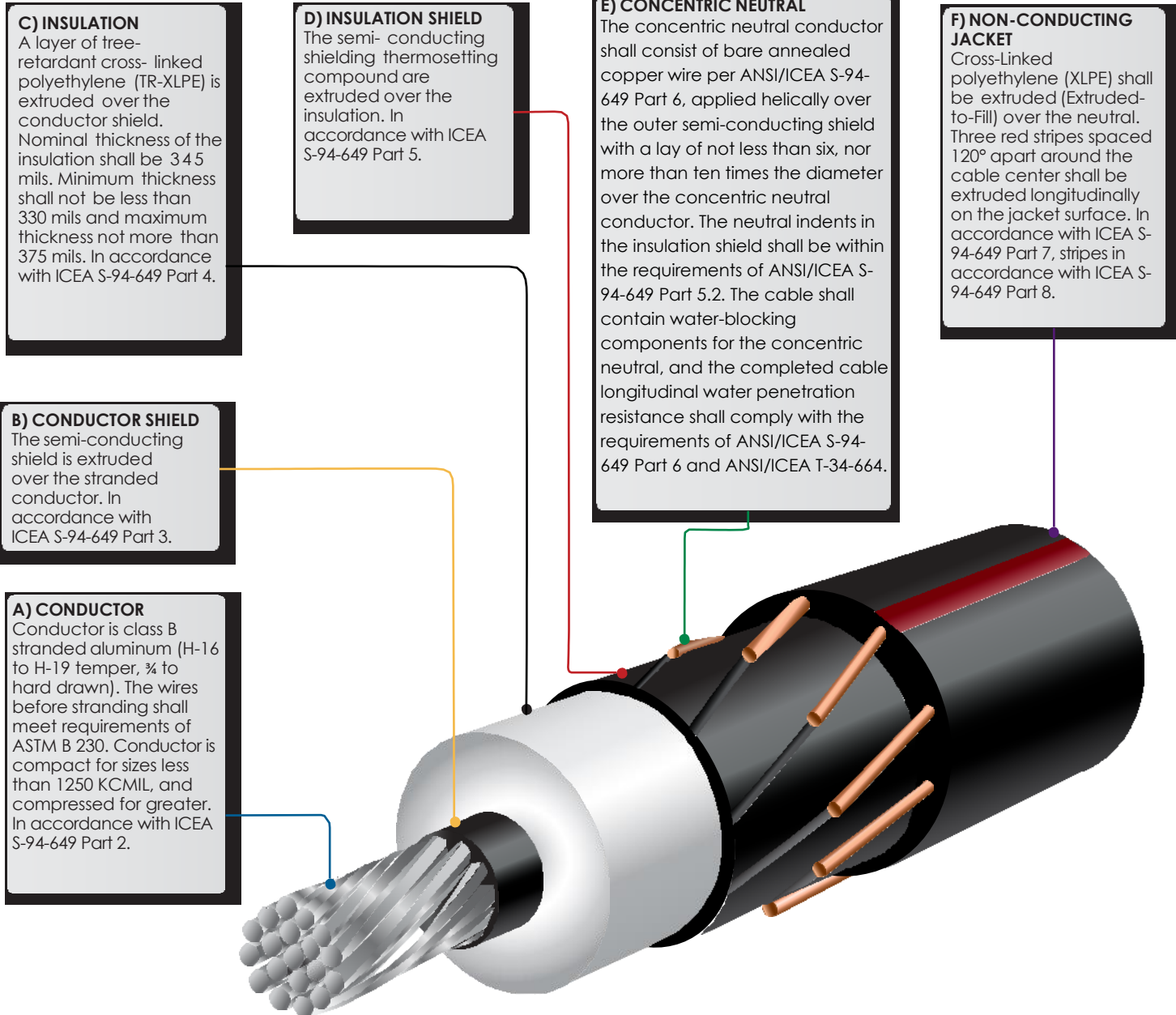
Double-helix compatible water-blocking yarn is used on all conductors. Water-swellable tape is applied over the insulation shield.

## QUALITY CONTROL:

All compounds are handled and loaded in a **Class 10000** clean room.

An optical pellet analyzer is used by the supplier to perform 100% pellet inspection.

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**TESTING:**

Cable shall be tested as described in Parts 9 and 10 of ICEA S-94-649 and part G of AEIC CS8. Corresponding production tests shall be done in accordance with ICEA T-27-581, ICEA T-28-562, ICEA T-24-380, and ICEA T-31-610. Factory test reports are available upon request.

**TEMPERATURE RATINGS:**

- Conductor maximum continuous temperature = 105°C
- Emergency temperature = 140°C
- Storing & working temperature range = -40...+105°C
- Installation & handling temperature = -10...+40°C

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### ELECTRICAL PARAMETERS FOR CABLES IN TREFOIL FORMATION

Part #	Size (AWG/KCMIL)	# Wires	Wire Size (AWG)	Positive/Negative Sequence Impedance ( $\mu\Omega/\text{ft}$ )	Zero Sequence Impedance ( $\mu\Omega/\text{ft}$ )	Capacitance ( $\mu\text{F}/1000\text{ft}$ )	Inductance (mH/1000ft)	DC resistance ( $\Omega/1000\text{ft}$ )		AC resistance ( $\Omega/1000\text{ft}$ )	
								20C	105C	20C	105C
MV1_0AL0414CUXLPE	1/0	4	14	250+j54	304+j746	0.03901	0.14379	0.18594	0.24963	0.18601	0.24968
MV1_0AL0614CUXLPE	1/0	6	14	250+j54	304+j746	0.03901	0.14379	0.18594	0.24963	0.18601	0.24968
MV1_0AL0814CUXLPE	1/0	8	14	250+j54	304+j746	0.03901	0.14379	0.18594	0.24963	0.18601	0.24968
MV1_0AL1214CUXLPE	1/0	12	14	250+j54	304+j746	0.03901	0.14379	0.18594	0.24963	0.18601	0.24968
MV2_0AL0514CUXLPE	2/0	5	14	191+j52	245+j741	0.04237	0.13713	0.14216	0.19085	0.14225	0.19092
MV2_0AL0814CUXLPE	2/0	8	14	191+j52	245+j741	0.04237	0.13713	0.14216	0.19085	0.14225	0.19092
MV2_0AL1014CUXLPE	2/0	10	14	191+j52	245+j741	0.04237	0.13713	0.14216	0.19085	0.14225	0.19092
MV2_0AL1514CUXLPE	2/0	15	14	191+j52	245+j741	0.04237	0.13713	0.14216	0.19085	0.14225	0.19092
MV3_0AL0714CUXLPE	3/0	7	14	145+j50	199+j738	0.04542	0.13238	0.10771	0.14461	0.10784	0.14470
MV3_0AL1014CUXLPE	3/0	10	14	145+j50	199+j738	0.04542	0.13238	0.10771	0.14461	0.10784	0.14470
MV3_0AL1314CUXLPE	3/0	13	14	145+j50	199+j738	0.04542	0.13238	0.10771	0.14461	0.10784	0.14470
MV3_0AL1914CUXLPE	3/0	19	14	145+j50	199+j738	0.04542	0.13238	0.10771	0.14461	0.10784	0.14470
MV4_0AL0814CUXLPE	4/0	8	14	117+j48	171+j733	0.04907	0.12755	0.08673	0.11643	0.08689	0.11655
MV4_0AL1214CUXLPE	4/0	12	14	117+j48	171+j733	0.04907	0.12755	0.08673	0.11643	0.08689	0.11655
MV4_0AL1614CUXLPE	4/0	16	14	117+j48	171+j733	0.04907	0.12755	0.08673	0.11643	0.08689	0.11655
MV4_0AL2314CUXLPE	4/0	23	14	117+j48	171+j733	0.04907	0.12755	0.08673	0.11644	0.08690	0.11656
0978Y3(□)	500	9	14	49+j43	103+j717	0.06309	0.11505	0.03611	0.04847	0.03654	0.04879
0978Y3(□)	500	18	14	49+j43	103+j717	0.06309	0.11505	0.03611	0.04847	0.03654	0.04879
0978Y3(□)	500	27	14	49+j43	103+j717	0.06309	0.11505	0.03611	0.04847	0.03654	0.04879
0978Y3(□)	750	14	14	34+j41	88+j708	0.07346	0.10776	0.02480	0.03329	0.02546	0.03379
0978Y3(□)	750	27	14	34+j41	88+j708	0.07346	0.10776	0.02480	0.03329	0.02546	0.03379
0978Y3(□)	750	26	12	34+j41	88+j707	0.07346	0.10871	0.02480	0.03329	0.02546	0.03378
0978Y3(□)	1000	9	14	25+j39	79+j700	0.08260	0.10256	0.01814	0.02435	0.01909	0.02508
0978Y3(□)	1000	12	14	25+j39	79+j700	0.08260	0.10256	0.01814	0.02435	0.01909	0.02508
0978Y3(□)	1000	18	14	25+j39	79+j700	0.08260	0.10256	0.01814	0.02435	0.01909	0.02508
0978Y3(□)	1000	36	14	25+j39	79+j700	0.08260	0.10256	0.01814	0.02435	0.01909	0.02508
0978Y3(□)	1000	34	12	25+j39	79+j700	0.08260	0.10346	0.01814	0.02435	0.01908	0.02507
0978Y3(□)	1250	12	14	20+j37	74+j696	0.08992	0.09904	0.01422	0.01908	0.01545	0.02003
0978Y3(□)	1250	15	14	20+j37	74+j696	0.08992	0.09904	0.01422	0.01908	0.01545	0.02003
0978Y3(□)	1250	23	14	20+j37	74+j696	0.08992	0.09904	0.01422	0.01908	0.01545	0.02003
MV1250AL2912C UXLPE	1250	29	12	20+j38	74+j695	0.08992	0.09989	0.01422	0.01908	0.01543	0.02002
MV1250AL2710CUXLPE	1250	27	10	20+j38	74+j694	0.08992	0.10094	0.01422	0.01908	0.01542	0.02001
MV1500AL2114CUXLPE	1500	21	14	17+j36	71+j690	0.09906	0.09582	0.01180	0.01584	0.01330	0.01702
MV1500AL2714CUXLPE	1500	27	14	17+j36	71+j690	0.09906	0.09544	0.01180	0.01584	0.01330	0.01702
MV1500AL2210CUXLPE	1500	22	10	17+j37	71+j723	0.09906	0.09760	0.01180	0.01584	0.01326	0.01699

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