

ENGINEERING MATERIAL SPECIFICATION

Material Name

Specification Number

**CABLE, LOW TENSION RESISTOR – CHLOROSULFONATED
POLYETHYLENE INSULATED**

ESB-M1L45-A

1. SCOPE

The material defined by this specification is a stranded, chlorosulfonated polyethylene covered, low tension resistor cable.

2. APPLICATION

This specification was released originally for material used for assembling into automotive wiring harness assemblies as a power window circuit component.

3. REQUIREMENTS

3.0 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.1 INSULATION COLOR

Shall be gray unless otherwise specified on the engineering drawing and/or release by a numerical suffix following the letter suffix of the material desired. The numerical color coding suffixes shall correspond to the following:

0 - Black	5 - Green
1 - Brown	6 - Blue
2 - Red	7 - Purple
3 - Orange	8 - Gray
4 - Yellow	9 - White

The first color coding numerical suffix shall be the base or body color of the finished cable and the second number shall designate the stripe or other auxiliary marking.

Date	Action	Revisions
2003 04 28	Revised	Para 3.0 inserted; Para 3.4 & 4 deleted
1978 11 27		Metricated, Renumbered and Retyped CAH1-RD572066-
1963 06 05		Released AS1 #915

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3.2 CABLE CONSTRUCTION

3.2.1 Conductor

Shall consist of 19 strands of 29 gage (0.0113 in (0.287 mm) maximum diameter) brass alloy wire, bunched to an approximate diameter of 0.060 in (1.52 mm).

Chemical Composition
(ASTM E 38)

Copper	70% min
Zinc	30% max

Resistance (ASTM B 63)	0.0175 Ω /ft (0.0574 Ω /m) + 8%, -4%
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Tensile Strength	55,000 - 120,000 psi (379 - 827 MPa)
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Temperature Coefficient of Resistivity (ASTM B 267, -50 to 150 °C)	+/- 0.0002
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3.2.2 Cable Insulation

Shall be a nominal 0.040 in (1.02 mm) thickness of chlorosulfonated polyethylene. The material shall adhere closely to, but strip readily from the conductor strands, leaving them reasonably clean and suitable for soldering. Insulation thickness shall be determined by measuring the diameter over the insulation, then removing the insulation and measuring the diameter of the conductor. Half of the difference of the two measurements shall be considered as the wall average thickness. For any cross section of a test specimen the minimum wall thickness shall not be less than 50% of the maximum wall thickness.

3.2.3 Finished Cable Diameter, max	0.150 in (3.81 mm)
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3.3 INSULATION QUALITY

3.3.1 Tensile Strength, min (ASTM D 412, 12 in (305 mm)/min speed)	1,600 psi (11 MPa)
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Elongation, min	250%
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