



CABLE, PRIMARY LOW TENSION, 85 °C VINYL INSULATED - REDUCED WALL THICKNESS

ESB-M1L120-A2

1. SCOPE

The material defined by this specification is a low tension stranded cable, vinyl-insulated with non-coated conductor. The cable is similar to SAE J 1128 Type GPT (General Purpose - Thermoplastic Insulated) but with a reduced insulation wall thickness, and an 85 °C classification.

2. APPLICATION

This specification was released originally for material used in automotive electrical harnesses.

Note: The assemblers of electrical wire harnesses shall use the bulk wire suppliers as shown in the Ford Motor Company Materials Approved Source List.

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).

3.2 CONDUCTOR

3.2.1 The individual strands of the conductor shall be soft or annealed copper conforming to ASTM B 3, except strand dimensions. These dimensions shall be controlled to yield the cross-sectional area listed for the conductor of the finished cable per Table 1. Conductor area shall be determined by measuring individual strand diameters and calculating the sum of the individual strand areas. As an alternate method, conductor area may also be determined in accordance with ASTM B 263.

3.2.2 The strands shall be bunched per ASTM B 174. The maximum lay length shall be as specified in ASTM B 174, Table 2, Column A. Conductor strand count shall comply with Table 1. Missing strands are not allowed.

3.3 INSULATION

3.3.1 The color of the vinyl insulation shall be specified on the engineering drawing of the component utilizing this material. Base and stripe color codes shall correspond to SAE J 1128. Where striping is specified, the stripe shall be a minimum of 0.5 mm wide, but not more than 19% of the circumference of the wire. The stripe shall be of the same material as the vinyl insulation.

Date	Action	Revisions
2003 06 26	Revised	Para 3.0 inserted; Para 3.1, 3.6, 3.7, 3.8, 3.9, 3.10, 4 deleted
1993 08 13	NB00I10043054279	Released TRB BCF J.M. Showalter

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- 3.3.2 The insulating material shall be a polyvinyl chloride (PVC) material, homogeneous in character, and similar to SAE J 1128 Type GPT. The material shall adhere closely to, but strip readily from the conductors, leaving them free of insulation and in suitable condition for applying terminals.
- 3.3.3 Insulation thickness shall comply with the requirements of Table 2. Insulation thickness shall be measured in accordance with ANSI/UL-1581-1985, Reference Standard for Electrical Wires, Cables, and Flexible Cords, Paragraphs 240. through 250.11. A 0.51 mm diameter pin will be used for determining minimum insulation thickness at any point.

3.4 CABLE QUALITY (TESTS)

The Physical Properties, High Temperature, Dielectric, and Cold Bend Tests shall all be conducted in accordance with SAE J 1128.

Note: The following paragraphs shall be tested in accordance with SAE J 1128, but with exceptions to the requirements as indicated.

3.4.1 Oil Absorption Test (SAE J 1128)

Except that the outside diameter of the cable shall not increase more than 15% when measured 4 h after removal from the oil.

3.4.2 Pinch Test (SAE J 1128)

Values as specified in Table 3 of this document.

3.4.3 Flame Test

A 610 mm specimen shall be suspended in a vertical position within a partial enclosure which allows a flow of sufficient air for complete combustion but is free from drafts. The tip of a 50 mm gas flame with an inner cone one-third its height shall then be applied to the end of the specimen for 15 seconds. After removal of the flame, the specimen shall not continue to burn for more than 30 seconds.

3.5 FOGGING

(Interior Glass Surface, min number)
(FLTM BO 116-03)

Fog Number, min 60

Formation of clear film, droplets or crystals is cause for rejection, regardless of minimum fog number.

Note: Anti-fogging is required for all wiring passing through the body shell luggage or passenger compartments. Wiring used exclusively in the engine compartment is excluded.