

ENGINEERING MATERIAL SPECIFICATION

Material Name

Specification Number

**CABLE IGNITION - HIGH TENSION-RESISTANCE CORE
(WIRE WOUND) SILICONE JACKET AND EPDM
INSULATION (8 mm)**

ESE-M1L102-A

1. SCOPE

The material defined by this specification is a high grade heat, moisture and corona resistant ignition cable, with sufficient reactive core resistance to suppress electrical components in the ignition system which could cause radio interference.

2. APPLICATION

This specification was released originally for material used for maximum performance in tractor and automotive type engines.

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 REACTIVE CORE

Reactive core. The finished diameter shall be: 2.1 +/- 0.1 mm.

The reactive core shall consist of continuous filament aramid fibers which is covered with a magnetic layer of thermally stable type material. Over the magnetic layer, 0.075 mm diameter stainless steel wire is spirally wound at 50 +/- 1 turns per meter.

3.2 CABLE INSULATION

The conductor shall be coated with a covering of EPDM rubber, placed concentrically within 0.15 mm around the conductor. The diameter of this insulation must not exceed 6 mm. The minimum diameter is limited only by the performance tests herein after required.

3.3 REINFORCING BRAID

The insulated conductor shall have a polyester braid covering. This skeleton braid shall consist of twisted polyester yarns per 16 heads, 7 to 9 picks per meter.

Date	Action	Revisions
2003 04 28	Revised	Para 3.0 inserted; Para 3.8, 3.9, 4 Deleted
1996 08 27	Revised	Revised para 1 and 3, Renumbered, Updated E.Duda
1975 07 01		Released (Was XE-M1L10-A) CE3E-EC 774588-E2

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3.4 CABLE - JACKET

Over the insulated conductor there shall be applied a protective coating of silicone rubber, flame, heat, corona, water and oil resistant. The surface of the finished cable shall be smooth, even and free from any tackiness due to compounds used in assembly or where specified. A minimum wall thickness of 1 mm must be maintained. Jacket to be black master slabs on file at engine materials engineering office.

3.5 SIZE

The diameter of the finished cable shall not exceed 8.3 mm and the minimum diameter shall not be less than 7.7 mm.

3.6 FINISHED CABLE

3.6.1 Diameter 7.75 - 8.26 mm

3.6.2 Resistance, (FLTM BB 101-11, Test I) 4480 - 6720 Ohms/m

3.6.3 Capacitance, max (FLTM BB 101-11, Test II) 164 pF/m

3.6.4 Tensile Strength No rupture or separation

Test Method: FLTM BB 101-11, Test III, except use 56.7 kg weight.

3.6.5 Corona Resistance No failure

Test Method: FLTM BB 101-11, Test IV, except Step 1 - 1372 mm length, Step 2 - tape 406 mm from end, Step 6 - 43.2 mm sleeve, and Steps 8 and 9 - 20 kV source. At end of 5 h increase voltage to a minimum of 30 kV without cable failure. Test should be repeated if failure occurs at point where cable is secured to mandrel or outside the specified five turns.

3.6.6 High Potential No burning over the end or rupture of insulation

Test Method: FLTM BB 101-11, Test V, except Step 1 - 762 mm length, Step 7 - 229 mm protrusion, and Step 10 - 25 kV AC. At end of 5 minutes increase voltage to a minimum of 32 kV without cable failure.

3.6.7 Heat Resistance No failure

Test Method: FLTM BB 101-11, Test VI, except Step 1 - 1067 mm length, Step 2 - 205 +/- 2 °C, Step 3 - 25 mm mandrel, Step 8 - 229 mm protrusion, Step 9 - 20 kV AC, and Steps 10 and 11 - 25 kV.