

**CABLE, PRIMARY LOW TENSION, CROSS LINKED POLYOLEFIN
INSULATED, THIN WALL****WSS-M1L123-A5****1. SCOPE**

The material defined by this specification is a low tension stranded cable insulated with cross linked polyolefin. The cable is similar to SAE J1128, type TXL.

2. APPLICATION

This specification was originally released for S197 and V229 automotive applications requiring the use of cross linked polyolefin insulation.

3. REQUIREMENTS

Material specification requirements are to be used for initial qualification of materials.

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).

3.3 CONDUCTOR

(SAE J1128/ASTM B 1/ASTM B 193)

- 3.3.1 The conductors shall meet all requirements of SAE J1128 with wire size and stranding as shown in Table 1 of this specification.
- 3.3.2 Before Bunching – The wire must meet the requirements of ASTM B 1 for tensile strength, elongation, resistivity, dimensions and finish.
- 3.3.3 Conductor resistance shall be measured by stripping 30 mm of insulation from each end of a 1050 mm cable (use of a longer specimen is optional). Solder (optional) 25 mm along each end of the specimen. Condition the specimen for a minimum of 4 hours at 23 °C +/- 5 °C. Measure the unsoldered length, the ambient temperature, and the resistance of the specimen. Calculate the resistance per meter. Calculate the resistance at 20 °C using the temperature correction method outlined in ASTM B 193. The maximum resistance values shall conform to those shown in Table 1.

Date	Action	Revisions
2010 11 29	Revised	Added wire size 8 to tables 1 & 2 M. Gramlich, NA
2003 06 25	Revised	Para 3.0 inserted; Para 3.1, 3.2, 3.6 , 4 deleted
2001 06 07	Activated	





3.4 INSULATION (SAE J1128)

- 3.4.1 The color of the insulation shall be specified on the engineering drawing of the component utilizing this material. Base and stripe color shall correspond to SAE J1128. Where striping is specified, the stripe shall be a minimum of 0.3 mm. wide, but not more than 15% of the circumference of the wire. There shall be two same color stripes. The stripes shall be on opposite sides of the cable. The stripe shall be of the same material as the insulation. If the insulation is died or painted, all the tests must be performed on the finished product. The insulation and the color may show no evidence of peeling or cracking.
- 3.4.2 The insulating material shall be flame retardant, homogeneous, cross-linked polyethylene, similar to SAE J1128 type SXL. The material shall adhere closely to, but strip readily from the conductors, leaving them free of insulation and in suitable condition for applying terminals. Water soluble stripping agents shall not be used.
- 3.4.3 Insulation thickness shall comply with the requirements of Table 2. Measure the minimum wall thickness as described in SAE J1128.
- 3.4.4 There shall be no separators permitted between the core and the insulation.

3.5 CABLE QUALITY (TESTS) (SAE J1128)

The finished cable shall meet all performance requirements of SAE J1128 (Revision date 2000-05) type TXL. These tests include strand coating, solderability, mechanical properties, dielectric, cold bend, flame resistance, fluid compatibility, ozone resistance, pinch resistance, sandpaper abrasion resistance, cross-linking, hot water resistance and environmental cycling. Below are additional requirements and test modifications:

- 3.5.1 Insulation Mechanical Properties Test
- This test shall be conducted in accordance with SAE J1128 for type TXL except that the test temperature shall be 160 +/- 2 °C.
- 3.5.2 All cable shall be spark tested at 2000 Volts at the final cable handling process prior to being packaged for shipment. All spark failures must be removed.
- 3.5.3 Insulation shrinkage shall be tested by cutting in the middle of a cable section at least 1.0 m (3 ft) in length and immediately checking for exposed core. No core is allowed to extend past the insulation. Care must be taken to assure the cable is not elongated prior to testing.