SAE International™

SURFACE VEHICLE STANDARD

SAE J1128

REV. DEC2005

Issued 1975-11
Revised 2005-12

Superseding J1128 MAY2000

Low Voltage Primary Cable

TABLE OF CONTENTS

1. Scope

This standard covers low voltage primary cable intended for use at a nominal system voltage of 60 V DC (25 V AC) or less in surface vehicle electrical systems. The tests are intended to qualify cables for normal applications with limited exposure to fluids and physical abuse.

1.1 Rationale

This document is being revised to include the following:

a. Add a separate “Winding” test
b. Consolidate all mandrels into one table
c. Specify mandrels as a multiple of “Outside Cable Diameter”
d. Add a section to define the “Oven”
e. Revise the “Temperature and Humidity Cycling” test
f. Update test fluids and sources
g. Change text from “Low Tension” to “Low Voltage”
h. Remove cable types STS, TWE, SGE, and HTE

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: custsvc@sae.org
http://www.sae.org

2. *References*

2.1 Applicable Publications

The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

SAE EA-1128—Wire Color Charts
SAE J311—Fluid for Passenger Car Type Automatic Transmission
SAE Dictionary of Materials and Testing

2.1.2 ASTM DOCUMENTS

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM B 33—Standard Specification for Tinned Soft or Annealed Copper Wire
ASTM B 263—Method for Determination of Cross-Sectional Area of Standard Conductors
ASTM B 298—Standard Specification for Silver-Coated Soft or Annealed Copper Wire
ASTM B 354—Definitions of Terms Relating to Uninsulated Metallic Electrical Conductors
ASTM B 355—Standard Specification for Nickel-Coated Soft or Annealed Copper Wire
ASTM D 412—Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers—Tension
ASTM D 471—Standard Test Method for Rubber Property—Effect of Liquids
ASTM D 573—Standard Test Method for Rubber—Deterioration in an Air Oven
ASTM E 145—Standard Specification for Gravity-Convection and Forced-Ventilation Ovens
ASTM F 1251—Standard Terminology Relating to Polymeric Biomaterials in Medical and Surgical Device

2.1.3 IEC DOCUMENTS

Available from ANSI, 25 West 43rd Street, New York, NY 10036-8002, Tel: 212-642-4900, www.ansi.org.

IEC 60811-2-1—Common test methods for insulating and sheathing materials of electrical cables—Part 2: Methods specific to elastomeric compounds—Section 1: Ozone resistance test—Hot set test—Mineral oil immersion test
IEC, Electricity, Electronics and Telecommunications, Multilingual Dictionary

2.2 Related Specifications

The following publications are provided for information purposes only and are not a required part of this specification.

2.2.1 SAE PUBLICATIONS

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

SAE J156—Fusible Links
SAE J1067—Seven Conductor Jacketed Cable for Truck Trailer Connections
SAE J1127—Low Voltage Battery Cable
SAE J1292—Automobile, Truck, Truck-Tractor, Trailer, and Motor Coach Wiring
SAE J1654—High Voltage Primary Cable
SAE J1673—High Voltage Automotive Wiring
SAE J1678—Low Voltage Ultra Thin Wall Primary Cable
SAE J2183—60 V and 600 V Single Core Cables—Test Methods, Dimensions and Requirements
SAE J2501—Round, Unscreened, 60 V and 600 V Multicore Sheathed Cables—Basic and High Performance Test Methods and Requirements

2.2.2 ASTM DOCUMENTS

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM B 1—Standard Specification for Hard-Drawn Copper Wire
ASTM B 3—Standard Specification for Soft or Annealed Copper Wire
ASTM B 8—Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft
ASTM B 452—Standard Specification for Copper-Clad Steel Wire for Electronic Application
ASTM B 787—19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation

2.2.3 ISO DOCUMENTS

Available from ANSI, 25 West 43rd Street, New York, NY 10036-8002, Tel: 212-642-4900, www.ansi.org.

ISO 6722—Road vehicles—60 V and 600 V single core cables—Test methods, dimensions and requirements
ISO 14572—Road vehicles—Round, screened and unscreened, 60 V and 600 V multicore sheathed cables—Basic and high performance test methods and requirements

3. Definitions

3.1 Additional Mass (Reference "Resistance to Sandpaper Abrasion" Test)

The mass which is applied to the support rod. The combination of the forces exerted by the additional mass and the 0.63 N exerted by the remaining apparatus (bracket, support rod, and pivoting arm) is applied to the cable.

3.2 Cable

See primary cable.