Australian Standard®

Jumper leads for automotive starting

This Australian Standard was prepared by Committee EL/5, Secondary Batteries. It was approved on behalf of the Council of Standards Australia on 7 December 1989 and published on 7 May 1990.

The following interests are represented on Committee EL/5:

Australian Automobile Association
Australian Automotive Aftermarket Association
Australian Electrical and Electronic Manufacturers Association
Australian Federation of Consumer Organizations
Australian Lead Development Association
Confederation of Australian Industry
Department of Administrative Services — Australian Construction Services
Department of Defence
Electricity Supply Association of Australia
Federal Chamber of Automotive Industries
Institution of Engineers, Australia
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CSIRO, Division of Manufacturing Technology

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PREFACE

This Standard was prepared by the Standards Australia Committee on Secondary Batteries to supersede AS 2697—1984.

This edition is necessary because tests conducted by the Australian Automobile Association on jumper leads available on the Australian market showed poor compliance with AS 2697—1984. Many jumper leads proved dangerous because of melting insulation, fire and the consequent risk of battery explosion.

This Standard differs from AS 2697—1984 in a number of respects. The requirement for a minimum cable size has been deleted. The requirements for connection between the cable and the clip have been tightened because of the large number of connection failures encountered. Insulation on the handles of the clips is now required to be fixed in position (simple slip-on sleeving is no longer permitted). The electrical requirements are now stated in terms of current rating and voltage drop, rather than resistance. The test methods in Appendices A and B have been altered accordingly.

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STANDARDS AUSTRALIA

Australian Standard

Jumper leads for automotive starting

1 SCOPE. This Standard specifies the requirements for jumper leads to be used as a temporary connection to an (additional) external battery for the purpose of starting the engine of a motor vehicle whose battery is discharged and not capable of starting the vehicle.

The Standard applies to jumper leads for vehicles having a 12 volt or 24 volt battery.

2 REFERENCED DOCUMENTS. The following documents are referred to in this Standard:

AS
1834 Material for soldering
1834.2 Part 2: Flux-cored solders

2218 Cables for use in automotive vehicles — PVC insulated cables having copper conductors

3116 Approval and test specification for elastomer insulated electric cables and flexible cables for working voltages up to and including 0.6/1 kV

3147 Approval and test specification — Electric cables — Thermoplastic insulated for working voltages up to and including 0.6/1 kV

3198 Approval and test specification for XLPE insulated electric cables for working voltages of 0.6/1 kV

3 DEFINITIONS. For the purpose of this Standard, the definitions below apply.

3.1 Conductor — that portion of a cable which has the specific function of conveying current.

3.2 Clip — a spring-loaded or mechanically operated clamp which makes a mechanical and electrical connection from the conductor to the battery or earth terminal of a vehicle.

3.3 Jumper leads — two insulated electrical conductors and clips used for the purpose of temporarily connecting an additional battery in parallel with an existing battery to provide additional power for jump-starting a motor vehicle (see Figure 1).

3.4 Rated current — the current at which the jumper leads have been tested and have complied with the requirements of this Standard.

4 GENERAL REQUIREMENTS.

4.1 Length. The overall length of the jumper leads, including the clips, shall not be less than 2.7 m.

4.2 Voltage drop. The voltage drop in each jumper lead when carrying rated current shall not exceed 1 V. The voltage drop shall be determined in accordance with Appendix B.

4.3 Current rating. The rated current of a jumper lead shall be deemed to be that current for which it has been tested in accordance with Appendix B and has satisfied the criteria of acceptance of Clause 4.4. To comply with this Standard a jumper lead shall have a rated current of no less than 100 A. Jumper leads may be tested and rated at currents of greater than 100 A.

NOTE: For a short time during a jump start, currents larger than 100 A will flow, however, if the jumper leads meet the requirements of Clause 4, 5 and 6 and are correctly used, (see Clause 8) they will prove adequate in service.

4.4 Criteria of acceptance. The jumper lead shall be considered to have satisfied the test if —

(a) at no time during the test is a voltage drop of greater than 1 V measured; and

(b) at no time during the test is a thermocouple temperature rise of greater than 20°C above ambient measured.

5 CABLES.

5.1 General. The cables shall take the form of two insulated conductors either separate or of parallel webbed construction. The cables shall be insulated with material complying with the criteria for insulation of either AS 3116, AS 3147 or AS 3198.

In all other respects the cables shall comply with AS 2218.

5.2 Colour. The insulation of the lead intended for connection to positive terminals shall be coloured red, throughout its mass. The insulation of the lead intended for connection to negative terminals shall be coloured either black or blue, throughout its mass. Insulation with colour stripes shall not be used.