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Crimped joints for aircraft electrical cables

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 1966 was drawn up by Technical Committee ISO/TC 20, *Aircraft and space vehicles*.

It was approved in May 1970 by the Member Bodies of the following countries :

Belgium	India	South Africa, Rep. of
Brazil	Israel	Spain
Canada	Italy	Switzerland
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The Member Bodies of the following countries expressed disapproval of the document on technical grounds :

France
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Crimped joints for aircraft electrical cables

1 SCOPE AND FIELD OF APPLICATION

1.1 This International Standard specifies the design requirements (and tests) for the crimping of insulated and non-insulated terminations to general purpose electrical cables for aircraft, with conductors of copper, copper alloy, aluminium or aluminium alloy, in locations in which the stabilized conductor temperature does not exceed the values specified for the relevant type of cable, i.e. 105 °C, 190 °C or 260 °C. The type of cable with which the terminations are intended to be made has to be declared (see 3.1.5).

1.2 The International Standard also contains recommendations relating to the inspection of such connections and the tools used to perform the crimping operation. Since satisfactory crimping is dependent upon the maintenance and setting of tools it also contains recommendations for tests to confirm their serviceability.

1.3 Testing of crimped joints to assess their suitability for aircraft shows that certain environmental conditions, for example vibration, have no significant effect on the performance of the joints. It has therefore not been considered necessary to provide for such tests in this International Standard.

2 DEFINITIONS

2.1 termination : A permanent connection formed by the end of an electrical cable conductor with a terminal end or a pin or socket contact.

2.2 terminal end : A connecting device with barrel(s) accommodating an electrical cable conductor with or without additional provision to accommodate and secure the insulation.

2.3 pin or socket contact : A contact used in a plug or socket (receptacle) with a barrel at one end to accommodate an electrical cable conductor with or without additional provision to secure the insulation.

2.4 cable splice : A connecting device with barrel(s) each accommodating an electrical cable conductor(s) with or without additional provision to accommodate and secure the insulation.

2.5 cable splice connection : A permanent connection formed by the ends of electrical cable conductors attached to a cable splice.

2.6 crimping : A method of firmly attaching a terminal end or cable splice to a conductor by re-shaping the barrel around the conductor to establish good electrical and mechanical contact.

2.7 insulation grip : That part of a terminal barrel or cable splice barrel into which the insulation of the cable is placed, and which by reforming grips the insulation.

2.8 pre-insulated joint : A crimped connection formed with an insulated terminal end or insulated cable splice.

2.9 post-insulated joint : An uninsulated crimped connection insulated after conductor crimping.

2.10 crimping tool : A manually operated or power-operated mechanical device for making a crimp or insulation grip.

2.11 positioner : A locator, turret or other device permanently or removably attached to a crimping tool, serving correctly to locate and control the position of the crimp on the barrel.

3 DESIGN REQUIREMENTS

3.1 General

3.1.1 Terminal ends, pin or socket contacts and cable splices shall comply with the requirements of the appropriate national and international standards.

3.1.2 The protective treatment and surface finish of the terminal end, pin or socket contact or cable splice shall be of such a quality that the completed crimped connection complies with the requirements of this International Standard. The electrochemical potential difference between all conducting surfaces should not exceed 0,25 V.

3.1.3 The design of the terminal end, pin or socket contact or cable splice shall be such that adequate engagement of the cable conductor in the completed joint can be readily established by inspection.