International Standard

ISO 1966

Crimped joints for aircraft electrical cables

Raccordements sertis pour câbles électriques utilisés à bord des aéronefs

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT),see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 1, *Aerospace electrical requirements*.

This second edition cancels and replaces the first edition (ISO 1966:1973), which has been technically revised.

The main changes are as follows:

— addition of Clause 2;

— addition of requirements for different crimp barrel materials and coating materials (see 4.1);

— addition of subclause 4.3;

— addition of requirements for the overall dimensions of the crimped joints (see Clause 6);

— revision of requirements for type test (see Clause 9);

— revision of the tables for test current, voltage drop and tensile strength tensile (Table 2 and Table 3).

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

This document serves as an essential reference standard for aerospace manufacturers, engineers and quality control professionals to promote consistency and safety of aircraft electrical systems.

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Crimped joints for aircraft electrical cables

1 Scope

This document specifies the design requirements (and tests) for the crimping of insulated and non-insulated joints 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. This document specifies the type of cable to use for the joints (see 4.1).

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

NOTE 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. Therefore, such tests are not provided in this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-2-6:2022, *Environmental testing — Part 2-6: Tests — Test Fc: Vibration (sinusoidal)*

IEC 60068-2-11:2021, *Tests - Test Ka: Salt mist*

IEC 60352-2:2024, *Solderless connections — Part 2: Crimped connections — General requirements, test methods and practical guidance*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
termination
permanent connection formed by the end of an electrical cable conductor with a *terminal end* (3.2) or a *pin or socket contact* (3.3)

3.2
terminal end
connecting device with barrel(s) accommodating an electrical cable conductor with or without additional provision to accommodate and secure the insulation

3.3
pin or socket contact
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

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