

Crimped joints for aircraft electrical cables and wires —

Part 2: Specification for control of crimping (including user control tests)

UDC 629.7.064.5:621.315.687

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- Civil Aviation Authority
- Electric Cable Makers Confederation
- Electronic Components Industry Federation
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- Ministry of Defence
- National Supervising Inspectorate
- Society of British Aerospace Companies Ltd.

This British Standard, having been prepared under the direction of the Aerospace Standards Committee, was published under the authority of the Board of BSI and comes into effect on 28 November 1986

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First published March 1972
First part revision as BS G 178-1 August 1984
First part revision as BS G 178-2 November 1986

The following BSI references relate to the work on this standard:
Committee reference ACE/6
Draft for comment 81/71694 DC

ISBN 0 580 14957 9

Amendments issued since publication

Amd. No.	Date of issue	Comments

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Foreword

This Part of BS 4G 178, prepared under the direction of the Aerospace Standards Committee, provides details of the requirements of aircraft constructors and operators for crimping connections for electrical cables for aircraft. The standard is published in separate Parts: Part 1 relates to the design requirements and tests for the manufacture of terminal ends, connector contacts, cable splices and their associated crimping tools and Part 2 relates to user control tests for crimped joints.

BS 4G 178-1 and BS 4G 178-2 together form a complete revision of BS 3G 178:1978, which is withdrawn.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This Part of BS 4G 178 gives user control tests for aircraft constructors or operators when crimping connections for electrical cables for aircraft.

NOTE The titles of the publications referred to in this standard are listed on the inside back cover.

2 Performance of crimped joints

When tested in accordance with Appendix A, the value of voltage drop across each joint shall not exceed the appropriate value given in the relevant curve from Figure 1, Figure 2, Figure 3 or Figure 4.

NOTE Should the relevant approving authority decide that the user has shown an adequate alternative measure of quality control, the authority may require only the tensile test to be implemented.

When tested in accordance with Appendix A, the pull-off load, applicable to all temperature ranges, shall not fall below the minimum value given in the relevant curve from Figure 1 or Figure 3.

3 Routine inspection

Every crimped joint shall be visually inspected for:

- a) correct combination of cable, tool and terminal end, connector contact or cable splice;
- b) correct die mark, where applicable;
- c) correctness of form and location of crimp;
- d) freedom from fracture, rough or sharp edges and flash;
- e) adequate insertion of all conductor strands in the crimping barrel;
- f) absence of damage to the conductor or insulation.

NOTE Certain visual inspections may require a degree of optical magnification to ensure compliance with the stated criteria.

4 Quality control inspection and testing

Unless otherwise specified by the Inspecting Authority, tools and dies and the crimped joints being produced by them shall be inspected and tested in accordance with Appendix A and Appendix B as follows:

- a) at the beginning of the use of any tool or die; and
- b) at the beginning of the use of any tool or die that has been stored without use for a period of longer than three months; and
- c) at three-monthly intervals throughout the period of use of any tool or die or at intervals of 2 000 crimps per tool or die, whichever interval is the shorter.

NOTE The Inspecting Authority may vary the periodicity of testing in the light of experience.

Joints shall be crimped using tools in accordance with BS 4G 178-1:1984.