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INTERNATIONAL STANDARD

Coaxial communication cables –
Part 1-305: Mechanical test methods – Solderability and resistance to soldering

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FOREWORD

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International Standard IEC 61196-1-305 has been prepared by subcommittee 46A: Coaxial cables, of IEC technical committee 46: Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories.

The text of this standard is based on the following documents:

FDIS	Report on voting
46A/1261A/FDIS	46A/1266/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This standard is intended to be read in conjunction with IEC 61196-1. It is based on the second edition (2005) of that standard.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all the parts in the IEC 61196 series published under the general title *Coaxial communication cables* can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

COAXIAL COMMUNICATION CABLES –

Part 1-305: Mechanical test methods – Solderability and resistance to soldering

1 Scope

This part of IEC 61196 applies to coaxial communication cables. It specifies the test methods to determine solderability and the resistance to soldering of inner and outer conductors of cables used in analogue and digital communication systems. Resistance to soldering details the test method to determine the dimensional stability of cable components after soldering.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61196-1, *Coaxial communication cables – Part 1: Generic specification – General, definitions and requirements*

IEC 60068-2-20, *Environmental testing – Part 2-20: Tests – Test T: Test methods for solderability and resistance to soldering heat of devices with leads*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61196-1 apply.

4 Solderability

4.1 Procedure

A specimen without sheath (or with sheath stripped when sheath exists) long enough to allow the immersion of a 25 mm length shall be submitted to test Ta, Method 1 (solder bath at 235 °C) of IEC 60068-2-20.

4.2 Test report

The test report shall give the test conditions:

– temperature,
– sample length

and record the corrected values for the reference length.

4.3 Requirements

The surface of the tubular outer conductor corresponding to the immersed length shall be correctly tinned, i.e. more than 95 % of this surface shall be wetted by solder, the spots and marks of soldering shall not be concentrated in one area and they shall not exceed 5 % of the immersed surface, unless otherwise specified in the relevant cable specification.

NOTE The percentage of the tinned surface as well as spots and marks of soldering can be determined with assistance of a magnifier capable of giving a magnification of 4 x to 25 x, see IEC 60068-2-20. A detailed procedure to measure or inspect the samples after soldering is under consideration.

5 Resistance to soldering

5.1 Procedure

A 150 mm ± 10 mm length specimen shall be very carefully curved at 30 mm from its end according to a bending radius as specified in the detail specification. The included angle thus formed in the specimen shall be 135° ± 5°.

The end of the bent sample shall then be immersed in a solder bath in accordance with test Tb, method 1A (solder bath at 260 °C) of IEC 60068-2-20.

Flux to be used: flux as indicated in IEC 60068-2-20, plus a 0,5 % mass of hydroxylamine-chlorhydrate.

Immersion depth: 25 mm ± 1 mm.

At the end of the test, the specimen shall be allowed to cool and the two ends checked to measure (with an accuracy of 0,1 mm):

a) the displacement of the insulation with respect to the outer conductor;
b) the displacement of the inner conductor with regard to the insulation.

5.2 Test report

The test report shall give the test conditions:

– temperature;
– duration of sample in solder bath;
– sample length;
– cable component displacement.

5.3 Requirements

Every measured displacement shall be less than the values indicated in the detail specification.

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