IEC 61196-1-313

Edition 1.0 2009-02

INTERNATIONAL STANDARD

Coaxial communication cables –
Part 1-313: Mechanical test methods – Adhesion of dielectric and sheath

IEC 61196-1-313:2009(E)

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland
Email: inmail@iec.ch
Web: www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

- Catalogue of IEC publications: www.iec.ch/searchpub

The IEC on-line Catalogue enables you to search by a variety of criteria (reference number, text, technical committee,…). It also gives information on projects, withdrawn and replaced publications.

- IEC Just Published: www.iec.ch/online_news/justpub

Stay up to date on all new IEC publications. Just Published details twice a month all new publications released. Available on-line and also by email.

- Electropedia: www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing more than 20 000 terms and definitions in English and French, with equivalent terms in additional languages. Also known as the International Electrotechnical Vocabulary online.

- Customer Service Centre: www.iec.ch/webstore/custserv

If you wish to give us your feedback on this publication or need further assistance, please visit the Customer Service Centre FAQ or contact us:

Email: csc@iec.ch
Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00

IEC 61196-1-313

Edition 1.0 2009-02

INTERNATIONAL STANDARD

Coaxial communication cables –
Part 1-313: Mechanical test methods – Adhesion of dielectric and sheath

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

PRICE CODE H

ICS 33.120.10

ISBN 2-8318-1026-8

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COAXIAL COMMUNICATION CABLES –

Part 1-313: Mechanical test methods – Adhesion of dielectric and sheath

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61196-1-300 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/923/FDIS	46A/930/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 publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of 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 maintenance result 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 1-313: Mechanical test methods – Adhesion of dielectric and sheath

1 Scope

This part of IEC 61196-1 applies to coaxial communication cables. It specifies the test method to determine the adhesion of the dielectric to inner conductor and of the sheath to outer conductor of coaxial cables.

2 Normative references

The following referenced documents are indispensable for the application 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 61196-1, *Coaxial communication cables – Part 1: Generic specification – General, definitions and requirements*

3 Terms and definitions

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

4 Test method

4.1 Preparation of test specimens

At least two test specimens separated by at least 300 mm shall be cut from the finished cable, unless otherwise specified in the relevant cable specification. Each test specimen shall be prepared as shown in Figure 1. Stripping shall be done carefully so as not to effect the adhesion of the test sample.

The tensile force shall be applied to the smaller of the two diameters under test and that component shall be of sufficient length to be gripped by the jaws of the tensile tester.

4.2 Procedure

The test piece shall be loaded into the tensile testing machine and test fixture as shown in Figure 2. The diameter of the hole in the test plate shall be larger than the smaller of the two diameters under test by 0,10 ± 0,03 mm.

The tensile force shall be applied steadily at a rate not exceeding 100 mm/min until, depending on which component is under test, the dielectric, outer conductor or sheath is completely removed. Sudden pulls and jerking shall be avoided. The physical handling of the test specimens shall be kept to a minimum to avoid specimen deterioration.

4.3 Expression of results

The adhesion shall be defined as the highest tensile reading obtained. The reported adhesion value is the overall median of these results.

5 Requirements

The lengths and the values of adhesion shall be in accordance with the values stated in the relevant cable specification.

The conductor surface may exhibit minimal residue from the remaining insulating material.

6 Details to be specified

The sectional or detail specification shall define:

- the temperature;
- the value of the adhesion;
- the lengths.

7 Test report

The test report shall include:

- temperature;
- the lengths;
- the value of the adhesion;
- number of samples tested;
- pass/fail criteria.

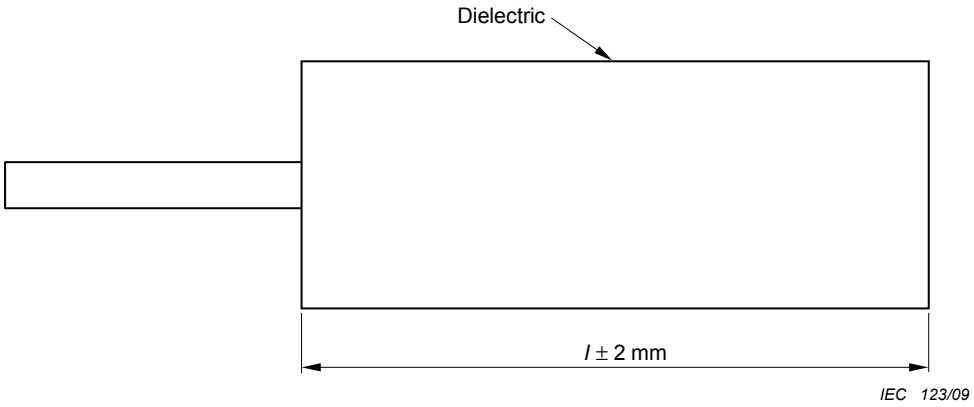

Figure 1a – Dimensions for adhesion test of inner conductor to dielectric

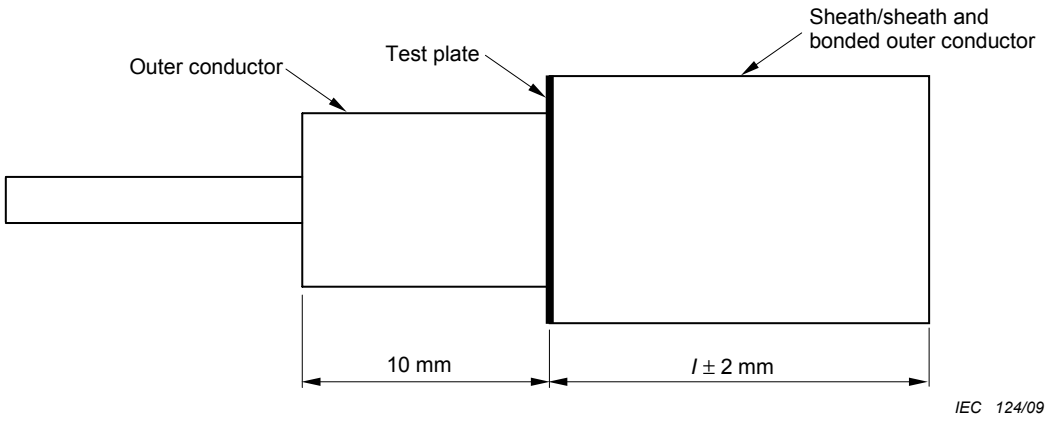

Figure 1b – Dimensions for adhesion test of sheath to outer conductor

Figure 1 – Dimension of stripping

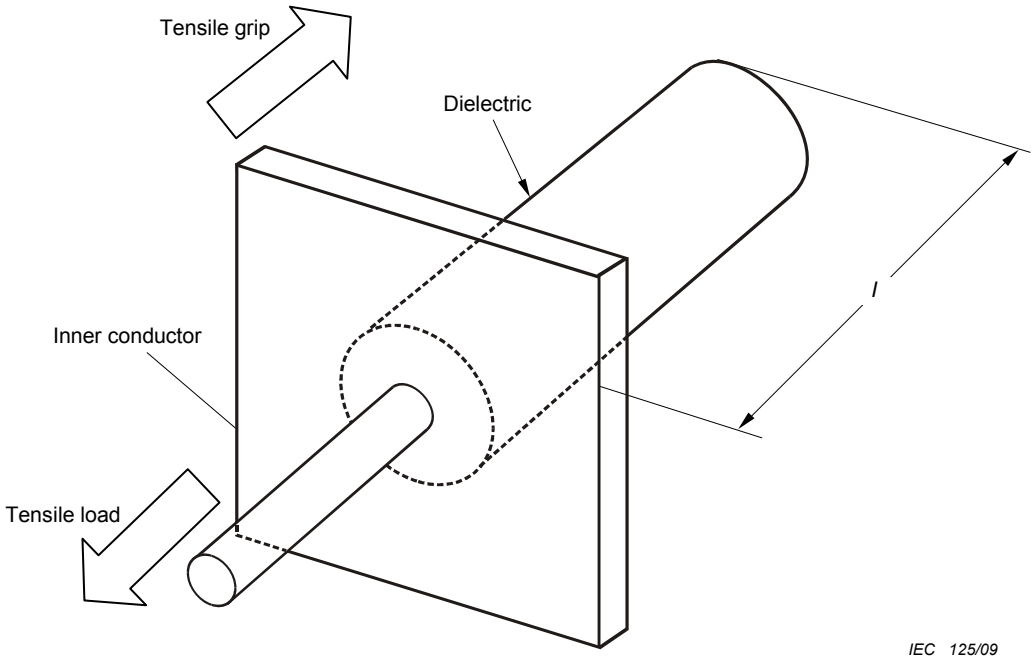

Figure 2a) – Inner conductor adhesion test

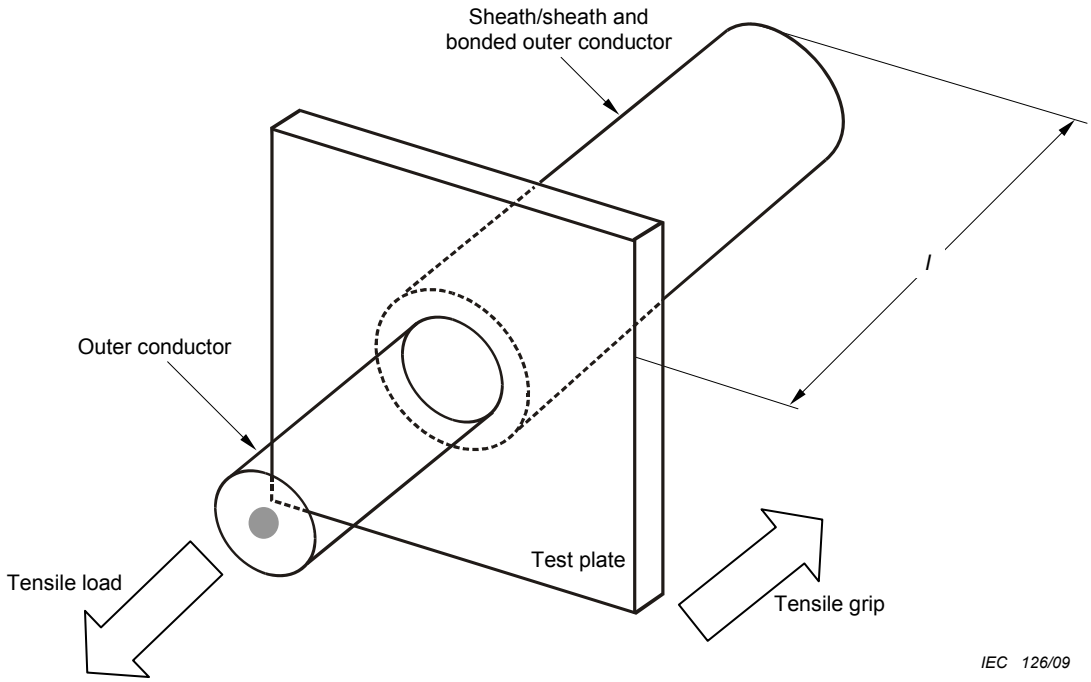

Figure 2b) – Sheath adhesion test

Figure 2 – Centre conductor adhesion test and sheath adhesion test

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

3, rue de Varembé
PO Box 131
CH-1211 Geneva 20
Switzerland

Tel: + 41 22 919 02 11
Fax: + 41 22 919 03 00
info@iec.ch
www.iec.ch