IEC 61196-1-314

Edition 2.0 2015-08

INTERNATIONAL STANDARD

Coaxial communication cables –
Part 1- 314: Mechanical test methods – Test for bending

IEC 61196-1-314:2015-08(en)

Documents
Document Sharing Hub

Full document details: IEC 61196-1-314 2015

THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2015 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

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

IEC Catalogue - webstore.iec.ch/catalogue
The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

IEC publications search - www.iec.ch/searchpub
The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,…). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished
Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

Electropedia - www.electropedia.org
The world's leading online dictionary of electronic and electrical terms containing more than 30 000 terms and definitions in English and French, with equivalent terms in 15 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary
More than 60 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

IEC Customer Service Centre - webstore.iec.ch/csc
If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: csc@iec.ch.

AVA Documents
Document Sharing Hub

Full document details: IEC 61196-1-314 2015

IEC 61196-1-314

Edition 2.0 2015-08

INTERNATIONAL STANDARD

Coaxial communication cables –
Part 1- 314: Mechanical test methods – Test for bending

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 33.120.10

ISBN 978-2-8322-2856-2

Warning! Make sure that you obtained this publication from an authorized distributor.

® Registered trademark of the International Electrotechnical Commission

Documents
Document Sharing Hub

Full document details: IEC 61196-1-314 2015

CONTENTS

FOREWORD....4
1 Scope....6
2 Normative references....6
3 Terms and definitions....6
4 Bending around a test mandrel....6
4.1 Equipment....6
4.2 Test sample....7
4.3 Procedure....7
4.3.1 General....7
4.3.2 Procedure 1....7
4.3.3 Procedure 2....7
4.3.4 Requirements....7
4.3.5 Test report....7
5 Repeated bending....7
5.1 Equipment....7
5.2 Test sample....8
5.2.1 Sample length....8
5.2.2 Termination....8
5.3 Procedure....8
5.4 Requirements....8
5.5 Test report....8
6 Flexing....10
6.1 Equipment....10
6.2 Test sample....10
6.3 Procedure....10
6.4 Requirements....10
6.5 Test report....10
7 Flexing endurance....11
7.1 Equipment....11
7.2 Test sample....11
7.3 Procedure....11
7.4 Requirements....11
7.5 Test report....11
8 Cable bending under tension (dynamic test)....12
8.1 Equipment....12
8.2 Test sample....12
8.3 Procedure....12
8.3.1 General....12
8.3.2 Procedure 1....13
8.3.3 Procedure 2....13
8.4 Requirements....13
8.5 Test report....13
9 Stiffness....14
9.1 General....14
9.2 Equipment....15
9.2.1 Method A....15

AVA Documents
Document Sharing Hub
Full document details: IEC 61196-1-314 2015

9.2.2 Method B 15
9.2.3 Method C 15
9.3 Test sample 15
9.4 Procedure 15
9.4.1 Method A 15
9.4.2 Method B 16
9.4.3 Method C 16
9.5 Requirements 16
9.6 Test report 16
10 Kink test 18
10.1 Sample 18
10.2 Equipment 18
10.3 Procedure 18
10.4 Requirement 18
10.5 Test report 18

Figure 1 – Repeated bending test for cable 9
Figure 2 – Repeated bending test for cable/connector assembly 9
Figure 3 – Flexing apparatus 11
Figure 4 – Apparatus for cable flexing endurance test 12
Figure 5 – U-bend 14
Figure 6 – S-bend 14
Figure 7 – Test set-up for method A: Three point bending test 17
Figure 8 – Test set-up for method B: Cantilever test 17
Figure 9 – Test set-up for compression force 18
Figure 10 – Example of results of applied force and displacement 18
Figure 11 – Kink test 19

Documents
Document Sharing Hub

Full document details: IEC 61196-1-314 2015

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COAXIAL COMMUNICATION CABLES –

Part 1- 314: Mechanical test methods – Test for bending

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 itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
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 61196-1-314 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.

This second edition cancels and replaces the edition published in 2006. This edition constitutes a technical revision. This edition includes the following significant technical change with respect to the previous edition:

– Clause 4 (single bending test) was completely revised.

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

FDIS	Report on voting
46A/1264/FDIS	46A/1269/RVD

Documents
Document Sharing Hub

Full document details: IEC 61196-1-314 2015

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.

This standard is intended to be read in conjunction with IEC 61196-1:2005, on which it was based.

A list of all parts in the IEC 61196 series, 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 website 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.

Documents
Document Sharing Hub

Full document details: IEC 61196-1-314 2015

COAXIAL COMMUNICATION CABLES –

Part 1- 314: Mechanical test methods – Test for bending

1 Scope

This part of IEC 61196 applies to coaxial communications cables. It specifies test methods to determine the bending tests for cables:

- bending around a test mandrel (Clause 4);
- repeated bending (Clause 5);
- repeated flexing in service (Clause 6);
- flexing in service (Clause 7);
- bending around rollers or bows during installation (Clause 8);

and for

- measuring the stiffness (Clause 9) of such a cable;
- kink test (Clause 10).

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 60050 (all parts), *International Electrotechnical Vocabulary,* available at http://www.electropedia.org/

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

EN 50289-3-1, *Communication cables – Specifications for test methods – Part 3-1: Mechanical test methods – General requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050 and in IEC 61196-1 apply.

4 Bending around a test mandrel

4.1 Equipment

A single mandrel apparatus shall enable the sample to be wrapped tangentially in a close helix around a test mandrel.

Documents
Document Sharing Hub

Full document details: IEC 61196-1-314 2015