IEC 61386-1

Edition 2.0 2017-04

INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 1
AMENDEMENT 1

Conduit systems for cable management – Part 1: General requirements

Systèmes de conduits pour la gestion du câblage – Partie 1: Exigences générales

IEC 61386-1:2008-02/AMD1:2017-04(en-fr)

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FOREWORD

This amendment has been prepared by subcommittee 23A: Cable management systems, of IEC technical committee 23: Electrical accessories.

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

FDIS	Report on voting
23A/831/FDIS	23A/838/RVD

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

The committee has decided that the contents of this amendment and the base 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- withdrawn,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.

2 Normative references

Replace the existing references to IEC 60529 and IEC 60695-2-11 by the following new references:

IEC 60529:1989 + AMD1:1999+AMD2:2013, *Degrees of protection provided by enclosures (IP Code)*

IEC 60695-2-11:2014, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products (GWEPT)*

Add the following new references:

IEC 61386-21:2002, *Conduit systems for cable management – Part 21: Particular requirements – Rigid conduit systems*

IEC 61386-22:2002, *Conduit Systems for cable management – Part 22: Particular requirements – Pliable conduit systems*

IEC 61386-23:2002, *Conduit systems for cable management – Part 23: Particular requirements – Flexible conduit systems*

IEC 61386-24:2004, *Conduit systems for cable management – Part 24: Particular requirements – Conduit systems buried underground*

IEC 61386-25:2011, *Conduit systems for cable management – Part 25: Particular requirements – Conduit fixing devices*

3.14

Replace existing definition 3.14 with the following new definition:

self-recovering conduit
pliable conduit which deforms when a transverse force is applied for a short time and which, after removal of this force, returns close to its original shape after a defined period

5.9

Delete this subclause.

7.1.1

Replace the existing text of Subclause 7.1.1 with the following new text:

The conduit or smallest supplied package shall also be marked with the classification code, in accordance with Annex A, and shall include at least the first four digits.

Add, after Subclause 7.1.1, the following new subclause:

7.1.1.1

Self-recovering conduits shall also be marked on the conduit or smallest supplied package with the classification code, in accordance with Annex A, and shall include at least the first five digits.

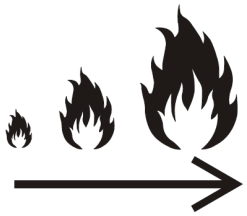
Compliance is checked by inspection.

7.3

Add, after the first paragraph, the following new paragraph:

Flame propagating conduits shall also be marked with the following symbol:

– along its entire length at intervals of preferably 1 m but not longer than 3 m with each length being marked at least once, and
– when the packaging of the smallest supplied package prevents the marking on the conduit being seen, the symbol shall be marked on the packaging or by means of a label



IEC 60417-6180:2013-01

7.6

Replace the existing text of Subclause 7.6 with the following new text:

The marking shall be durable and clearly legible.

Compliance is checked by inspection, using normal or corrected vision, without additional magnification and by rubbing the marking for 15 s with a piece of cotton cloth soaked with water and again for 15 s with a piece of cotton cloth soaked with n-hexane 95 %[1].

When using the liquid specified for the test, precautions as stated in the relative material safety datasheet provided by the chemical supplier shall be taken to safeguard the laboratory technicians.

Laser marking directly on the product and marking made by moulding, pressing or engraving are not subjected to this test.

The marking surface to be tested shall be dried before rubbing the marking with n-hexane 95 % solvent.

Rubbing shall commence immediately after soaking the piece of cotton, applying a compression force of (5 ± 1) N at a rate of about one cycle per second (a cycle comprising a forward and backward movement along the length of the marking). For markings longer than 20 mm, rubbing can be limited to a part of the marking, over a path of at least 20 mm length.

The compression force is applied by means of a test piston which is wrapped with cotton comprising of cotton wool covered by a piece of cotton medical gauze.

The test piston shall have the dimensions given in Figure 9 and shall be made of an elastic material which is inert against the test liquids and has a Shore-A hardness of 47 ± 5 (for example synthetic rubber).

When it is not possible to carry out the test on the specimens due to the shape/size of the product, a suitable piece having the same characteristics as the product can be submitted to the test.

After the test, the marking shall be legible.

10.3.1

Replace the existing second paragraph of Subclause 10.3.1 with the following new text:

Conduits are tested without fittings. Fittings are tested with a short length of conduit assembled to them as in normal use.

Delete the note.

10.3.2

Replace the existing text of Subclause 10.3.2 with the following new text:

The test apparatus is placed on a firm flat surface.

The samples are conditioned for 2 h in a cold chamber at the temperature specified in Table 1 with a tolerance of ± 2 °C corresponding to the declared classification. The samples are removed from the cold chamber and placed on a flat steel surface as shown in Figure 2.

The hammer shall fall once on each sample. The time between the removal of the sample from the cold chamber and the completion of the impact test shall not be greater than 10 s. The mass of the hammer and the fall height are specified in Table 5.

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1 *Chemical Abstracts Service Registry Number, CAS RN, 110-54-3.*

The test is made on what is likely to be the weakest part of the conduit or fitting except that it is not applied within 5 mm of any conduit entry of the fitting. Conduit test samples shall be tested at the centre of their length.

11.3.1.2

Replace the existing first paragraph of Subclause 11.3.1.2 with the following new text:

After 24 h ± 15 min, an a.c. voltage of substantially sine wave form and having a frequency between 45 Hz and 65 Hz is applied across the two electrodes. The voltage is then gradually increased from 1 000 V to 2 000 V a.c. Once the maximum voltage has been reached it shall be maintained for a period of 60 $^{+5}_{0}$ *s.*

Replace the last paragraph with the following new text:

The samples shall be considered to have adequate electrical insulating strength if a 100 mA trip device, incorporated into the circuit, does not trip during the test.

13.1.3 Spread of fire

Add, at the end of Subclause 13.1.3, the following new Note:

NOTE In accordance with 422.3.4 of IEC 60364-4-42:2010 and Annex F of IEC 60364-5-52:2009, flame propagating conduits are not suitable for use in buildings, unless embedded in non-combustible material, such as concrete.

14.2.2.2

Replace the existing first paragraph of Subclause 14.2.2.2 with the following new paragraph:

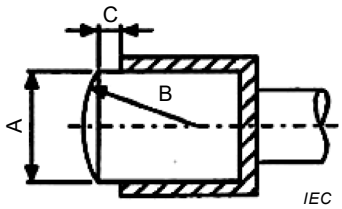
Medium protection conduit and conduit fittings shall be cleaned with a piece of wadding soaked in white spirit.

Figure 3 – Assembly of conduit and conduit fitting for bonding test

Replace the existing title of Figure 3 with the following new title:

Figure 3 – Example of the assembly of conduit and conduit fittings for bonding test

Add, after Figure 8, the following new figure:



Dimensions mm		
A	**B**	**C**
20	20	2

Key	
A	Diameter of piston
B	Head radius

Figure 9 – Test piston and dimensions for rubbing test of marking

Annex

Add, after Annex B, the following new Annex C:

Annex C
(normative)

Additional test requirements for conduit systems already complying with IEC 61386-1:2008

Annex C relates to requirements which have changed between IEC 61386-1:2008 and IEC 61386-1:2008/AMD1:2017. It informs where compliance checks are required to be carried out in order that a conduit system can be declared to meet the requirements of this amendment if it already complies with IEC 61386-1:2008.

Compliance checks are to be carried out only for the following subclauses:

7.1.1

7.3

7.6

Bibliography

Add the following new references:

IEC 60364-4-42:2010, *Low-voltage electrical installations – Part 4-42: Protection for safety – Protection against thermal effects*

IEC 60364-5-52:2009, *Low-voltage electrical installations – Part 5-52: Selection and erection of electrical equipment – Wiring systems*

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