

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

Electric and optical fibre cables – Test methods for non-metallic materials –  
Part 602: Physical tests – Separation of oil in filling compounds  
(standards.iteh.ai)

Câbles électriques et à fibres optiques – Méthodes d'essai pour les matériaux  
non-métalliques –  
Partie 602: Essais physiques – Séparation d'huile dans les matières de  
remplissage



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRIC AND OPTICAL FIBRE CABLES –  
TEST METHODS FOR NON-METALLIC MATERIALS –****Part 602: Physical tests –  
Separation of oil in filling compounds**

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International Standard IEC 60811-602 has been prepared by IEC technical committee 20: Electric cables.

This Part 602 of IEC 60811 cancels and replaces Clause 5 of IEC 60811-5-1:1990, which is withdrawn. Full details of the replacements are shown in Annex A of IEC 60811-100:2012.

There are no specific technical changes with respect to the previous edition, but see the Foreword to IEC 60811-100:2012.

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

FDIS	Report on voting
20/1311/FDIS	20/1360/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.

This part of IEC 60811 shall be used in conjunction with IEC 60811-100.

A list of all the parts in the IEC 60811 series, published under the general title *Electric and optical fibre cables – Test methods for non-metallic materials*, 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- withdrawn,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
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## INTRODUCTION

The IEC 60811 series specifies the test methods to be used for testing non-metallic materials of all types of cables. These test methods are intended to be referenced in standards for cable construction and for cable materials.

NOTE 1 Non-metallic materials are typically used for insulating, sheathing, bedding, filling or taping within cables.

NOTE 2 These test methods are accepted as basic and fundamental and have been developed and used over many years principally for the materials in all energy cables. They have also been widely accepted and used for other cables, in particular optical fibre cables, communication and control cables and cables for ships and offshore applications.

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# ELECTRIC AND OPTICAL FIBRE CABLES – TEST METHODS FOR NON-METALLIC MATERIALS –

## Part 602: Physical tests – Separation of oil in filling compounds

### 1 Scope

This Part 602 of IEC 60811 gives the test methods for separation of oil in filling compounds.

### 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 60811-100:2012, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 100: General*

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### 3 Terms and definitions (standards.iteh.ai)

For the purposes of this document, the terms and definitions given in IEC 60811-100 apply.

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### 4 Test method

#### 4.1 General

This part of IEC 60811 shall be used in conjunction with IEC 60811-100.

Unless otherwise specified, tests shall be carried out at room temperature.

This test is used to examine the amount of oil separation from the filling compound at 50 °C.

#### 4.2 Apparatus

The apparatus comprises an angle box with two rectangular cases conforming to the dimensions shown in Figure 1 and manufactured with a surface finish which will not impede the spread of separated oil.

#### 4.3 Test procedure

The filling compound shall be heated to its clarity point and well stirred. One rectangular case of the angle box is filled with molten compound and the box is transferred into an oven which has been pre-heated to about 100 °C. The oven is then allowed to cool to room temperature keeping its door open.

After at least 24 h of cooling time, the angle box is rotated through 90 ° and the oven is heated to (50 ± 2) °C. After 24 h, the angle box is removed from the oven and examined.



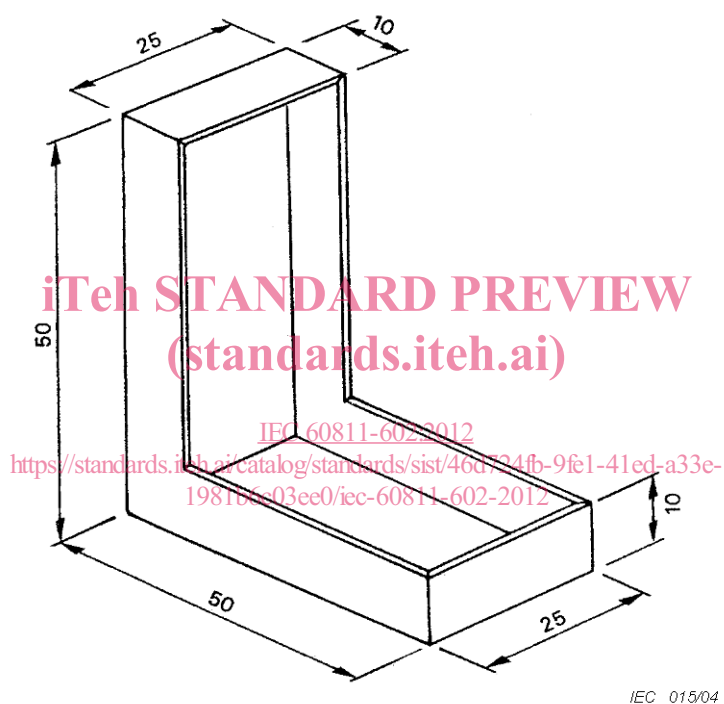
#### 4.4 Expression of results

The distance over which the oil is extended into the unfilled central part shall be measured (i.e. disregarding seepage of oil along the edges of the box) and shall not be greater than the value stated in Annex A.

#### 5 Test report

The test report shall be in accordance with that given in IEC 60811-100.

*Dimension in millimeters*



**Figure 1 – Angle box with two rectangular cases**

**Annex A**  
(normative)

**Requirement**

The oil shall not extend by more than 5 mm.

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## Bibliography

IEC 60811-5-1:1990, *Common test methods for insulating and sheathing materials of electric cables – Part 5: Methods specific to filling compounds – Section One – Drop-point – Separation of oil – Lower temperature brittleness – Total acid number – Absence of corrosive components – Permittivity at 23 °C – DC resistivity at 23 °C and 100 °C*  
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