

Recurrent Tests of Electrical Equipment

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NATIONAL FOREWORD

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ICS 19.080, 29.020

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ICS 19.080; 29.020

English Version

Recurrent Test of Electrical Equipment

Essais récurrents des appareils électriques

Wiederholungsprüfung für elektrische Geräte

This European Standard was approved by CENELEC on 2020-09-21. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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European foreword

This document (EN 50699:2020) has been prepared by CLC/BTTF 160-1 "Recurrent Test of Electrical Equipment".

The following dates are fixed:

- latest date by which this document has (dop) 2021-09-21
to be implemented at national level by
publication of an identical national
standard or by endorsement
- latest date by which the national (dow) 2023-09-21
standards conflicting with this document
have to be withdrawn

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Introduction

This document intends to provide a uniform test procedure to test the effectiveness of the protective measures for electrical safety for recurrent tests of current-using equipment and appliances during their operating life time at work places.

This document can be considered by employers to support compliance with the European Directive 2009/104/EC concerning the minimum safety and health requirements for the use of work equipment by workers at work and does not necessarily involve the manufacturer.

In general, test procedures for verification of products is the responsibility of the related product technical committees. This document can be taken into consideration by product technical committees if they need to take into consideration modified or additional tests for verification of products falling within their scope.”

The described tests are simple and fast, well approved and safe for the testing person.

They can be carried out on site and/or in laboratories.

1 Scope

This document specifies the requirements of the test procedures to be applied for recurrent tests of current-using electrical equipment and appliances for the verification of the effectiveness of the protective measures and the permissible limits

This procedure is applicable to current-using electrical equipment connected at work places to final circuits with a rated voltage above 25 V AC and 60 V DC up to 1 000 V AC and 1 500 V DC, and currents up to 63 A. They can be either pluggable equipment type A connected to final circuits at work places via a plug or permanently connected equipment.

This document assumes that the current-using equipment or appliances under consideration complies with its related product standard, has been introduced on the market and is in use.

This document does not cover:

- tests after repair defined in EN 50678;
- type tests, routine tests, sample tests, special tests and acceptance tests for product safety nor for product functional requirements.

NOTE 1 type tests, routine tests, sample tests, special tests and acceptance tests are usually defined in product standards. This document does not replace tests covered by product standards.

This document does not apply to:

- devices and equipment that are part of the fixed electrical installations defined in HD 60364 (all parts);

NOTE 2 For these devices, tests for initial and periodic verifications are covered by HD 60364-6.

- uninterruptible Power Supply (UPS), photovoltaic inverters and power converters, e.g. AC/DC converters;
- charging stations for electro-mobility;
- stationary power supplies (generators);
- programmable Logic Controllers (PLC);
- power Drives;
- devices for EX-zones or for mining applications in general;
- products already covered by standards addressing similar topics such as:
 - a) medical equipment covered by EN 60601-1. For these devices, EN 62353 applies;
 - b) arc welding equipment covered by EN 60974-1. For these devices, EN 60974-4 applies;
 - c) machinery covered by EN 60204-1. For these devices, EN 60204-1 applies.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 61557-1, *Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 1: General requirements*

EN 61557-2, *Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 2: Insulation resistance*

EN 61557-4, *Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 4: Resistance of earth connection and equipotential bonding*

EN 61557-16, *Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 16: Equipment for testing the effectiveness of the protective measures of electrical equipment and/or medical electrical equipment*

IEC 60417, *Graphical symbols for use on equipment*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

NOTE Some of the definitions are different from those in the product standards for type testing, as different measuring methods are used.

3.1

electrical safety

protection within a piece of equipment which limits the effects of electrical current on a user or other individuals

Note 1 to entry: Safety is defined as freedom from unacceptable risk (refer to ISO 14971:2007, definition 2.24).

3.2

testing

process of visually controlling, measuring or proving the electrical equipment in order to assure that equipment remains safe to use

3.3

electrically skilled person

skilled person

person with relevant education and experience to enable him or her to perceive risks and to avoid hazards which electricity can create

[SOURCE: IEC 195-04-01]