



NSAI
Standards

Irish Standard
I.S. EN 50678:2020&AC:2021-04

General procedure for verifying the effectiveness of the protective measures of electrical equipment after repair

I.S. EN 50678:2020&AC:2021-04

Incorporating amendments/corrigenda/National Annexes issued since publication:

EN 50678:2020/AC:2021-04

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This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

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National Foreword

I.S. EN 50678:2020&AC:2021-04 is the adopted Irish version of the European Document EN 50678:2020, General procedure for verifying the effectiveness of the protective measures of electrical equipment after repair

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

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Corrigendum to EN 50678:2020

English version

Replace the formula in 5.3, "Measurement of protective bonding resistance" with the following formula:

"For cross section areas above 1,5 mm² and other cable lengths the limit shall be calculated by the following formula:

$$R = \rho \frac{l}{A} + 0,1\Omega \text{ or } R = \frac{l}{\kappa A} + 0,1\Omega$$

where

- R is the electrical resistance (Ω);
- ρ is the standard value of electrical resistivity ($\Omega \text{ mm}^2/\text{m}$) for the metal used for the PE conductor;
- l is the length of the cable in meters (m);
- A is the cross-sectional area of the conductor in square millimetres (mm²);
- κ is the electrical conductivity (m/($\Omega \text{ mm}^2$)).

NOTE 2 The value of 0,1 Ω in the equation above considers the influence of the contact resistance."

EN 50678:2020/AC:2021

Replace Figure 3e, "Example of protective conductor current — direct method with clamp" with the following figure:

"

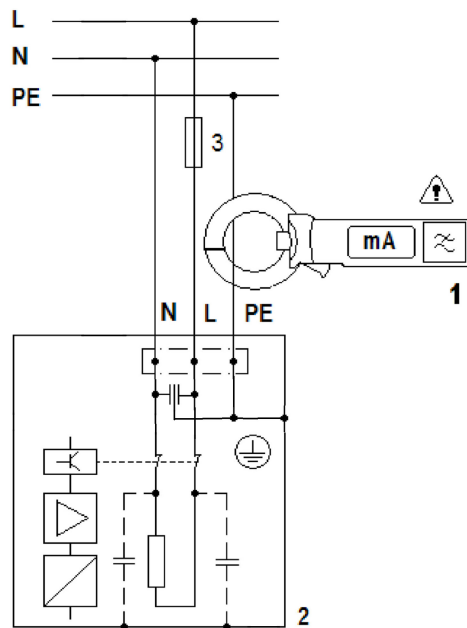


Figure 3e — Example of protective conductor current — direct method with clamp

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April 2021

EUROPEAN STANDARD

EN 50678

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2020

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English Version

General procedure for verifying the effectiveness of the protective measures of electrical equipment after repair

Procédure générale visant à vérifier l'efficacité des mesures de protection des équipements électriques après réparation

Allgemeines Verfahren zur Überprüfung der Wirksamkeit der Schutzmaßnahmen von Elektrogeräten nach der Reparatur

This European Standard was approved by CENELEC on 2019-12-16. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN 50678:2020 (E)

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European foreword

This document (EN 50678:2020) has been prepared by CLC/TC 85X “*Measuring equipment for electrical and electromagnetic quantities*”.

The following dates are fixed:

- latest date by which this document has (dop) 2020-12-16
to be implemented at national level by
publication of an identical national
standard or by endorsement
- latest date by which the national (dow) 2022-12-16
standards conflicting with this document
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EN 50678:2020 (E)

Introduction

This standard intends to provide a general test procedure to verify the effectiveness of the basic protective measures for current-using equipment or appliances after they have been repaired, thus ensuring the safety of people using repaired equipment.

This standard may be considered to support compliance with the European Directive 2009/104/EU concerning the minimum safety and health requirements for the use of work equipment by workers at work.

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

1 Scope

This document specifies requirements for setting a uniform procedure to verify the effectiveness of the protective measures for current-using equipment or appliances after they have been repaired.

This procedure is applicable to current-using equipment or appliances 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, connected to final circuits. They may be either pluggable equipment type A connected or permanently connected.

This document is not intended to replace test covered by safety standards nor product standards, for example type tests, routine tests and acceptance tests.

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

It intends to verify that operations for repairs have not jeopardized basic protective measures, for example to verify the continuity of the protective conductor, the withstand capability of the insulation or to verify that no metallic part is loose or is inadvertently inserted in the device.

This document does not apply to:

- recurrent tests defined in EN 50699;¹
- devices and equipment that are part of the fixed electrical installations. For these, tests for verification after repair are covered by HD 60364-6;
- audio/video, information and communication technology equipment;
- uninterruptible Power Supply (UPS);
- charging stations for electro-mobility;
- power supplies;
- 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:
 - medical equipment covered by EN 60601-1. For these devices, tests for verification after repair are covered by EN 62353;
 - arc welding equipment covered by EN IEC 60974-1. For these devices, tests for verification after repair are covered by EN 60974-4.
 - machinery covered by EN 60204-1. For these devices, EN 60204-1 applies.

¹ Under preparation. Stage at time of publication: prEN 50699:2019.

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