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Soft soldering fluxes — Test methods —

Part 16: Flux efficacy test, wetting balance method

Flux de brasage tendre — Méthodes d'essai —

Partie 16: Essai d'efficacité du flux, méthode à la balance de mouillage

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 12, *Soldering materials*.

This third edition cancels and replaces the second edition (ISO 9455-16:2013), of which it constitutes a minor revision.

The main changes compared to the previous edition are as follows:

— Clause 2 has been updated;

— the coding of the fluxes has been updated in accordance with ISO 9454-1:2016;

— the format of this document has been updated.

A list of all parts in the ISO 9455 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Soft soldering fluxes — Test methods —

Part 16: Flux efficacy test, wetting balance method

1 Scope

This document specifies a method for the assessment of the efficacy of a soft soldering flux, known as the wetting balance method. It gives a qualitative assessment of the comparative efficacy of two fluxes (for example, a standard and a test flux), based on their capacity to promote wetting of a metal surface by liquid solder. The method is applicable to all flux types in liquid form classified in ISO 9454-1.

NOTE It is hoped that future developments using improved techniques for obtaining a reproducible range of test surfaces will enable this method for assessing flux efficacy to be quantitative. For this reason, several alternative procedures for preparing the surface of the test piece are included in the present method.

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.

ISO 9454-1, *Soft soldering fluxes — Classification and requirements — Part 1: Classification, labelling and packaging*

IEC 60068-2-20:2008, *Environmental testing — Part 2-20: Tests — Test T: Test methods for solderability and resistance to soldering heat of devices with leads*

IEC 60068-2-69, *Environmental testing — Part 2-69: Tests — Test Te/Tc: Solderability testing of electronic components and printed boards by the wetting balance (force measurement) method*

IEC 60068-2-78:2012, *Environmental testing — Part 2-78: Tests; Test Cab: Damp heat, steady state*

3 Terms and definitions

No terms and definitions are listed in this document.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Symbols

d depth of immersion, in millimetres, of the test piece below the undisturbed solder level

A cross-sectional area, in square millimetres, of the test piece at the solder line

ρ density, in grams per millilitre, of the solder under test at the test temperature

F wetting force, in millinewtons