



Handläggande organ	Fastställt	Utgåva	Sida
SVENSK MATERIAL- & MEKANSTANDARD, SMS	2000-02-18	1	1 (1+6)

© Copyright SIS. Reproduction in any form without permission is prohibited.

Soft soldering fluxes – Test methods – Part 13: Determination of flux spattering (ISO 9455-13:1996)

The European Standard EN ISO 9455-13:1999 has the status of a Swedish Standard. This document contains the official English version of EN ISO 9455-13:1999.

Swedish Standards corresponding to documents referred to in this Standard are listed in "Catalogue of Swedish Standards", issued by SIS. The Catalogue lists, with reference number and year of Swedish approval, International and European Standards approved as Swedish Standards as well as other Swedish Standards.

Fluss för mjuklödning – Provningsmetoder – Del 13: Bestämning av flusstänk (ISO 9455-13:1996)

Europastandarden EN ISO 9455-13:1999 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN ISO 9455-13:1999.

Motsvarigheten och aktualiteten i svensk standard till de publikationer som omnämns i denna standard framgår av "Katalog över svensk standard", som ges ut av SIS. I katalogen redovisas internationella och europeiska standarder som fastställts som svenska standarder och övriga gällande svenska standarder.

ICS 25.160.50

Standarder kan beställas hos SIS Förlag AB som även lämnar allmänna upplysningar om svensk och utländsk standard.
Postadress: SIS, Box 6455, 113 82 STOCKHOLM
Telefon: 08 - 610 30 00. Telefax: 08 - 30 77 57
E-post: sis.sales@sis.se. Internet: www.sisforlag.se

Upplysningar om **sakinnehållet** i standarden lämnas av SMS.
Telefon: 08 - 459 56 00. Telefax: 08 - 667 85 42
E-post: info@sms-standard.se

Prisgrupp L

Tryckt i maj 2000

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 9455-13

April 1999

ICS 25.160.50

English version

Soft soldering fluxes - Test methods - Part 13: Determination of flux spattering (ISO 9455-13:1996)

Flux de brasage tendre - Méthodes d'essai - Partie 13:
Détermination de projections de flux (ISO 9455-13:1996)

Flußmittel zum Weichlöten - Prüfverfahren - Teil 13:
Bestimmung von Flußmittelspritzern (ISO 9455-13:1996)

This European Standard was approved by CEN on 22 March 1999.

CEN 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 Central Secretariat or to any CEN 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 CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword

The text of the International Standard from Technical Committee ISO/TC 44 "Welding and allied processes" of the International Organization for Standardization (ISO) has been taken over as an European Standard by Technical Committee CEN/TC 121 "Welding", the secretariat of which is held by DS.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 1999, and conflicting national standards shall be withdrawn at the latest by October 1999.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 9455-13:1996 has been approved by CEN as a European Standard without any modification.

NOTE: Normative references to International Standards are listed in annex ZA (normative).

Soft soldering fluxes — Test methods —

Part 13: Determination of flux spattering

1 Scope

This part of ISO 9455 describes a method for estimating the tendency of a flux to spatter in use. It is a qualitative (comparative) method and is only applicable to liquid fluxes, as defined in ISO 9454-1.

The method is not applicable to flux cored solder wire, or to solder pastes.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 9455. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 9455 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3574:1986, *Cold-reduced carbon steel sheet of commercial and drawing qualities*.

ISO 9453:1990, *Soft solder alloys — Chemical compositions and forms*.

ISO 9454-1:1990, *Soft soldering fluxes — Classification and requirements — Part 1: Classification, labelling and packaging*.

3 Principle

A measured amount of the liquid flux under test is placed on a specimen plate of sheet steel. The plate is heated on a solder bath and the plate examined visually for evidence of spattering of the flux.

4 Apparatus and materials

Usual laboratory apparatus and, in particular, the following.

4.1 Solder bath, of rectangular cross-section, approximately 150 mm × 100 mm, containing at least 4 kg of tin-lead solder (such as ISO 9453, grade S-Sn63Pb37) having a liquidus less than 200 °C. The depth of the solder shall be such that the liquid surface of the solder is not greater than 5 mm from the bath rim. The bath shall be capable of being maintained at a temperature of (400 ± 10) °C.

4.2 Specimen plates, cut from 1 mm thick unalloyed steel sheet, deep drawing quality, conforming to ISO 3574. The plates are to be cut to size, such that the length and width are 10 mm larger than the corresponding dimensions of the solder bath (4.1).

4.3 Silicon carbide cloth, 180 grade.

5 Procedure

Adjust the temperature of the solder in the solder bath (4.1) to (400 ± 10) °C. Ensure that the level of the solder in the bath is $4 \text{ mm} \pm 1 \text{ mm}$ below the level of the rim of the bath.

Carry out the following procedure on three specimen plates (4.2).

Using the silicon carbide cloth (4.3), clean the surface of each specimen plate immediately before testing in order to remove all oxidation and contamination from the steel.

By means of a fine graduated pipette, transfer $(0,1 \pm 0,01)$ ml of the liquid test flux to the centre of one of the specimen plates.

Immediately after application of the flux, carefully place the specimen plate, flux upwards, on the rim of the solder bath, such that it covers the rim completely. During these operations, ensure that the solder bath is located in still air conditions.

Remove the plate after 3 min and examine it visually for evidence of spattering.

Repeat this procedure for each of the two remaining specimen plates, whilst maintaining the solder bath temperature at (400 ± 10) °C.

6 Expression of results

The average result obtained from the three tests is assessed, compared with figure 1, and reported as either "no spattering" or "spattering occurs". Alternatively, a reference flux of known satisfactory performance may be subjected to the same procedure as described in clause 5, and the average spattering rating of the test flux reported as "equal to", "better than" or "worse than" the average for the reference flux.

7 Test report

The test report shall include the following information:

- a) the identification of the flux test sample;
- b) the test method used (i.e. reference to this part of ISO 9455);
- c) the results obtained from the test, either in absolute terms, or by comparison with a reference flux, the details of which should be given;
- d) any unusual features noted in the test;
- e) details of any operation not specified in the method, or any optional operation which may have influenced the result.