

This document is a preview generated by EVS

**Solder wire, solid and flux cored -  
Specification and tests methods - Part 3:  
Wetting balance test method for flux cored  
solder wire efficacy**

Solder wire, solid and flux cored - Specification and tests methods - Part 3: Wetting balance test method for flux cored solder wire efficacy

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 12224-3:2003 sisaldab Euroopa standardi EN ISO 12224-3:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 17.09.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 12224-3:2003 consists of the English text of the European standard EN ISO 12224-3:2003.</p> <p>This document is endorsed on 17.09.2003 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
--	---

<p><b>Käsitlusala:</b> This part of ISO 12224 specifies a wetting balance test method for measuring the flux efficacy of a cores solder wire for the electronics industry. The test is applicable to all classes of flux listed in ISO 9454-1</p>	<p><b>Scope:</b> This part of ISO 12224 specifies a wetting balance test method for measuring the flux efficacy of a cores solder wire for the electronics industry. The test is applicable to all classes of flux listed in ISO 9454-1</p>
---	---

**ICS** 25.160.50

**Võtmesõnad:** deter, effects, electronics industry, filler wires, fluxes (materials), interpretations, measuring instruments, measuring of wetting power, solder wires, soldering, solderings, solders, specification (approval), specifications, testing, wetting, wetting balances

**English version**

**Solder wire, solid and flux cored – Specifications and  
test methods**

**Part 3: Wetting balance test method for flux cored solder wire efficacy  
(ISO 12224-3 : 2003)**

Fils d'apport de brasage, pleins et à flux incorporé – Spécifications et méthodes d'essai – Partie 3: Méthodes d'essai à la balance de mouillage de l'efficacité des fils à flux incorporé (ISO 12224-3 : 2003)

Massive Lotdrähte und flussmittelgefüllte Röhrenlote – Anforderungen und Prüfverfahren – Teil 3: Bestimmung der Flussmittelwirkung von flussmittelgefüllten Röhrenloten mit der Benetzungswaage (ISO 12224-3 : 2003)

This European Standard was approved by CEN on 2003-04-16.

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 Management Centre or to any CEN member.

The European Standards exist 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 Management Centre has the same status as the official versions.

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

**CEN**

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

**Management Centre: rue de Stassart 36, B-1050 Brussels**

## Foreword

International Standard

ISO 12224-3 : 2003 Solder wire, solid and flux cored – Specifications and test methods – Part 3: Wetting balance test method for flux cored solder wire efficacy,

which was prepared by ISO/TC 44 'Welding and allied processes' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 121 'Welding', the Secretariat of which is held by DS, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by November 2003 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, the Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland, and the United Kingdom.

## Endorsement notice

The text of the International Standard ISO 12224-3 : 2003 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative.)

## 1 Scope

This part of ISO 12224 specifies a wetting balance test method for measuring the flux efficacy of a cored solder wire for the electronics industry. The test is applicable to all classes of flux listed in ISO 9454-1.

## 2 Normative references

The following referenced documents are indispensable for the application 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*

ISO 9455-16:1998, *Soft soldering fluxes — Test methods — Part 16: Flux efficacy tests, wetting balance method*

IEC 60068-2-54, *Environmental testing. Part 2: Tests. Test Ta: Soldering — Solderability testing by the wetting balance method*

## 3 Principle

A copper coupon and flux cored solder wire are simultaneously immersed in a bath of molten solder alloy that releases the flux to be tested by the coupon. It is subjected to a group of buoyancy forces due to Archimedian thrust and the different surface tensions at the alloy/flux/test specimen interfaces. Data are collected on wetting forces versus time which represent the meniscus, and therefore the wetting angle  $\theta$ , the wetting speed and the total wetting performance, i.e. the efficacy of the flux cored solder wire.

## 4 Apparatus

**4.1 Solder bath**, containing the alloy capable of reaching test temperature (see Figure 1 and 6.3).

**4.2 Wetting balance**, and ancillary instrumentation, conforming to IEC 60068-2-54.

**4.3 Stainless steel crucible** (see Figures 1 and 2).