

Plastid. Põlevuskatsed. Standardised süüteallikad

Plastics - Fire tests - Standard ignition sources

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 10093:1999 sisaldab Euroopa standardi EN ISO 10093:1998 ingliskeelset teksti.

Käesolev dokument on jõustatud 12.12.1999 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN ISO 10093:1999 consists of the English text of the European standard EN ISO 10093:1998.

This document is endorsed on 12.12.1999 with the notification being published in the official publication of the Estonian national standardisation organisation.

The standard is available from Estonian standardisation organisation.

Käsitlusala:

Standard kirjeldab ning liigitab laboratoorseid süüteallikaid, mida kasutatakse plastide ja peamiselt plastidest koosnevate materjalide põlevuse katsetamiseks. Need süüteallikad erinevad oma intensiivsuse ja toimeulatuse poolest. Nende abil saab matkida termilist väärkäitumist, mille toime kätte plastid tegeliku tuleohu korral sattuda võivad.

Scope:

ICS 13.220.40, 83.080.01

Võtmesõnad: katsed, katseseadmed, plastid, põlevuskatsed, süttimine, süüteallikad (tuli)

ICS 73.220.00; 83.080.10

Descriptors: Plastics, fire testing, ignition sources.

English version

Plastics – Fire tests
Standard ignition sources
(ISO 10093 : 1998)

Plastiques – Essai au feu –
Catégories de sources d'allumage
(ISO 10093 : 1998)

Kunststoffe – Brandprüfungen –
Standard-Zündquellen
(ISO 10093 : 1998)

This European Standard was approved by CEN on 1998-11-01.

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.

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 Central Secretariat 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, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

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

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

Foreword

International Standard

ISO 10093 : 1998 Plastics – Fire tests – Standard ignition sources, which was prepared by ISO/TC 61 ‘Plastics’ of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 249 ‘Plastics’, the Secretariat of which is held by IBN, 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 May 1999 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, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 10093 : 1998 was approved by CEN as a European Standard without any modification.

Contents	Page
1 Scope	4
2 Normative references	4
3 Definitions	5
4 Ignition processes	7
5 Characteristics of ignition sources.....	7
6 Experimental principles	7
7 Ignition sources	8
Annex A (informative) Confirmatory procedure for evaluating test flames	22
Annex B (informative) Bibliography	25

Introduction

Fires are caused by a wide range of possible ignition sources. Statistical analysis of fires has identified the main primary and secondary sources, especially for fires in buildings. The most frequent sources of fires have been found to be as follows:

- a) cooking appliances;
- b) space-heating appliances;
- c) electric wiring, connectors and terminations;
- d) other electrical appliances (such as washing machines, bedwarmers, televisions, water heaters);
- e) cigarettes;
- f) matches and smokers' gas lighters;
- g) blow-lamps, blow-torches and welding torches;
- h) rubbish burning;
- i) candles.

The above list covers the major primary ignition sources for accidental fires. Other sources may be involved in fires raised maliciously. Research into causes of fires has shown that primary ignition sources (e.g. glowing cigarettes or dropped flaming matches) can set fire to waste paper, which then acts as a secondary ignition source of greater intensity.

When analysing and evaluating the various ignition sources for applications involving plastics materials, the following questions need to be answered on the basis of detailed fire statistics:

- a) What is the significance of the individual ignition sources in various fire risk situations?
- b) What proportion is attributable to secondary ignition sources?
- c) Where does particular attention have to be paid to secondary ignition sources?
- d) To what extent are different ignition sources responsible for fatal fire accidents?

The following laboratory ignition sources are intended to simulate actual ignition sources that have been shown to be the cause of real fires involving plastics. Laboratory ignition sources are preferred over actual ignition sources due to their consistency which results in greater data repeatability within a laboratory and greater reproducibility between laboratories.

These laboratory ignition sources may be used to develop new test procedures.

1 Scope

This International Standard describes and classifies a range of laboratory ignition sources for use in fire tests on plastics and products consisting substantially of plastics. These sources vary in intensity and area of impingement. They may be used to simulate the initial thermal abuse to which plastics may be exposed in certain actual fire risk scenarios.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard 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 1337:1980, *Wrought coppers (having minimum copper contents of 99,85 %) — Chemical composition and forms of wrought products*.

ISO 5657:1997, *Reaction to fire tests — Ignitability of building products using a radiant heat source*.

ISO 8191-1:1987, *Furniture — Assessment of the ignitability of upholstered furniture — Part 1: Ignition source: smouldering cigarette*.

ISO 8191-2:1988, *Furniture — Assessment of the ignitability of upholstered furniture — Part 2: Ignition source: match-flame equivalent*.

ISO 9705:1993, *Fire tests — Full-scale room test for surface products*.

ISO 11925-2:1997, *Reaction to fire tests — Ignitability of building products subjected to direct impingement of flame — Part 2: Single flame source test*.

IEC 60332-3:1992, *Tests on electric cables under fire conditions — Part 3: Tests on bunched wires or cables*.

IEC 60695-2-1/0:1994, *Fire hazard testing — Part 2: Test methods — Section 1/sheet 0: Glow-wire test methods — General*.

IEC 60695-2-2:1991, *Fire hazard testing — Part 2: Test methods — Section 2: Needle-flame test*.

IEC 60695-2-4/1:1991, *Fire hazard testing — Part 2: Test methods — Section 4/sheet 1: 1 kW nominal pre-mixed test flame and guidance*.

IEC 60695-2-4/2:1994¹⁾, *Fire hazard testing — Part 2: Test methods — Section 4/sheet 2: 500 W nominal test flames and guidance*.

IEC 60695-2-20:1995, *Fire hazard testing — Part 2: Glowing/Hot wire based test methods — Section 20: Hot-wire coil ignitability test on materials*.

1) Future editions of this standard are expected to be published under the designation IEC 60695-11-3.