Irish Standard
I.S. EN 13772:2011

Textiles and textile products - Burning behaviour - Curtains and drapes - Measurement of flame spread of vertically oriented specimens with large ignition source

I.S. EN 13772:2011

Incorporating amendments/corrigenda/National Annexes issued since publication:

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I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

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SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces:
EN 13772:2003

This document is based on:
EN 13772:2011

Published:
27 January, 2011

This document was published under the authority of the NSAI and comes into effect on:
27 January, 2011

ICS number:
13.220.40
97.160
59.080.30

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I.S. EN 13772:2011

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13772

January 2011

ICS 13.220.40; 59.080.30; 97.160

Supersedes EN 13772:2003

English Version

Textiles and textile products - Burning behaviour - Curtains and drapes - Measurement of flame spread of vertically oriented specimens with large ignition source

Textiles et produits textiles - Comportement au feu - Rideaux et tentures - Mesurage de la propagation de flamme d'éprouvettes orientées verticalement, avec une source d'allumage importante

Textilien und textile Erzeugnisse - Brennverhalten - Vorhänge und Gardinen - Messung der Flammenausbreitungseigenschaften von vertikal angeordneten Messproben mit großer Zündquelle

This European Standard was approved by CEN on 3 December 2010.

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Ref. No. EN 13772:2011: E

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Foreword

This document (EN 13772:2011) has been prepared by Technical Committee CEN/TC 248 “Textiles and textile products”, the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by July 2011, and conflicting national standards shall be withdrawn at the latest by July 2011.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13772:2003.

The main differences between this standard and the previous version are:

— all three marker threads shall be used;

— tolerances for the position of the electric radiator and for the tension of the marker threads have been introduced;

— the metal grid below the specimen has been defined more precisely;

— major adjustments to the cleansing procedure.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

In order to assess the burning behaviour of curtains and drapes two test methods were established, i.e. EN 1101 for the measurement of ignitability (based on EN ISO 6940) and EN 1102 for the measurement of flame spread (based on EN ISO 6941).

EN ISO 6941 measures the flame spread of vertically oriented specimens exposed to a defined small flame**.** This allows the flame spread properties of ignitable products to be determined. Nevertheless this test method is not suitable to assess products that do not ignite. The measurement of the length or area destroyed by the small flame is questionable as shown by round robin testing. There is a risk that products which pass the small flame test, can still be ignited with a larger ignition source.

The equipment used in EN ISO 6941 has therefore been modified by adding a radiator, which radiates on the lower part of the specimen in order to boost locally and temporarily the ignition of the specimen. The combination of this radiation and the small flame application simulates the action from a larger flaming source. With this combined ignition source some materials, not ignitable with the small flame, may ignite. Some of these will self extinguish, when the action from the ignition source has ceased, while others will self-propagate.

For this purpose, a European research project (CT 96-2057) was set up to establish a small scale test method for assessing the burning behaviour of curtains and drapes using a large ignition source. Reaction to fire parameters like smoke development, heat release and toxic components were not taken into account. The project involved eleven laboratories from nine European countries.

In order to select the relevant characteristics of burning behaviour in terms of classification and to assess the repeatability and reproducibility, 15 samples of commercially available fabrics representative for the main product groups on the market were tested with the large ignition source test method. Most of them had a flame retardant treatment or coating. The material selection included standard and fire retardant polyester, cotton, modacryl, wool, chlorofibre and glass fibre and represented different structures and fibre blends.

The occurrence of flaming debris, the severance of marker threads and the time to sever marker threads (first and third threads) were selected as representative parameter to assess the burning behaviour of the samples. Other burning behaviour characteristics such as after-flame and after-glow times did not bring any extra relevant information and were discarded.

An inter-laboratory test was conducted in 1997 with ten laboratories, each testing 15 materials. Repeatability and reproducibility were assessed through statistical analysis. Consequently, some improvements were introduced in the method. Good agreement was also found with national test methods in use in various European countries or regions (France, Germany, Belgium, the Netherlands, Italy, Scandinavia and the United Kingdom).