BS EN 1021-1:2014

BSI Standards Publication

Furniture — Assessment of the ignitability of upholstered furniture

Part 1: Ignition source smouldering cigarette

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee FW/6, Flammability performance and fire tests for furniture.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Foreword

This document (EN 1021-1:2014) has been prepared by Technical Committee CEN/TC 207 “Furniture”, the secretariat of which is held by UNI.

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of an identical text or by endorsement, at the latest by February 2015 and conflicting national standards shall be withdrawn at the latest by February 2015.

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 1021-1:2006.

The main changes in relation to the 2006 edition of EN 1021-1 are:

— Modification to the specification of the weight of the ignition source;

— Modification to the test procedure to allow for a third ignition source to be placed on the test sample if either of the two initial ignition sources self extinguish prior to the completion of the test.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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Introduction

This European Standard is one of a series of standards concerned with the ignitability of upholstered furniture using different ignition sources. The ignition source used in this European Standard is a smouldering cigarette.

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1 Scope

This European Standard specifies a test method to assess the ignitability of material combinations, such as covers and fillings used in upholstered seating, when subjected to a smouldering cigarette as an ignition source.

The test measures only the ignitability of a combination of materials used in upholstered seating and not the ignitability of a particular finished item of furniture incorporating these materials.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1
progressive smouldering
exothermic oxidation, not accompanied by flaming, that is self-propagating, i.e. independent of the ignition source. It may or may not be accompanied by incandescence

2.2
flaming
undergoing combustion in the gaseous phase with the emission of light

2.3
flammability
ability of a material or product to burn with a flame under specified test conditions

2.4
ignitability
measure of the ease with which a material, product or component can be ignited so as to flame or progressively smoulder

2.5
ignition source
source of energy used to ignite combustible materials or products

2.6
outer cover
outer layer of the upholstery

2.7
inner cover
layer of material used between the outer cover and the upholstery filling whose nominal thickness is less than or equal to 2 mm

Note 1 to entry: Any inner cover nominally greater than 2 mm thick is considered an upholstery filling.

2.8
filling
main upholstery material contained by the outer cover and (if used) the inner cover which may consist of several different materials, including any inner cover nominally greater than 2 mm thick

3 Criteria of ignition

3.1 Progressive smouldering ignition

For the purposes of this European Standard, all the following types of behaviour are considered to be progressive smouldering ignitions:

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a) any test assembly that displays escalating combustion behaviour so that it is unsafe to continue the test and active extinction is necessary;

b) any test assembly that smoulders until it is largely consumed within the test duration;

c) any test assembly that smoulders to the extremities of the specimen, viz. upper or lower margins, either side or to its full thickness, within the duration of the test;

d) any test assembly that smoulders after one hour from the application of the ignition source;

e) any test assembly that, on final examination (see 9.3), shows evidence of progressive smouldering.

NOTE In practice it has been found that there is usually a clear distinction between materials which may char under the influence of the ignition source but which do not propagate further (non-progressive combustion) and those where smouldering develops in extent and spreads (progressive combustion).

3.2 Flaming ignition

For the purposes of this European Standard, a flaming ignition is considered to be the occurrence of any flames initiated by a smouldering source.

4 Principle

To subject an assembly of upholstery materials to a smouldering ignition source. The assembly is arranged to represent in stylised form a junction between a seat and back (or seat and arm) such as might occur in a typical chair. The ignitability of an assembly is determined by applying a smouldering ignition source such as a cigarette. The test method measures the ignitability of the overall composite of materials, i.e. outer cover, inner cover, filling etc., as constructed on the test rig. The tests give an indication of, but cannot guarantee, the ignition behaviour of the finished item of furniture. The results shall not be stated as being applicable to the general behaviour of any individual component (see also Annex A).

NOTE Test specimens prepared from materials taken from furniture that has been used may give different results to the same materials before use.

5 Health and safety of operators

5.1 General

The test method specified in this European Standard presents a considerable hazard; suitable precautions shall be taken.

5.2 Enclosure

For safety, the test should be conducted in a non-combustible fume cupboard. If such a cupboard is not available, a test enclosure should be constructed (see 6.2) so that the operator is protected from the fumes.

5.3 Extinguishers

Adequate means of extinguishing the assembly should be provided bearing in mind that some combinations may produce severe flaming during the test. A hand and/or fixed water spray which can be directed over the burning area can be useful. Other means such as suitable fire extinguishers, fire blankets and a bucket of water will assist.

In some cases smouldering may be difficult to extinguish completely and complete immersion in water may be necessary.

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