
Pohištvo - Ocenjevanje vžigljivosti oblazinjenega pohištva - 2. del: Vir vžiga: enakovreden plamenu vžigalice

Furniture - Assessment of the ignitability of upholstered furniture - Part 2: Ignition source match flame equivalent

Möbel - Bewertung der Entzündbarkeit von Polstermöbeln - Teil 2: Eine einem Streichholz vergleichbare Gasflamme als Zündquelle

Ameublement - Evaluation de l'allumabilité des meubles rembourrés - Partie 2: Source d'allumage flamme équivalente à une allumette

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ICS:

13.220.40	Sposobnost vžiga in obnašanje materialov in proizvodov pri gorenju	Ignitability and burning behaviour of materials and products
97.140	Pohištvo	Furniture

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EUROPEAN STANDARD
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**Furniture - Assessment of the ignitability of upholstered furniture
- Part 2: Ignition source match flame equivalent**

Ameublement - Évaluation de l'allumabilité des meubles
rembourrés - Partie 2 : Source d'allumage : flamme
équivalente à celle d'une allumette

Möbel - Bewertung der Entzündbarkeit von Polstermöbeln -
Teil 2: Eine einem Streichholz vergleichbare Gasflamme als
Zündquelle

This European Standard was approved by CEN on 28 June 2014.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 1021-2:2014) 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 1021-2:2006.

The main changes in relation to the 2006 edition of EN 1021-2 are:

- The standard has been aligned with EN 1021-1;
- A tolerance has been added to the temperature of the gas flame;
- Clarification of the gas supply required to production ignition source 1.

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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EN 1021-2:2014 (E)**Introduction**

This European Standard is one of a series of standards concerned with the ignitability of upholstered furniture using various ignition sources. The ignition source used in this European Standard is a gas flame equivalent to a match flame.

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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 small flame 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.

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EN 1021-2:2014 (E)

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:

- a) any test assembly that displays escalating combustion behaviour so that it is unsafe to continue and 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, all the following types of behaviour are considered to be flaming ignitions:

- 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 burns until it is essentially consumed within the test duration;
- c) any test assembly on which any flame front reaches the lower margin, either side or passes through its full thickness within the duration of the test;
- d) any flaming which continues for more than 120 s after removal of the burner tube.

4 Principle

To subject an assembly of upholstery materials to a gas flame 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 gas flame equivalent to a burning match. 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.

6 Apparatus

6.1 Test rig

A suitable test rig is illustrated in Figures 1 and 2. It shall consist of two rectangular frames hinged together and capable of being locked at right angles to each other.

The sides and hinge edges of the frames shall be made from nominal 25 mm x 3 mm flat steel bar and shall securely hold mesh steel platforms set (6 ± 1) mm below the top edge of the frames (mesh size should be such that an open mesh area of approximately 15 mm² to 150 mm² exists).

The upper edge of the vertical frame and the front edge of the horizontal frame shall be steel end plates 450 mm x 65 mm x 3 mm to prevent the test filling moving during the assembly of the test specimen (see Figures 1 and 2).

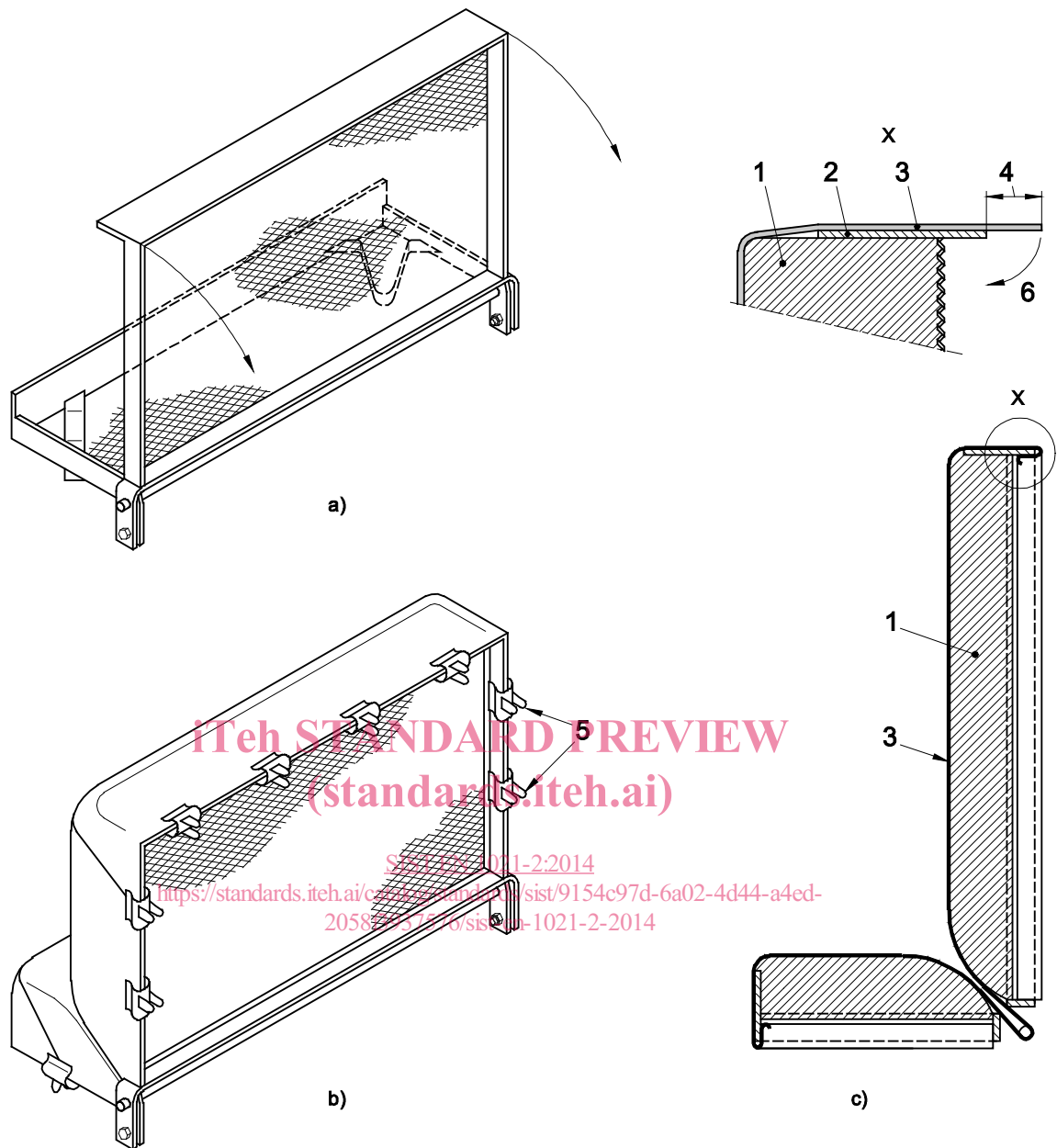
The internal width and height of the back frame shall be (450 ± 2) mm x (300 ± 2) mm and the width and depth of the base frame (450 ± 2) mm x (150 ± 2) mm. A standard edging section may be used around the mesh steel platform to give protection and greater rigidity.

The sides of the frame shall extend beyond the back of each frame to provide for the hinge holes and to form the back legs. The hinge rod shall be of nominal 10 mm diameter steel, continuous across the back of the rig and its axis $(22,5 \pm 0,5)$ mm beyond the back member of each frame.

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Key

- a) test rig
- b) test rig with cover and fillings
- c) vertical section
- X detail of fitting cover to frame
- 1 filling
- 2 end plate of frame
- 3 cover
- 4 overlap 20 mm
- 5 clips
- 6 fold cover overlap under frame to touch the steel mesh supporting the filling and fasten with clips as below

Figure 1 — Test rig assembly