SLOVENSKI STANDARD
SIST EN 15254-6:2014

01-marec-2014

Razširjena uporaba rezultatov preskusov požarne odpornosti - Nenosilne stene - 6. del: Obešene fasade

Extended application of results from fire resistance tests - Non-loadbearing walls - Part 6: Curtain walling

Erweiterter Anwendungsbereich der Ergebnisse von Feuerwiderstandsprüfungen - Nichttragende Wände - Teil 6: Vorhangfassaden

Application étendue des résultats d'essais de résistance au feu - Murs non porteurs - Partie 6: Façades rideaux

Ta slovenski standard je istoveten z: **EN 15254-6:2014**

ICS:

13.220.50	Požarna odpornost gradbenih materialov in elementov	Fire-resistance of building materials and elements
91.060.10	Stene. Predelne stene. Fasade	Walls. Partitions. Facades

SIST EN 15254-6:2014 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 15254-6

January 2014

ICS 13.220.50; 91.060.10

English Version

Extended application of results from fire resistance tests - Non-loadbearing walls - Part 6: Curtain walling

Application étendue des résultats d'essais de résistance au feu - Murs non porteurs - Partie 6: Murs rideaux

Erweiterter Anwendungsbereich der Ergebnisse von Feuerwiderstandsprüfungen - Nichttragende Wände - Teil 6: Vorhangfassaden

This European Standard was approved by CEN on 9 November 2013.

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 CEN-CENELEC Management Centre or to any CEN member.

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.

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

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

Ref. No. EN 15254-6:2014 E

Contents

Page

Foreword

This document (EN 15254-6:2014) has been prepared by Technical Committee CEN/TC 127 “Fire Safety in buildings”, 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 2014, and conflicting national standards shall be withdrawn at the latest by July 2014.

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 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of 89/106/EEC.

According to the CEN/CENELEC Internal Regulations, the national standards organisations 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.

1 Scope

This European Standard provides guidance and, where appropriate, defines procedures for variations of certain parameters and factors associated with the design of curtain walling according to EN 13830 which have been tested in accordance with EN 1364-3 and classified according to EN 13501-2 (curtain walling type B according to 3.2), components of curtain walling type A or type B according to 3.1 and 3.2, e.g. spandrel panels, which have been tested in accordance with EN 1364-4, and classified according to EN 13501-2.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1363-1, *Fire resistance tests - Part 1: General Requirements*

EN 1363-2, *Fire resistance tests - Part 2: Alternative and additional procedures*

EN 1364-3:2014, *Fire resistance tests for non-loadbearing elements — Part 3: Curtain walling — Full configuration (complete assembly)*

EN 1364-4:2014, *Fire resistance tests for non-loadbearing elements — Part 4: Curtain walling — Part configuration*

EN 13119, *Curtain walling - Terminology*

EN 13501-2, *Fire classification of construction products and building elements — Part 2: Classification using data from fire resistance tests, excluding ventilation services*

EN 13830, *Curtain walling - Product standard*

EN ISO 13943, *Fire safety - Vocabulary (ISO 13943)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1363-1, EN 1363-2, EN 1364-3, EN 1364-4, EN 13119, EN 13830, EN ISO 13943 and the following apply.

3.1
curtain walling Type A
for definition see EN 1364-3

3.2
curtain walling Type B
for definition see EN 1364-3

3.3
vertically faceted curtain walling
curtain walling with a vertical and a sloped part without fixing/bracket at the joint (see Figure 1)

4 Principles

4.1 General principles

Extended application is a prediction of the expected fire resistance performance of a fire resistant curtain walling or its components. It may be based either on interpolation between or extrapolation from test data according to EN 1364-3 and/or EN 1364-4.

Curtain walling function as integral systems in which the individual components (e.g. frames and fixing of the framing system (anchoring), infill panels, perimeter seals and vertical linear gap seals) are combined in such a way that they are effective in meeting the defined fire resistance criteria. In this document in addition to rules for the complete construction rules are defined for the components of curtain walling which are separately characterised as the framing system, the fixing of the framing system (anchoring), the infill panels and its fixing methods, the perimeter seal and the vertical linear gap seals as well as the supporting construction (floor and walls).

4.2 Use of test evidence

The applicant for the extended application shall either be the “owner” (i.e. sponsor) of all test data being submitted for the extension, or have written permission from the owner to use the submitted test evidence.

4.3 Analysis of test results

In order to maximise the extended field of application, it is important that the test reports shall record details of any premature integrity and / or insulation failure.

Where a series of tests have been conducted, the field of extended application shall be based on the lowest performance achieved from the complete series of tests unless premature failure has been attributed to one or more specific construction parameter variations.

Where it has been possible, to identify specific parameter failures, the extended application for all other construction parameter variations can be based on the performance achieved after isolating the premature failure(s).

5 General rules

5.1 Fire resistance classification

In the extended application, an increase in the classification time (e.g. from 30 min to 45 min) and changes to the fire resistance classification (e.g. from E to EW to EI) are not permitted.

5.2 Combination of extended application

Each extended application shall be the subject of a separate evaluation. Within this application it is allowed to produce a combination of extensions provided these combinations can be substantiated by the supporting test evidence.

5.3 Overrun time

For some rules to be applicable an overrun time in the fire test result compared to the envisaged classification time is required. The required overrun time is shown in Table 1. The overrun time is required for the following criteria:

— E classification: integrity

— EW classification: integrity and radiation

— EI classification: integrity and insulation

Table 1 – Overrun time

Classification Time	Overrun time
≤ 20 min	minimum 3 min
30, 45 and 60 min	minimum 6 min
≥ 90 min	minimum 10 % of the classification time

6 Specific rules for curtain walling type B

6.1 General

Minimum one test according to EN 1364-3 is required. The assessment of the extended field of application may be based on additional test results from EN 1364-4 or EN 1364-3. The rules given in 6.2 to 6.4 apply to stick constructions only except where stated otherwise.

Rules which result in higher weight of the curtain walling are only applicable if the fixing of the framing system used in practice has been designed for the higher load. The measured temperature at the fixing of the framing system shall be taken into account.

6.2 Rules for the complete construction

6.2.1 Width for curtain walling with classification EW

Test results are also valid for curtain walling with classification EW extending over one or more fire separating walls with a higher distance between the fire separating walls than the width of the tested construction if in addition to the criteria given in EN 1364-3 the radiation criterion is fulfilled for the resulting larger area. The radiation criterion shall be assessed using the rules given in A.1. The result of a calculation for a width equalling three times the tested width or minimum 9 m, whatever is larger, is applicable to any larger width.

An increase in width is only permitted by replicating the tested construction (especially type and dimensions of infill panels) in the same arrangement as tested.

6.2.2 Span length for curtain walling with classification EW

Test results are also valid for curtain walling with classification EW for a higher span length than used in the test if in addition to the criteria given in EN 1364-3 the radiation criterion is fulfilled for the resulting larger area. The radiation criterion shall be assessed using the rules given in A.1. This rule applies also to unitised constructions.

6.2.3 Installation angle (vertical/sloped)

Test results cover all installation angles between the maximum and minimum angle used in tests. This rule applies also to unitised constructions.

6.2.4 Vertically faceted curtain walling

Test results cover all angles between vertically adjacent infill panels between the maximum and minimum angle used in tests. This rule applies also to unitised constructions.

6.2.5 Horizontally faceted curtain walling

For corners and facet angles not covered by the rules given in EN 1364-3 the following rules apply:

EI classification: Results from tests of faceted specimens according to EN 1364-3 using the test configurations A and B or alternatively E as illustrated in EN 1364-3:2014, Figure 8 and from minimum one test of a straight specimen cover all angles between horizontally adjacent infill panels at the common mullion from 45° to 315° (see Figure 2) with classification EI (o ↔ i).

E, EW classification: Results from tests of faceted specimens according to EN 1364-3 using the test configurations A, B, C and D or alternatively E and F as illustrated in EN 1364-3:2014, Figure 8 and from minimum one test of a straight specimen cover all angles between horizontally adjacent infill panels at the common mullion from 45° to 315° (see Figure 2) with classification E (o ↔ i) or EW (o ↔ i) respectively.

6.2.6 Inclusion of doors and/or windows

Doors and/or windows may be included into a curtain walling and the rules of the EN 15269 series may be used provided an additional test as required by the standards of the EN 15269 series was conducted using the intended curtain walling as the associated supporting construction with the dimensions d ≥ 200 mm (see Figure 3).

NOTE Dimensions d ≥ 500 mm are recommended.

The field of application of the classified curtain walling may be used when doors and/or windows are included in the curtain walling provided the test(s) including door(s) and/or window(s) has been conducted

— with internal fire exposure and surface S1 exposed to the fire as defined in EN 1364-3 and EN 1364-4, and

— the smallest mullion size has been used in case of timber framing, or

— the largest mullion size has been used in case of metal framing

These rules apply also to unitised constructions.

6.3 Framing system

6.3.1 Dimension of mullions and transoms

All dimensions of mullions and transoms are covered between maximum and minimum tested.

6.3.2 Connection between mullions and transoms

6.3.2.1 Connection geometry

For angles between mullions and transoms between a minimum of 80 degrees and a maximum of 100 degrees, see EN 1364-3.

For angles between mullions and transoms outside the range of 80 degrees to 100 degrees then for test result on angles less than 80 degrees will cover the range from 90 degrees to the angle tested and for results on angles tested greater than 100 degrees will cover the range 90 degrees to the angle tested, see Figure 4.