SLOVENSKI STANDARD
SIST EN 15882-1:2012/oprA1:2015

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Extended application of results from fire resistance tests for service installations - Part 1: Ducts

Erweiterter Anwendungsbereich der Ergebnisse aus Feuerwiderstandsprüfungen für Installationen - Teil 1: Leitungen

Application étendue des résultats des essais de résistance au feu des installations de service - Partie 1: Conduits

Ta slovenski standard je istoveten z: **EN 15882-1:2011/prA1**

ICS:

13.220.50	Požarna odpornost gradbenih materialov in elementov	Fire-resistance of building materials and elements
91.060.40	Dimniki, jaški, kanali	Chimneys, shafts, ducts

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English Version

Extended application of results from fire resistance tests for service installations - Part 1: Ducts

Application étendue des résultats des essais de résistance au feu des installations de service - Partie 1: Conduits

Erweiterter Anwendungsbereich der Ergebnisse aus Feuerwiderstandsprüfungen für Installationen - Teil 1: Leitungen

This draft amendment is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 127.

This draft amendment A1, if approved, will modify the European Standard EN 15882-1:2011. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

This draft amendment was established by CEN 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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Foreword

This document (EN 15882-1:2011/prA1:2015) has been prepared by Technical Committee CEN/TC 127 “Fire safety in buildings”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

1 Modification to Clause 3, Terms and definitions

Add a new definition 3.6:

"

3.6
single variable duct system
duct system where all essential components are identical, with the exception of one parameter in one component (e.g. density of the insulation, thickness of insulation)

Note 1 to entry: By changing the variable parameter, the individual duct system gets different classification times.".

2 Modification to Clause 8, Test arrangements and criteria for additional tests

Add a new subclause 8.5:

"

8.5 Additional rules

8.5.1 Rule no. 1: omitting the vertical duct A scenario

8.5.1.1 General

If a single variable duct system is tested according to all 4 test scenarios for at least two values of the variable parameter (8 tests in total), and these test results shows that the vertical duct A has the best performance in relation to (E) integrity, (I) insulation and (S) smoke leakage, for both tested values of the variable parameter, then the vertical duct A test can be omitted for intermediate values of the variable parameter. For intermediate values of the variable parameter, only the scenarios: horizontal duct A, horizontal duct B and vertical duct B have to be tested to obtain full classification.

8.5.1.2 Additional requirements to rule no. 1

The supporting construction shall be of the same type, as listed below for all horizontal tests used to verify this rule:

— standard rigid construction where the density shall be the same with a difference of ± 10 kg/m^3 or

— standard flexible construction using the same type of group.

If the vertical ducts are tested with load the field of direct application given in 13.5.2 *Self load bearing ducts* do not apply for the intermediate ducts.

8.5.1.3 Example of use of Rule No. 1

An example of use of this rule is shown in the table below. In the example, the variable parameter in the single variable duct system is the thickness of the insulation material.

Insulation parameter		Test direction			
Either	Or	Horizontal Duct penetrating a standard wall construction		Vertical Duct penetrating a standard floor construction	
Fixed parameter: thickness	Fixed parameter: density				
Variable parameter	Variable parameter				
Density 1	Thickness 1	A	B	A	B
Density 2	Thickness 2	A	B	*A*	B
Density 3	Thickness 3	A	B	*A*	B
Density 4	Thickness 4	A	B	*A*	B
Density 5	Thickness 5	A	B	A	B

	Test that must be conducted
	Test that can be omitted if rule 1 is fulfilled

8.5.2 Rule no. 2: worst case direction for tests according to the fire from inside scenario (Duct B)

8.5.2.1 General

A number of tests according to the fire from inside scenario (Duct B) can be omitted for a single variable duct system if test results show that a worst cast test direction for the duct B's exist. To evaluate if a worst cast test direction for the duct B's exist for a duct system the following shall be fulfilled:

a) A minimum of 3 vertical and horizontal Duct B test shall be conducted (6 tests in total). Both a horizontal and a vertical duct B test shall be conducted for each tested value of the variable parameter. See the example below.

b) For all sets of tests (one horizontal and vertical with the same value of the variable parameter) the same direction shall have the earliest failure of insulation and integrity.

c) For all tests in the same direction (vertical or horizontal) the order of failure criteria shall be the same (e.g. first failure of insulation then failure of integrity).

d) For all tests in the same direction the cause of integrity failure shall be the same e.g. sustaining flames from the penetration.

NOTE The situation can occur where some of the tests are stopped before integrity failure has occurred. In that case, it is sufficient to evaluate the behaviour only based on the insulation criterion on condition that the tests have been continued a minimum of 30 min after the insulation failure has occurred or to a failure of the supporting construction.

If the above criteria are fulfilled a worst case direction can be defined for the test according to the fire from inside scenario (Duct B).

When a worst case direction for the duct B's exist only the worst case direction for the Duct B scenario shall be test for intermediate value of the variable parameter, as shown on the example below.

8.5.2.2 Additional requirements to rule no. 2

This rule only applies for duct systems with insulation ability. The supporting construction shall be of the same type, as listed below for all horizontal tests used to verify this rule:

— standard rigid construction where the density shall be the same with a difference of ± 10 kg/m^3 or

— standard flexible construction using the same type of group.

8.5.2.3 Example of use of Rule No. 2

Insulation parameter		Test direction			
Either	Or	Horizontal Duct penetrating a standard wall construction		Vertical Duct penetrating a standard floor construction	
Fixed parameter thickness	Fixed parameter density				
Variable parameter	Variable parameter				
Density 1	Thickness 1	A	B E=45, I=16	A	B E=66, I=20
Density 2	Thickness 2	A	B	A	B
Density 3	Thickness 3	A	B E=89, I=57	A	B E=110, I=61
Density 4	Thickness 4	A	B	A	B
Density 5	Thickness 5	A	B E=162 I=120	A	B E=182 I=130

The example shows that:

— A minimum of 3 vertical and horizontal duct B tests have been conducted (6 tests in total). The tests marked with grey.

— For all sets of tests the horizontal direction has the earliest failure of insulation and integrity.

— For all tests in the same direction the order of failure criteria is the same (first insulation then integrity).

In the example, the criteria are fulfilled and a worst case direction can be defined for the test according to the fire from inside scenario (Duct B). The worst case direction is horizontal. Therefore, only the horizontal direction for the duct B scenario has to be tested for intermediate value of the variable parameter.