

English Version

Test methods for external fire exposure to roofs

Méthodes d'essai pour l'exposition des toitures à un feu
extérieur

Prüfverfahren zur Beanspruchung von Bedachungen durch
Feuer von außen

This Technical Specification (CEN/TS) was approved by CEN on 23 August 2011 for provisional application.

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Contents

Page

Foreword.....	5
Introduction	6
1 Scope	7
2 Normative references	7
3 Terms and definitions	7
4 Test 1: Method with burning brands.....	10
4.1 Test equipment	10
4.2 Calibration	10
4.3 Test conditions (roof pitch)	11
4.4 Test specimen	11
4.4.1 General.....	11
4.4.2 Selection of standard supporting decks	11
4.4.3 Positioning of joints	12
4.4.4 Edge detailing	13
4.5 Conditioning.....	13
4.5.1 Wood wool.....	13
4.5.2 Test specimen	13
4.6 Test environment.....	13
4.7 Test procedure.....	13
4.7.1 Filling the basket.....	13
4.7.2 Positioning of the brand	14
4.7.3 Start of the test.....	14
4.7.4 End of the test.....	14
4.8 Observations and measurements	15
4.8.1 General.....	15
4.8.2 External fire spread	15
4.8.3 Fire penetration and openings	15
4.8.4 Damage	15
4.9 Test report	16
4.10 Direct field of application of test results	17
4.10.1 Roof pitch	17
4.10.2 Nature of the deck.....	17
5 Test 2: Method with burning brands and wind	18
5.1 Test equipment	18
5.2 Calibration	19
5.2.1 Air velocity.....	19
5.2.2 Propane supply	21
5.2.3 Mechanical alignment	21
5.3 Test conditions	21
5.4 Test specimen	21
5.4.1 Sampling.....	21
5.4.2 Preparation of test specimens	22
5.5 Conditioning.....	22
5.5.1 Crib.....	22
5.5.2 Test specimen	22
5.6 Test environment.....	22
5.7 Test procedure.....	23
5.8 Observations and measurements	24
5.9 Test report	24

5.10	Direct field of application of test results	25
6	Test 3: Method with burning brands, wind and supplementary radiant heat	25
6.1	Test equipment	25
6.1.1	Brands	25
6.1.2	Wind	25
6.1.3	Radiant panel	26
6.1.4	Timing device	26
6.1.5	Calibration element	27
6.1.6	Specimen holder	27
6.2	Calibration	27
6.2.1	General	27
6.2.2	Specimen holder	27
6.2.3	Wind	27
6.2.4	Radiant level	27
6.3	Test conditions	27
6.4	Test specimen	27
6.4.1	General	27
6.4.2	Selection of standard supporting decks	28
6.4.3	Positioning of joints	28
6.4.4	Edge detailing	29
6.4.5	Protection of the edges	29
6.5	Conditioning	29
6.6	Test environment	29
6.7	Test procedure	29
6.7.1	Preparation of brands	29
6.7.2	Start of the test	30
6.7.3	Positioning of the brands	30
6.7.4	End of the test	30
6.7.5	Post test examination	30
6.8	Observations and measurements	30
6.8.1	General	30
6.8.2	External fire spread	30
6.8.3	Fire penetration and openings	31
6.8.4	Damage	31
6.9	Test report	31
6.10	Direct field of application of test results	32
6.10.1	Roof pitch	32
6.10.2	Nature of the deck	32
7	Test 4 – Method with two stages incorporating burning brands, wind and supplementary radiant heat	33
7.1	Test equipment	33
7.1.1	Brands	33
7.1.2	Wind	33
7.1.3	Radiant panel	33
7.1.4	Calibration element	34
7.1.5	Timing device	34
7.1.6	Specimen holder	34
7.2	Calibration	34
7.3	Test conditions	34
7.4	Test specimen	34
7.4.1	Number of test specimens	34
7.4.2	Construction of specimens	35
7.5	Conditioning	36
7.6	Test environment	36
7.7	Test procedure	36
7.7.1	Preliminary ignition test with burning brands (stage 1)	36
7.7.2	Penetration test with burning brands, wind and supplementary radiant heat (stage 2)	37
7.7.3	End of test	37

7.8	Observations and measurements	37
7.8.1	General.....	37
7.8.2	Preliminary ignition test with burning brands (stage 1)	37
7.8.3	Penetration test with burning brands, wind and supplementary radiant heat (stage 2)	37
7.9	Test report	38
7.10	Direct field of application of test results – Roof pitch	38
8	Figures	39
8.1	Test 1.....	39
8.2	Test 2.....	44
8.3	Test 3.....	51
8.4	Test 4.....	57
	Bibliography	60

Foreword

This document (CEN/TS 1187:2012) has been prepared by Technical Committee CEN/TC 127 “Fire safety in buildings”, the secretariat of which is held by BSI.

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 ENV 1187:2002.

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

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Introduction

The first mandate given to CEN/TC 127 on fire resistance testing (Mandate No. 117) in support of the Construction Products Directive required two test methods for external fire exposure to roofs. One test method was to include the effect of a burning brand, the other was to include the effect of a burning brand together with wind and supplementary radiant heat. These two draft methods were circulated for the CEN 6-month enquiry, but many countries did not support the two and several countries requested that only one method should be prepared by CEN.

The topic was referred to the EC Fire Regulators' Group. Discussions took place in both the Fire Regulators' Group and the Standing Committee on Construction, and in April 1997 CEN/TC 127 was requested to produce a standard incorporating the two existing draft methods and the Nordtest method.

The Standing Committee accepted this as a short-term solution and strongly expressed the view that a truly harmonised test procedure should be developed in the long term, i.e. a single test procedure for this characteristic.

Realizing that the three test method document (ENV 1187:2002 dated May 2002) and the Amendment A1 (ENV 1187:2002/A1 dated August 2005) did not have the same time scale, it was decided to consider all four methods under the same procedure.

This Technical Specification will be followed by a single test procedure required by the European Commission.

CAUTION — The attention of all persons concerned with managing and carrying out these tests is drawn to the fact that fire testing can be hazardous and that there is a possibility that toxic and/or harmful smoke and gases can be evolved during the test.

An assessment of all potential hazards and risks to health should be made and safety precautions should be identified and provided. Written safety instructions should be issued. Appropriate training should be given to all relevant personnel. Laboratory personnel should ensure that they follow written safety instructions at all times.

1 Scope

This Technical Specification specifies four methods for determining the performance of roofs to external fire exposure. The four methods assess the performance of roofs under the following conditions:

- a) test 1 – with burning brands;
- b) test 2 – with burning brands and wind;
- c) test 3 – with burning brands, wind and supplementary radiant heat;
- d) test 4 – with two stages incorporating burning brands, wind and supplementary radiant heat.

The tests assess the fire spread across the external surface of the roof, the fire spread within the roof (tests 1, 2 and 3), the fire penetration (tests 1, 3 and 4) and the production of flaming droplets or debris falling from the underside of the roof or from the exposed surface (tests 1, 3 and 4).

Tests 2 and 3 are not applicable to geometrically irregular roofs or roof mounted appliances, e.g. ventilators and roof lights.

NOTE The four tests listed above do not imply any ranking order. Each test stands on its own without the possibility to substitute or exchange one for another.

2 Normative references

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

EN 13238:2010, *Reaction to fire tests for building products — Conditioning procedures and general rules for selection of substrates*

EN 13501-1:2007+A1:2009, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN 13501-5:2005+A1:2009, *Fire classification of construction products and building elements — Part 5: Classification using data from external fire exposure to roofs tests*

EN ISO 13943:2010, *Fire safety — Vocabulary (ISO 13943:2008)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 13943:2000 and the following apply.

3.1

roof

covering and sealing system including any insulating layers or vapour barriers normally provided together with their supporting elements including attachment (glued, mechanically fastened, etc.), and roof lights or other closures for roof apertures that are intended to provide a weatherproof surface

3.2

material

basic single substance or uniformly dispersed mixture of substances (e.g. metal, stone, wood, bitumen, concrete, mineral wool)