

STN	Zaťaženie striech a strešných krytín vonkajším ohňom. Rozšírená aplikácia výsledkov skúšok vykonaných podľa CEN/TS 1187.	STN P CEN/TS 16459 92 0842
------------	---	--

External fire exposure of roofs and roof coverings - Extended application of test results from CEN/TS 1187

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Obsahuje: CEN/TS 16459:2013

119017

Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, odbor SÚTN, 2014
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

ICS 13.220.50; 91.060.20

English Version

**External fire exposure of roofs and roof coverings - Extended
application of test results from CEN/TS 1187**Exposition des toitures et des couvertures à un feu
extérieur - Application étendue des résultats d'essai de la
CEN/TS 1187Beanspruchung von Bedachungen durch Feuer von außen
- Erweiterter Anwendungsbereich der Prüfergebnisse aus
CEN/TS 1187

This Technical Specification (CEN/TS) was approved by CEN on 14 April 2013 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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**

Contents

Page

Foreword.....	5
Introduction	6
1 Scope	8
2 Normative references	8
3 Terms and definitions	9
4 Product and end-use application parameters for roof coverings/roof systems.....	11
5 Extended application.....	12
5.1 General principles for extended application for roof coverings/roof systems	12
5.2 Extended application by additional tests	13
5.2.1 Additional tests on one product/end-use application parameter	13
5.2.2 Additional tests on several product/end-use application parameters	13
5.3 Extended application by calculation.....	14
5.4 Guidance on the use of historical test data	14
6 Influence of product parameters and end-use application parameters on external exposure to fire test performance.....	14
7 General guidance to the annexes for Application Rules	18
Annex A (normative) Application rules for test results from CEN/TS 1187 test 1, per product group and/or components	21
A.1 General.....	21
A.2 General rules, valid for every product within a product group and/or component	23
A.3 Product groups	24
A.3.1 Slates and tiles.....	24
A.3.1.1 slates and tiles, non-metallic.....	24
A.3.1.2 Metallic tiles.....	26
A.3.2 Small elements.....	27
A.3.2.1 General.....	27
A.3.2.2 Bitumen shingles	27
A.3.2.3 Miscellaneous small elements	29
A.3.3 Reinforced bitumen sheets.....	29
A.3.4 Plastic and rubber sheets	31
A.3.5 Roof-lights	33
A.3.6 Glazing systems.....	34
A.3.7 Profiled non-metallic sheets.....	34
A.3.7.1 Profiled fibre cement sheets.....	34
A.3.7.2 Profiled bitumen based sheets.....	34
A.3.7.3 Miscellaneous profiled non-metallic sheets	34
A.3.8 Composite metallic sandwich panels	34
A.3.9 Profiled metal sheets.....	34
A.3.10 Flat metal sheets.....	35
A.3.11 Liquid applied roof waterproofing kits	35
A.3.12 Miscellaneous	35
A.4 Components	35
A.4.1 Adhesive	35
A.4.2 Separating layer.....	36
A.4.3 Insulation layer.....	38
A.4.4 Vapour Barrier.....	41
A.4.5 Supporting deck.....	43
Annex B (normative) Application rules for test results from CEN/TS 1187 Test 2, per product group.....	45
B.1 General.....	45

B.2	General rules, valid for every product within a product group	46
B.3	Product groups	47
B.3.1	Slates and tiles	47
B.3.1.1	Non-metallic slates and tiles (reaction-to-fire-class A1 to A2-s3 d2 according to EN 13501-1)	47
B.3.1.2	Metallic tiles	49
B.3.2	Small elements (reaction-to-fire-class B-s1,d0 to F according to EN 13501-1)	49
B.3.2.1	General	49
B.3.2.2	Bitumen shingles.....	49
B.3.2.3	Miscellaneous small elements	50
B.3.3	Reinforced bitumen sheets	51
B.3.4	Plastic and rubber sheets.....	53
B.3.5	Roof-lights.....	54
B.3.6	Glazing systems	54
B.3.7	Profiled non-metallic sheets.....	54
B.3.7.1	Profiled fibre cement sheets	54
B.3.7.2	Profiled bitumen based sheets	55
B.3.7.3	Miscellaneous profiled non-metallic sheets	55
B.3.8	Composite metallic sandwich panels.....	55
B.3.9	Profiled metal sheets	55
B.3.10	Flat metal sheets	55
B.3.11	Liquid applied waterproofing kits	55
B.3.12	Miscellaneous	55
Annex C	(normative) Application rules for test results from CEN/TS 1187 test 3, per product group.....	56
C.1	General	56
C.2	General rules, valid for every product within a product group	58
C.3	Product groups	59
C.3.1	Slates and tiles	59
C.3.1.1	Non-metallic slates and tiles (reaction-to-fire-class A1 to A2 – s3 d2, according to EN 13501-1)	59
C.3.1.2	Metallic Tiles	61
C.3.2	Small elements (reaction-to-fire-class B – s1, d0 to F; according to EN 13501-1)	61
C.3.2.1	General	61
C.3.2.2	Bitumen Shingles	61
C.3.2.3	Miscellaneous small elements	63
C.3.3	Reinforced bitumen sheets	64
C.3.3.1	General	64
C.3.3.2	Typical roof waterproofing system.....	64
C.3.4	Plastic and rubber sheets.....	69
C.3.4.1	General	69
C.3.4.2	Typical roof waterproofing system.....	70
C.3.5	Roof-lights.....	75
C.3.6	Glazing systems	76
C.3.7	Profiled non-metallic sheets.....	76
C.3.7.1	Profiled fibre cement sheets	76
C.3.7.2	Profiled bitumen-based Sheets.....	76
C.3.7.3	Miscellaneous profiled non-metallic sheets	76
C.3.8	Composite metallic sandwich panels.....	76
C.3.9	Profiles metal sheets.....	76
C.3.10	Flat metal sheets	77
C.3.11	Liquid applied roof watering kits	77
C.3.12	Miscellaneous	77
Annex D	(normative) Application rules for test results from CEN/TS 1187 Test 4 for individual product groups	78
D.1	General	78

CEN/TS 16459:2013 (E)

D.2	General EXAP rules for CEN/TS 1187 test 4, valid for every product within a product group	80
D.3	Product groups	81
D.3.1	Slates and tiles	81
D.3.1.1	Non-metallic slates and tiles	81
D.3.1.2	Metallic slates and tiles	84
D.3.2	Small elements	84
D.3.2.1	General	84
D.3.2.2	Bitumen shingles	84
D.3.2.3	Miscellaneous small elements, e.g. plastic tiles	87
D.3.3	Reinforced bitumen sheets (same as bitumen shingles)	88
D.3.4	Plastic and rubber sheets	91
D.3.5	Roof-lights	94
D.3.6	Glazing systems	94
D.3.7	Profiled non-metallic sheets	94
D.3.7.1	Profiled fibre cement sheets	94
D.3.7.2	Profiled bitumen based sheets	94
D.3.7.3	Miscellaneous profiled non-metallic sheets	94
D.3.8	Composite (including metal faced) sandwich panels	95
D.3.9	Profiled metal sheets	95
D.3.10	Flat metal sheets	95
D.3.11	Liquid applied roof water-proofing kits	95
D.3.12	Miscellaneous	95
	Bibliography	96

Foreword

This document (CEN/TS 16459:2013) 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 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: 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.

Introduction

Fire tests on individual roofs/roof coverings are carried out in accordance with CEN/TS 1187. The results from these tests can then be classified in accordance with EN 13501-5.

In order to derive classifications for similar roofs/roof coverings based on the data determined from CEN/TS 1187, additional rules are needed.

These rules are direct application rules or extended application rules. Rules within the direct field of application of test results are given in EN 13501-5 (these rules correspond to CEN/TS 1187).

This document outlines a procedure to develop rules for extended application and lists application rules which have already been developed in Annexes A to D for test methods 1 to 4 from CEN/TS 1187, where Annex A is related to test method 1, Annex B relates to test method 2, and so forth.

Annexes A to D have been developed based upon the available information and the roof systems in the market. The objective of this document is to provide a methodology for optimising the number of tests required to cover the maximum field of application.

Whilst special attention has been focused on roofs typically comprising a support deck/substrate, vapour barrier, insulation layer(s), membranes/roof coverings, there will be occasions when other separating layers or intermediate layers will be needed to satisfy other roof characteristics. These layers should be included in the consideration of the roof/the roof covering being classified.

NOTE Tests 1, 3 and 4 are carried out on a roof construction, whereas test 2 is done on a roof covering with its substrate below.

The decision route from the diagram below shows ways to determine which procedure to follow.

The solid line is compulsory, whereas the dotted line is optional.

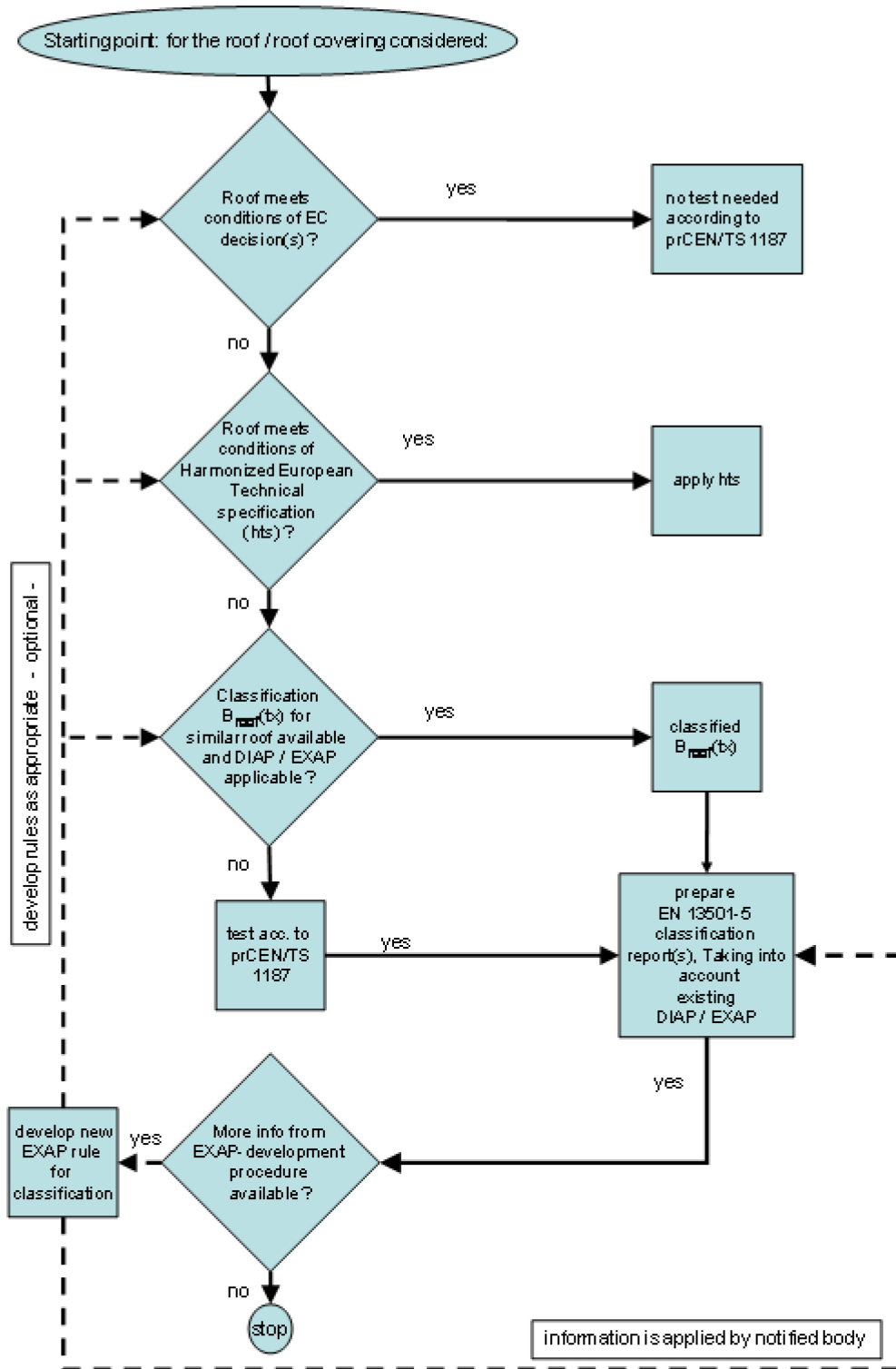


Figure 1 – Decision process on classification of roofs/roof coverings

1 Scope

This Technical Specification gives guidance on the process and development of extended fields of application using test results obtained from CEN/TS 1187 test 1 to 4, and included in test reports, and other relevant information in order to evaluate and classify the performance of roofs/roof coverings. This Technical Specification provides a methodology to consider the possible effect(s) on classification to EN 13501-5 from single or multiple changes to the individual product and end-use application parameters of the roof/roof covering.

Specific application guidance is given in Annexe A, Annex B, Annex C and Annex D for CEN/TS 1187 tests 1 to 4 respectively.

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.

CEN/TS 1187:2012, *Test methods for external fire exposure to roofs*

EN 490, *Concrete roofing tiles and fittings for roof covering and wall cladding - Product specifications*

EN 492, *Fibre-cement slates and fittings - Product specification and test methods*

EN 494, *Fibre-cement profiled sheets and fittings - Product specification and test methods*

EN 506, *Roofing products of metal sheet - Specification for self-supporting products of copper or zinc sheet*

EN 508-1, *Roofing products from metal sheet - Specification for self-supporting products of steel, aluminium or stainless steel sheet - Part 1: Steel*

EN 508-2, *Roofing products from metal sheet - Specification for self-supporting products of steel, aluminium or stainless steel sheet - Part 2: Aluminium*

EN 508-3, *Roofing products from metal sheet - Specification for self-supporting products of steel, aluminium or stainless steel sheet - Part 3: Stainless steel*

EN 534, *Corrugated bitumen sheets - Product specification and test methods*

EN 544, *Bitumen shingles with mineral and/or synthetic reinforcements - Product specification and test methods*

EN 1013 (all parts), *Light transmitting profiled plastic sheeting for single skin roofing*

EN 1304, *Clay roofing tiles and fittings - Product definitions and specifications*

EN 1849-2, *Flexible sheets for waterproofing - Determination of thickness and mass per unit area - Part 2: Plastic and rubber sheets*

EN 1873, *Prefabricated accessories for roofing - Individual roof lights of plastics - Product specification and test methods*

EN 12326-1, *Slate and stone products for discontinuous roofing and cladding - Part 1: Product specification*

EN 13162, *Thermal insulation products for buildings - Factory made mineral wool (MW) products - Specification*

EN 13163, *Thermal insulation products for buildings - Factory made expanded polystyrene (EPS) products - Specification*

EN 13164, *Thermal insulation products for buildings - Factory made extruded polystyrene foam (XPS) products - Specification*

EN 13165, *Thermal insulation products for buildings - Factory made rigid polyurethane foam (PU) products - Specification*

EN 13166, *Thermal insulation products for buildings - Factory made phenolic foam (PF) products - Specification*

EN 13167, *Thermal insulation products for buildings - Factory made cellular glass (CG) products - Specification*

EN 13169, *Thermal insulation products for buildings - Factory made expanded perlite board (EPB) products - Specification*

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 13707, *Flexible sheets for waterproofing - Reinforced bitumen sheets for roof waterproofing - Definitions and characteristics*

EN 13956, *Flexible sheets for waterproofing - Plastic and rubber sheets for roof waterproofing - Definitions and characteristics*

EN 14351-1, *Windows and doors - Product standard, performance characteristics - Part 1: Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics*

EN 14509, *Self-supporting double skin metal faced insulating panels - Factory made products - Specifications*

EN 14782, *Self-supporting metal sheet for roofing, external cladding and internal lining - Product specification and requirements*

EN 14783, *Fully supported metal sheet and strip for roofing, external cladding and internal lining - Product specification and requirements*

EN 14963, *Roof coverings - Continuous rooflights of plastics with or without upstands - Classification, requirements and test methods*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN