

Ikadan Sport og Fritid A/S
Höjrisallé 89
DK-7430 IKAST
Danmark

Reaction to fire tests for floorings - Part 1: Determination of the burning behaviour using a radiant heat source - EN ISO 9239-1 (1 appendix)

Introduction

SP has by request of Ikadan Sport og Fritid A/S performed a fire test according to EN ISO 9239-1. The test is for informatory purpose.

Product

According to client:

Floor covering called "IKA FLOOR SPORT", consisting of recycled polypropylene (PP) plastic. The floor covering consisted of 49.7 x 49.7 mm large plates that can be joint together. The plate has a nominal height of 34 mm and a nominal area weight of 6.0 kg/m².

Client

Ikadan Sport og Fritid A/S, Ikast, Denmark.

Sampling

The sample of the product was delivered by the client. It is not known to SP Fire Technology if the product received is representative of the mean production characteristics.

The sample was received January 31, 2012 at SP Fire Technology.

Test results

The test results are given in appendix 1.

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

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Criteria

According to “Fire classification of construction products and building elements – Part 1: Classification using test data from reaction to fire tests”, EN ISO 13501-1, February 2007.

To meet class “B_{f1} s1”, floor coverings have to meet the following limits when tested according to EN ISO 9239-1:

- Mean critical radiant flux (CHF) $\geq 8.0 \text{ kW/m}^2$
- Smoke development $\leq 750 \% \times \text{min}$

To meet class “C_{f1} s1”, floor coverings have to meet the following limits when tested according to EN ISO 9239-1:

- Mean critical radiant flux (CHF) $\geq 4.5 \text{ kW/m}^2$
- Smoke development $\leq 750 \% \times \text{min}$

To meet class “D_{f1} s1”, floor coverings have to meet the following limits when tested according to EN ISO 9239-1:

- Mean critical radiant flux (CHF) $\geq 3.0 \text{ kW/m}^2$
- Smoke development $\leq 750 \% \times \text{min}$

Additionally floorings have to meet the following limits when tested according to EN ISO 11925-2:

- Flame tip must not reach 150 mm vertically from the point of application of the test flame, within 20 s from the time of application. 15 s exposure time.

Deviation from standard

Only one test was carried out, instead of the four stipulated in the standard.

Note

The accreditation referred to is valid for EN ISO 9239-1.

This test does not comply with the standard as far as number of tests is concerned. It can therefore not be used as the sole basis for a classification or an approval.

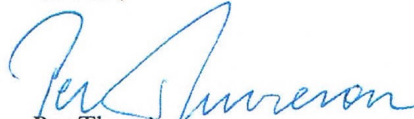
**SP Technical Research Institute of Sweden
Fire Technology - Fire Dynamics**

Performed by



Johan Post

Examined by



Per Thureson

Appendix

1 Test results

Appendix 1

Test results – EN ISO 9239-1:2010

Product

According to client:

Floor covering called "IKA FLOOR SPORT", consisting of recycled polypropylene (PP) plastic. The floor covering consisted of 49.7 x 49.7 mm large plates that can be joint together. The plate has a nominal height of 34 mm and a nominal area weight of 6.0 kg/m².

Application

The specimen was loosely put on a non-combustible board, type "fibre cement board", having a density of 1800 kg/m³ approximately.

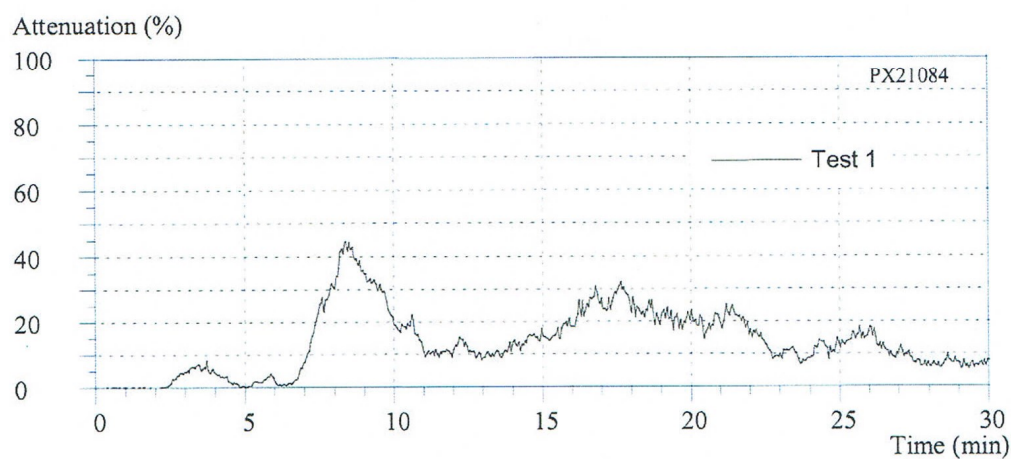
Test results

Test no	1	2	3	4
Flame spread distance, mm	Time, min:s	Time, min:s	Time, min:s	Time, min:s
50	02:39	-	-	-
100	05:33	-	-	-
150	07:09	-	-	-
200	08:48	-	-	-
250	10:12	-	-	-
300	14:06	-	-	-
350	16:21	-	-	-
400	19:51	-	-	-
450	21:33	-	-	-
500	23:24	-	-	-
550	25:33	-	-	-
Flames at flame front were extinguished	30:00	-	-	-

Appendix 1

Test no	1	2	3	4
Time, min	Flame spread distance, mm	Flame spread distance, mm	Flame spread distance, mm	Flame spread distance, mm
HF-10	240	-	-	-
HF-20	420	-	-	-
HF-30	520	-	-	-

Test no	1	2	3	4	Average value
Maximum flame spread, mm	590				-
Critical radiant flux (CHF), kW/m ²	2,7				=
Peak smoke production, %	45				=
Light absorption (area under curve), % x min	411				=

Smoke generation sample no 1 to 4


Appendix 1

Measured data

Thickness 3.9 – 4.0 mm.

Area weight 6.0 – 6.1 kg/m².

Conditioning

According to EN 13238:2010.

Temperature (23 ± 2) °C.

Relative humidity (50 ± 5) %.

Date of test

February 20, 2012.

Ikadan Sport og Fritid A/S
Højrisallé 89
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Danmark

Reaction to fire classification report

1 Introduction

This classification report defines the classification assigned to the product "IKA FLOOR" in accordance with the procedure given in EN 13501-1:2007.

2 Details of classified product

2.1 General

The product "IKA FLOOR" is defined as a flooring. Its classification is valid for the end use application as floor covering for indoor use as well as for outdoor use.

2.2 Product description

According to client:

Floor covering called "IKA FLOOR", consisting of recycled polypropylene (PP) plastic. The floor covering consisted of 49.7 x 49.7 mm large plates that can be joint together. The plate has a nominal height of 34 mm and a nominal area weight of 6.0 kg/m².

3 Test reports & test results in support of classification

3.1 Test reports

This classification is based on the test report listed below:

Name of laboratory	Name of sponsor	Test report ref no	Accredited test method
SP	Ikadan Sport og Fritid A/S	PX15212-1	EN ISO 11925-2

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3.2 Test results

Test method	Parameter	Number of tests	Results	
			Continuous parameter mean (m)	Compliance parameter
EN ISO 11925-2		6		
15 s exposure	$F_s \leq 150 \text{ mm}$		(-)	Compliant
(-) : not applicable				

4 Classification and field of application

4.1 Reference and direct field of application

This classification has been carried out in accordance with clause 12 and 15 of EN 13501-1:2007.

4.2 Classification

The product called "IKA FLOOR" in relation to its reaction to fire behaviour is classified:

E_{fl}

The format of the reaction to fire classification for floorings is:

Fire Behaviour		Smoke Production	
E_{fl}	-	s	-

Reaction to fire classification: E_{fl}

4.3 Field of application:

This classification is valid for the following product parameters:

Nominal height: 34 mm.

Nominal area weight: 6.0 kg/m².

The sample was delivered by the client. SP Fire Technology was not involved in the sampling procedure.

5 Limitations


This classification document does not represent type approval or certification of the product.

SP Technical Research Institute of Sweden Fire Technology - Fire Dynamics

Performed by


Ida Larsson

Examined by


Per Thureson

Ikadan Sport og Fritid A/S
Höjrisallé 89
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Danmark

Ignitability according to EN ISO 11925-2

(1 appendix)

Introduction

SP has by request of Ikadan Sport og Fritid A/S performed a fire test according to EN ISO 11925-2. The purpose of the test is basis for technical fire classification.

Product

According to client:

Floor covering called "IKA FLOOR", consisting of recycled polypropylene (PP) plastic. The floor covering consisted of 49.7 x 49.7 mm large plates that can be joint together. The plate has a nominal height of 34 mm and a nominal area weight of 6.0 kg/m².

Sampling

The samples of the product were delivered by the client. It is not known to SP Fire Technology if the product received is representative of the mean production characteristics.

The samples were received August 16, 2011 at SP Fire Technology.

Test results

The product was tested with surface exposure.

The test results are given in appendix 1.

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

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Note

The accreditation referred to is valid for EN ISO 11925-2.

SP Technical Research Institute of Sweden Fire Technology - Fire Dynamics

Performed by



Ida Larsson

Examined by



Per Thureson

Appendix

1 Test results

Appendix 1

Test results – EN ISO 11925-2:2010

Product

According to client:

Floor covering called "IKA FLOOR", consisting of recycled polypropylene (PP) plastic. The floor covering consisted of 49.7 x 49.7 mm large plates that can be joint together. The plate has a nominal height of 34 mm and a nominal area weight of 6.0 kg/m².

Application

Surface exposure. Flame exposure time was 15 seconds.

Test results

Test no	1	2	3	4	5	6
Direction	↑	↑	↑	→	→	→
The sample ignited, s	NI	NI	NI	NI	NI	NI
The flames reach 150 mm, s	-	-	-	-	-	-
Burning droplets	No	No	No	No	No	No
Time when filter paper ignited, s	-	-	-	-	-	-

NI = No ignition.

Measured data

Thickness 3.2 – 4.0 mm.
Area weight 6.2 kg/m².

Conditioning

According to EN 13238:2010.
Temperature (23 ± 2) °C.
Relative humidity (50 ± 5) %.

Date of test

September 29, 2011.