



TFI Report 470211-03

Reaction to fire test

For the classification according to EN 13501-1:2010

Customer

Remmers GmbH
Bernhard-Remmers-Str. 13
49624 Lönningen
GERMANY

Product

floor coating
SR Floor QP Art

This report includes 3 pages and 3 annexes.

This report is a translation of test report no. 470211-01.

Responsible at TFI

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Aachen, 17 August 2017



Dr. Alexander Siebel

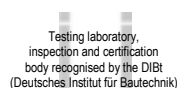
head of the testing laboratory

The present document is provided with an advanced electronic signature.

This report only applies to the tested samples and has been established to the best of our knowledge. Only the entire report shall be reproduced. Under no circumstances, extracts shall be used. Furthermore, we apply the "General Terms and Conditions for the Execution of Contracts" of the TFI Aachen GmbH, also with regard to the order execution.



Notified Body
No. 1658



Testing laboratory,
inspection and certification
body recognised by the DIBt
(Deutsches Institut für Bautechnik)



Accredited for the methods indicated
in the annex to the DAKKS certificate

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1 Transaction

Test order	Reaction to fire test for construction products according to EN ISO 11925-2:2010 and EN ISO 9239-1:2010
Order date	20 December 2016, 27 January 2017, 15 August 2017
Your reference	extern order 32-2016/A
Product designation	SR Floor QP Art
TFI sample number	17-01-0315
Date of manufacture	not specified
Date of sample receipt	31 January 2017
Sampling performed by	Customer

2 Product Specification

Structure*	<p><u>Primer:</u> Epoxy SQ 100 very quick-reacting, transparent epoxy resin Applied quantity: 0.30 kg/m²</p> <p><u>Coating:</u> QP Color very quick through-hardened, pigmented coating, Applied quantity: 1.20 kg/m² filled with 0.60 kg/m² Selectmix 01/03</p> <p><u>Infill:</u> 0.03 kg/m² sediment flocks</p> <p><u>Sealing:</u> QP Top Plus very quick through-hardened, transparent, anti-slipped sealing, Applied quantity: 0.10 kg/m²</p>
Colour of the use surface	light grey, grey, white, black *customer information

3 Results

Ignitability of products subjected to direct impingement of flame according to EN ISO 11925-2:2010

Ignition	no
Flame tip	≤ 150 mm
Burning droplets	not relevant

Burning behaviour using a radiant heat source according to EN ISO 9239-1:2010

Average critical heat flux [kW/m ²]	>11.0
Integrated smoke density [% x min]	55



Adhesion

Coating is applied on fibre cement board by customer

Substrate according to EN 13238:2010

fibre cement board

This test report is the basis for a classification report according to EN 13501-1:2010.

The test results relate to the behaviour of the test specimens of a construction 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 construction product in use.

4 Annexes

Photographs	F 470211-03
Ignitability ^a	KB 470211-03
Reaction to Fire ^a	RP 470211-03

The annexes marked ^a are based on tests accredited in accordance with EN ISO/IEC 17025.

Annex F - Photographs

1 Transaction

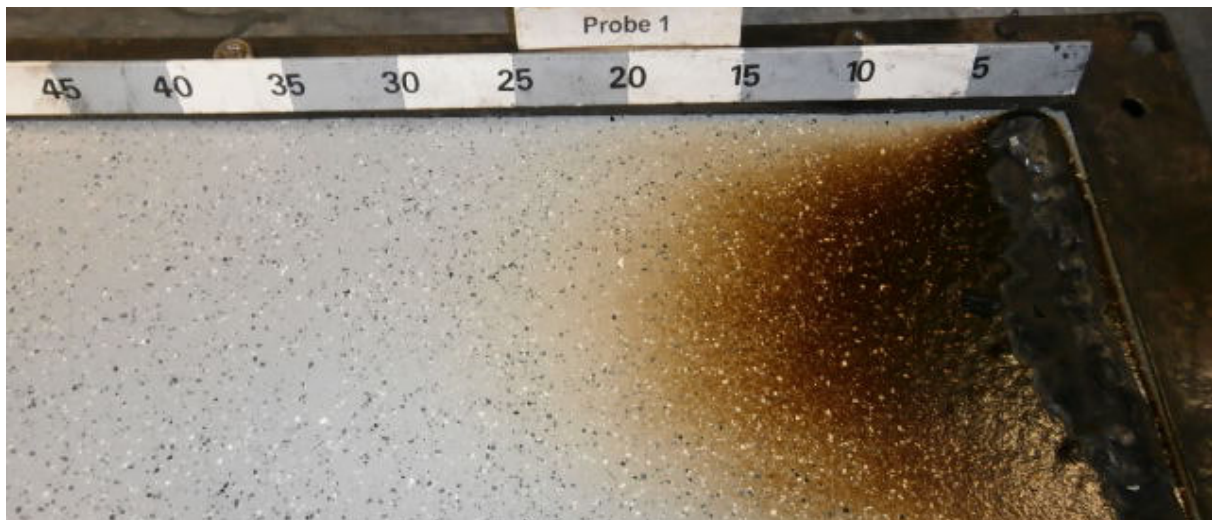
Product designation SR Floor QP Art
TFI sample number 17-01-0315
Testing period 09 March 2017

2 Test Method / Requirements

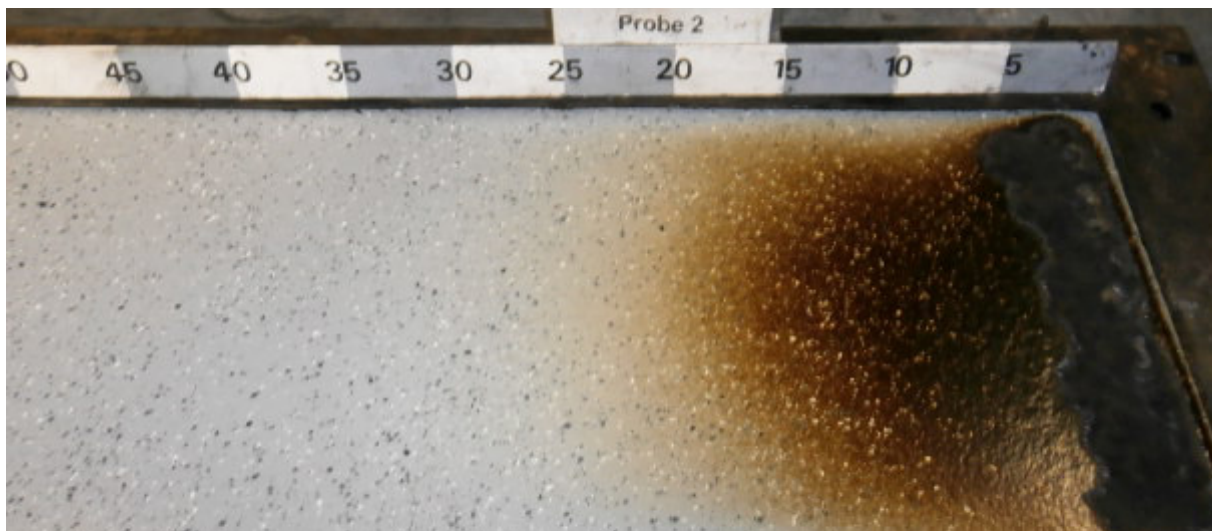
-not specified-

3 Results

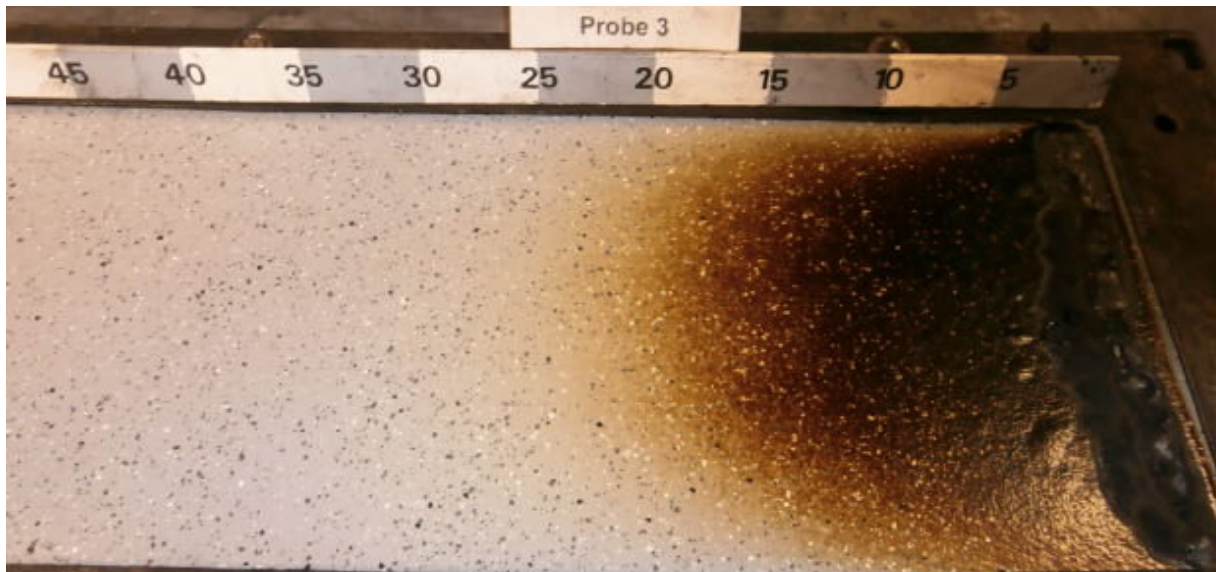
3.1. Specimen 1, without direction



3.2. Specimen 2, without direction



3.3. Specimen 3, without direction



Annex KB - Ignitability

1 Transaction

Product designation	SR Floor QP Art
TFI sample number	17-01-0315
Testing period	09 March 2017

2 Test Method / Requirements

EN ISO 11925-2:2010 Part 2	Ignitability of products subjected to direct impingement of flame
Substrate according to EN 13238:2010	Fibre cement board
Type of fixation	Coating is applied on fibre cement board by customer
Conditioning	Conditioning according to EN 13238:2010
Type of ignition	Surface ignition
Ignition time [s]	15
Deviation from the standard	-none-

3 Results

Parameter	Specimen no.					
	1	2	3	4	5	6
Orientation to the direction of production	without direction	without direction	without direction	without direction	without direction	without direction
Ignition of the specimen	no	no	no	no	no	no
Flame tip (moment [s])	<150 mm (n.r.)	<150 mm (n.r.)	<150 mm (n.r.)	<150 mm (n.r.)	<150 mm (n.r.)	<150 mm (n.r.)
Maximum flame height [mm] (moment [s])	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.
Burning droplets	no	no	no	no	no	no
Ignition of the filter paper	no	no	no	no	no	no

Observations: -none-



Annex RP – Reaction to Fire

1 Transaction

Product designation	SR Floor QP Art
TFI sample number	17-01-0315
Testing period	09 March 2017

2 Test Method / Requirements

EN ISO 9239-1:2010 Part 1	Determination of the burning behaviour using a radiant heat source
Substrate according to EN 13238:2010	Fibre cement board
Adhesion	Coating is applied on fibre cement board by customer
Joint according to EN ISO 9239-1:2010	No
Conditioning	Conditioning according to EN 13238:2010
Deviation	-none-

3 Results

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Annex RP - Burning behaviour

Sample designation 17-01-0315

Sample

Sample No.: 1
 Direction: without direction

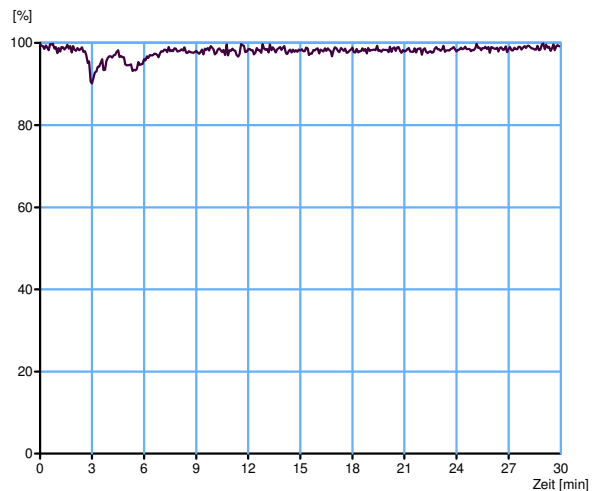
Observation

molten/singed during pre-radiation up to	0 mm
buckled/contracted from pilot flame area up to	0 mm
penetration of flame through substrate	-
transitory flaming	-
blistering	-
glowing, after flame has extinguished	-

Results

Position [mm]	Time [min:s]	Heat Flow [kW/m ²]
50	06:28	12.42
100	-	-
150	-	-
200	-	-
250	-	-
300	-	-
350	-	-
400	-	-
450	-	-
500	-	-
550	-	-
600	-	-
650	-	-
700	-	-
750	-	-
800	-	-
850	-	-
900	-	-
950	-	-
1000	-	-

Smoke density



Time [min:s]	Position [mm]	Heat Flow [kW/m ²]
10:00	50	12.42
20:00	50	12.42
30:00	50	12.42

CHF [kW/m ²]	>= 11
HF_30 [kW/m ²]	12.42
Smoke density integral [%*min]	61.0
Flame extinguished after [min:s]	12:00
max. burnt distance [mm]	50
max. light attenuation [%]	9.9



Annex RP - Burning behaviour

Sample designation 17-01-0315

Sample

Sample No.: 2
 Direction: without direction

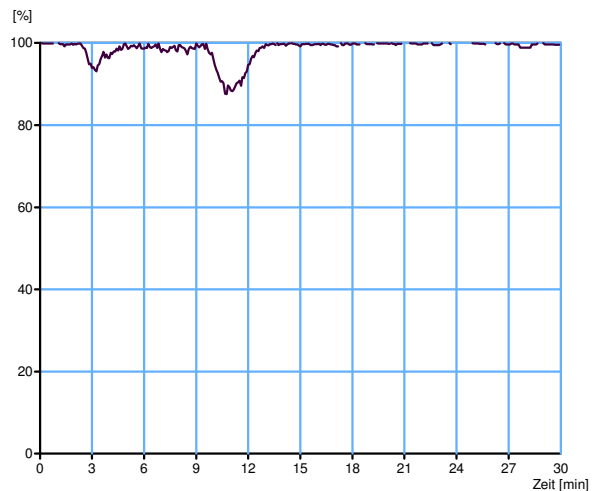
Observation

molten/singed during pre-radiation up to	0 mm
buckled/contracted from pilot flame area up to	0 mm
penetration of flame through substrate	-
transitory flaming	-
blistering	-
glowing, after flame has extinguished	-

Results

Position [mm]	Time [min:s]	Heat Flow [kW/m ²]
50	09:58	12.42
100	-	-
150	-	-
200	-	-
250	-	-
300	-	-
350	-	-
400	-	-
450	-	-
500	-	-
550	-	-
600	-	-
650	-	-
700	-	-
750	-	-
800	-	-
850	-	-
900	-	-
950	-	-
1000	-	-

Smoke density



Time [min:s]	Position [mm]	Heat Flow [kW/m ²]
10:00	50	12.42
20:00	58	12.27
30:00	58	12.27

CHF [kW/m ²]	>= 11
HF_30 [kW/m ²]	12.27
Smoke density integral [%*min]	39.6
Flame extinguished after [min:s]	12:21
max. burnt distance [mm]	58
max. light attenuation [%]	12.5



Annex RP - Burning behaviour

Sample designation 17-01-0315

Sample

Sample No.: 3
 Direction: without direction

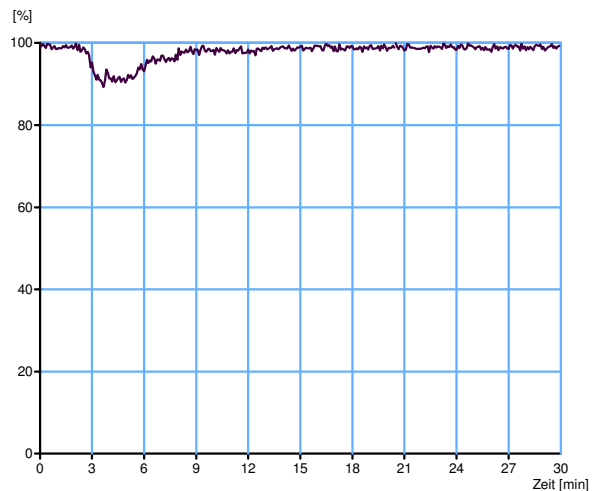
Observation

molten/singed during pre-radiation up to	0 mm
buckled/contracted from pilot flame area up to	0 mm
penetration of flame through substrate	-
transitory flaming	-
blistering	-
glowing, after flame has extinguished	-

Results

Position [mm]	Time [min:s]	Heat Flow [kW/m ²]
50	08:12	12.42
100	-	-
150	-	-
200	-	-
250	-	-
300	-	-
350	-	-
400	-	-
450	-	-
500	-	-
550	-	-
600	-	-
650	-	-
700	-	-
750	-	-
800	-	-
850	-	-
900	-	-
950	-	-
1000	-	-

Smoke density



Time [min:s]	Position [mm]	Heat Flow [kW/m ²]
10:00	50	12.42
20:00	50	12.42
30:00	50	12.42

CHF [kW/m ²]	>= 11
HF_30 [kW/m ²]	12.42
Smoke density integral [%*min]	64.9
Flame extinguished after [min:s]	12:00
max. burnt distance [mm]	50
max. light attenuation [%]	10.7