



REPORT No. 062543-001-1-a

CUSTOMER BASF CC Europe AG

CONTACT PERSON GWENAEL JAN

ADDRESS HARDMATTSTRASSE 434
CH-5082 KAISTEN - SUIZA

PURPOSE REACTION TO FIRE TEST REPORT
ACCORDING TO EN ISO 9239-1:2010
and EN ISO 11925-2:2010

TESTED SAMPLE FLOORING SYSTEM
REF. « **MASTERTOP 1912** »

DATE OF RECEIPT 11.11.2016

TEST DATE 14.11.2016-15.11.2016

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DATE OF TRADUCTION 23.12.2016



Pablo Garmendia
Safety Laboratory

- * The results of the current report concern only and exclusively the sample tested.
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- * In case of a lawsuit, the original Spanish version shall be taken as reference.

SAMPLE CHARACTERISTICS

On 11rd November 2016 FUNDACIÓN TECNALIA R&I received from the company BASF CC EUROPE AG samples of a flooring system, referenced as:

«MASTERTOP 1912»

The flooring system consisting of these coats:

- Substrate:
 - ✓ Reference: Fibrecement “Eterplan”
 - ✓ Thickness: 8 mm
 - ✓ Density: 1.85 g/cm³
 - ✓ Fire classification: A2-s1,d0
- Primer coat:
 - ✓ Reference: MasterTop P 617
 - ✓ Type: Bi-component resin
 - ✓ Solvent: Non- solvented
 - ✓ Application weight: 0.50 Kg/m²
- Intermediate coat of siliceous aggregate:
 - ✓ Reference: MasterTop BC372 (pigmented)
 - ✓ Type: Filled 1:0.7 with dried Siliceous aggregate
 - ✓ Solvent: -
 - ✓ Application weight: 3.5 Kg/m²
- Finish coat:
 - ✓ Reference: MasterTop TC 941
 - ✓ Type: Bi-component resin
 - ✓ Solvent: Non- solvented
 - ✓ Application weight: 0.14 Kg/m²

Four samples (1.050 x 230 x 10) mm samples and six samples (250 x 90 x 10) mm samples undergoing tests in accordance to EN ISO 9239-1:2010 and EN ISO 11925-2:2010 standards.

The technical datasheet of the tested product and the test photographs are included in the annex.



REQUESTED TESTS

The test requested is **Reaction to fire test of floorings. Part 1: Determination of the burning behaviour using a radiant heat source** according to standard EN ISO 9239-1:2010.

The test requested is **Reaction to fire tests for building products. Ignitability of building products when subjected to direct impingement of flame. Part 2: Single-flame source test** according to standard EN ISO 11925-2:2010.

The uncertainties related to the main test parameters will be available for the customer, upon request.

CONDITIONING

The test specimen is conditioned prior to test under the specifications set down in the standard EN 9239-1:2011.

The samples remain in a conditioning chamber at 23+2 °C and 50+5% relative humidity, until constant weight

Environmental conditions during testing:

STANDARD		TEMPERATURE (°C):	HUMIDITY (%)
EN ISO 11925-2:2010		18	61
EN ISO 9239-1:2010	SAMPLE 1	18	61
	SAMPLE 2	18	62
	SAMPLE 3	19	62



TESTS CONDUCTED

A) REACTION TO FIRE TESTS OF FLOORINGS

The test requested is ***Reaction to fire test of floorings. Part 1: Determination of the burning behaviour using a radiant heat source according to standard EN ISO 9239-1:2010.***

DETAILS OF SUBSTRATE USED AND FASTENING METHOD

The whole set with the applied coating is placed in the stainless steel tray that contains said sample fastened with bolts and provided with two rulers on both sides to determine flame propagation.

B) IGNITABILITY TEST ACCORDING TO EN ISO 11925-2:2010

The test requested is ***Reaction to fire tests for building products. Ignitability of building products when subjected to direct impingement of flame. Part 2: Single-flame source test*** according to standard EN ISO 11925-2:2010.

The (250 x 90 x 10) mm samples used in this test are placed on a stainless steel U-shaped double frame hung vertically, in a way that the bottom side of the sample is directly exposed to the flame, alongside its central line and edges.

Burner spacers are used to approach the flame by 16 mm to expose the edge of the sample and 5 mm to expose its surface.

The flame height should be 20 mm.

- Flame exposure is carried out on the surface for 5 seconds, on the central line at 40 mm on the bottom edge and edge, as shown in section 7.3.3.2.2 of standard EN ISO 11925-2:2010.
 - a) The flame is applied on the surface of the panel (Surface)
 - b) The flame is applied on the centre bottom edge of the panel (Edge)



RESULTS OF TESTING:

RESULTS according to standard EN ISO 9239-1:2010

The test results only refer to specimens as they have been tested. Small differences in the composition or thickness of the product can vary the behaviour of the sample during testing and, in consequence, invalidate the outcome. It should be ensured that any product used is represented by the tested samples.

One test is performed longitudinally and another in the direction perpendicular to the former. The sample with lower CHF and/or HF-30 performance should be tested twice in that direction.

Table 1 shows the distance between the flame front and the zero point during the 10-minute interval, the period in which the flame reaches each 50-mm mark and the highest distance from the initial point recorded during testing. Moreover, it includes the remarks gathered during the test of every sample.

The results obtained refer to the samples in longitudinal direction, following the procedure set down in standard EN ISO 9239-1:2010.

CLASSIFICATION CRITERIA	AVERAGE
Maximum flame-propagation distance (mm)	53.33 mm
Critical radiant flux, CHF (KW/m ²)	10.90 kW/m²
Smoke development (%min)	15.68 %min
Maximum light attenuation (%)	0.76 %

NOTE: "The test results correspond to the behaviour of test samples of a product, under the particular conditions of the test. They do not pretend to constitute the only potential fire risk assessment criteria that could entail the use of the product".

RESULTS according to standard EN ISO 11925-2:2010

A.- SURFACE

<i>TEST SPECIMEN</i>		Sample ignition	Flame propagation to 150 mm (Fs)	Period in which <u>F_s</u> is reached	Filter paper ignition
Longitudinal	1	No	No	—	No
	2	No	No	—	No
	3	No	No	—	No
Transverse	4				
	5				
	6				

Observations:

B.- EDGE

<i>TEST SPECIMEN</i>		Sample ignition	Flame propagation to 150 mm (Fs)	Period in which <u>F_s</u> is reached	Filter paper ignition
Longitudinal	1	YES	No	—	No
	2	YES	No	—	No
	3	YES	No	—	No
Transverse	4				
	5				
	6				

Observations:



ANNEXES

Table 1

Sample no.	1 Longitudinal	2 Longitudinal	3 Longitudinal	1 Transversal
Distance (cm)	Time elapsed on reaching indicated distance (minutes, seconds)			
50	12'11''	11'53''	10'47''	—
100	—	—	—	—
150	—	—	—	—
200	—	—	—	—
250	—	—	—	—
300	—	—	—	—
350	—	—	—	—
400	—	—	—	—
450	—	—	—	—
500	—	—	—	—
550	—	—	—	—
600	—	—	—	—
650	—	—	—	—
700	—	—	—	—
750	—	—	—	—
800	—	—	—	—
850	—	—	—	—
900	—	—	—	—
950	—	—	—	—
1000	—	—	—	—
Max. Distance. Flame-propagation (mm)	50.00	55.00	55.00	—
Critical radiant flux, CHF (KW/m ²)	10.90	10.90	10.90	—
Smoke development (%min)	0.07	0.30	46.67	—
Maximum light attenuation (%)	0.65	0.85	0.79	—

Sample no.	1 Long	2 Long	3 Long	1 Transv
Flame front distance at min 10 (mm)	40	40	45	—
Flame front distance at min 20 (mm)	—	—	—	—
Flame front distance at min 30 (mm)	—	—	—	—



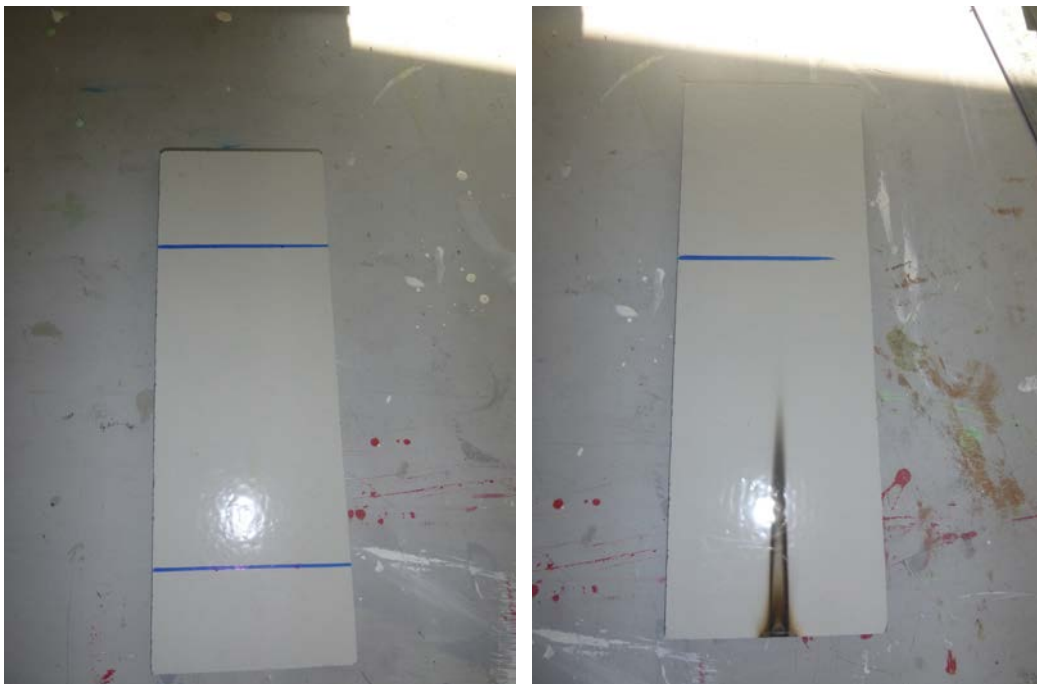
PHOTOGRAPHS OF TESTED SAMPLES





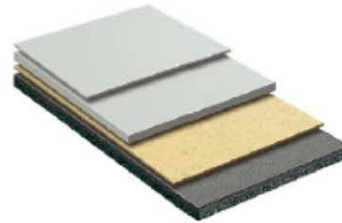


**View of the sample before ignitability test
according to EN ISO 11925-2: 2010 (application on edge)**



**View of the sample after ignitability test
according to EN ISO 11925-2: 2010 (application on edge)**



TECHNICAL DATASHEET (sample assembly)



MasterTop 1912

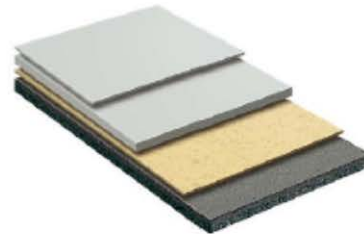
The innovative flooring solution for exceptional aesthetic durability, low emission

Fields of application: for use on medium to heavy duty industrial flooring when a glossy finish and wear resistance surface is required: for example warehouses, production halls, laboratories, public and institutional areas, etc.

		consumption:
 Primer	MasterTop P 617 (or P 604) EP,2 component, non-solvented (total solid)	0,3-0,5 kg/m ²
 Optional/ Sand broadcast*	Oven dried silica sand, size 0,3-0,8 mm, uniformly applied, not in excess	0,8-1,0 kg/m ²
Optional/ Scratch primer	MasterTop P 617 (or P 604) Filled 1 : 0,5 up to 1:1 with oven dried silica sand, size 0,1-0,3 mm	0,6-2,0 kg/m ^{2**}
Optional/ Sand broadcast*	oven dried silica sand, size 0,3-0,8 mm	2,0-3,0 kg/m ²
 Body coat	MasterTop BC 372 pigmented, EP, 2 component, low emission Filled till 1:0,7 with oven dried silica sand, size 0,1-0,3 mm	3,0-3,5 kg/m ^{2**}
 Top coat***	MasterTop TC 941 pigmented, hybrid PUR, 2 component, non solvented (high solid), UV resistant, glossy	0,10-0,14 kg/m ²
Total thickness of the system	ca. 2,5-3,5 mm	



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Remark:

Consumptions are indicative and may be higher, depending on substrate roughness, temperature and porosity, as well as waste produced during application.

* MasterTop P 604 needs only to be broadcasted with silica sand if the re-coating intervals are not respected.

** Total consumption including filler. The consumption depends on the filling ratio and the roughness of the surface.

The flooring system fulfills, as minimum requirements, the following properties and technical data determined by internal and external testing:

EN 13813	SR-B1,5-AR1-IR4-Cfl
Slip resistance	R9
Taber abrasion	27 mg (CS17/0,5KG/1000 R)
Emissions behavior	AgBB conform AFSSET conform A+ Classification
Fire behavior according to DIN EN 13501-1	Cfl-s1


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CE MARKING ACCORDING TO EN 13813

	
BASF Coatings GmbH Donnerschweer Str. 372, D-26123 Oldenburg	
16	
191201	
EN 13813: 2002	
EN 13813: SR-B1,5-AR1-IR4	
Synthetic resin screed for internal uses	
Essential characteristics	Performance
Fire behavior	Cfl-s1
Release of corrosive substances	SR
Water permeability	NPD
Wear resistance	< AR 1
Bond strength	> B 1,5
Impact resistance	> IR 4
Impact sound insulation	NPD
Sound absorption	NPD
Heat insulation	NPD
Chemical resistance	NPD

NPD = No performance determined
Performance determined in System build-up MasterTop 1912

CONTACT

Should you require any further information, please do not hesitate to contact your local sales consultant or take directly contact with us:

Performance Flooring

BASF Construction Chemicals Europe AG
Hardmatt 434
CH-5082 Kaisten
Tel: +41 62 868 93 60
Fax: +41 62 868 93 59

BASF Coatings GmbH
Donnerschweer Str. 372
D-26123 Oldenburg
Tel: +49 441 3402 251
Fax: +49 441 3402 333

Mitglied der



master-builders-solutions.basf.com