TECHNICKÝ A SKÚŠOBNÝ ÚSTAV STAVEBNÝ, n. o.
Test laboratory
Studená 3, 821 04 Bratislava

Reg. No. 004/S-045

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TEST REPORT No. 90-15-0106

JOB

No.: 90150017

Client: MARIS POLYMERS S.A.
Industrial Area of Inofita
GR-32011 Inofita
Greece

OBJECT OF TESTING

Product: Floor screed **MARISEAL 400**

Manufacturer: manufacturer is the client

Manufacturing plant: at the manufacturer's address

Standard of product: EN 13813: 2002 Screed material and floor screeds. Screed material. Properties and requirements.

PRODUCT SAMPLE

Description of sample: - one-component coating material
- Batch no. 14014389, date production: 05.09.2014, 2 pcs of 1,0 kg

Sampler: client

Place and date of delivery: Laboratory branch in Tatranská Štrba, on 28th January 2015

Designation of sample by lab.: 018/15

Preparation and coating:
Test specimens were prepared in accordance with EN 13891-1 and with the manufacturer's instructions. Floor screed system was applied on the concrete substrate.

Composition of the system:

System	Number of layer	Consumption /layer	Recoating interval
MARISEAL 400	2	150 g/m^2 / 1 layer	3 h

Storage conditions of test specimens: 28 days at (23±2)°C and (50±5)% relative humidity according to EN 13892-1, Table 3.

TESTS

Determinattion of wear resistance – BCA (non accredited test)

Test procedure: EN 13892-4: 2002 Methods of test for screed materials. Parts 4: Determination of wear resistance - BCA

Description of test specimens: - Three pieces of concrete slabs with the floor system applied to one face, with dimensions of 500 mm x 500 mm, thickness 100 mm
- Application of screed system: as described above

Test specimens prepared by: Milan Ševčík, 13th February 2015

Test conditions: standard laboratory conditions (23±2)°C and (50±5)% Relative Humidity
- Test operation: 2850 revolutions according to EN 13892-4, Clause 7.3
- Readings of depth recorded to the nearest 10 µm

Deviations from the standard: none

Date of test: 16. March 2015

Test personnel: Milan Ševčík

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Date: 2021.12.16 18:38:22 EET
Reason: MoldSign Signature
Location: Moldova

Impact resistance (accredited test)

Test procedure:	EN ISO 6272-1: 2004 Paints and varnishes – Rapid-deformation (impact resistance) tests. Part 1: Falling-weight, large-area indenter
Description of test specimens:	- One concrete slab with the floor screed system applied to one face, with dimensions of 300 mm x 300 mm, thickness 50 mm - Application of screed system: as described above
Test specimens prepared by:	Milan Ševčík, 13th February 2015
Test conditions:	standard laboratory conditions (23±2)°C and (50±5)% Relative Humidity
Deviations from the standard:	none
Date of test:	17th March 2015
Test personnel:	Milan Ševčík

Bond strength (accredited test)

Test procedure:	EN 13892-8: 2002 Methods of test for screed materials. Part 8: Determination of bond strength
Description of test specimens:	- One concrete slab with the floor screed applied to one face, with dimensions of 300 mm x 300 mm, thickness 100 mm (sample 2) - Test substrate: concrete according to EN 1766 of type MC (0,40) with maximum aggregate size 8 mm - Application of screed system: as described above
Test specimens prepared by:	Milan Ševčík, 13th February 2015
Test conditions:	standard laboratory conditions (23±2)°C and (50±5)% Relative Humidity - Pull-head plates of circular cross-section with a diameter of 50 mm - For bonding pull-head plates two-component epoxy adhesive was used. Curing time 24 h - Conversion rate of pull-off tester x (314 / area of pull head plates)
Deviations from the standard:	none
Date of test:	17th March 2015
Test personnel:	Milan Ševčík

Applied instrumentation:

ID	Name	Range	Unit	Division
M900008	Pull-off tester ERICHSEN 417	0 až 47	MPa	0,5
M900039	Micrometer dial			
Z900021	Falling-weight apparatus			
Z900033	Apparatus for testing of wear resistance – BCA			
Z900045	Moulds for preparing concrete plates			
Z900047	Concrete mixer 125 l			
Z900050	Scarecrows electric table for compacting concrete			
Z900053	Magnifying glass - with a magnification of 10 x			
	Steel shim			

TEST RESULTS

1) Determination of wear resistance – BCA (non accredited test)

- Rolling on with the BCA tester using a cycle of 2850 revolutions

Test specimen No.	Measuring positions No.	Initial depth (μm)	Depth after wear (μm)	Mean depth d_0 (μm)	Mean depth d_w (μm)	Wear resistance AR (μm)
1	1	1190	1190	1190	1200	10
	2	1220	1230			
	3	1240	1240			
	4	1160	1180			
	5	1220	1230			
	6	1230	1230			
	7	1190	1190			
	8	1100	1130			
2	1	1200	1220	1200	1210	10
	2	1230	1240			
	3	1240	1240			
	4	1180	1190			
	5	1190	1190			
	6	1150	1160			
	7	1210	1220			
	8	1180	1200			
3	1	1240	1250	1190	1210	20
	2	1180	1210			
	3	1190	1200			
	4	1210	1230			
	5	1220	1240			
	6	1160	1180			
	7	1150	1160			
	8	1200	1210			
Average				1190	1210	**10**

The visual examination revealed no delaminations, disruptions, or cracks in the rolled-on area.

- Wear resistance – BCA according to EN 13813, Clause 5.2.3, Table 5: <u>class AR0,5</u>

2) Impact resistance (accredited test)

Number of measurement	Impact resistance - the mass of the falling weight 2000 g		
	Height 95,0 cm	Height 97,5 cm	Height 100,0 cm
1	pass	pass	fail
2	pass	pass	pass
3	pass	pass	fail
4	pass	pass	pass
5	pass	pass	fail
Impact resistance: 19,1 Nm			

- Impact resistance according to EN 13813, Clause 5.2.13: <u>class IR 19</u>

3) Bond strength (accredited test)

Number of measurement	Bond strength		Type of failure
	Measured value	Value after conversion (N/mm^2)	
1	38,0	4,8	A = 100 %
2	36,0	4,5	A = 100 %
3	37,0	4,6	A = 100 %
4	37,0	4,6	A = 100 %
5	39,0	4,9	A = 100 %
6	37,0	4,6	A = 100 %
Average	-	**4,7**	**-**
Extended uncertainty U	-	0,2	-

Note:
A Cohesive failure in the substrate

- Bond strength according to EN 13813, Clause 5.2.12, Table 11: class B2,0

Date of report: 31st March 2015

Prepared by: Ing. Erika Halčinová

Authorized by: .....
Ing. Erika Halčinová
Head of Laboratory Branch

Technický a skúšobný ústav stavebný, n. o., Bratislava
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pracovisko Tatranská Štrba

Notes:
- Unless the Test Laboratory makes the sampling, data on the manufacturer, its manufacturing plant and about the sampling are presented according to information provided by the client.
- Testing was carried out according to the Operational procedure No. PP-006 of the Test laboratory in compliance with the listed test procedure.
- The given extended uncertainty U is based on the standard uncertainty multiplied by the coverage factor k = 2, that in case of the normal distribution provides the reliability in the order of 95%.
- Presented results are relevant to the product sample only.
- This report shall not be reproduced except in full without written approval of the Test Laboratory.

——————————— End of test report ———————————