

## 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 28<sup>th</sup> 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 <sup>2</sup> / 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

#### Determination 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, 13<sup>th</sup> 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<sup>th</sup> March 2015  
Test personnel: Milan Ševčík

**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, 13<sup>th</sup> February 2015

**Test conditions:** standard laboratory conditions (23±2)°C and (50±5)% Relative Humidity

**Deviations from the standard:** none

**Date of test:** 17<sup>th</sup> 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, 13<sup>th</sup> 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:** 17<sup>th</sup> March 2015

**Test personnel:** Milan Ševčík

**Applied instrumentation:**

<u>ID</u>	<u>Name</u>	<u>Range</u>	<u>Unit</u>	<u>Division</u>
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 ( $\mu\text{m}$ )	Depth after wear ( $\mu\text{m}$ )	Mean depth $d_0$ ( $\mu\text{m}$ )	Mean depth $d_w$ ( $\mu\text{m}$ )	Wear resistance AR ( $\mu\text{m}$ )
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			
<b>Average</b>				1190	1210	<b>10</b>

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: class AR0,5

### 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
<b>Impact resistance: 19,1 Nm</b>			

- Impact resistance according to EN 13813, Clause 5.2.13: class IR 19

### 3) Bond strength (accredited test)

Number of measurement	Bond strength		Type of failure
	Measured value	Value after conversion (N/mm <sup>2</sup> )	
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 %
<b>Average</b>	-	<b>4,7</b>	-
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: 31<sup>st</sup> March 2015

Prepared by: Ing. Erika Halčinová

Authorized by:

  
Ing. Erika Halčinová  
Head of Laboratory Branch



#### 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**