

RN 21228808

Zagreb, 2007-07-04

## TEST REPORT No 2122-02-PS/003/07

Client: CorteCros d.o.o., 10000 Zagreb, Nova Ves 57

Contract/order/offer: No 04/2007 from 2007-01-23

Construction product: Protective-decorative coating for concrete "MCI-Architectural coating"

Tested properties: Capillary absorption and permeability to water according to HRN EN 1062-3  
Permeability to water vapour according to HRN EN ISO 7783-2  
Bond strength by pull-off according to HRN EN 1542  
Resistance to freezing/thawing with de-icing salt immersion according to HRN EN 13687-1  
Chloride-ion diffusion according to ASTM C 1202

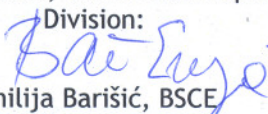
Purpose of the testing: Testing of the product according to the programme

*REMARK: Original test report No. 2122-02-PS/003/07 is written in Croatian language. In the case of any dispute, Croatian version should be taken as a reference.*

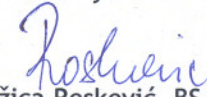
Test overseer:

  
Karla Štemberga, BSCE

Head of the Concrete, Mortar and Repair Materials

Division:  
  
Emilija Barišić, BSCE

Head of the Laboratory for Concrete and Masonry:

  
D.Sc. Ružica Rosković, BS in Chem Tec

Director of the Department of Concrete and  
Masonry Structures:

  
Damir Tkalčić, MSCE

Laboratory expects feedback on provided services on a form "COMPLAINTS-COMPLIMENTS" available on [www.igh.hr](http://www.igh.hr).

Test results refer only to tested specimens. Partial copying of this report is not permitted without a written authorisation by the Head of the Laboratory. Total of pages: 12; annexes 6

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CLIENT: Corte Cros d.o.o., Zagreb, Nova Ves 57  
 CONTRACT/ORDER/OFFER: No 04/2007 from 2007-01-23

## 1. SPECIMEN DATA

SUBMITTED MATERIAL: MCI-Architectural coating (protective-decorative coating for concrete)  
 1L container (mark 09064)  
 SUBMITTAL DATE: January 29, 2007  
 MANUFACTURER OF MATERIALS: CORTEC, USA  
 PURPOSE OF THE TESTING: Testing according to the programme

## 2. TESTING PROGRAMME

Testing programme was drawn up based on the requirements of the Client for the performance of protective-decorative coating for concrete, *MCI-Architectural coating*:

Ordinal No	Property	Test method	Accredited method
1	Capillary absorption	HRN EN 1062-3:2002 Paints and varnishes -- Coating materials and coating systems for exterior masonry and concrete -- Part 3: Determination and classification of liquid-water transmission rate (permeability) (EN 1062-3:1998)	NO
2	Water-vapour transmission	HRN EN ISO 7783-2:2004 Paints and varnishes - Determination of water-vapour transmission rate -- Part 2: Method for films supported by a porous substrate (ISO 7783-2:1999; EN ISO 7783-2:1999)	YES
3	Bond strength by pull off	HRN EN 1542:2001 Products and systems for the protection and repair of concrete structures -- Test methods - Measurement of bond strength by pull off (EN 1542:1999)	YES
4	Resistance to freezing/thawing with de-icing salt immersion	HRN EN 13687-1:2002 Products and systems for the protection and repair of concrete structures -- Test methods -- Determination of thermal compatibility -- 1. dio Freeze-thaw cycling with de-icing salt immersion (EN 13687-1:2002)	YES
5	Chloride-ion diffusion	ASTM C 1202:2005 Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration	NO

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### 3. OVERVIEW OF TEST RESULTS

TESTED PROPERTY		TEST RESULTS	CRITERIA	TEST METHOD	
1.	Capillary absorption	Base (silica brick) + MCI-Architectural coating	HRN EN 1062-3		
		<ul style="list-style-type: none"> <li>Mean value of absorption coefficient of treated specimens: <b>0.11 kg/m<sup>2</sup>h<sup>-1/2</sup></b></li> </ul>	Class <b>I (high)</b>	Absorption coefficient (kg/m <sup>2</sup> h <sup>-1/2</sup> ) <b>&gt; 0.5</b>	HRN EN 1062-3
		<ul style="list-style-type: none"> <li>Mean value of absorption coefficient of untreated specimen (silica brick): <b>6.38 kg/m<sup>2</sup>h<sup>-1/2</sup></b></li> </ul>	<b>II (moderate)</b> <b>III (low)</b>	<b>0.1 to 0.5</b> <b>&lt; 0.1</b>	
2.	Permeability to water vapour	Base(concrete) + MCI-Architectural coating	HRN EN ISO 7783-2		
<ul style="list-style-type: none"> <li>Mean value of water-vapour diffusion resistance: <b>1.35 m</b></li> </ul>		Class <b>I (high)</b> <b>II (medium)</b> <b>III (low)</b>	Water vapour diffusion resistance (m) <b>&lt; 0.14</b> <b>0.14 to 1.4</b> <b>&gt; 1.4</b>	HRN EN ISO 7783-2	
3.		Bond strength by pull off	Base(concrete) + MCI-Architectural coating		HRN EN 1504-2 (table 5)
<ul style="list-style-type: none"> <li>Mean value of tensile strength after 28 days: <b>4.0 MPa</b></li> </ul>	<b>≥ 1.0 MPa</b>		HRN EN 1542		
4.	Resistance to freezing/thawing with de-icing salt immersion	Base(concrete) + MCI-Architectural coating	HRN EN 1504-2 (Table 5)		
		<ul style="list-style-type: none"> <li>Visual assessment of treated surface: <b>No change in surface until 28th cycle</b></li> </ul>	a) there is no bubbles, cracks and delamination		
		<ul style="list-style-type: none"> <li>Mean value of tensile strength of treated surface: <b>1.2 MPa</b></li> <li>Mean value of tensile strength of untreated surface (concrete): <b>4.1 MPa</b></li> </ul>	b) testing of tensile strength (pull-off) <b>≥ 1.0 MPa</b>		HRN EN 13687-1
5.	Diffusion of chloride ions	Base(concrete) + MCI-Architectural coating	ASTM C 1202		
		<ul style="list-style-type: none"> <li>Mean value of chloride permeability:  Of treated specimens: <b>3255 Cb</b></li> <li>Of untreated specimens (concrete): <b>7126 Cb</b></li> </ul>	Chloride permeability (Cb) <b>High</b> <b>Moderate</b> <b>Low</b> <b>Very low</b> <b>Negligible</b>	<b>&gt; 4000</b> <b>4000-2000</b> <b>2000-1000</b> <b>1000-100</b> <b>&lt; 100</b>	

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#### 4. COMMENTS ON TEST RESULTS

- 1) Specimens treated with protective-decorative coating for concrete - MCI-Architectural coating, according to the mean measured value of absorption coefficient ( $0.11 \text{ kg/m}^2\text{h}^{-1/2}$ ), showed a moderate resistance to absorption and can formally be classified in **class II**, but they are on the very limit of class III (class of low absorption).
- 2) According to the mean measured value of the resistance to water vapour diffusion ( $s_d = 1.35 \text{ m}$ ), specimens can be classified as **class II**.
- 3) Testing of coating bond strength (MCI-Architectural coating), by pull-off, produced a mean value of **4.0 MPa**; which means that specimens **fulfil** the requirements of the standard ( $\geq 1.0 \text{ MPa}$ ).
- 4) Testing of resistance to freezing/thawing with immersing of treated specimens in the de-icing salt solution showed that there was no **damage to the treated surface until the 28th cycle**. Mean value of tensile strength of **1.2 MPa**, after cycles were performed, **fulfils** the requirement of the standard ( $\geq 1.0 \text{ MPa}$ ). Complete testing by 50 freeze/thaw cycles was not performed in the way stipulated in the standard specification (HRN EN 1504-2), since the appearance of bubbles and delamination was noticed after 28th cycle.
- 5) Chloride diffusion testing shows that MCI-Architectural coating **reduces** chloride permeability from **high** for concrete to **moderate** for treated specimens.

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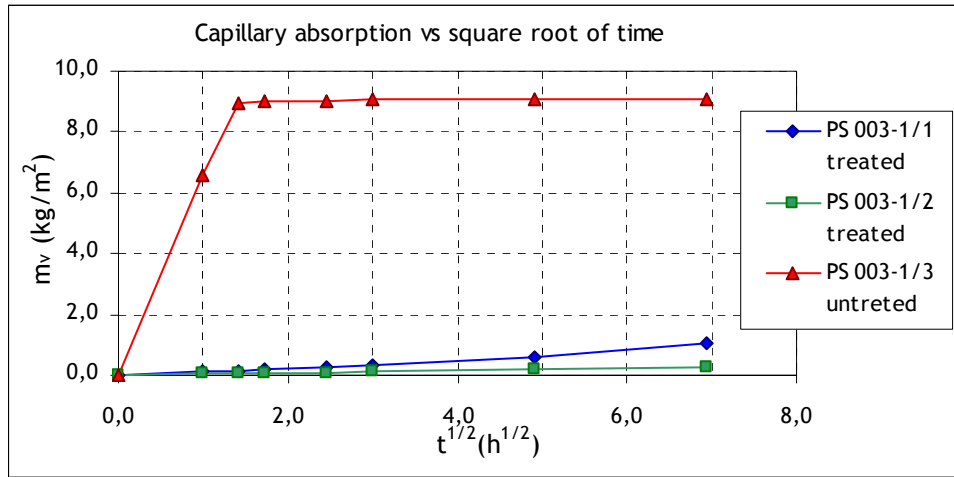
## 5. INDIVIDUAL TEST RESULTS

### 5.1. TEST RESULTS FOR CAPILLARY ABSORPTION

SPECIMEN MARK:	PS 003-1/1-3/07
BASE:	Silica brick of dimensions 250/120/65 mm
PREPARATION OF SPECIMEN/APPLICATION:	Test (bottom) surface was coated with MCI-Architectural coating - applied in one layer, using a brush Side surfaces and the upper surface were coated with epoxy coating - applied in one layer, using a brush
USE:	According to manufacturer's recommendations: 13-16 m <sup>2</sup> /1 ℓ of MCI-Architectural coating
CONDITIONING OF SPECIMENS:	24 days (23 ± 2) °C and (50 ± 5) % r.h. 3 cycles: 24 h in water (23 ± 2) °C 24 hours of drying (50 ± 2) °C
TESTED ACCORDING TO THE STANDARD:	HRN EN 1062-3:2001
DATE OF TESTING:	2007-04-05 - 2007-05-09
LOCATION OF TESTING:	Concrete, Mortar and Repair Materials Division (2 2122)
EQUIPMENT USED:	Digital stopwatch, mark 269, Drying cabinet, mark 2907, Vernier callipers, mark 2282, Mettler Toledo balance, mark 2930
NUMBER OF TESTED SPECIMENS:	2 treated (coated) + 1 untreated (control)
DEVIATIONS FROM THE STANDARD:	Testing was performed on two specimens; measurement of coating thickness was not carried out
NOTE:	None

Mark of the lab/Client	PS 003-1/1 Silica brick + MCI			PS 003-1/2 Silica brick + MCI			PS 003-1/3 Silica brick								
	<i>a</i> (mm)	<i>b</i> (mm)	<i>h</i> (mm)	<i>P</i> (mm <sup>2</sup> )	$\rho_{dry}$ (kg/dm <sup>3</sup> )	time	<i>m</i>	<i>m<sub>v</sub></i>	<i>A</i>						
	<i>h</i>	<i>h</i> <sup>-1/2</sup>	g	kg/m <sup>2</sup>	kg/m <sup>2</sup> h <sup>-1/2</sup>	g	kg/m <sup>2</sup>	kg/m <sup>2</sup> h <sup>-1/2</sup>	g	kg/m <sup>2</sup>	kg/m <sup>2</sup> h <sup>-1/2</sup>				
	250.0	120.0	65.0	30000.0	1.77	0	3448.41	0.00		3457.74	0.00		3453.11	0.00	
						1	3451.44	0.10	0.10	3459.14	0.05	0.05	3650.30	6.57	6.57
						2	3452.49	0.14	0.10	3459.34	0.05	0.04	3721.70	8.95	6.33
						3	3453.44	0.17	0.10	3459.62	0.06	0.04	3723.69	9.02	5.21
						6	3455.46	0.24	0.10	3460.22	0.08	0.03	3724.35	9.04	3.69
						9	3457.97	0.32	0.11	3460.97	0.11	0.04	3725.41	9.08	3.03
						24	3466.48	0.60	0.12	3463.01	0.18	0.04	3725.81	9.09	1.86
						48	3479.42	1.03	0.15	3466.47	0.29	0.04	3725.72	9.09	1.31
<i>A</i> (by linear regression)	0-72 h		0.17	0-72 h		0.04	0-2 h		6.38						

Report No: 2122-02-PS/003/07



Statement: Specimens were tested according to the standard, with the exception of deviations mentioned in the item Deviations from the standard.

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## 5.2. RESULTS OF BOND STRENGTH TESTING BY PULL-OFF METHOD

**SPECIMEN MARK:** PS 003-3/1-5/07

**SUBSTRATE:** Concrete slab (300x300x100) mm, grit-blasted. Concrete of MC type (0.40) according to HRN EN 1766, marked LB-71/06

**PREPARATION OF SPECIMENS/APPLICATION:** Test surface was coated with MCI-Architectural coating -one layer was applied using a brush

**USE:** According to manufacturer's recommendation: 13-16 m<sup>2</sup>/1 ℓ of MCI-Architectural coating

**CURING AND CONDITIONING:** In laboratory conditions (21 ± 2) °C and (60 ± 10) r.h.

**TESTED ACCORDING TO THE STANDARD:** HRN EN 1542:2001

**DATE OF COATING :** 2007-02-22

**DATE OF TESTING:** 2007-03-22

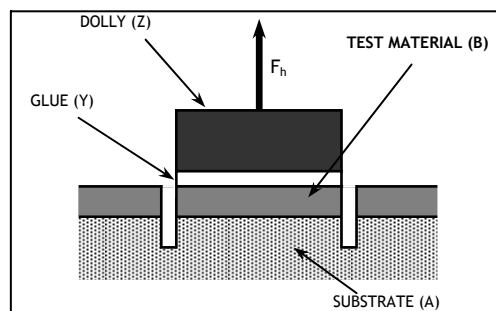
**TESTING LOCATION:** Concrete, Mortar and Repair Materials Division (2 2122)

**EQUIPMENT USED:** Diamond core drill, mark 1138; Digital Pull-off, mark 1987; Digital vernier callipers, mark 2282

**GLUE TYPE:** Sikadur 31 Rapid

**DEVIATION FROM THE STANDARD:** None

**NOTE:** Marks of type of failure: A - substrate (concrete); B - MCI-Architectural coating, C - glue



TESTING MARK	FAILURE LOAD (kN)	DIAMETER OF THE TEST SPECIMEN (mm)	BOND OF THE TEST SPECIMEN (MPa)		TYPE OF FAILURE
			individual	Mean value	
PS 003-3/1	7.64	50.0	3.89	4.0	60% A ; 40 % A/B
PS 003-3/2	7.30	50.0	3.72		100 % A
PS 003-3/3	8.15	50.0	4.15		50% A ; 50 % A/B
PS 003-3/4	8.01	50.0	4.08		80% A ; 20 % A/B
PS 003-3/5	7.78	50.0	3.96		70% A ; 30 % A/B

*Statement: Specimens were tested according to the standard, with the exception of deviations mentioned in the item Deviations from the standard.*

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### 5.3. TEST RESULTS FOR FREEZEING/THAWING RESISTANCE WITH DE-ICING SALTS

SPECIMEN MARK: PS 003-4/1-3/07  
 TESTING WAS CARRIED OUT ACCORDING TO: HRN EN 13687-1:2002  
 CYCLES: 25 cycles: 2 hours in a saturated NaCl solution at (-15 ± 2) °C and 2 hours in water at (20 ± 2) °C  
 PREPARATION DATE: February 22, 2007 (application to the surface)  
 PREPARATION/CONDITIONS: Applied to the concrete slab in one layer, using a brush 21.5 °C; 57.3 r.h.  
 CONDITIONING OF MATERIALS AND EQUIPMENT: 24 h before applying under laboratory conditions  
 SUBSTRATE: Concrete slabs 3 x (300x300x100) mm, grit-blasted. Concrete of type MC (0.40) according to HRN EN 1766, marked LB-71/06  
 SPECIMEN PREPARATION: All surfaces except for the test surface were coated with epoxy resin.  
 CURING OF SPECIMENS BEFORE FREEZING: Under laboratory conditions (21 ± 2) °C and (60 ± 10) r.h.  
 NUMBER OF SPECIMENS: 2 test specimens, 1 control specimen  
 PERIOD OF PERFORMING TEST CYCLES: April 10-22, 2007  
 CONDITIONING PRIOR TO TENSILE BOND STRENGTH TESTING: >7 days under laboratory conditions  
 DATE OF TENSILE BOND STRENGTH TESTING: May 3, 2007  
 EQUIPMENT USED: Cooling chamber KGM 502 (mark 2224)  
 Mettler Toledo balance (mark 1976)  
 PULL-OFF tester "PROCEQ SA - Dyna Z 16" No 1-0860, Switzerland (mark 1987); vernier callipers (mark 2281)  
 Sikadur 31 Rapid  
 TYPE OF GLUE: A=concrete (substrate); B=coating  
 NOTE: On visual inspection after 28th cycle, bubbles and delamination were noticed in places. It was decided to stop the testing before the end, after 28 instead of 50 cycles.  
 DEVIATIONS FROM THE STANDARD: None

Visual inspection of specimens during and after freezing:

CYCLES/DEFECTS		DATE	SPECIMEN MARK	
			PS003-4/1	PS003-4/2
10	Flaking, cracking	April 15, 2007	NO	NO
20	Flaking, cracking	April 19, 2007	NO	NO
28	Flaking, cracking	April 24, 2007	Appearance of bubbles on 10% of the surface	NO
16 hours after 28th cycle		April, 25, 2007	Delamination in places	NO



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*Results of tensile bond strength testing:*

SPECIMEN MARK - TESTING MARK	FAILURE LOAD (kN)	DIAMETER OF THE TEST SPECIMEN (mm)	BOND OF THE TEST SPECIMEN (MPa)		TYPE OF FAILURE
			Individual	Mean value	
<i>SPECIMEN PS003-4/1 - AFTER CYCLES WERE PERFORMED</i>					
PS 003-4/1-1	1.99	49.8	1.02	1.1	100 % A
PS 003-4/1-2	2.22	49.8	1.14		100 % A
PS 003-4/1-3	2.43	49.8	1.25		100 % A
PS 003-4/1-4	2.16	49.8	1.11		100 % A
PS 003-4/1-5	1.88	49.8	0.97		100 % A
<i>SPECIMEN PS003-4/2 - AFTER CYCLES WERE PERFORMED</i>					
PS 003-4/2-1	2.24	49.8	1.15	1.2	100 % A
PS 003-4/2-2	2.34	49.8	1.20		100 % A
PS 003-4/2-3	2.59	49.8	1.33		100 % A
PS 003-4/2-4	2.10	49.8	1.08		100 % A
PS 003-4/2-5	2.38	49.8	1.22		100 % A
<i>SPECIMEN SS003-4/3 - CONTROL</i>					
PS 003-4/3-1	7.38	49.8	3.79	4.1	40% A ; 60 % A/B
PS 003-4/3-2	8.19	50.0	4.18		60% A ; 40 % A/B
PS 003-4/3-3	8.05	50.0	4.11		100 % A
PS 003-4/3-4	7.54	50.0	3.85		70% A ; 30 % A/B
PS 003-4/3-5	8.64	50.0	4.40		90% A ; 10 % A/B

*Statement: Testing was carried out according to the standard with the exception of deviations mentioned in the item Deviations from the Standard.*

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#### 5.4. TEST RESULTS OF CHLORIDE-ION DIFFUSION

SPECIMEN MARK: PS 003-6/1-4/07  
 SUBSTRATE: Cylinders of 100 mm diameter drilled from concrete slabs of dimensions (300x300x100 mm), sawed at the height of 50 mm. Concrete of type MC (0,40) according to HRN EN 1766, marked LB-71/06  
 PREPARATION OF SPECIMEN/APPLICATION: Test surface was coated with MCI-Architectural coating - applied with a brush in one layer  
 USE: According to manufacturer's recommendation: 13-16 m<sup>2</sup>/l of MCI-Architectural coating  
 CURING AND CONDITIONING: Under laboratory conditions (21 ± 2) °C and (60 ± 10) r.h.  
 TESTED ACCORDING TO THE STANDARD: ASTM C 1202  
 DATE OF TESTING: 2007-06-26 to 2007-06-28  
 TESTING LOCATION: Concrete, Mortar and Repair Materials Division (2 2122)  
 EQUIPMENT USED: Mettler Toledo balance, mark 2930; Stopwatch, mark 269; Drying cabinet, mark 2907; Digester, mark 1089; Vacuum pump, mark 179; Device for testing chloride diffusion *PROOVE't* (Germann Instruments), Ser No 053706  
 DEVIATION FROM THE STANDARD: None  
 NOTE: Depth of chloride-ion penetration in the concrete was measured on specimens after applying silver nitrate.  
 Print-outs of individual test results are given in the annex to this report.

TESTING MARK	SPECIMEN TYPE	SPECIMEN THICKNESS (mm)	MEAN VALUE OF PENETRATION (mm)	CHLORIDE PERMEABILITY (Cb)	
				individual	mean value
PS 003-6/1	TREATED	47.1	37.6	2825	3255
PS 003-6/2	TREATED	47.4	44.7	3685	
PS 003-6/3	UNTREATED	47.1	43.8	4135*	7126
PS 003-6/4	UNTREATED	48.2	48.1	7126	

\* Due to excessive current, measurements on the specimen PS 003-6/3 were suspended after 3:45 hours.

*Statement: Specimens were tested according to the standard, with the exception of deviations mentioned in the item Deviations from the Standard.*

ANNEX 1 Test report No 2920-419/07 (Water-vapour transmission)

ANNEX 2 Individual results of chloride ion diffusion testing according to ASTM C 1202



ANNEX 1: TEST REPORT No 2920-419/07 (WATER VAPOUR TRANSMISSION)



Laboratory accredited by HAA

CIVIL ENGINEERING INSTITUTE OF CROATIA d.d.  
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Laboratory of Building Physics 2 29 20  
p.p. 283, Janka Rakuše 1, HR-10000 Zagreb,  
Tel. +385 (0)1 61 25 999  
Fax. +385 (0)1 61 25 998, e-mail: lgf@igh.hr



www.igh.hr

Test request: internal order 2 21 22 Concrete, Mortar and Repair Materials Division, order no: 2122-038/07  
EB from 2007-03-06  
Test decree No.: 37/07

Zagreb, 2007-05-29

## TEST REPORT No. 2920-419/07

**Client:** CorteCross d.o.o.  
**Manufacturer:** Cortec  
**Working Order No.:** 29208806  
**Building product:** Protective-decorative coating for concrete  
MCI-Architectural Coating HPRS (White)  
**Date of specimen receipt:** 2007-03-07  
**Tested property:** Water-vapour transmission

REMARK: Original test report No. 2920-419/07 is written in Croatian language. In the case of any dispute, Croatian version should be taken as a reference.

Test overseer:

Ivna Weigand, B.S. in Chem. Techn.

Head of the Laboratory:

Dr. Ivica Kušević, B.S. Physics

Laboratory of Building Physics of the Building Research Department, IGH, is accredited by the Croatian Accreditation Agency (HAA) according to the requirements of the standard HRN EN ISO/IEC 17025:2004 for the testing of thermal insulation products for building applications, of selected testing: of building materials and products in terms of their hygrothermal and acoustical properties, thermal properties of buildings, of windows and doors, paints and varnishes, and fire behaviour of building materials and elements, according to the Annex to Accreditation Certificate No 1033/06.

The Laboratory of Building Physics of the Building Research Department, IGH, is authorised by the Ministry of Environmental Protection, Physical Planning and Construction of the Republic of Croatia for the works of testing thermal insulation products, external thermal insulating composite systems (ETICS) and building products for fire resistance in the works of assessing conformity of building products, register number 1/05.

Test results refer only to tested specimens. Partial copying of this report is not permitted without a written authorization by the Head of the Laboratory. The laboratory expects feedback about the provided service, from the Client, on the form "CLIENT COMPLAINTS-COMPLIMENTS" - [www.igh.hr](http://www.igh.hr)

## GENERAL DATA

<b>Testing location:</b>	Laboratory of Building Physics of the Building Research Department, Civil Engineering Institute of Croatia d.d, Janka Rakuše 1, HR-10000 Zagreb
<b>Description of test specimen:</b>	Protective-decorative coating for concrete MCI-Architectural Coating HPRS (White) was delivered in a plastic container of 1 ℓ
<b>Laboratory mark of the specimen:</b>	LGF 069/07
<b>Task:</b>	to test vapour transmission
<b>Test method:</b>	HRN EN ISO 7783-2:2004
<b>Date of specimen preparation:</b>	2007-03-13
<b>Individual coating thicknesses:</b>	0.104 mm; 0.11 mm; 0.116 mm
<b>Mean value of coating thickness:</b>	0.11 mm
<b>Conditioning of test specimens:</b>	from 2007-03-28 till 2007-04-06
<b>Date of testing:</b>	2007-04-11 till 2007-05-21
<b>Measuring equipment:</b>	<ul style="list-style-type: none"> <li>- Thermohygrometer, mark: 3131</li> <li>- Präzisions Barometer, mark: 1135</li> <li>- Mettler Toledo balance, P 1203, mark: 449</li> <li>- Dial gauge, mark: 1123</li> </ul>

## RESULTS OF VAPOUR TRANSMISSION TESTING

$\mu$  is the water vapour diffusion resistance coefficient,  $s_d$  is the relative resistance to water vapour diffusion,  $V$  is the water vapour transmission rate. Expanded uncertainties of the corresponding value for 95 % confidence interval with the coverage factor  $k = 4.3$  (Student's distribution for  $\nu = 3 - 1 = 2$  degree of freedom) are given in the parenthesis.

Test specimen LGF 069/07	$\mu (u_\mu)$	$s_d (u_{s_d})$ (m)	$V (u_V)$ (g/(m <sup>2</sup> day))	Classification of test specimens by water vapour transmission according to the value of relative resistance to water vapour diffusion $s_d$ according to HRN EN 1062-1:2002
MCI-Architectural Coating HPRS (White)	12700 (4900)	1.35 (0.46)	15 (5)	class II (medium water vapour transmission - $s_d$ from 0.14 to 1.4 m)

**Report No: 2122-02-PS/003/07**

## ANNEX 2: Individual results of chloride ion diffusion testing according to ASTM C 1202



ASTM C 1202-97



Test-compagny  
Testing street 45  
CompagnyCity  
Some Country

Your own logo,  
size=20x80mm



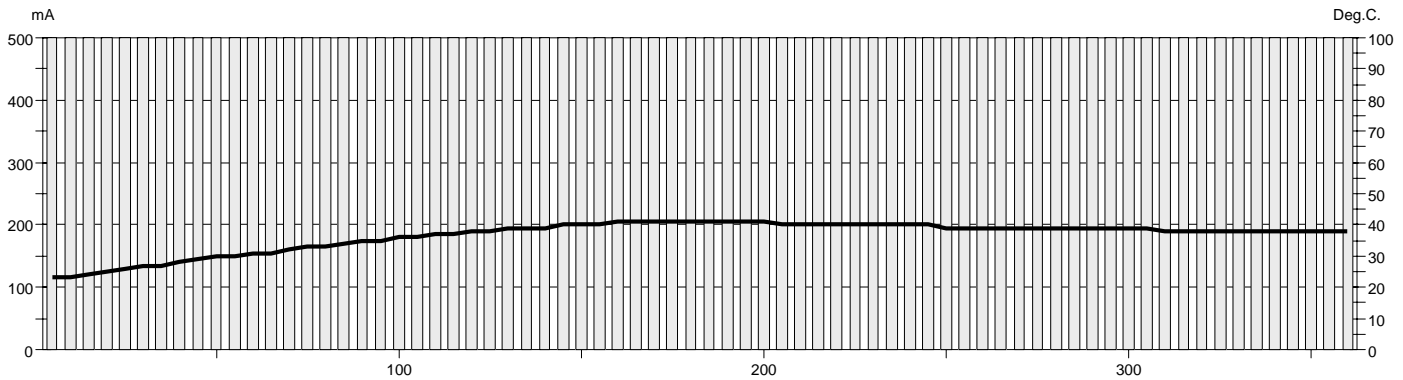
GERMANN INSTRUMENTS

DENMARK  
Phone: +45 3967 7117  
Fax: +45 3967 3167

USA  
Phone: (847)329-9999  
Fax: (847)329-8888

**Test report**

Voltage Used: 60  
 Testing time: 06:00 hour  
 Charge passed: 3130  
 Adjusted Charge passed: 2825  
 Permeability class: Moderate  
 Instrument number: 053706  
 Channel number: 1  
 Report date: 28.6.2007  
 Testing by: Milan Jagušt  
 Reference: PS 003-6/07  
 Sample diameter: 100  
 Comment: Beton + Cortec - MCI Architectural coating



Time	°C	mA	Time	°C	mA	Time	°C	mA	Time	°C	mA
00:05	23	200.3	01:35	35	244.0	03:05	41	108.3	04:35	39	83.1
00:10	23	195.8	01:40	36	241.3	03:10	41	102.9	04:40	39	81.7
00:15	24	199.2	01:45	36	236.4	03:15	41	97.6	04:45	39	82.7
00:20	25	202.8	01:50	37	231.0	03:20	41	93.8	04:50	39	80.9
00:25	26	203.9	01:55	37	225.3	03:25	40	94.4	04:55	39	80.4
00:30	27	207.6	02:00	38	218.9	03:30	40	92.9	05:00	39	80.2
00:35	27	214.9	02:05	38	211.4	03:35	40	90.1	05:05	39	84.4
00:40	28	216.9	02:10	39	205.5	03:40	40	88.1	05:10	38	83.8
00:45	29	221.2	02:15	39	199.9	03:45	40	87.0	05:15	38	81.0
00:50	30	225.2	02:20	39	192.7	03:50	40	86.3	05:20	38	79.5
00:55	30	228.3	02:25	40	182.8	03:55	40	85.7	05:25	38	80.2
01:00	31	230.8	02:30	40	171.4	04:00	40	84.7	05:30	38	78.8
01:05	31	234.4	02:35	40	157.7	04:05	40	84.9	05:35	38	79.0
01:10	32	240.1	02:40	41	148.5	04:10	39	87.5	05:40	38	79.5
01:15	33	243.0	02:45	41	136.5	04:15	39	85.7	05:45	38	78.5
01:20	33	244.1	02:50	41	128.6	04:20	39	86.3	05:50	38	77.6
01:25	34	244.5	02:55	41	118.9	04:25	39	84.9	05:55	38	77.6
01:30	35	245.1	03:00	41	113.6	04:30	39	84.4	06:00	38	77.7



ASTM C 1202-97



Test-compagny  
Testing street 45  
CompagnyCity  
Some Country

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size=20x80mm



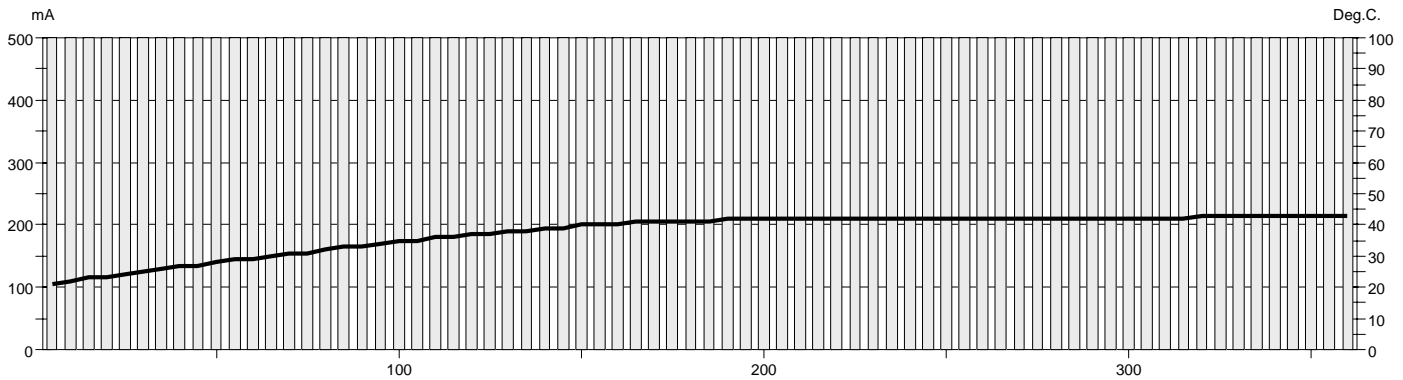
GERMANN INSTRUMENTS

DENMARK  
Phone: +45 3967 7117  
Fax: +45 3967 3167

USA  
Phone: (847)329-9999  
Fax: (847)329-8888

**Test report**

Voltage Used: 60  
 Testing time: 06:00 hour  
 Charge passed: 4083  
 Adjusted Charge passed: 3685  
 Permeability class: Moderate  
 Instrument number: 053706  
 Channel number: 2  
 Report date: 28.6.2007  
 Testing by: Milan Jagušť  
 Reference: PS 003-6/07  
 Sample diameter: 100  
 Comment: Beton + Cortec - MCI Architectural coating



Time	°C	mA	Time	°C	mA	Time	°C	mA	Time	°C	mA
00:05	21	206.0	01:35	34	255.8	03:05	41	156.6	04:35	42	149.4
00:10	22	213.0	01:40	35	253.9	03:10	42	154.7	04:40	42	149.3
00:15	23	221.7	01:45	35	252.1	03:15	42	154.2	04:45	42	150.1
00:20	23	223.8	01:50	36	248.6	03:20	42	153.8	04:50	42	150.1
00:25	24	223.9	01:55	36	246.0	03:25	42	153.3	04:55	42	150.3
00:30	25	223.0	02:00	37	241.6	03:30	42	152.7	05:00	42	150.4
00:35	26	226.6	02:05	37	237.8	03:35	42	151.0	05:05	42	150.2
00:40	27	231.9	02:10	38	233.1	03:40	42	151.7	05:10	42	151.1
00:45	27	235.0	02:15	38	228.2	03:45	42	149.0	05:15	42	151.7
00:50	28	238.5	02:20	39	220.8	03:50	42	147.3	05:20	43	150.6
00:55	29	241.5	02:25	39	213.8	03:55	42	147.3	05:25	43	152.0
01:00	29	244.5	02:30	40	202.2	04:00	42	145.2	05:30	43	153.2
01:05	30	247.5	02:35	40	194.1	04:05	42	145.7	05:35	43	152.9
01:10	31	250.4	02:40	40	187.7	04:10	42	146.5	05:40	43	154.5
01:15	31	254.4	02:45	41	180.2	04:15	42	146.9	05:45	43	156.7
01:20	32	256.8	02:50	41	174.3	04:20	42	148.4	05:50	43	159.3
01:25	33	257.4	02:55	41	165.5	04:25	42	148.4	05:55	43	161.7
01:30	33	257.6	03:00	41	160.5	04:30	42	150.0	06:00	43	162.8





ASTM C 1202-97



Test-compagny  
Testing street 45  
CompagnyCity  
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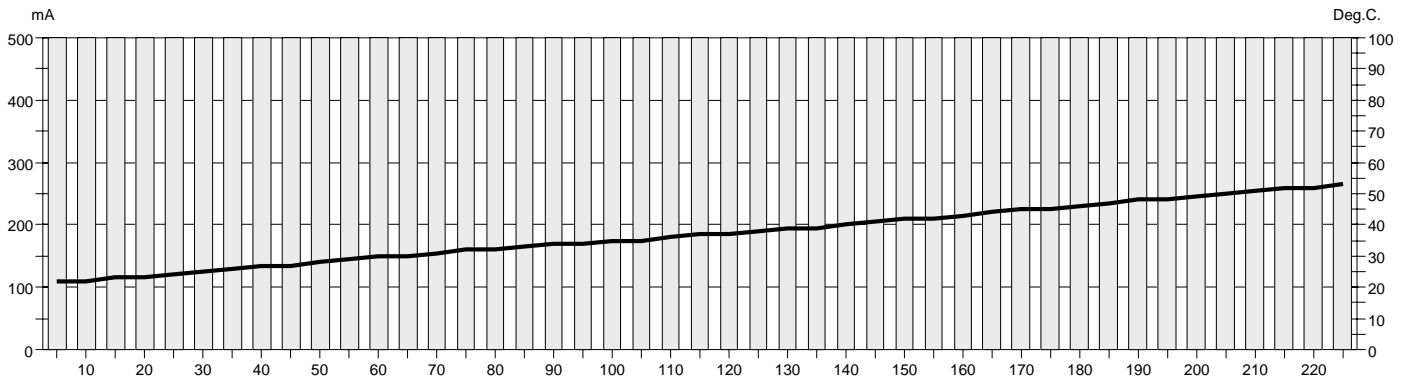
GERMANN INSTRUMENTS

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Fax: +45 3967 3167

USA  
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**Test report**

Voltage Used: 60  
 Testing time: 06:00 hour  
 Charge passed: 4582  
 Adjusted Charge passed: 4135  
 Permeability class: High  
 Instrument number: 053706  
 Channel number: 3  
 Report date: 28.6.2007  
 Testing by: Milan Jagušť  
 Reference: PS 003-6/07  
 Sample diameter: 100  
 Comment: Beton



Time	°C	mA	Time	°C	mA	Time	°C	mA	Time	°C	mA
00:05	22	211.1	01:05	30	273.4	02:05	38	335.7	03:05	47	433.5
00:10	22	222.8	01:10	31	277.6	02:10	39	343.8	03:10	48	440.5
00:15	23	233.5	01:15	32	280.9	02:15	39	353.3	03:15	48	448.2
00:20	23	239.0	01:20	32	285.9	02:20	40	362.4	03:20	49	457.4
00:25	24	240.6	01:25	33	287.8	02:25	41	369.7	03:25	50	464.7
00:30	25	242.8	01:30	34	293.5	02:30	42	378.4	03:30	51	471.1
00:35	26	251.3	01:35	34	298.4	02:35	42	385.9	03:35	52	478.2
00:40	27	259.2	01:40	35	302.7	02:40	43	393.9	03:40	52	485.2
00:45	27	256.9	01:45	35	308.6	02:45	44	402.0	03:45	53	490.4
00:50	28	261.0	01:50	36	315.1	02:50	45	409.9			
00:55	29	265.1	01:55	37	320.7	02:55	45	418.6			
01:00	30	268.8	02:00	37	328.9	03:00	46	426.1			



ASTM C 1202-97



Test-compagny  
Testing street 45  
CompagnyCity  
Some Country

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size=20x80mm



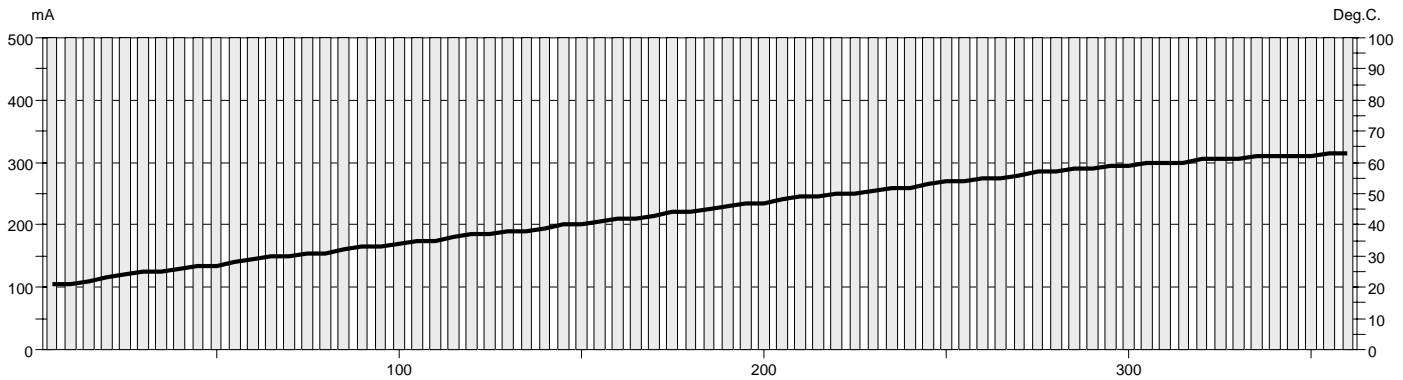
GERMANN INSTRUMENTS

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USA  
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Fax: (847)329-8888

**Test report**

Voltage Used: 60  
 Testing time: 06:00 hour  
 Charge passed: 7896  
 Adjusted Charge passed: 7126  
 Permeability class: High  
 Instrument number: 053706  
 Channel number: 4  
 Report date: 28.6.2007  
 Testing by: Milan Jagušt  
 Reference: PS 003-6/07  
 Sample diameter: 100  
 Comment: Beton



Time	°C	mA	Time	°C	mA	Time	°C	mA	Time	°C	mA
00:05	21	204.3	01:35	33	293.1	03:05	45	383.5	04:35	57	470.7
00:10	21	213.2	01:40	34	291.7	03:10	46	387.4	04:40	57	467.2
00:15	22	217.2	01:45	35	291.6	03:15	47	393.4	04:45	58	458.6
00:20	23	224.7	01:50	35	295.8	03:20	47	398.6	04:50	58	471.1
00:25	24	230.6	01:55	36	300.5	03:25	48	403.5	04:55	59	456.6
00:30	25	235.0	02:00	37	306.0	03:30	49	408.5	05:00	59	461.7
00:35	25	240.7	02:05	37	311.9	03:35	49	413.8	05:05	60	460.2
00:40	26	245.7	02:10	38	317.7	03:40	50	417.1	05:10	60	464.1
00:45	27	250.0	02:15	38	323.5	03:45	50	421.5	05:15	60	459.5
00:50	27	254.1	02:20	39	329.7	03:50	51	425.8	05:20	61	461.0
00:55	28	257.8	02:25	40	336.7	03:55	52	430.0	05:25	61	459.8
01:00	29	261.6	02:30	40	340.7	04:00	52	432.6	05:30	61	460.4
01:05	30	265.3	02:35	41	348.3	04:05	53	437.3	05:35	62	458.1
01:10	30	269.2	02:40	42	352.5	04:10	54	440.0	05:40	62	458.4
01:15	31	273.5	02:45	42	358.4	04:15	54	461.5	05:45	62	457.4
01:20	31	277.5	02:50	43	365.9	04:20	55	451.8	05:50	62	466.1
01:25	32	281.3	02:55	44	372.1	04:25	55	464.3	05:55	63	450.3
01:30	33	284.8	03:00	44	377.5	04:30	56	456.7	06:00	63	451.9