

	<b>Forschungsinstitut für Pigmente und Lacke e.V.</b> Allmandring 37, D-70569 Stuttgart Tel.: 0711/68780-0, Fax: 0711/68780-79 e-Mail: <a href="mailto:fpl@fpl.uni-stuttgart.de">fpl@fpl.uni-stuttgart.de</a>	
Prüfbericht – Nr.: AT 113/05	Abteilung Anwendungstechnik	Seite 1 von 5

## Test Report

**Customer:** Keimfarben GmbH & Co.KG  
Keimstr. 16  
86420 Diedorf

**Date of commission:** 02.12.2005

**Sample taking:** by the customer

**Storing of sample material:**

All samples are stored 25 months after delivering the results to the customer, unless the sample material was used up or destroyed by chemical reaction or any other agreements were made.

**Item of contract:**

- 1) Keim Royalan (white)
- 2) Keim Royalan –Dilution and Keim Royalan

**Test methods:**

**DIN EN 1062-1 (Dec. 1996), coating materials and coating systems for exterior masonry and concrete**

- 1) Determination and classification of water vapour transmission rate (DIN EN ISO 7783-2)
- 2) Determination and classification of liquid water transmission rate (DIN EN 1062-3)
- 3) Measurement of gloss, determination of the reflectance (ISO 2813)



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**Designation of the samples:**

- 1) Keim Royalan (2 coats)
- 2) Keim Royalan-Dilution (2 coats) and Keim Royalan (2 coats)

**Beginning of tests:** 22.12.2005

**End of tests:** 02.02.2006

**Designation of the laboratory:**

Application technique

**Enclosures:**

Enclosures 1 to 3

**Test result:**

- 1) **Determination and classification of water vapour transmission rate (DIN EN ISO 7783-2)**

**Samples:**

The following coating systems were applied on glass frits (Fa. Robu, porosity 4, test area: 61 cm<sup>2</sup>).

Number of samples: 4

<b>Consumption on glass frits</b>		
	<b>consumption</b>	<b>dried film thickness</b>
Keim Royalan (2 coats)	366 g/m <sup>2</sup> ± 25,1	100-110 µm
Keim Royalan-Dilution (2 coats)	1,09 l/m <sup>2</sup> ± 0,07	-
Keim Royalan (2 coats)	377 g/m <sup>2</sup> ± 23,8	100-110 µm

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After 28 days of drying under the conditions of the climate chamber (23 °C/50 % relative humidity) the samples were preconditioned due to DIN EN ISO 7783-2. Afterwards, the determination of the water vapour transmission followed by weighing the loss of water, daily.

The following values were determined (calculation of the sd-value, see enclosure 1 and 2):

Façade paint	sd- value (m)	V (g/(m <sup>2</sup> d))	Classification due to DIN EN 1062-1
1) Keim Royalan	0,013 ± (0,002)	1566	class: I, high (sd < 0,14 m)
2) Keim Royalan-Dilution and Keim Royalan	0,036 ± (0,006)	565	class: I, high (sd < 0,14 m)

### Annotations

- Diffusion equivalent airtightness thickness = sd
- Water vapour transmission rate  $V = 20,4/sd$   
(at 23 °C, gradient of relative humidity 93 %/50 %, atmospheric pressure 1013,25 hPa)



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## 2) Determination and classification of liquid water transmission rate (DIN EN 1062-3)

The coating systems were applied on lime sandstone.  
(test area: 270 cm<sup>2</sup>, 3,5 cm thickness)  
Number of samples: 4

consumption on lime sandstone		
Keim Royalan	2 coats	375 g/m <sup>2</sup> ± 12,3
Keim Royalan-Dilution	2 coats	0,3 l/m <sup>2</sup> ± 0,02
Keim Royalan	2 coats	377 g/m <sup>2</sup> ± 16,2

After 28 days of drying under the conditions of the climate chamber (23 °C/50 % relative humidity) the samples were preconditioned due to DIN EN 1062-3.

Afterwards, the determination of the liquid water transmission rate followed by weighing the water uptake in demineralised water at 23 °C after 1, 2, 3, 6, 24 hours.

The following values were determined:  
(calculations, see enclosure 3):

Façade paint	Water transmission rate (24 h) $w_{24}$ -value ( kg/(m <sup>2</sup> √h))	Classification due to DIN EN 1062-1
Keim Royalan	0,12 ± (0,01)	class: II, medium (0,1 bis 0,5 kg/(m <sup>2</sup> √h))
Keim Royalan-Dilution and Keim Royalan	0,03 ± (0,003)	class: III, low (< 0,1 kg/(m <sup>2</sup> √h))

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- 3) Measurement of specular gloss, determination of the reflectance (ISO 2813)

Application with the automatical film applicator (400 µm gap clearance) on fibre concrete substrate.

Façade paint	Dried film thickness	Specular gloss (at 85 ° angle of incidence)	Classification due to DIN EN 1062-1
Keim Royalan	approx. 200 µm	0,5 ± 0,05	matt (≤ 10 at 85 ° angle )

**Comments\*:**

The test results refer to the samples, only. This test report may not be published (even not in parts) without the allowance of the FPL.

\* The comments are an additional interpretation (opinion) beyond the test methods.

Stuttgart, 27.02.2006

i.A. 

K. Gaszner

Application technique

i. A. 

H. Neher-Schmitz

tester

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