

Assessment Report

- Translation -

Document No.: (5098/835/14-2) – Wob of 15/08/2014

Client: Alchimica SA
13, Oryzomylon Street
GR 12244 Athens

Order date: 12/02/2014

Order Ref.: -

Order received: 12/02/2014

Subject: Determination of thermal conductivity and water vapour transmission for the Aquasmart Thermo and Aquasmart Paint products

Test basis: DIN EN 12572

Test material received: 11/04/2014

Sampling: Made by the client

Test material marking: Specimen 1: Aquasmart Thermo 1K-PU insulating system
Specimen 2: Aquasmart Paint 2K-PU system

Assessment period: 27/05/2014 until 15/08/2014

This Assessment Report consists of 3 pages, including the cover sheet.

This document is the translated version of Assessment Report No. 5098/835/14-2 – Wob dated 15/08/2014. The legally binding text is the aforementioned German Assessment Report.



This Assessment Report may not be circulated unless as a complete text without any alterations. Excerpts and abridged versions of this document are subject to approval in writing of MPA Braunschweig. Translations of this document that are made without the approval of the Testing House must bear the note "translation of the German original not examined by the Materials Testing Institute" in Braunschweig. The first sheet of this document and the page carrying the signatures bear the official stamp of MPA Braunschweig. Documents that do not carry a signature and the official stamp are invalid. The test material has been fully used. The accreditation scope can be found in the accreditation documents. A list of the accredited sections and tests will be send on request

1 General information

With their letter of 12/02/2014, Alchimica SA, Athens, Greece, commissioned the Civil Engineering Materials Testing Institute (MPA) in Braunschweig to determine the thermal conductivity and water vapour diffusion of their coating system, consisting of the materials Aquasmart Thermo 1K-PU insulating system and Aquasmart Paint 2K-PU system. This report contains the results of the water vapour transmission test.

2 Material used for testing

The following materials were used for testing:

Specimen 1: Aquasmart Thermo 1K-PU insulating system, batch No. 24101322

Specimen 2: Aquasmart Paint 2K-PU system, component A: batch No. LDC 1300016
component B: batch No. LOT 02121301

3 Determination of water vapour transmission

3.1 Specimen preparation

The supporting layer for the coating system consisted of commercial gypsum plasterboards, 13 mm thick, that was covered an area of 150 x 150 mm. For preparation of the specimens, 22.6 grams each of the Aquasmart Thermo material were applied to six gypsum plasterboards in one application process. This corresponds to a consumption rate of 2 l/m². After the specimens had dried, two coats of Aquasmart Paint (mass ratio: comp. B : comp A = 10 : 1) were applied to three of the boards at a consumption rate of 15.8 g/board (0.7 kg/m²). The specimens were dried at ambient temperature until the weight remained constant.

3.2 Testing and test results

The tests were carried out according to DIN EN 12572 with coated plasterboards. Both coating systems (Aquasmart Thermo and Aquasmart Thermo + Aquasmart Pain) were determined under the following test conditions 23°C and 50/93% moisture.

Subsamples with a diameter of 80 mm were used for the tests.

The results are shown in table 1 and 2. The water vapour diffusion equivalent air layer thickness (sd value) of the coated samples were calculated according to appendix E of DIN EN 12572. The uncoated plasterboards were considered with sd-Value of 0.07 m.

Table 1: results of water vapour tests Aquasmart Thermo
(Test conditions 23°C - 50/93 % moisture. (Set C))

No.	material	sample	thickness [mm]	g [kg/(m ² ·h)]	sd-value [m]
1	plasterboard + Aquasmart Thermo	1	14.9	1.2818E-07	1.8
		2	14.9	1.4276E-07	1.6
		3	14.5	1.4834E-07	1.5
		4	14.7	1.5184E-07	1.5
		5	14.3	1.6466E-07	1.4
		Mittelwert	14.7	1.4716E-07	1.6

Table 2: results of water vapour tests Aquasmart Thermo + Aquasmart Paint
(Test conditions 23°C - 50/93 % moisture.. (Set C))

No.	material	sample	thickness [mm]	g [kg/(m ² ·h)]	sd-value [m]
1	plasterboard + Aquasmart Thermo + Aquasmart Paint	1	15.8	1.4655E-07	2.2
		2	15.7	1.6643E-07	4.1
		3	15.5	1.9130E-07	5.0
		4	15.3	1.4717E-07	3.9
		5	15.7	2.1606E-07	5.1
		Mittelwert	15.6	1.4716E-07	1.4

This document is the translated version of Assessment Report No. 5098/835/14-2 – Wob dated 15/08/2014. The legally binding text is the aforementioned German Assessment Report.

Head of Department

i.A.


Dr Knut Herrmann



Engineer in Charge

i.A.


Dr. Matthias Wobst