

All the tests in this report are executed according to the ISO 9001
 certified quality management system of BBRI

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TEST REPORT

Laboratory	MATERIALS FOR STRUCTURAL AND FINISHING WORKS (LMA)	O/References	DE621XB622-3-eng LMA 5748 Page: 1/3
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Requestor	SOUDAL Attn.: F. Van Mieghem Everdongenlaan, 18-20 BE-2300 TURNHOUT		
Order date	16/12/2015	Samples registration	S2016-4-16
		Samples reception date	21/01/2016
Report date	11/05/2016 25/11/2016 (English version)		
Tests carried out	Determination of the water vapour transmission properties Product: 'Soudatight'		
References	NBN EN ISO 12572 (2001) Hygrothermal performance of building materials and products - Determination of water vapour transmission properties		

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- No sample
- Sample(s) subjected to a destructive test
- Sample(s) to be removed from our laboratories 30 calendar days after sending the report, except in the case of a further written request.

In charge of the test

Project leader

Division head

André Leblanc

ir. Stijn Mertens

ir. Yves Grégoire



1. SAMPLE

Were delivered and registered under lab number LMA 5748:

- 1 bucket of 5 kg of the product 'Soudatight', number 2014 / 1685 / 36



Figure: product

The used substrate was chosen by the requestor and delivered by the laboratory:

Substrate	Description/data (according to the technical sheets)
Brick	Facing brick of group 1 ('H4')

2. Water vapour transmission properties – NBN EN ISO 12572

2.1. PREPARATION

The product was applied by the requestor (after homogenisation) in one layer (thickness: 1 mm) on the surface and smoothed with a small screed board to obtain a uniform thickness (1 mm). After conditioning, five cylindrical test specimens without product (with a diameter of about 8 cm), and five cylindrical test specimens with product (with a diameter of about 8 cm) were obtained using a core drill. These specimens were conditioned in standard conditions (23 ± 2 °C and 50 ± 5 % RH) until constant mass. Subsequently, they were mounted on glass cups with paraffin, with black adhesive tape and then again with paraffin. The glass cups contained an aqueous supersaturated solution of ammonium dihydrogen phosphate ($\text{NH}_4\text{H}_2\text{PO}_4$) in order to obtain 93% of relative humidity (in accordance with method C of the standard).

Finally, the mass variation, the water vapour permeability (δ) and the water vapour resistance (μ) was calculated.

2.2. TESTS

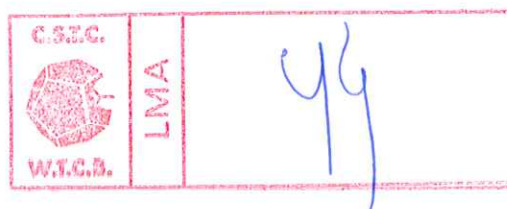
The used test method is conform to the European standard NBN EN 12572: 2001.

After the above-mentioned conditioning and preparation the test specimens were placed in a climatized room with the following measuring conditions in terms of temperature and relative humidity:

Measuring conditions:

- Temperature in the climatized room: 23 ± 1 °C;
- Relative humidity on the other side of the specimen (climatized room side): 50 ± 5 % RH;
- Relative humidity on one side of the specimen (inside the test cup): 93 ± 3 % RH.

By means of daily comparative measurements, the water vapour transmission properties of the product were determined.



2.3. RESULTS

- Selected period : 7.03.2016 – 11.04.2016
- Controlled conditions in the climatised chamber: 23.4°C and 46.6% RV.
- Mean controlled relative humidity: 46.4 %
- Mean barometric pressure during the aforementioned period : 1012.7 hPa
- Diameter of the test specimens : 8 cm

Water vapour transmission properties of the reference substrate without 'Soudatight'									
Properties	LMA 5748						Mean	Std. dev.	COV. (%)
	/1	/2	/3	/4	/5	/6			
Thickness of reference substrate (mm)	36.9	36.9	36.7	36.7	36.9	36.9	36.8	0.10	0.3
Water vapour flow rate G (kg/s)	27.6E-10	27.2E-10	33.2E-10	31.5E-10	36.6E-10	31.1E-10	31.2E-10	3.5E-10	11
Water vapour permeance W (kg/m ² .s.Pa)	42.9E-11	42.3E-11	51.7E-11	49.0E-11	57.0E-11	48.4E-11	48.5E-11	5.5E-11	11
Water vapour resistance Z _m (m ² .s.Pa/kg)	23.3E+08	23.6E+08	19.3E+08	20.4E+08	17.6E+08	20.7E+08	20.8E+8	2.3E+08	11
Water vapour diffusion-equivalent air layer thickness s _d (m)	0.45	0.46	0.38	0.40	0.34	0.40	0.41	0.05	11

Water vapour transmission properties of the substrate with 'Soudatight'									
Properties	LMA 5748						Mean	Std. dev.	COV (%)
	/1	/2	/3	/4	/5	/6			
Thickness of substrate (mm)	36.7	36.5	36.8	36.8	36.9	36.8	36.8	0.15	0.41
Thickness of product (mm)	1.14	1.22	1.17	0.89	1.13	0.96	1.09	0.13	12
Water vapour flow rate G (kg/s)	10.2E-11	10.7E-11	12.0E-11	11.8E-11	16.0E-11	10.4E-11	11.8E-11	2.2E-11	18
Water vapour permeance W (kg/m ² .s.Pa)	15.2E-12	15.9E-12	17.9E-12	17.5E-12	23.7E-12	15.4E-12	17.6E-12	3.2E-12	18
Water vapour resistance Z _t (m ² .s.Pa/kg)	65.8E+9	62.8E+9	55.9E+9	57.1E+9	42.1E+9	64.8E+9	58.1E+9	8.8E+09	15
Water vapour diffusion-equivalent air layer thickness s _d (m)	12.86	12.28	10.93	11.16	8.24	12.67	11.36	1.72	15

Water vapour transmission properties of the product 'Soudatight'									
Properties	LMA 5748						Mean	Std. dev.	COV (%)
	/1	/2	/3	/4	/5	/6			
Thickness of product (mm)	1.14	1.22	1.17	0.89	1.13	0.96	1.09	0.13	12
Water vapour resistance Z _t (m ² .s.Pa/kg)	63.7E+9	60.7E+9	53.9E+9	55.0E+9	40.1E+9	62.7E+9	56.0E+9	8.8E+9	16
Water vapour permeance W (kg/m ² .s.Pa)	15.7E-12	16.5E-12	18.6E-12	18.2E-12	24.9E-12	15.9E-12	18.3E-12	3.5E-12	19
Water vapour resistance factor μ (without unity)	10923	9695	9008	12058	6955	12809	10241	2144	21
Water vapour diffusion-equivalent air layer thickness s _d (m)	12.46	11.88	10.53	10.76	7.84	12.26	10.96	1.7	16

