



TOR COATINGS  
att. Andy Shaw  
Portobello Industrial Estate  
Birtley  
Chester-Le-Street  
County Durham DH3 2RE  
UNITED KINGDOM

## TEST REPORT

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**IDENTIFICATION NUMBER:** ES-150610.a

**DATE:** 12.6.2015

**LABORATORY:** Coatings Research Institute  
Avenue P. Holoffe  
1342 LIMELETTE

**CUSTOMER:** TOR COATINGS  
Portobello Industrial Estate  
Birtley  
Chester-Le-Street  
County Durham DH3 2RE  
UNITED KINGDOM

**REFERENCE ORDER:** Your order 13498

**DATE OF RECEPTION OF THE SAMPLES:** 28.5.2015

**NUMBER OF THE RECEPTION DOCUMENT:** ES 8832

**SAMPLES:** Zinsser Grade I applied on filter paper (10 m<sup>2</sup>/l per coat) by Tor Coatings

**TEST(S) + METHOD(S):**

***Water vapour permeability***

Realized following ASTM D 1653 "Water vapor transmission of organic coating films" - Method B - Wet cup method - Condition A

A piece of filter paper with paint and also filter paper without paint is brought upon cups filled with water. These cups are placed until constant weight loss in a desiccator at 23°C and 50 % RH.



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The WVT (water vapor transmission) is calculated using the following formula:

$$WVT = G/t.A$$

where: G = weight loss (in g)  
t = time during which this weight loss (G) is established (h)  
A = surface of the free film (m<sup>2</sup>)

After that the WVP (water vapour permeance) is calculated using the following formula:


$$WVP = WVT/\Delta p$$


where:  $\Delta p = S.(R1-R2)$   
S = mm Hg vapour pressure at test temperature  
R1 = relative humidity in the cup  
R2 = relative humidity outside the cup

**DATE OF EXECUTION OF THE TESTS:** May - June 2015

## RESULTS:

	Filter paper alone	Filter paper with paint
Film thickness - Mean (µm)	124,7	132,7 (only paint)
Measurement 1	1112,41	316,02
Measurement 2	1063,49	263,76
Measurement 3	1076,97	266,13
Measurement 4	/	261,41
Measurement 5	/	263,78
mean WVT (g/m <sup>2</sup> per 24 h)	<b>1084,29</b>	<b>274,22</b>
WVP (g/m <sup>2</sup> per 24 h per mm Hg)	<b>0,515</b>	<b>0,130</b>

Performed by:   
R. Guns  
Technician

Approved by:   
S. Vonckx  
Resp. testing Dept.

**!!!!!!! Samples will be stored at CoRI during 6 months and then removed in accordance with the waste legislation, unless you make an appeal to prolongate this period or you recall the samples yourself (on charge of the customer).**

\* This test report concerns only the samples subjected to these tests

\* This test report can not be copied partially without the written permission of the CoRI

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