

Certificate of Test

Supplement to Certificate of Test number 7932 issued by Taylor Woodrow Technology on 10 January 2006, Certificate of Test number 9699 issued by Taylor Woodrow Technology on 5 February 2008 and Certificate of Test number 12075 on 09 July 2009.

Since the original Certificates were issued, the product known as 'Jotashield Tex Ultra' has had no formulation change.

Since the original Certificate was issued, Taylor Woodrow Technology has rebranded as VINCI Construction UK Ltd. Technology Centre.

Title: Determination of Moisture Vapour Transmission Rate of Jotashield Tex Ultra

Certificate of Test Number: 13531

Client's Name & Address:

Jotun UAE LLC
Al Quoz Industrial Area
PO Box 3671
Dubai
United Arab Emirates

Our Ref: N950/V018

TC Job No: 3NF3 – 1.064.273

Your Ref: PO 54798

Date: 06 October 2010

Date sample(s) received: 24 October 2005


Sample(s) received from: Jotun UAE Ltd LLC


Sample No: 143005

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This Certificate and the results shown are based upon the information drawings samples and tests referred to herein

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Tested by: 
D J Thompson (position: Engineer)

Authorised by: 
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TECHNOLOGY CENTRE 

1. INTRODUCTION

This certificate of test describes the moisture vapour transmission testing carried out at the request of Jotun UAE Ltd LLC on 09.12.05 – 09.01.06 at Technology Centre (TC), Leighton Buzzard.

The test was carried out in accordance with Internal Technology Centre Test Procedure TP/N950/09/16074.

2. SAMPLE DESCRIPTION

Technology Centre received one litre of Jotashield Siloxane Acrylic Primer (TC Ref 143004) and one litre of Jotashield Tex Ultra (TC Ref 143005). The coatings were given unique TC sample numbers for reference purposes only.

3. TEST PROCEDURE

3.1 Coating Application

The coating system was brush applied to previously characterised cartridge paper using a weighing procedure to achieve the coverage rate required. The Jotun Siloxane Acrylic Primer was applied as a flood coat and allowed to dry for a minimum of 8 hours. Two coats of Jotashield Tex Ultra were then applied, each at a rate of 465g/m^2 with a minimum drying period of 24 hours between coats. Each subsequent coat was applied at 90° to the previous.

The coated sample was cured for 2-3 days in the laboratory and then conditioned at $23\pm 2^\circ\text{C}$ and $60\pm 5\%$ Relative Humidity for a minimum period of four weeks prior to testing.

3.2 Determination of Moisture Vapour Transmission

The test was carried out in triplicate at $23\pm 2^\circ\text{C}$. Three coated cartridge paper discs were sealed in Payne permeability cups such that both faces were exposed. The coated face was exposed to a dry atmosphere (0% relative humidity) and the other face to water vapour (100% relative humidity).

The test cups were weighed periodically over a test interval of approximately 30 days. Equilibrium conditions were achieved after approximately 4 days and the subsequent steady state flow of water vapour was calculated from the rate of weight loss.

The diffusion coefficient with respect to water vapour for the coating ($\text{D}_{\text{H}_2\text{O}}$) was calculated from the measured flux for the coated tile ($\text{g/m}^2\cdot 24\text{hr}$) using Fick's law of diffusion and Crank's equation.

4. TEST RESULTS

MOISTURE VAPOUR TRANSMISSION RATE

Table 1

COATING SYSTEM	Jotashield Tex Ultra		
	Specimen No.	143005/6A	143005/6B
Flux (g/m ² .24hr)	40.06	52.60	43.65
D _{H₂O} (cm ² s ⁻¹)	7.14x10 ⁻⁰⁵	9.67x10 ⁻⁰⁵	7.85x10 ⁻⁰⁵
μ-value	3.56x10 ⁺⁰³	2.63x10 ⁺⁰³	3.24x10 ⁺⁰³
SD (m)	1.1	0.8	1.0
Mean DFT (μm)	323	323	323

Dates tested: 09.12.05 – 09.01.06

Notes

- (i) The SD-value (equivalent air layer thickness) is dependent on film thickness and is calculated above for the mean of the measured dry film thickness obtained from a spare sample.
- (ii) D_{H₂O} for the Cartridge Paper (thickness = 192μm) is 0.00043 (Units of D are cm²s⁻¹).
- (iii) The criterion for an acceptable anti-carbonation coating is for SD to be equal to, or less than, 4m.
- (iv) Classification in accordance with EN 1062-1

Table 2

Classification	Moisture Vapour Transmission Rate (V)		SD (m)
	(g/(m ² .d))	(g/(m ² .h))	
I (high)	>150	>6	< 0.14
II (medium)	15 to 150	0.6 to 6	0.14 to 1.4
III (low)	<15	<0.6	> 1.4

END OF CERTIFICATE