

Certificate of Test

Supplement to Certificate of Test number 7890 issued by Taylor Woodrow Technology on 12 April 2004 and Certificate of Test number 9696 issued by Taylor Woodrow Technology on 5 February 2008 and Certificate of Test number 12076 issued by Taylor Woodrow Technology on 9 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 after 2500 Hours Accelerated Weathering

Certificate of Test Number: 13532

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 – 1.064.27

Your Ref: PO 54798

Date: 06 October 2010

Date sample(s) received: 16 January 2002

Sample(s) received from: Jotun UAE Ltd LLC


Sample No: 129543

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Tested 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 09/10/03 – 20/11/03 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.

The moisture vapour transmission rate of the coating system after 2500 hours QUV accelerated weathering was to be determined.

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. A flood coat of Jotun Siloxane Acrylic Primer was applied and allowed to dry for a minimum period of 8 hours. Two coats of Jotashield Tex Ultra were then applied at a rate of 465g/m²/coat with a minimum drying period of 24 hours between coats. The second coat was applied at 90° to the first.

The coated sample was cured for 2-3 days in the laboratory and then conditioned at 23±2°C and 60±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±2°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 (D_{H₂O}) was calculated from the measured flux for the coated tile (g/m².24hr) using Fick's law of diffusion and Crank's equation.

4. TEST RESULTS

MOISTURE VAPOUR TRANSMISSION RATE

Table 1

COATING SYSTEM	Jotashield Tex Ultra
QUV Weathered for	2500 hours
Specimen No.	129543A
Flux (g/m ² .24hr)	35.02
D _{H₂O} (cm ² s ⁻¹)	3.61 x10 ⁻⁰⁵
μ-value	7.04 x10 ⁺⁰³
SD (m)	1.3
Mean DFT (μm)	189

Dates tested: 09/10/03 – 20/11/03

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 criteria 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