

Test Report No. 7191067958-MEC13/01A-ED
dated 30 Sep 2013



PSB Singapore

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SUBJECT:

Testing of liquid-applied polyurethane waterproofing membrane

TESTED FOR:

Maris Polymers S.A.
Industrial area of Inofita
32 011 Inofita
Greece

Attn: Mr Lance Khoo

SAMPLE DESCRIPTION:

The following items were received as shown:

Sample	Size	Quantity	Date received
'Mariseal 650' Cured sheet	400 mm x 350 mm	1 pc	12 Aug 2013
	300 mm x 210 mm	1 pc	23 Sep 2013

TEST METHODS:

Tensile Properties

1. ASTM D412 : 2006a Standard Test Method For Vulcanized Rubbers And Thermoplastic Elastomers-Tension

Test specimen : Dumbbell shape, die C
Gauge length : 25 mm
Grip length : 64 mm
Crosshead speed : 500 mm/min
No. of determinations : 5

Tear Strength

2. ASTM D624 : 2007 Standard Test Method For Tear Strength Of Conventional Vulcanized Rubber And Thermoplastic Elastomers

Test specimen : Tear test specimen
Grip length : 25.4 mm
Crosshead speed : 500 mm/min
No. of determinations : 5



Laboratory:
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3. Puncture Strength

ASTM E154 : 2008a Standard Test Methods For Water Vapor Retarders Used In Contact With Earth Under Concrete Slabs, On Walls, Or As Ground Cover
Section 10 : Resistance To Puncture

Test size : 300 mm x 300 mm
Crosshead speed : 6 mm/min
No. of determination : 1

Water Absorption

4. Adopted ASTM D 570 : 2005 Standard Test Method For Water Absorption Of Plastics

Test size : 75 mm x 25 mm
Pre-conditioning before immersion : $50 \pm 3^\circ\text{C}$ for 24 hours
Immersion duration : $23 \pm 1^\circ\text{C}$ for 24 hours
No. of determinations : 3

Hydrostatic Pressure

5. DIN 16726 : 1986 Plastic Roofing Felt And Waterproofing Sheet Testing
Section 5.11 : Behaviour Under Hydrostatic Pressure

Apparatus : Slotted disc pressure tester
Test specimen dimensions : $\varnothing 130$ mm
Test condition : 3 bar for 1 hour
No. of determination : 1

CONDITIONING:

Unless otherwise specified, all test specimens were conditioned at $23 \pm 2^\circ\text{C}$, $70 \pm 15\%$ relative humidity and tested at $23 \pm 2^\circ\text{C}$, $65 \pm 5\%$ relative humidity. The tensile properties, tear strength and puncture strength tests were conducted at $23 \pm 2^\circ\text{C}$ and $50 \pm 5\%$ relative humidity.

TEST RESULTS:

Test	Unit	'Mariseal 650'
1.		
a. Maximum Tensile Strength, median	N/mm ²	4.9
b. Elongation At Break, median	%	815.9
c. Tensile Strength At 100% Elongation, median	N/mm ²	0.6
d. Tensile Modulus Of Elasticity, median	N/mm ²	0.6
2. Tear Resistance, average	N/mm	14.1
3. Puncture Strength	N	150.0
4. Water Absorption, average	%	0.7
5. Hydrostatic Pressure	-	No rupture

Ed



REMARKS:

1. The cured sheets were fully cured upon receipt as specified by the client.
2. The tensile properties were specified by the client.
3. One piece of cured sheet was tested for puncture strength test due to insufficient sample.

A handwritten signature in black ink, appearing to read 'Eddie Suwand'.

Eddie Suwand
Senior Associate Engineer

A handwritten signature in black ink, appearing to read 'Eng Aik How'.

Eng Aik How
Engineer
Building
Mechanical Centre





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July 2011

