



PSB Singapore

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SUBJECT:

ECO SEAL 100 WHITE

TESTED FOR:

IDEAS LAB
3, Rothwell Street
Redruth
Timaru
New Zealand 7910
Attn: Dr Nicholas Wall

SAMPLE DESCRIPTION:

The following items were received on June 8th 2017..

Sample	Size and Type	Quantity
ECOSEAL 100 White	300mm x 300mm coated 7mm plywood sheet	10
ECOSEAL 100 White	300mm x 300mm coated flexible acrylic sheet	10

TEST METHODS:

Adopted : ASTM G53 "Standard Practise for Operating Light and Water Exposure Apparatus (Fluorescent UV – condensation Type) for exposure of Nonmetallic Materials.

Staining And Colour Change

1. ASTM C510: 2005 Standard Test Method for Staining and Change of Colour and Gloss.

Test Exposure
Exposure Duration
No. of determination

8 hours UV exposure, followed by 4 hours condensation at 45°C
10,000 Hours
1 for colour and gloss per 1000 hours test duration



TUV SUD PSB

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Hardness

- 2 ASTM C661 : 2006 Standard Test Method For Indentation Hardness Of Elastomeric Coatings and Sealants By Means Of A Durometer

Test Conditions:

- a) 23°C and 50% relative humidity for 7 days
 - b) 38°C and 95% relative humidity for 7 days
 - c) 23°C and 50% relative humidity for 7 days
- No. of determinations 3 points per test piece.
3 determinations at the end of the QUV exposure per panel.

Cyclic Adhesion & Cohesion

- 3 ASTM C719: 2005 Standard Test Method For Adhesion And Cohesion Of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle)

Test Conditions:

- a) 23°C and 50% relative humidity for 7 days
- b) 38°C and 95% relative humidity for 7 days
- c) 23°C and 50% relative humidity for 7 days
- d) Immersion in distilled water at 23°C for 7 days
- e) Drying in oven at 70°C for 7 days

Cyclic Test Conditions:

Stage A-10 cycles of joint movement

- a) The joint width was compressed by 25% at 3.2mm/hr
- b) It was extended by 25% at 3.2 mm/h
- c) It was compressed by 25% again at 3.2mm/hr

Stage B-10 cycles of joint movement

- a) The joint width was compressed by 25% and conditioned at 60°C for 24 hours
- b) After ageing the test sample was cooled to 20°C for 3 hours
- c) The joint width was extended by 25% at -26°C and 3.2 mm/h
- d) The sample were removed and allowed to condition to room temperature

No. of determinations



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Effects Of Accelerated Weathering

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Adopted ASTM ASTM C793:2005 Standard Test Method For Effects Of Accelerated Weathering On Elastomeric Membranes

Test cycle	:	8 hours UV exposure at 55°C and 4 hours condensation at 45°C
Lamp designation	:	Fluorescent UVA 340 nm
Exposure Duration	:	10,000 hours
No. of determinations	:	3 (
Bend test	:	
Apparatus	:	Steel mandrel
Test condition	:	26°C for 24 hours
No. of determinations	:	3

CONDITIONING:

Unless otherwise specified, all test specimens were tested at 20°C +/- 2°C and 65% +/- relative humidity.



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Test	ECOSEAL 100 WHITE	ASTM G53 Flexible Coatings and Membranes
1. Staining and Colour Changes	No Staining and Colour Change of less than 2.0 units. No chalking.	The membrane shall not discolour or chalk after exposure to UV and condensation.
2. Indentation Hardness	Initial Hardness = 105 Shore A Hardness post exposure = 102 shore A	Coatings and membranes shall not become embrittled after exposure to UV and condensation
3. Adhesion and Cohesion	No Bond Failure No Cohesive Failure	Coatings and Membranes shall show no cracks after the specified UV exposure, and shall show no cracks after cold temperatures and the bend test.
4. Effects Of Accelerated Weathering	No cracks after UV exposure and bend test	Coatings and Membranes shall show no chalking, excessive discolouration, embrittlement or loss of adhesion after accelerated UV weathering.

Test Summary.

ECOSEAL 100 is a very flexible, tough coating with more than 280% flexural strain when it is new. After 10,000 hours of accelerated weathering testing in accordance with ASTM G53 with a standard cycle the ECOSEAL 100 does not chalk, discolour, become embrittled or lose either cohesive or adhesive strength, and still maintains a high degree of flexural strain. The ECOSEAL 100 is a green chemistry product that is zero VoC and has outstanding chemical and weathering properties.

Eddie Suwand
Senior Associate Engineer

Eng Aik How
Product Manager
Building Mechanical Centre.

REMARKS:

The test conditions for staining and colour change tests and effects of accelerated weathering test were adopted from ASTM G53 and G154:2006. Standard Practice For Operating Fluorescent Light Apparatus For UV Exposure of Nonmetallic Materials

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June 2018

