x'traseal®

"MS-602"

MS Polymer Sealant - LM

SINGAPORE GREEN BUILDING PRODUCT
SGBC
VERY GOOD
SGBP 3971

MS
SIRIM
CERT.TO ASTM C920 : 2014a
CERT.NO : PC004057

Low Modulus | Specially for Aluminium Composite Panel (ACP)

- Conform to ASTM C920 Class 50
- Conform to ASTM C1248
- Prolonged Life Expectancy
- No Visible Stain Even On Porous Substrates
- Excellent UV Radiation & Weather Resistant
- Primerless Adhesion on Many Substrates
- Joint Movement Capability Up to +/-50%
- Free of Isocyanate, Solvent, Acid & Silicone Oil
- No Bubble Formation within Sealant
- Can be Applied on Damp Surface
- Suitable for Indoor & Outdoor Uses

NON-BLEEDING SEALANT

www.xtraseal.com

MS-602 is based upon Hybrid Silyl Modified Polyether Technology. It is a neutral, single component, low modulus with high movement capability joint sealant. It has an outstanding bond strength and primerless adhesion on various types of substrates. It can be painted with most type of paints and has superior weatherability in all climates. It won't form bubbles within sealant even in humidity applications or apply on moist surfaces. It is a high performance flexible elastic sealant suitable for all kind of applications and conditions. MS-602 is designed for use on prestige buildings. This specially formulated non-bleeding sealant mainly for application to difficult substrates associated with modern facade construction. MS-602 is a durable, flexible, non-sagging sealant that offers excellent performance in moving joints and exhibits tenacious adhesion.

Uses:
- Expansion and connection joints in the building and construction industry.
- Sealing of joints in prefabricated buildings or concrete panels.
- Bonding or sealing of natural stones and aluminium sub-frames.
- Sealing between window and door frames.
- Movement or perimeter joints around buildings.

Application:
- Substrates must be clean, dry and free from grease. Remove all dirt, oil, grease, detergents and loose material.
- Cut tip off cartridge. Cut nozzle to desired size at 45°angle. Screw nozzle onto cartridge. Insert cartridge into caulking gun.
- Push sealant ahead for uniform bead.
- Tool as required to properly fill joint.
- Clean off excess sealant with m.e.k. or toluene before dry.

Joint Design:
The specified sealant bead size should be calculated to comply with the compression and extension capabilities of the sealant in relation to the anticipated joint width die to expansion and contraction.

Generally calculation of the width of MS-602 sealant bead should be computed on the basis of a maximum ± 50 % of the original joint width. A minimum of 6mm substrate sealant bond is necessary to ensure adequate adhesion and accommodate movement. Joint depth should not less than 6mm and not greater than 10mm. Use 2:1 width to depth ratio up to 20mm in width. Backer material should be installed to prevent 3 side adhesion and to control sealant depth.

Suitable joint depth vs width:
- 6mm x 6mm
- 6mm x 12mm
- 10mm x 20mm

Curing Time:
MS-602 will skin forming in approximately 15 minutes and it will cure to a depth of 10mm in 7 days. Longer curing time may be necessary in dry and low humidity area.

Specification:

PROPERTIES	VALUE	METHOD
Curing System	Neutral	-
Appearance	Non-Sagging Paste	Visual
Smell	Odorless	Visual
Joint Movement Capability	+/- 50%	ASTM C719
Rheological (Flow) Properties I) Vertical Displacement II) Horizontal Displacement	0 mm Sag No Deformation	ASTM C639
Specific Gravity	1.48 +/- 0.05 (Matte White & Matte Grey), 1.47+/- 0.05 (Matte Black)	ASTM D1475
Hardness (Shore A)	25 Approx.	ASTM D2240
Staining	No Staining	ASTM C510 & ASTM C1248
Colour Change	No Colour Change	ASTM C510
Elongation at Break	1100% Approx.	ASTM D412
Tensile at Break	0.90 MPa	ASTM D412
Secant Modulus @ 23°c at 100% Elongation	0.21 MPa	ASTM D412
Application Temp.	5°C to 40°C	-
Service Temp.	-40°C to 100°C	-
Lap Shear Strength (AL. to AL.)	0.6 MPa	ASTM C961

Shelf Life & Storage:
9 months for cartridge packaging & 12 months for sausage packaging (unopened) in a cool and dry storage place at temperatures between +5ºC to +30ºC.

Caution:
Read and understand material safety data sheet of this product before handling or using.

We recommend preliminary compatibilty tests prior to application to achieve desirable results.
This information is provided in good faith and is believed accurate based on a review of current composition and information supplied by vendors.
No warranty is expressed or implied. Liability is expressly disclaimed.

Colour Available: Matte Black, Matte Grey, *Matte White
Content: 290ml Cartridge, 600ml Sausage
Packaging Details: 24 Cartridges / Carton, 20 Sausages / Carton

Distributed by:

x'traseal®

TECHNICAL DATA SHEET

REV: 09 DATE: 22 april 2021

MS-602

MS POLYMER SEALANT – LOW MODULUS

SIRIM
CERT.TO ASTM C920 : 2014a
CERT.NO : PC004057

SINGAPORE GREEN BUILDING PRODUCT SGBC VERY GOOD SGBP 3971

VOLATILE ORGANIC COMPOUNDS LOW VOC ENVIRONMENTALLY FRIENDLY

Description:

x'traseal® MS-602 is based upon **hybrid silyl modified polyether technology**. It is a neutral, single component, low modulus with high movement capability joint sealant. It has an outstanding bond strength and primerless adhesion on various types of substrates. It can be painted with most type of paints and has superior weatherability in all climates. MS-602 is designed for use on prestige buildings. This specially formulated non-bleeding sealant technology with low static charge property can greatly reduce or minimize dirt pick up and surface streaking / staining. It's ideal for application on difficult substrate associated with modern facade construction. MS-602 is a durable, flexible, non-sagging sealant that offers excellent performance in moving joints and exhibits tenacious adhesion.

Features:

- Conform to ASTM C920 - CLASS 50 & ASTM C1248
- Permanently flexible & crack resistant
- No visible stain even on porous substrate
- Excellent UV radiation and weather resistance
- Primerless adhesion on most surfaces
- Joint movement capability up to +/- 50 %
- Free of isocyanate, solvent, acid and silicone oil
- No bubble formation within sealant
- Can be applied on damp surface
- Suitable for indoor and outdoor uses
- Fungus is not easily grow on sealant

Uses:

MS-602 is specially developed as a universal sealant for sealing joints in prefabricated buildings or concrete panels, expansion and connection joints in the building and construction industry, bonding or sealing of natural stones and aluminum sub-frames, sealing between window and door frames and movement or perimeter joints around buildings.

Due to a large variety of different coatings and substrates, we recommend preliminary compatibilty tests prior to application to achieve desirable results.

Joint design:

The specified sealant bead size should be calculated to comply with the compression and extension capabilities of the sealant in relation to the anticipated joint width die to expansion and contraction.

MS-602 has a movement accommodation factor (MAF) of 50%. The theoretical minimum joint width may be calculated

$$W = \frac{M}{MAF/100} + M$$

M = Expected Maximum Working Movement Of Joint

MAF = Movement Accommodation Factor of Sealant

MOHM CHEMICAL SDN. BHD. (REG NO 276851-U)
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Malaysia. Tel : +607 333 1222 Fax : +607 332 0545 / 333 7919
Website: www.xtraseal.com Email: info@mochem.com

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A minimum of 6mm substrate sealant bond is necessary to ensure adequate adhesion and accommodate movement. Joint depth should not less than 6mm and not greater than 12mm. The optimal ratio of sealant width to depth is 2:1. Backer material should be installed to prevent 3 side adhesion and to control sealant depth.

Suitable joint width* vs depth:

6mm x 6mm	20mm x 10mm
12mm x 6mm	25mm x 12mm
16mm x 8mm	30mm x 12mm

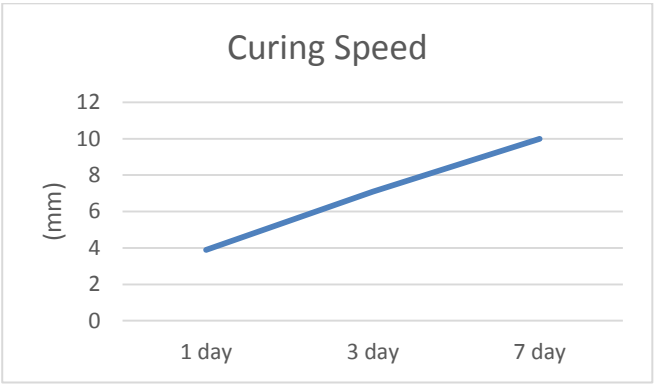
*Bigger joint width may encounter at the job site condition but have to take precautions step as sealant may sag on vertical application.

Application:

- Substrates must be clean, dry and free from grease. Remove all dirt, oil, grease, detergents and loose material.
- The joint edges can be masked with tape to prevent contamination of adjacent substrates. The tape should be removed carefully after tooling.
- Cut tip off cartridge. Cut nozzle to desired size at 45°angle. Screw nozzle onto cartridge. Place cartridge into caulking gun.
- Extrude the sealant firmly into joint to ensure complete contact with joint faces.
- Tool as required within the tooling time to achieve smooth surface.

Curing time:

MS-602 will skin forming in approximately 15 minutes and it will cure to a depth of 10 mm in 7 days. Longer curing time may be necessary in dry and low humidity area.



Paintability

MS-602 is paintable with water based paints, however due to large number of paints and varnishes available we strongly suggest a compatibility test before application. Paints based on alkyd resins may have extended drying time.

Note: MS-602 has larger movement capability than a normal paint film. Cracking of paint film may occur with movement in joint.

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Chemical resistance:

Good resistance to water, diluted inorganic acids and alkalis.
Poor resistance to concentrated acids and alkaline solutions, organic solvents, and halogenated hydrocarbons.

Clean up

Excess sealant can be removed with mineral spirit and cleaning solvent before cured. After curing, MS-602 may only be removed mechanically.

Limitations:

MS-602 is not suitable for the following applications:

- PE, PP, PMMA, PTFE, plastics containing softeners, and bituminous substrates
- Structural glazing
- Totally confined spaces where there is no atmospheric humidity, which is needed for proper curing
- Under water applications
- Heavy trafficable surface / joints
- Exposure to aggressive solvents or chemicals
- Food contact

Packaging:

290 ml cartridges / 24 per carton
600 ml sausages / 20 per carton

Color:

White, grey and black, other colors upon request.

Shelf life:

9 months for cartridge packaging & 12 months for sausage packaging (unopened) in a cool and dry storage place at temperatures between +5°c and +30°c.

Quantity estimation

Number of 600ml sausage

$$= \frac{JOINT\ WIDTH\ (MM)\ X\ JOINT\ DEPTH\ (MM)\ X\ JOINT\ LENGTH\ (M)\ X\ 1.15}{600}$$

Number of 290ml cartridge

$$= \frac{JOINT\ WIDTH\ (MM)\ X\ JOINT\ DEPTH\ (MM)\ X\ JOINT\ LENGTH\ (M)\ X\ 1.15}{290}$$

** With 15% wastage estimation*

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TECHNICAL DATA SHEET

REV: 09 DATE: 22 april 2021

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VOLATILE ORGANIC COMPOUNDS LOW VOC ENVIRONMENTALLY FRIENDLY

Specification:

Properties	Value	Method
Curing system	Neutral	-
Appearance	Non-sagging paste	Visual
Smell	Odorless	Visual
Joint movement capability	+/- 50 %	ASTM C719
Rheological (flow) properties I) vertical displacement: Ii) horizontal displacement	0 mm sag No deformation	ASTM C639
Specific gravity	1.48 +/- 0.02 (white & grey) 1.47+/- 0.02 (black)	ASTM D1475
Hardness (Shore A)	25 approx.	ASTM D2240
Staining	No staining	ASTM C510 & ASTM C1248
Color change	No color change	ASTM C510
Elongation at break	1100% approx.	ASTM D412
Tensile at break	0.90 MPa	ASTM D412
Secant modulus @ 23°c at 100% elongation	0.21 MPa	ASTM D412
Application temp.	5°c to 40°c	-
Service temp.	-40°c to 100°c	-
Lap shear strength (AL. To AL.)	0.6 MPa	ASTM C961

Caution:

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Malaysia. Tel : +607 333 1222 Fax : +607 332 0545 / 333 7919
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Test Report No. 7191157439-MEC17/01-ED (221411391)
dated 18 May 2017

PSB Singapore

Choose certainty.
Add value.

Note: This report is issued subject to the Testing and Certification Regulations of the TÜV SÜD Group and the General Terms and Conditions of Business of TÜV SÜD PSB Pte Ltd. In addition, this report is governed by the terms set out within this report.

SUBJECT:

Testing of sealant

TESTED FOR:

Mohm Chemical Sdn Bhd
No.32, Jalan Temenggong
Off Jalan Tampoi
81100 Johor Bahru
Johor
Malaysia

Attn: Mr Xavier Kong

SAMPLE DESCRIPTION:

The following items were received on 23 Feb 2017 as shown:

Sample/Material	Size	Quantity
'X'traseal MS-602 MS Polymer Sealant-LM' (refer Photo 1) Primer	830 g/sausage 100 g	12 sausages 1 tin

TEST METHODS:

Adopted ASTM C920 : 2008 Standard Specification For Elastomeric Joint Sealants

Staining And Colour Change

1. ASTM C510 : 2005 Standard Test Method For Staining And Colour Change Of Single Or Multi-Component Joint Sealants

Test cycle	:	8 hours UV exposure at 55°C and 4 hours condensation at 45°C
Exposure duration	:	100 hours
No. of determination	:	1 for staining test, 1 for colour change test, 1 as control

Extrudability

2. ASTM C1183 : 2008 Standard Test Method For Extrusion Rate Of Elastomeric Sealants
(Cross Reference: ASTM D1475 : 2008 Standard Test Method For Density Of Liquid Coatings, Inks And Related Products)

Test pressure	:	40 psi
No. of determination	:	1

TÜV SÜD PSB

Laboratory:
TÜV SÜD PSB Pte. Ltd.
No.1 Science Park Drive
Singapore 118221

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www.tuv-sud-psb.sg
Co. Reg : 199002667R

Regional Head Office:
TÜV SÜD Asia Pacific Pte. Ltd.
1 Science Park Drive, #02-01
Singapore 118221

Flow Properties

3. ASTM C639 : 2007 Standard Test Method For Rheological (Flow) Properties Of Elastomeric Sealants

Method	:	Test method for 'Type II' sealant
Test conditions	:	a) 4.4°C in environmental chamber for 4 hours b) 50°C in oven for 4 hours
No. of determinations	:	2 for vertical and horizontal displacements

Hardness

4. ASTM C661 : 2006 Standard Test Method For Indentation Hardness Of Elastomeric-Type 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	:	2, 3 points per test piece

Tack-Free Time

5. ASTM C679 : 2003 Standard Test Method For Tack-Free Time Of Elastomeric Sealants

No. of determinations	:	2

Cyclic Adhesion & Cohesion

6. Adopted 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

Substrate	:	Mortar
Test temperature	:	Room temperature
No. of determinations	:	3 for class 25 and class 50

Effects Of Heat Ageing

7. ASTM C1246 : 2006 Standard Test Method For Effects Of Heat Ageing On Weight Loss, Cracking, And Chalking Of Elastomeric Sealants After Cure

Test Conditions:
a) 23°C and 50% relative humidity for 28 days
b) 70°C for 21 days

No. of determinations	:	3, 1 as control

Effects Of Accelerated Weathering

8. Adopted ASTM C793 : 2005 Standard Test Method For Effects Of Accelerated Weathering On Elastomeric Joint Sealants

Test cycle	:	8 hours UV exposure at 55°C and 4 hours condensation at 45°C
Lamp designation	:	Fluorescent UVA 340 mm
Exposure duration	:	250 hours
No. of determinations	:	3 (1 as control)
Bend test		
Apparatus	:	Steel mandrel
Test condition	:	-26°C for 24 hours
No. of determinations	:	3

Adhesion-In-Peel

9. ASTM C794 : 2006 Standard Test Method For Adhesion-In-Peel Of Elastomeric Joint Sealants

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 water at 23°C for 7 days

Substrate	:	Mortar, Aluminium and Glass
Crosshead speed	:	50.8 mm/min
No. of determinations	:	4 per substrate

Material Identification/Verification

10. ASTM E1252 : 2007 Standard Practice For General Techniques For Obtaining Infra-Red Spectra for Qualitative Analysis
Material Identification/Verification By Fourier Transform Infra-Red Spectrometric Analysis (FTIR)

CONDITIONING:

Unless otherwise specified, all test specimens were tested at 23 ± 2°C and 65 ± 5% relative humidity.

TEST RESULTS:

Test	'X'traseal MS-602 MS Polymer Sealant-LM'	ASTM C920 : 2008 Standard Specification For Elastomeric Joint Sealants
1. Staining And Colour Change	No staining and no colour change	The sealant shall not cause any visible staining on the top surface of a white cement mortar base
2. Extrudability	44.5 ml/min	Type S (single component), grade NS (non-sag or gunnable sealant) shall have an extrusion rate time of not < 10 ml/min

TEST RESULTS:

Test	'X'traseal MS-602 MS Polymer Sealant-LM'	ASTM C920 : 2008 Standard Specification For Elastomeric Joint Sealants
3. Rheological (Flow) Properties	Vertical displacement: 0 mm sag Horizontal displacement: No deformation	Grade NS (non-sag) or gunnable sealant shall have flow characteristics such that it does not sag >4.8mm in vertical displacement and shall show no deformation in horizontal displacement (refers to Types II and IV sealants)
4. Indentation Hardness	test piece 1, average : 49.8 test piece 2, average : 45.6 average of 2 test pieces : 47.7	T (traffic) sealant shall have a hardness reading of not <25 or >50 after being properly cured NT (non-traffic) sealant shall have a hardness reading of not <15 or >50 after being properly cured
5. Tack-Free Time	No transfer of test specimens to the polyethylene film	There shall be no transfer of the sealant to the polyethylene film when tested at 72 hours
6. Adhesion & Cohesion Under Cyclic Movement a. Class 25 b. Class 50	 No bond loss No bond loss	The total loss in bond and cohesion areas among the three specimens tested for each surface shall not be >9 cm^2 with mortar substrates
7. Effects Of Heat Ageing On Weight Loss, Cracking And Chalking, average	1.2% No cracking and chalking	The sealant shall not lose >7% of its original weight or show any cracking and chalking
8. Effects Of Accelerated Weathering	No cracks after UV exposure and bend test	The sealant shall show no cracks after the specified UV exposure and shall show no cracks after exposure at cold temperature and the bend test
9. Adhesion-In-Peel, average a. Mortar b. Aluminium c. Glass	 40.2 N (9.1 lbf) 74.5 N (16.8 lbf) 57.6 N (13.0 lbf) cohesive failure within the sealant and no adhesive bond loss between sealant and substrate for each test piece	The peel strength for each individual test shall not be <22.2 N (5 lbf) and the sealant shall show no >25% adhesive bond loss for each individual test
10. Material Identification/ Verification By FTIR	MS Polymer-based material (refer Figure 1)	-

REMARKS:

1. The test conditions for staining and colour change tests and effects of accelerated weathering test were adopted from ASTM G154 : 2006 Standard Practice For Operating Fluorescent Light Apparatus For UV Exposure Of Non-Metallic Materials.
2. The mortar substrate and class movements 25 and 50 were specified by the client for cyclic adhesion/cohesion test.
3. The mortar, aluminium and glass substrates were specified by the client for adhesion-in-peel test.

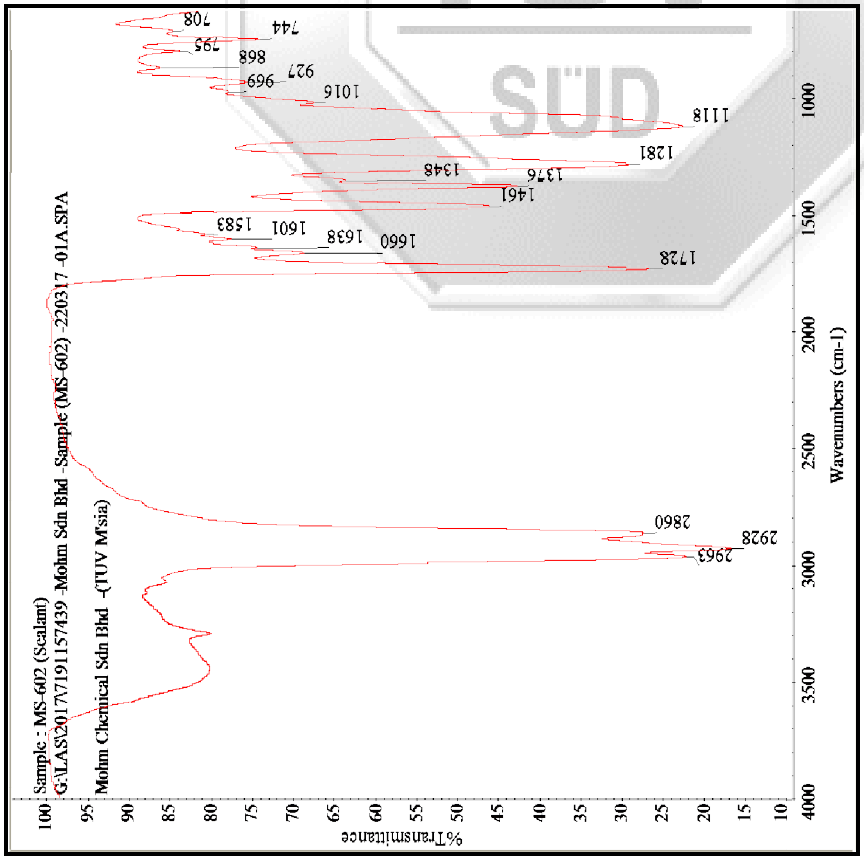
4. As specified by the client, the primer was applied onto the substrates and allowed to dry until tack-free before application of the sealant.

Eddie Suwand
Testing Officer
Senior Associate Engineer

Alex Tan
Engineer
Building
Mechanical Centre

Photo 1 : 'X'traseal MS-602 MS Polymer Sealant-LM'

Figure 1 : IR spectrum of 'X'traseal MS-602 MS Polymer Sealant-LM'



Please note that this Report is issued under the following terms :

1. This report applies to the sample of the specific product/equipment given at the time of its testing/calibration. The results are not used to indicate or imply that they are applicable to other similar items. In addition, such results must not be used to indicate or imply that TÜV SÜD PSB approves, recommends or endorses the manufacturer, supplier or user of such product/equipment, or that TÜV SÜD PSB in any way "guarantees" the later performance of the product/equipment. Unless otherwise stated in this report, no tests were conducted to determine long term effects of using the specific product/equipment.

2. The sample/s mentioned in this report is/are submitted/supplied/manufactured by the Client. TÜV SÜD PSB therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture, consignment or any information supplied.

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4. This report shall not be reproduced wholly or in parts and no reference shall be made by the Client to TÜV SÜD PSB or to the report or results furnished by TÜV SÜD PSB in any advertisements or sales promotion.

5. Unless otherwise stated, the tests were carried out in TÜV SÜD PSB Pte Ltd, No.1 Science Park Drive Singapore 118221.

July 2011

Test Report No. 7191013226-MEC11-ED (QM-0211-107)
dated 11 Nov 2011

PSB Singapore

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Note: This report is issued subject to the Testing and Certification Regulations of the TÜV SÜD Group and the General Terms and Conditions of Business of TÜV SÜD PSB Pte Ltd. In addition, this report is governed by the terms set out within this report.

SUBJECT:

Testing of sealant

TESTED FOR:

Mohm Chemical Sdn Bhd
No.32, Jalan Temenggong
Off Jalan Tampoi
81100 Johore Bahru
Johore
Malaysia

Attn: Ms Sithra Paranjothy

SAMPLE DESCRIPTION:

The following items were received on 6 Jul 2011 as shown:

Sample/Substrate	Size	Quantity
'x'traseal MS-602 MS polymer Sealant - LM/x'traseal MS-607 MS Polymer Hybrid Sealant'	290 ml	6 cartridges
Primer	150 g	1 tin
Marble	75 mm x 75 mm x 18 mm	40 pcs
Granite	75 mm x 75 mm x 18 mm	40 pcs

TEST METHODS:

Staining

1. Adopted ASTM C1248 : 2008 Standard Test Method For Staining Of Porous Substrate By Joint Sealants
Cross-reference : ASTM G154 : 2006 Standard Practice For Operating Fluorescent Light Apparatus For UV Exposure Of Non-Metallic Materials

Test specimen	:	Adhesion & cohesion test assembly
Test conditions	:	a. 23°C and 50% relative humidity for 21 days b. Adhesion/cohesion cyclic movement, class 50 c. Before ageing, 14 and 28 days d. 70°C, 14 and 28 days e. UV exposure : 4 Hours UV at 60°C and 4 hours condensation at 50°C, 14 and 28 days
No. of determinations	:	20 sets per substrate, 4 sets per test condition

TÜV SÜD PSB

Laboratory:
TÜV SÜD PSB Pte. Ltd.
Testing Services
No.1 Science Park Drive
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Regional Head Office:
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3 Science Park Drive, #04-01/05
The Franklin, Singapore 118223

Volatile Content

2. Adopted Method 24 - Determination of Volatile Matter Content, Water Content, Density, Volume Solids, And Weight Soilds Of Surface Coatings
Cross-reference : ASTM D2369 : 2004 Standard Test Method For Volatile Content Of Coatings

Test conditions	:	110 ± 5°C for 1 hour
No. of determinations	:	3

CONDITIONING:

Unless otherwise specified, all test specimens were tested at 23 ± 2°C and 65 ± 5% relative humidity.

TEST RESULTS:

Test	Unit	'x'traseal MS-602 MS polymer Sealant - LM/x'traseal MS-607 MS Polymer Hybrid Sealant'
1. Staining	-	
a. Marble		
i. Before ageing,14 days		No surface stain
ii. Before ageing, 28 days		No surface stain
iii. 70°C for 14 days		No surface stain
iv. 70°C for 28 days		No surface stain
v. UV exposure, 14 days		No surface stain
vi. UV exposure, 28 days		No surface stain
b. Granite		
i. Before ageing,14 days		No surface stain
ii. Before ageing, 28 days		No surface stain
iii. 70°C for 14 days		No surface stain
iv. 70°C for 28 days		No surface stain
v. UV exposure, 14 days		No surface stain
vi. UV exposure, 28 days		No surface stain
2. Volatile Content, average	%	0.3

REMARKS:

1. The marble and granite substrates were cut to 75 mm x 25 mm by TUV SUD PSB Pte Ltd as agreed by the client.
2. The primer was applied onto the substrates and allowed to dry tack-free before application of the sealant.
3. The test samples for before ageing,14 days test were used for before ageing, 28 days test.
4. The test method for volatile content test was provided by the client.

Eddie Suwand
Associate Engineer

Wong Mun Hong
Engineer
Building & Acoustics
Mechanical Centre

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1. This report applies to the sample of the specific product/equipment given at the time of its testing/calibration. The results are not used to indicate or imply that they are applicable to other similar items. In addition, such results must not be used to indicate or imply that TÜV SÜD PSB approves, recommends or endorses the manufacturer, supplier or user of such product/equipment, or that TÜV SÜD PSB in any way "guarantees" the later performance of the product/equipment. Unless otherwise stated in this report, no tests were conducted to determine long term effects of using the specific product/equipment.

2. The sample/s mentioned in this report is/are submitted/supplied/manufactured by the Client. TÜV SÜD PSB therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture, consignment or any information supplied.

3. Nothing in this report shall be interpreted to mean that TÜV SÜD PSB has verified or ascertained any endorsement or marks from any other testing authority or bodies that may be found on that sample.

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5. Unless otherwise stated, the tests were carried out in TÜV SÜD PSB Pte Ltd, No.1 Science Park Drive Singapore 118221.

July 2011

X'traseal Sealant & Adhesive
Singapore Job Reference

2025	Novartis @ 8 Tuas bay Lane, Tuas, Singapore
2024	Republic Polytechnic, Woodland, Singapore
2024	SIT 1@Punggol, Singapore
2023	SIT 2@Punggol, Singapore
2023	Woodleigh Residence@Woodleigh, Singapore
2023	Pan Pacific Orchard, Orchard, Singapore
2023	Alexandra Hospital - Imrovement Works at Alexandra Rd, Singapore
2022	Central Grove Condo @ Geylang East, Geylang East, Singapore
2022	Exyte Global Foundries @ 60 Woodlands Ind Park D, Woodland, Singapore
2022	Geras Data Centre, Harbourfront, Singapore
2022	National Cancer Center NCC, Outram Park, Singapore
2022	Mount Elizabeth Novena Hospital Proton Therapy Centre, Novena, Singapore
2022	Shimano New Factory @ Bulim Drive, Bulim Ave, Singapore
2021	Seaside Residences, East Coast, Singapore
2021	LYF @ One North, One North, Singapore
2021	Equinix / Data Center, Sunview Dr, Singapore
2020	Orchard Central, Orchard, Singapore
2020	Tampines Nursing Home, Tampines, Singapore
2019	Draycott Park, Draycott Park, Singapore
2019	Sumitomo Warehouse Extension @ 8 Tuas Ave 5, Tuas, Singapore
2018	Connexion @ Race Course Rd, Farrer Park, Singapore
2018	Seletar Airport, Seletar, Singapore
2017	Jurong West N1C31, Jurong West, Singapore
2017	MRT C929 @ Kaki Bukit Ave 1, Kaki Bukit, Singapore
2017	Woodlands Nursing Home, Woodlands Rise, Singapore
2017	The Trilinq, Clementi, Singapore
2017	UIC @ Shenton Way, Shenton Way, Singapore
2017	Bencoolen MRT, Bencoolen, Singapore
2016	Sennett Residence, Potong Pasir, Singapore
2016	21 Hillview Terrace, Chua Chu Kang, Singapore
2016	Baxter Healthcare SA, Woodlands, Woodlands, Singapore
2015	Sky Habitat @ Bishan, Bishan, Singapore
2015	Equinix Data Center SG3, Ajer Raja Crescent, Singapore
2015	National Art Gallery, Singapore
2015	Conservation of Capitol Theatre, Stamford Rd, Singapore
2015	YCH (Yishun Community Hosiptal, Yishun, Singapore
2015	Lighthouse Evangelism @ Woodlands Circle, Woodlands, Singapore

X’traseal Sealant & Adhesive Singapore Job Reference

2014	St Anthony's Canossian Primary School, Bedok North, Singapore
2014	Parc Vera, Hougang, Singapore
2014	LINK @ AMK, Ang Mo Kio, Singapore
2014	SIM Global Education, Clementi, Singapore
2014	GEMS International School, Yishun, Singapore
2014	A Treasure Trove, Punggol, Singapore
2014	Singapore Flyer, Raffles, Singapore
2013	SHINNYO-EN, Eunos, Singapore
2013	NUS Create, University Town, Singapore
2013	7 Ardmore Park, Tanglin, Singapore
2013	Kerry Logistics Center, Tampines, Singapore
2013	Tye Soon Limited, Toh Guan Rd, Singapore
2013	Westgate, Jurong East, Singapore
2013	Waterview Condo, Tampines, Singapore
2013	Yamazaki Mazak Singapore Pte Ltd@Joo Koon, Singapore
2013	Wyeth Nutritionals (Singapore) Pte Ltd@Changi, Singapore
2012	Tiong Seng Hub@Tuas, Singapore
2012	Stamford American Int'l School (SAIS)@Woodleigh, Singapore
2012	Urban Suites@Hullet Rd, Singapore
2012	Changi Expo Hall 3, Changi, Singapore