

Sx-100MS

MS -HYBRID Adhesive / Sealant



Sx-100MS is a high performance sealant and adhesive based on MS Polymer Hybrid technology from Japan. Sealex Sx-100MS, having only 2% VOC, is a green sealant suitable for all green building designs. All Sealex MS range of products has excellent weathering capability and high resistance to ultraviolet and does not shrink nor bubble and swell. As it does not contain any oil nor solvent Sealex MS does not attract dirt particles so does not stain on any substrates and at the same time is paintable.

- Very low VOC – 2% achieved green standard
- For both external and internal application
- Isocyanate free and silicone free
- Watertight and weatherproof
- Solvent free and odorless
- Minimal dirt pick up
- Stain free
- Paintable



PSB Singapore

GREEN STANDARDS

- * LEED 2009 for New Construction and Major Renovations:
Low Emitting Materials (Section 4.1), SCAQMD rule 1168 (2005)
- * ASTM D 2369 EPA Method 24 VOC content 15g/l or 1%

| Features | Benefits |
|---------------------------------------|---|
| Excellent adhesion to most substrates | Versatile and flexible in applications. |
| Isocyanate and solvent free | Safe to users and owners especially interior applications Green & environmentally friendly. |
| Low VOC | Less than 2%. Approved for all confined application. |
| Odorless (Safe to human) | Work in comfort. Live in comfort. |
| Excellent weather & UV resistance | Shows no cracking, splitting or adhesion failure after long term desert test. 20 years service life expectancy. |
| Non gassing, bubbling or foaming | Provide a strong solid long life seal |
| Quick cure | Increase productivity. Cleaner work space. |
| Stain-free (Non-migration) | Excellent stain resistant when applied to porous substrates. |
| Minimal dirt pickup (Silicone free) | Non-bleeding throughout the life span of the product result in clean joint. |
| Excellent paintability | Paintable even with water based paints. |
| One part system and primerless | Versatile and easy to apply and adhere even to wet surfaces. |
| High strength | High tensile and shear strength provides a strong joint. |

Applications

- Precast concrete joint
- Stone & metal facade
- Steel pre-engineered building
- Metal Roofing & Walling
- Sandwich panel
- Expansion joint
- Door and window frame
- Ducting
- Floor & wall tile
- Timber floor and skirting
- Kitchen and sanitary
- Mirrors and cabinets

* not applicable for structural glazing

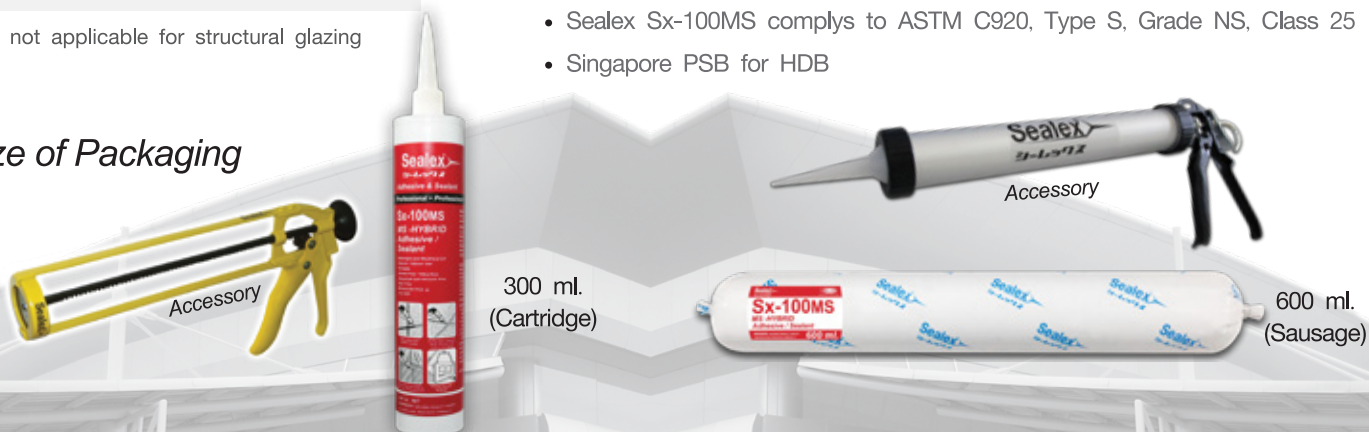
Technical Specification

| | |
|---------------------------|---------------------------|
| Basic Material | Modified Silicone Polymer |
| Color | Basic / Light Grey |
| Odor | Odorless |
| Specific Gravity | 1.59 |
| Viscosity | 400 Pa.s (10rpm, at 23°) |
| Tack Free Time | 20 mins (23°C, 50%RH) |
| Cure Depth | 4 mm/24hr (23°C, 50%RH) |
| Application Temperature | 5°C to 40°C |
| Service Temperature Range | -30°C to 90°C |
| Stress at 100% Elongation | 0.8 MPa |
| Tensile Strength | 1.8 MPa |
| Elongation To Break | 500% |
| Shelf Life | 12 months |
| Movement Capability | ± 25% |

Conformance

- Sealex Sx-100MS complys to ASTM C920, Type S, Grade NS, Class 25
- Singapore PSB for HDB







Size of Packaging



Curing-Best Compare to PU and Silicone

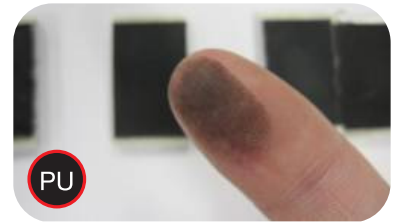
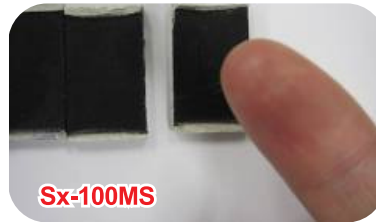
PAINTABLE

Sx-100MS offers excellent paintability for all paints and colours compared to all sealants.

| WATER BASE ACRYLIC PAINT | | |
|--------------------------|---|---|
| SEALANT | A | B |
| Sx-100MS |  |  |
| Silicone |  |  |
| Polyurethane |  |  |

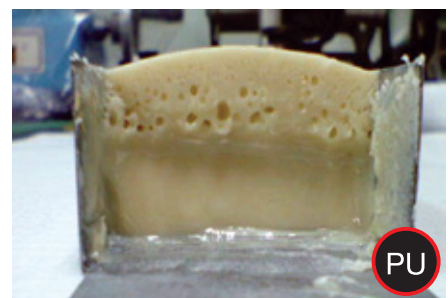
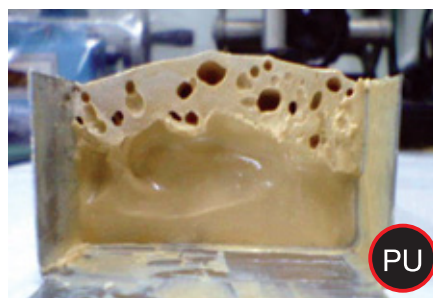
WEATHERABILITY

No degradation and change in colour after 2000hrs exposure to UV, irradiation and water. PU shows signs of degradation and colour change after only 1000hrs exposure.



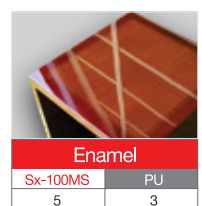
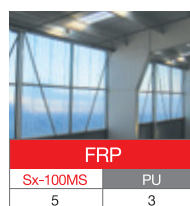
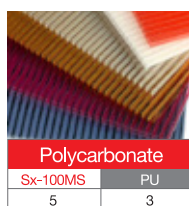
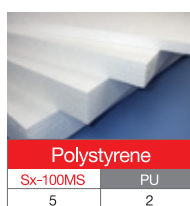
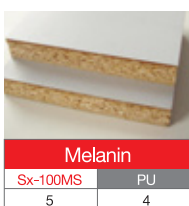
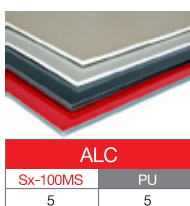
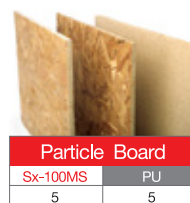
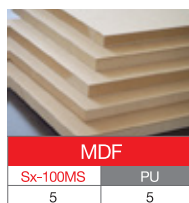
NO BUBBLE, NO FOAM, NO HOLLOW, NON SHRINKAGE

Sx-100MS when cured remains flexible but provide a solid seal and excellent adhesion without any bubble, hollow and shrinkage compared to all PU which naturally produces bubbles and shrinks.



EXCELLENT ADHESION

With excellent adhesion properties Sx-100MS is the most versatile adhesive sealant available compared even to PU and other solvent base products.



Comparison Table

TECHNICAL SUBMITTAL

| Properties | Sx-100MS | Polyurethane (PU) | Silicone | Comparison and Results |
|--|----------|-------------------|----------|--|
| Non-hazardous, safe to human and environment | 10 | 5 | 9 | Unlike PU, Sx-100MS does not contain any isocyanate and solvent which are hazardous to health and environment. |
| Non Dirt Pickup | 10 | 8 | 5 | Sx-100MS does not bleed throughout its life span and so does not attract dirt to stick. This property prevents dirt streaking on aluminium composite panels and curtain walls. |
| Stain Resistance | 8 | 7 | 5 | Due to its non-bleed property, Sx-100MS does not stain the substrates especially marble, granite and other porous material. |
| Weatherability | 9 | 6 | 10 | Sx-100MS displays excellent weather resistance. |
| Non-bubbling and foaming | 10 | 6 | 10 | This provides a very strong, long live and solid seal and adhesion. |
| Adhesion Versatility | 10 | 5 | 8 | Sx-100MS can be used with most substrates and yet displays the strongest adhesion. |
| Paintability with water-based paints | 10 | 8 | 3 | When painted it is able to blend well with its environment. |
| Fast Curing | 10 | 7 | 10 | Increases productivity and also prevents messy working environment when accidentally touched. |
| Storage Stability | 7 | 7 | 9 | When stored properly and protected from moisture, Sx-100MS has an excellent shelf-life. |

Compliance

TEST RESULTS OF ASTM C920 BY TUV SUD.

| Test | 'Sealex Sx-100MS' | ASTM C920 : 2008 Standard Specification For Elastomeric Joint Sealants |
|--|---|--|
| 1. Staining And Colour Change ASTM C501:2005 | 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 ASTM C1183 | >10 ml/min | Type S (single component), grade NS (non-sag or gunnable sealant) shall have an extrusion rate time of not < 10 ml/min |
| 3. Rheological (Flow) Properties ASTM C639:2007 | 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 test piece 2, average ASTM C661:2006 | 28 28 | 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. Adhesion & Cohesion Under Cyclic Movement, Class 25 ASTM C719:2005 | No bond failure | 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 |
| 6. Effects Of Heat Ageing On Weight Loss, Cracking And Chalking, average ASTM C1246:2006 | 0.9% No cracking and chalking | The sealant shall not lose >7% of its original weight or show any cracking and chalking |
| 7. Effects Of Accelerated Weathering ASTM C793:2005 | 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 |
| 8. Adhesion-In-Peel, average ASTM C794:2006 | 235.6 N (53.1 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 |
| 9. Material Identification/ Verification By FTIR | MS polymer-based material (refer to Figure 1) | - |
| 10. a. Maximum Tensile Strength, average b. Modulus Of Elasticity, average ASTM C1135:2005 | 0.7 N/mm ² 0.9 N/mm ² | - |

LIMITED WARRANTY

The information contained in this document offered in good faith is believed to be accurate. However, as it is beyond our control on the conditions and methods of use of our products by our clients the information contained in this document should not be used in substitution for customer's tests to ensure that our products are safe, effective, and fully satisfactory for the intended end application.

Sealex warranties that all Sealex products meet the specifications herewith at the time of shipment. In the event of breach of such warranty Sealex is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

Caution :

Do not apply MS sealant onto protective film.
Plasticizers contained in these materials penetrate the film and may cause gloss change on the coating.

LEED 2009 (Section 4.1)



Analytical Result

| | Solid content, % mass | Water content, % mass | Exempt compounds, % mass | VOC less water less exempt compounds, g/l | VOC limit g/l |
|------------------------|-----------------------|-----------------------|--------------------------|---|---------------|
| Sealex Sx 100MS | 99.2 | 0 | 0 | 15 | 250* |

* VOC limit for "Architectural sealants"

Sealex®
SI-LUX

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inno-cons

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