



# BUILD™

## MARQUE

### TECHNICAL DATA SHEET

REV: 07    DATE: 05 MARCH 2021

# MS-111

## MS POLYMER ADHESIVE / SEALANT



### Description:

**BUILD** MARQUE MS-111 is based upon **hybrid silyl modified polyether technology**. It is suitable in wide range of industrial applications and it has excellent primerless adhesion to various types of substrates of dissimilar porosity and surface textures. It also can be over painted with most of the types of paints. MS-111 is a technology that combines the unique features of silicone and polyurethane sealants. It is a moisture cure system adhesive sealant and "none" bubbling when apply in high humidity or to moist substrates. It is not suitable for structural glazing.

### Features:

- ♦ High mechanical bonding strength
- ♦ Non-bleeding and crack resistant
- ♦ No visible stain even on porous substrate
- ♦ Free of isocyanate, solvent, acid, and silicone oil
- ♦ Excellent UV radiation and weather resistance
- ♦ Can be applied on damp surfaces
- ♦ Odourless and fast curing
- ♦ Environment friendly
- ♦ Fungus is not easily grown on sealant
- ♦ Suitable for indoor and outdoor use

### Uses:

MS-111 is specially developed as a universal sealant for sealing building connection and expansion joint on most building materials such as concrete, brickwork, aluminum, stainless / mild or galvanized steel, door or metal frames and ceramics. It's also suitable for sealing and bonding in automotive industry, cold storage & clean room.

**Due to a large variety of different coatings and substrates, we recommend preliminary compatibility 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 due to expansion and contraction.

MS-111 has a movement accommodation factor (MAF) of 25%. The theoretical minimum joint width may be calculated.

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

M = expected maximum working movement of joint

M = MAF movement accommodation factor of sealant

### DEEP POCKETS

📍 #2, Nanakpura, Kuldeep Nagar, Ambala - 133004

☎ Customer Care No. +91-99915 66665

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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:

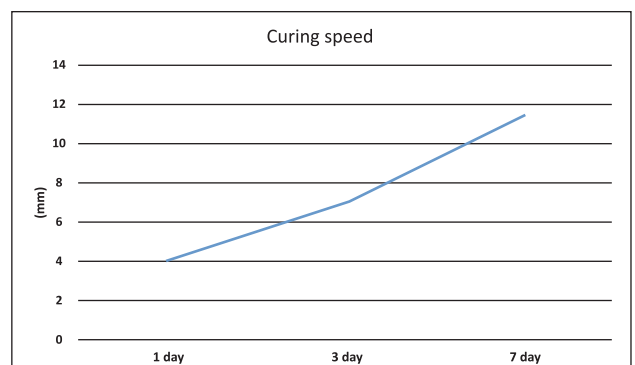
- ◆ Substrates must be clean, dry and free from grease. Remove all dirt, oil, grease, detergents and loose material.
- ◆ The joint edges can be masked with tape to prevent contamination of adjacent substrates. The tape should be removed carefully after tooling.
- ◆ Cut tip off cartridge. Cut nozzle to 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-111 will skin forming in approximately 15 minutes and it will cure to a depth of 11.5 mm in 7 days. Longer curing time may be necessary in dry and low humidity area.

### PAINTABILITY:

MS-111 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. Chlorinated paint may cause staining issue. Oil based paint may not be compatible.



**MS-111 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-111 may only be removed mechanically.

### Limitations:

MS-111 is not suitable for the following applications:

- ◆ PE, PP, PTFE, plastics containing softeners and bituminous substrates
- ◆ Structural glazing
- ◆ Outdoor sealing / bonding adjacent to glass substrates
- ◆ Totally confined spaces where there is no atmospheric humidity, which is needed for proper curing
- ◆ Water immersion application (water ponding)
- ◆ Heavy trafficable surface / joints
- ◆ Exposure to aggressive solvents or chemicals
- ◆ Food contact

### Packaging:

290 ml cartridges / 24 per carton

### Color:

White and other colors upon request.

### Shelf life:

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

### Quantity estimation:

Number of 290ml cartridge

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

290

\* With 15% wastage estimation

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### Specification:

Properties	Result
Curing system	Neutral
Appearance	Non-sagging paste
Smell	Almost odorless
Slump / flow (vertical and horizontal @ 5°C and 50°C)	0 (no failure)
Specific gravity	1.43 +/- 0.02 (white & grey) 1.39 +/- 0.02 (black)
Hardness (Shore A)	32 approx.
Staining and color change	No staining and no color change
Elongation at break	1000 % approx.
Tensile at break	1.40 MPa
Secant modulus @ 23°C at 100% elongation	0.40 MPa
Lap shear strength (AL. To AL.)	1.06 MPa
Application temperature	5°C to 40°C
Service temperature	-40°C to 90°C

### Caution:

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

*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.*

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