



OVERVIEW & FEATURES

Tuff-Stuff MS is a moisture-curing, single-component, non-sag sealant that contains no solvents. When cured, Tuff-Stuff MS offers the performance of a two-part sealant with the ease of installation associated with a one-part. It is designed to maintain an effective bond and seal between materials of similar and dissimilar surfaces, porosities and coefficients of expansion. Tuff-Stuff MS is designed for use in reglets, precast panels, tilt-up walls, metal curtain walls, copings, window and door perimeters, panel bedding and glazing details.

Environmentally Friendly – Due to its modified silane chemistry, Tuff-Stuff MS is a low-odor product which makes it useful in VOC sensitive areas like hospitals, schools, and food production plants. Tuff-Stuff MS does not use solvents or isocyanates and contains only 50 g/L VOC's.

Extended Life for High Movement – Tuff-Stuff MS high solid content optimizes minimal shrinking unlike heavily solvent based products that will shrink when exposed to UV as the solvent flashes out enabling high flexibility and long-term performance.

User Friendly/Saves Money – Tuff-Stuff MS can be applied with a normal caulking gun, industrial type, and wet or dry tooled into a joint making it easy for in-house maintenance use.

Cures Quickly – Tuff-Stuff MS utilizes a moisture assisted cure type chemistry that enables a fast skin time and is paintable within 3 days of install depending on the sealed joints overall dimensions.

APPLICATION

Surface Preparation – Joint surfaces and backer rod must be dry and free of all contaminants such as oil, grease, wax, dust, corrosion, tar, asphalt, loose aggregate, frost, form-release agents, decorative and protective coatings. Precast panels using form release agents other than polyethylene film must be sandblasted or mechanically abraded and blown or brushed dust free. Glass, metal and other nonporous surfaces must be free of any coatings and wiped clean with solvent.

Priming – Never a substitute for proper surface preparation, priming is not required on glass or anodized aluminum and usually not necessary on other common building materials. However, varieties of brick, natural stone, plastics, paints, EIFS, coatings and other treatments of surfaces often present difficult substrates at which to adhere. Due to the number and unpredictable nature of these substrates, a field test is recommended to determine the adhesion of Tuff-Stuff MS.

Joint Backing – Backer rods control the depth of the sealant and allow it to be applied under pressure. Use an oversized, closed-cell backer rod sized so that it will compress 25%. In joints too shallow for backer rod, use a polyethylene bond-breaker tape to prevent three-sided adhesion.

Joints should be masked to ensure a neat appearance. Sealant should

be applied in a continuous operation using sufficient pressure to fill the joint and make complete contact to the joint sides. Tool the sealant slightly concave using dry-tooling techniques. Do not tool with soap or detergent and water solutions.

Movement Capability - 25% Extension - 25% Compression. Joint sealants do not change volume with expansion or compression, only shape; the greater the change in shape, the greater the stress on the sealant.

Tool Time (Initial Skin) - 1-2 hours at 77°F (25°C); 50% relative humidity. Higher temperatures and/or humidity will shorten this time.

Cleaning - Use mineral spirits to remove excess sealant before it cures and to clean equipment.

Storage Life - One-part MS polymer is extremely moisture and heat sensitive. Tuff-Stuff MS has a warranted shelf life of nine (9) months from the factory shipping date when stored in original unopened cartridges at conditions not exceeding 80°F (27°C), 50% relative humidity. Consistently higher temperatures and/or humidity will shorten the shelf life and valid warranty.

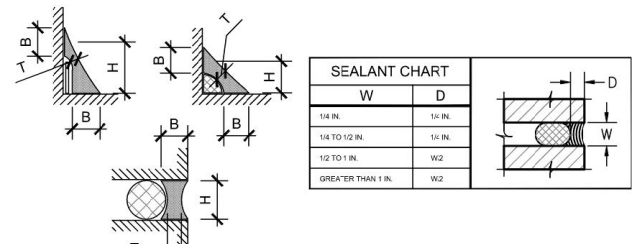
PRECAUTIONS

Tuff-Stuff MS should not be used:

- As a cap, heel or toe bead in certain glazing installations with highperformance glass or plastic.
- In joints less than 1/4 in. (6 mm) in depth.
- In joints where contact may be made with polysulfide sealants
- In areas exposed to harsh chemicals.
- On certain architectural paints and finishes without laboratory or field testing.
- In horizontal joints subject to vehicular traffic.

Technical Data	Tuff-Stuff MS
Bond Durability-Class 25 (ASTM C 920)	Passes
Hardness, Shore A (ASTM C 920, 15-50)	25-35
Service Temperature Range	-50°F to 300°F (-45°C to 148°C)
Stain and Color Change (ASTM C 920)	Passes
Tack Free Time @ 77°F (25°C); 50% RH (ASTM C 679)	Less than 1 hr.
Tensile Strength (ASTM D 412)	225 psi
Elongation (ASTM D 412)	450-550%
Weep and Sag max 3/16 in. (4 mm) (ASTM C 920)	Passes
VOC	<50 g/L
Colors	Refer to color chart

Joint Size (depth x width)	10.3 oz tube
1/4" x 1/4" (0.635cm x 0.635cm)	24' (7.32m)
1/4" x 1/2" (0.635cm x 1.27cm)	12' (3.66m)
3/8" x 3/8" (0.95cm x 0.95cm)	11' (3.35m)
3/8" x 3/4" (0.95cm x 1.91cm)	5.5' (1.68m)
1/2" x 1/2" (1.27cm x 1.27cm)	6' (1.83m)
1/2" x 1" (1.27cm x 2.54cm)	3' (0.91m)
3/4" x 3/4" (1.91cm x 1.91cm)	2.5' (0.76m)
3/4" x 1.5" (1.91cm x 3.175cm)	1.5' (0.46m)
1" x 1" (2.54cm x 2.54cm)	1.5' (0.46m)



B = BOND LINE - MIN. 3/8" ON MASONRY
- MIN. 1/4" ON METAL OR GLASS

T = SEALANT THICKNESS - MIN. 1/4" TO 3/8" FOR SILICONE SEALANTS
- MIN. 1/4" TO 1/2" FOR URETHANE SEALANTS

GENERAL BEAD - PROVIDE AN "HOURLASS" PROFILE (B>T)
PROFILE - PROVIDE MIN. 2:1 LENGTH TO THICKNESS RATIO (H:T)

For specific recommendations and coverage rates, please contact your local Garland Representative or Garland Technical Service Department.



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Tests verified by independent laboratories. Actual roof performance specifications will vary depending on test speed and temperature. Data reflects samples randomly collected. A ± 10% variation may be experienced. The above data supersedes all previously published information. Consult your local Garland Representative or Garland Corporate Office for more information.

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