



GEMTHANE 'S'

TECHNICAL DATA

SINGLE COMPONENT SEVERE SERVICE INDUSTRIAL COATING

THE PRODUCT AND ITS USES

GemThane 'S' is a *single component-plus-catalyst* high build polyurethane coating for the protection of concrete, steel and wood. It provides an extremely durable and seamless surface coupled with excellent resistance to abrasion and chemicals. Properly applied, GemThane 'S' will provide a pinhole-free, monolithic barrier which completely protects the substrate beneath. It will cure at a wide range of ambient temperatures.

This non-toxic protective film is designed for use in chemical plants, food processing plants, battery charging areas, as well as manufacturing and service areas exposed to heavy vehicular traffic and severe chemical exposure. It is also suitable for direct food contact, and continuous immersion such as truck/car washes. Depending on the porosity of the substrate, applying two coats at a rate of 4 to 5 square meters per litre (200 to 250 square feet per gallon) will yield 6 to 8 wet mils or 4.5 to 6 dry mils. For continuous immersion, three coats are suggested.

GemThane 'S' is the most chemical and corrosion resistant of all GemThane products. For highly abrasive service, e.g. factory floors, a ceramic reinforced version of GemThane 'S' is available.

TECHNICAL INFORMATION

PROPERTY	TEST DESCRIPTION	RESULTS
Application Temperatures	N/A	-15°C(10°F) to 65°C(150°F)
Viscosity	Brookfield Viscometer	1500 cps
Pot Life		20 minutes to 2 hrs - depends on catalyst
Initial Setting Time		30 to 120 minutes - depends on catalyst
Recoat Time*		12 to 24 hours - depends on catalyst
Solids Content	ASTM D-1259	72%
Volatile Organic Compounds (VOCs)	ASTM D-2369	282 grams/litre
Theoretical coverage	N/A	625 m ² /litre/micron (1150 ft ² /US gal/mil)
Adhesion	ASTM D-4541 (SSPC 5)	Greater than 1200 p.s.i.
Hardness	ASTM D-2240 Shore D	60 +/- 5
Flexibility	ASTM D-522	180° over 1" mandrel
Abrasion Resistance	ASTM D-4060 (CS-17 wheels, 1 kgs weights, 1000 revolutions)	60 mg loss (standard version) 20 mg loss (CM version)
Permeability	ASTM E-96 (@ 15 mils)	1.4 x 10 ⁻³ perm inches
Resistance to Cathodic Disbondment	CSA Z-245 (65°C, 48 hours, 20 mils)	Excellent; less than 10 mm
Chemical Resistance	ASTM D-543	Excellent; see Chemical Resistance Chart
Dielectric strength	ASTM D-149	Greater than 200 volts per mil
Impact Resistance	ASTM G-14 (20 mils)	Greater than 40 in. lb.
Temperature Resistance	ASTM D-870, ASTM D-2485	-40°C(-40°F) to 65°C(150°F) Wet -40°C(-40°F) to 90°C(195°F) Dry
Colours		Black, Gray, Off-white

*However, recoat window varies depending on the spray equipment temperature setting, the ambient conditions, product temperature/thickness, and the temperature of the substrate being coated.

NOTE: All statements, technical information and recommendations contained herein are typical of results obtained under laboratory conditions and are not intended to be used as contract specifications. For specification guidelines please contact Madison Chemical.

APPLICATION INSTRUCTIONS

CONTACT MADISON FOR DETAILED APPLICATION INSTRUCTIONS

A. SURFACE PREPARATION

- 1) General** - This section applies to **ALL** substrates. The surface must be free of moisture, dust, oil and other contaminants. Degrease by scrubbing with hot water and detergent (preferably trisodium phosphate) or use a hot water high pressure wash. Proceed only if the substrate temperature is more than 3°C (5°F) above the dew point temperature during surface preparation and coating application. Humidity over 85% may impair adhesion and/or ruin the finish. On previously painted surfaces, remove loose coating, then test for compatibility and adhesion. If appears incompatible in any way or if adhesion is poor, completely remove prior coating.
- 2) Metal** - For general use, roughen surface by sanding, grinding or power wire brushing. Check adhesion; if inadequate, use GemThane Aluminized Primer before applying GemThane 'S'. For immersion service and other critical applications, blast to a near-white surface with a 2.5 mil profile. Welds and corners require extra coating. Avoid thinning if possible.
- 3) Concrete** - Concrete *must* be fully cured. On floors, clean as above, then roughen with blasting or acid etching to remove laitance. If pinholes or blowholes appear, use Madison MG 201 penetrating epoxy sealer before applying GemThane 'S'. Concrete block can be coated directly using GemThane 'S' but, for a pinhole-free result, Madison MG 220 epoxy basecoat or a quality cementitious/rendering compound should be applied first. Use 10-20% Reducer in first coat of GemThane 'S'.
- 4) Wood** - New wood can be sanded lightly before coating. Do not coat green or damp wood. Use 10-20% Reducer in first coat. For previously painted surfaces, see **General**.

B. APPLICATION OF COATING

- 1)** Before application, power stir or mechanically mix GemThane 'S' to disperse any settling that may have occurred. Add approximately 5% of GemThane C-10 Catalyst (2 to 4 hour pot life) and thoroughly mix into GemThane 'S' resin for 3 to 5 minutes. Other catalysts are available if faster curing is required but they will reduce the pot life. If thinning, use up to 20% VR-1 or VR-2 Viscosity Reducer.
- 2)** GemThane 'S' can be applied by brush, roller or single component airless spray equipment. If using a roller, use even backwards and forward strokes to achieve a continuous film. Cross roll to eliminate any ridges but do not overwork the surface as bubbling or blistering may occur. When spraying, use multiple light passes to avoid sags and pinholes.
- 3)** For optimum intercoat adhesion, recoat when previous layer is tacky to the touch - within 24 hours. If recoat time is exceeded, sand previous layer until the gloss is removed from the entire coated area, clean then apply the next coat. Allow GemThane 'S' to cure for a minimum of 24-48 hours before use.

C. CLEAN-UP AND STORAGE

- 1)** GemThane 'S' will react with humidity and moisture. Keep containers tightly sealed and store upside down. Avoid dropping or subjecting the material to strong force. For clean-up, use VR-1 or VR-2 Viscosity Reducer, M.E.K. or a 50:50 blend of M.E.K. and Xylol. Other solvents may react with GemThane "S".
- 2)** Store between 10°C (50°F) and 27°C (80°F). **DO NOT FREEZE.** Use product within 6 months of receiving.

HEALTH AND SAFETY

GemThane 'S' might build up gas over time. To avoid any sudden burst of gas, open the container carefully, thus allowing the gas to escape slowly. Avoid dropping or subjecting the material to strong force. GemThane 'S' is intended for industrial use only. It contains no monomeric isocyanate but may nevertheless cause respiratory distress in some people. Flammable; avoid open sparks and flames. Provide ample ventilation. Wear a fresh air respirator when using in confined areas or when spraying. If swallowed, do NOT induce vomiting as this will cause additional throat irritation; call physician. If splashed on skin, remove immediately with rubbing alcohol and then wash with soap and water. If splashed in eyes, wash liberally with clean water and contact physician; temporary irritation of eyes may last several days. Applicators should use rubber gloves, safety goggles and protective clothing. Resins are inert when cured. See MSDS for more information.

LIMITED TWO YEAR WARRANTY

Madison will replace any product which, in service for which it is suitable, fails to meet specifications within two years of sale and which is proven to be defective when applied according to instructions by a Madison Approved Applicator or Certified OEM Applicator. Madison accepts no responsibility or liability for any other loss, claim, damage, injury or expense, direct or consequential, in contract or negligence. This product replacement warranty is in lieu of any other right, warranty, guarantee or condition, statutory or otherwise, expressed or implied, whether as to fitness for a particular purpose or as to merchantable quality or otherwise.

The information contained herein is believed to be accurate as of the date of publication. Madison reserves the right to change product specifications without notice.

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