

PRODUCT NAME

Gem-Cote™ W ST Resin

Bonding of Gem-Wrap Fabrics



MANUFACTURER

Gemite® Products Inc.

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FEATURES

- Designed for bonding of Gemite Wrap fabrics
- Hard and tough
- Excellent adhesion and durability
- Easy to apply
- Excellent wetting and bonding of fabrics
- High abrasion resistance
- High chemical resistance

PRODUCT DESCRIPTION

Basic Use

Gem-Cote W ST Resin is used together with *Gem-Cote W ST Primer* in bonding of *Gemite Wrap* fabrics in reinforcing of concrete, masonry and timber structures. It is suitable for all Gem-Wrap fabrics, based on carbon, glass, aramid and basalt fibres. *Gem-Cote W ST Resin* is also used together with dry silica sand for thin layer patching of concrete surface prior to application of *Gemite Wrap* fabrics.

Composition and Materials

Gem-Cote W ST Resin is a two component epoxy system consisting of Component A (epoxy resin) and Component B (hardener).

Limitations

Do not apply *Gem-Cote W ST Resin* when the temperature is expected to go below 15°C (59°F) and above 25°C (77°F). The RH (relative humidity) must be below 85%. Do not apply over wet surfaces. Consult the manufacturer for application over previously treated substrate.

Health and Safety

Gem-Cote W ST Resin is flammable. If contact with skin occurs, wash with water. Harmful if digested. Keep the product out of reach of children. FOR INDUSTRIAL USE ONLY. Consult MSDS for additional information.

Colors

Gem-Cote W ST Resin is a clear epoxy resin system.

Packaging

Gem-Cote W ST Resin, Component A (resin) is supplied in 10 kg (22 lb.) containers and Component B (hardeners) in 5 kg (11 lb.) containers.

Yield

See the Application Section of this document.

Storage and Transportation

Shelf life of materials in unopened containers is one year. Store in temperatures above 4°C (40°F).

TECHNICAL DATA

Gem-Cote W ST Resin		
Viscosity		< 2,000 cps.
Tensile Strength	>30.0 MPa	>4,350 psi
Adhesive Strength	> 1.5 MPa	>220 psi
Compressive Strength	> 60 MPa	>8,700 psi
Flexural E-Modulus	>3,500 MPa	0.51 x 10 ⁶ psi
Flexural Strength	>40 MPa	5,800 psi
Shear Strength	>30 MPa	4,350 psi
Adhesive Strength	> 1.5 MPa	> 220 psi
Resin to Hardener Ratio by Weight		2:1
Application Temperature	5-35 °C	41-95 °F

INSTALLATION

Current Guide Specification and Application Instructions contain additional information specific to each application and must be followed.

Surface Preparation

Concrete Repair
The structure may require a repair prior to the application of *Gem-Wrap* fabrics. Use *Fibre-Prime* as corrosion protective coating for steel reinforcement and as bonding agent for *Fibre-Patch OV* repair mortar. See respective Gemite product data sheets for *Fibre-Prime* and *Fibre-Patch OV*.

Surface Preparation

Clean contact surfaces of oil, grease, scale, dirt and other foreign matter. The surface must be clean, sound, dry and free of dirt. The concrete structure may require restoration prior to bonding of *Gem-Wrap* fabrics. Remove all deteriorated concrete, sandblast the surface or clean using an approved method. (Contact Gemite Technical Service for further instructions).

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03064 Concrete Sealers
Structural Reinforcement

The tensile strength of the concrete must be checked by a random pull-off test (ACI 503R) at the discretion of the engineer. Minimum tensile strength must be 1.4 MPa (200 psi) with failure in the substrate concrete. Uneven surfaces must be filled with and epoxy mortar made of 1:1 volume parts of *Gem-Cote W ST Resin* and oven-dry silica sand, 30-50 Mesh. Maximum allowable deviation is 6 mm (1/4 in) in 3 m (6 ft) and not greater than 3 mm (1/8 in) over 1 m (3 ft). Remove any sharp edges by grinding. The maximum surface roughness "peak and valley" must not be more than 0.5 mm (20 mils). When using the *Gem-Cote W ST* epoxy mortar for leveling, the fabric should be applied the next day, even if still a little tacky. If the repair resin is left longer and hardens, the surface must be sanded and dust removed. All corners have to be rounded to a radius of at least 12 mm (1/2 in). The concrete surface must be ground to expose aggregates and dust completely removed.

Application

The substrate must be dry; maximum moisture content 4%. Mix *Gem-Cote W ST Primer* using a slow electrical drill (no more than 600 rpm) and a paddle. The ambient temperature must be above 5°C (41°F) and RH below 85%. Roll on the primer at the coverage of approximately 0.250 kg/m² (0.051 lb/ft²) and let cure overnight - minimum 12 hours. Mix *Gem-Cote W ST Resin* in the same weight ratio, 2:1, as the primer. Apply *Gem-Cote W ST Resin* to the prepared substrate by lamb skin roller at the rate 0.6 to 0.8 kg/m² (0.123- 0.164 lb/ft²). Place *Gem-Wrap* fabric into the resin coating in the designed direction. Work the fabric into the resin with a plastic roller until the resin is squeezed out between the rowings of the fabric. Apply an additional *Gem-Cote W ST Resin* coat at the rate of 0.5 kg/m² (0.16 lbs/ft²) to applied fabric. If the application requires an additional fabric layer, apply more resin at the same rate. This must be done within one hour at 20°C, (68°F), after the application of the previous layer. If this is not possible, wait for at least 12 hours before the next layer is applied. Apply the second layer in the same

manner as the first one. When overlapping, the fabric must extend at least 100 mm (4 in) over the applied fabric (in the fibre direction). Prevent exposure of the carbon fabric to constant UV light. Ambient temperature during application must be at least 5°C (41°F) and at least 3°C (5°F) above dew point. The entire *Gem-Wrap* reinforcing system must be protected by *Primer # 300* and *Tuff-Flex CA*. Please consult respective Gemite product data sheets.

Clean up

Clean tools and equipment immediately after use with Xylol. For dry material use MEK or Xylol.

AVAILABILITY AND COST

Available worldwide. Contact Gemite for the name of the nearest Representative / Distributor and pricing information. When ordering specify the finish, smooth or textured, and color. When ordering a custom color, the color suitability and pricing must be established by Gemite before order can be processed.

MAINTENANCE

Some maintenance may be required on traffic surfaces, depending upon the severity of the traffic and the type of chemical exposure.

WARRANTY

A limited twelve (12) month Material Replacement Warranty is available. For complete details contact Gemite's Head Office.

TECHNICAL SERVICE

For advice on suitability of *Gem-Cote W ST Resin* for a specific application, specification assistance and application advice contact Gemite Technical Service at: USA 888-443-6483 or Canada 905-672-2020.

Short Specification

The epoxy bonding system for *Gem-Wrap* fabrics will be *Gem-Cote W ST Resin* and *Gem-Cote W ST Primer* as manufactured by Gemite Products Inc. [USA 888-443-6483] or [Canada 905-672-2020]. It will meet all the Technical Data specified in the current *Gem-Cote W ST Resin* and *Gem-Cote W ST Primer* Product Data Sheet.