Gurit EPOXY

PRODUCT DATASHEET

Gurit



SPABOND™ 575

VERSATILE PERFORMANCE WOOD ADHESIVE

Spabond 575 is a two-part solvent free epoxy adhesive incorporating next generation core-shell rubber toughening technology. It benefits from exceptional fatigue performance, fracture toughness and resistance to crack propagation with reduced shrinkage. Spabond 575 is a very versatile adhesive, suitable for bonding a wide range of substrates, and with its carefully formulated chemistry, is ideal for bonding high oil content woods such as teak.

In use, Spabond 575 has a tolerant 1:1 mix ratio and a thixotropic, gel type consistency. This makes Spabond 575 easy to measure, mix and apply.

Spabond 575 cures at room temperature without the need for a post cure. The system generates green strength rapidly and when cured, creates a very strong bond that is tough and flexible.

- Enhanced health and safety
- Excellent application characteristics
- Mixing machine pumpable
- Sag resistant – up to 5 mm on a vertical surface
- Tolerant of very high humidity
- Very tough, highly adhesive and strong
- Excellent fatigue resistance
- Extremely versatile
- Does not require post cure
- Tolerant mix ratio of 1:1

INSTRUCTIONS FOR USE

APPLICATION

The product is optimized for use at 10 - 30°C. At lower temperatures the components thicken and may eventually become unworkable. To ensure accurate mixing and good workability, pre-warm the resin & hardener as well as the surfaces to be bonded before use. Apply the freshly mixed system using a tooth comb to spread and distribute evenly with minimum entrapment of air. The mixture has excellent gap-filling properties and, when applied to vertical surfaces, will not sag in thicknesses up to 8mm at temperatures up to 25°C. Clamp the bonded assembly in place, suitably placed weights or vacuum bagging until the system has gelled. Take care not to squeeze out the epoxy in the joint by applying excessive holding pressure during cure. Do not stress the joint until final cure has been achieved.

Preferably, the adhesive should be applied to both surfaces before the joint is closed. One face should be screeded over with a thin film of adhesive to fill any surface undulations (approximately 150-250g/m²), the bulk should then be applied to the other face by toothed comb. The table below gives an average of weight (g) to area (m^2) coverage to a single surface when applying Spabond 575 with an adhesive tooth comb (tooth depths from 3 to 6mm). To ensure a good bond between substrates is achieved, target coverage weight should not be less than 500g/m^2 (bond line thickness of ~0.4mm).

TRIANGULAR TOOTH COMB DEPTH (21°C)	UNITS	WEIGHT
3mm	g/m^2	672
5mm	g/m^2	928
6mm	g/m^2	1280

SURFACE PREPARATION

Before using the product ensure that surfaces to be bonded are clean, degreased, dry and dust-free. Prepare all surfaces by abrading either with shot blasting or with medium grit paper or other suitable abrasive. After abrading ensure removal of all dust.

Metals – Prepared according to Gurit surface preparation guide

Epoxy laminates - it is recommended to use a suitable Peel Ply as the last stage in their manufacture, otherwise prepare as above. Trials may be required to test Peel Ply suitability.

Polyester or Vinylester laminates - ensure laminates are fully cured before bonding, it is recommended to use a suitable Peel Ply as the last stage in their manufacture, otherwise prepare as above.

Timber - sand with abrasive paper across grain. Degrease oily timber with a fast-evaporating solvent (e.g. acetone). For resinous or gummy timber, etch with 2% caustic soda solution, wash off with fresh water and dry.

MIXING & HANDLING

The two components must be mixed thoroughly. If mixing by hand, particular attention should be paid to the sides and bottom of the mixing vessel. Solvent free epoxy systems have a limited pot-life so do not mix more than can be used within 15 minutes at 18-20°C. Larger volumes and higher ambient temperature will reduce this available mixing time while lower ambient temperatures and smaller volumes will increase it. Transfer the mixed system into a shallow tray of large area will help dissipate the heat of the chemical resin/hardener reaction and increase working time.

CURE SCHEDULE

The system is designed to cure at ambient temperatures. Full cure can be achieved by a cure cycle of 28 days at 15-25°C. Exact times for every particular set of conditions have not been determined and users should satisfy themselves that adequate properties for the system are obtained for the particular combination of glue line thickness, substrate materials, cure temperature and elapsed time.

TRANSPORT & STORAGE

The resin and hardener should be kept in securely closed containers during transport and storage. Any accidental spillage should be soaked up with sand, sawdust, cotton waste or any other absorbent material. The area should then be washed clean (see appropriate Safety Data Sheet). Adequate long term storage conditions will result in a shelf life, as per table, from the date of manufacture for both the resin and hardeners, see product container label for expiry date.

COMPONENT	UNITS	10 – 25°C
Spabond 575 Resin	Months	24
Spabond 575 Hardener	Months	24

Storage should be in a warm dry place out of direct sunlight and protected from frost. The storage temperature should be kept constant between 10°C and 25°C, cyclic fluctuations in temperature can cause crystallization. Containers should be firmly closed. The hardener will suffer serious degradation if left exposed to air. Hardeners may darken over time, however the physical properties are not affected.

SPABOND 575 RESIN & HARDENER

This product summary is intended for use in conjunction with further advice provided under the Instructions for Use section. All data has been generated from typical production material and does not constitute a product specification.

PROPERTY	UNITS	SPABOND 575 RESIN	SPABOND 575 HARDENER	MIXED SYSTEM	TEST METHOD
Appearance - color	Gardner	Opaque yellow	Opaque brown	Light brown	-
Appearance - form	Description		Thixotropic paste		
Mix ratio by weight	Parts by weight	100	100	-	-
Mix ratio by volume	Parts by volume	100	100	-	-
Density at 21 °C	g/cm3	1.17	1.17	1.17	Archimedes

COMPONENT & MIXED SYSTEM PROPERTIES

PROPERTY	UNITS	20°C	25°C	TEST METHOD
Spabond 575 Resin viscosity	P	290	150	-
Spabond 575 Standard Hardener viscosity	P	700	470	-
Initial Mixed System viscosity	P	350	194	-
Working time in thin film (tack free)	hrs:min	05:00	-	-
Working time at 15mm thickness	hrs:min	01:30	-	-
Gel time (100 g, in air)	hrs:min	00:45	-	-
Gel time (150 g, in water)	hrs:min	-	00:52	-
Sag resistance	mm	5	-	-

ADHESIVE PERFORMANCE

MECHANICAL PROPERTIES	SYMBOL	UNITS	7 DAYS AT 21°C (Dry)	7 DAYS AT 21°C (Wet)*	TEST STANDARD
Lap shear on steel	τ_{steel}	MPa	22.19	-	BS 5350 Part C5
Lap shear on teak	τ_{teak}	MPa	6.16 (Failure in wood)	5.29 (Failure in wood)	BS 5350 Part C5
Lap shear on red cedar	$\tau_{red\ cedar}$	MPa	3.43 (Failure in wood)	3.88 (Failure in wood)	BS 5350 Part C5
Lap shear on ash	τ_{ash}	MPa	9.92 (Failure in wood)	8.08 (Failure in wood)	BS 5350 Part C5
Lap shear on utile	τ_{utile}	MPa	6.74 (Failure in wood)	-	BS 5350 Part C5
Lap shear on iroko	τ_{iroko}	MPa	4.25 (Failure in wood)	-	BS 5350 Part C5
Lap shear on poplar	τ_{poplar}	MPa	6.28 (Failure in wood)	-	BS 5350 Part C5
Lap shear on gaboon ply	τ_{ply}	MPa	3.29 (Failure in wood)	-	BS 5350 Part C5

* Conditioned wood in 30% humidity. Actual moisture content teak 12.3%, red cedar 20.6%, ash 18%.

CURED MECHANICAL AND THERMAL PROPERTIES

MECHANICAL PROPERTIES	SYMBOL	UNITS	7 DAYS AT 21°C	16 HOURS AT 50°C	TEST STANDARD
Glass transition temperature	Tg_1	°C	47	56	ISO 6721 (DMA)
Tensile strength	σ_T	MPa	29.6	35.2	ISO 527-2
Tensile modulus	E_T	GPa	1.97	2.27	ISO 527-2
Tensile strain	ε_T	%	8.95	7.16	ISO 527-2
3-point flexural strength	σ_F	MPa	58.5	68.3	ISO 178
3-point flexural modulus	E_F	GPa	2.2	2.56	ISO 178
3-point flexural strain	ε_T	%	8.85	6.75	ISO 178

HEALTH AND SAFETY

The following points must be considered:

1. Skin contact must be avoided by wearing protective gloves. Gurit recommends the use of disposable nitrile gloves for most applications. The use of barrier creams is not recommended, but to preserve skin condition a moisturizing cream should be used after washing.
2. Protective clothing should be worn when mixing, laminating or sanding. Contaminated work clothes should be thoroughly cleaned before re-use.
3. Eye protection should be worn if there is a risk of resin, hardener, solvent or dust entering the eyes. If this occurs flush the eye with water for 15 minutes, holding the eyelid open, and seek medical attention.
4. Ensure adequate ventilation in work areas. Respiratory protection should be worn if there is insufficient ventilation. Solvent vapors should not be inhaled as they can cause dizziness, headaches, loss of consciousness and can have long term health effects.
5. If the skin becomes contaminated, then the area must be immediately cleansed. The use of resin-removing cleansers is recommended. To finish, wash with soap and warm water. The use of solvents on the skin to remove resins etc must be avoided.

   Washing should be part of routine practice:
   - before eating or drinking
   - before smoking & vaping
   - before using the lavatory
   - after finishing work

6. The inhalation of sanding dust should be avoided and if it settles on the skin then it should be washed off. After more extensive sanding operations a shower/bath and hair wash is advised.

Gurit produces a separate full Safety Data Sheet for all hazardous products. Please ensure that you have the correct SDS to hand for the materials you are using before commencing work.

NOTICE

All advice, instruction or recommendation is given in good faith but the selling Gurit entity (the Company) only warrants that advice in writing is given with reasonable skill and care. No further duty or responsibility is accepted by the Company. All advice is given subject to the terms and conditions of sale (the Conditions) which are available on request from the Company or may be viewed at Gurit's Website: www.gurit.com/terms-and-conditions.aspx

The Company strongly recommends that Customers make test panels in the final process conditions and conduct appropriate testing of any goods or materials supplied by the Company prior to final use to ensure that they are suitable for the Customer's planned application. Such testing should include testing under conditions as close as possible to those to which the final component may be subjected. The Company specifically excludes any warranty of fitness for purpose of the goods other than as set out in writing by the Company. Due to the varied nature of end-use applications, the Company does, in particular, not warrant that the test panels in the final process conditions and/or the final component pass any fire standards.

The Company reserves the right to change specifications and prices without notice and Customers should satisfy themselves that information relied on by the Customer is that which is currently published by the Company on its website. Any queries may be addressed to the Technical Services Department.

Gurit is continuously reviewing and updating literature. Please ensure that you have the current version by contacting your sales contact and quoting the revision number in the bottom left-hand corner of this page.

CONTACT INFORMATION

Please see local contact information at www.gurit.com

24-HOUR CHEMICAL EMERGENCY NUMBER

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