

Spabond 368

Epoxy Adhesive System

- **Low density (0.7 S.G.) core bonding paste**
- **Long working time for large structures**
- **Suitable for all applications where lightweight core is used**

Introduction

Spabond 368 is a low density adhesive, with a simple 2:1 by volume mix ratio which is designed for bonding a wide range of core materials. The product is uniquely filled and can be applied in thicknesses of up to 6mm at 20°C on vertical surfaces without the risk of drainage.

Resin and hardener are both colour coded to ensure consistency of the mix. The resin is light green and the hardener pale brown leading to a neutral grey colour when fully mixed.

With the fillers used in its formulation, Spabond 368 is easy to sand and can be used for strip planking with wood or foam strips.

Instructions for Use

Working Conditions

The product is optimised for use at 15 - 25°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.

Surface Preparation

Before using the product ensure that surfaces to be bonded are clean, dry and dust-free. Prepare all surfaces by abrading with medium grit paper or other suitable abrasive, remove dust then wipe with acetone or SP Fast Epoxy Solvent (Solvent A).

Metals usually require a chemical pre-treatment to create the best bond (contact Technical Services).

Ensure that polyester or vinylester laminates are fully cured before bonding, then prepare as above.

When bonding epoxy laminates, the use of a suitable Peel Ply as the last stage in their manufacture is recommended, otherwise prepare as above. Trials may be required to test Peel Ply suitability.

For ferrocement, etch with 5% solution of hydrochloric acid, wash with fresh water, then dry.

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

Mixing & Handling

Spabond 368 has only one hardener, Extra slow, which should be mixed with the 368 Resin in the ratio:-

Spabond 368 resin	Spabond 368 hardener
2 : 1 (by volume)	
100 : 44 (by weight)	

Properties

Component Properties		
	Resin	Extra Slow
Mix Ratio (by weight)	100	44
Mix Ratio (by volume)	100	50
Viscosity @ 15°C (P)	937	1423
Viscosity @ 20°C (P)	507	916
Viscosity @ 25°C (P)	330	810
Viscosity @ 30°C (P)	261	555
Shelf Life (months)	12	12
Colour	Green	Light Brown
Mixed Colour	-	Pale Green
Component Dens. (g/cm³)	0.64-0.66	0.56-0.58
Mixed Density (g/cm³)	-	0.61-0.63
Hazard Definition	Xi, N	C

For small volumes use graduated plastic mixing cups available from SP-High Modulus. Solvent free epoxies have a limited pot life. Mix sufficient only for immediate use to avoid excessive heat build up and resin wastage : with extra slow hardener, mix enough for 40 minutes use.

The resin is coloured green and the hardener light brown. This aids component identification and helps achieve even and thorough mixing. A uniform grey colour should be obtained when correctly mixed.

Mix thoroughly for at least one minute, paying particular attention to the sides and bottom of the mixing vessel, to ensure a good cure. Use from pot quickly or spread mixed system over a large surface area (e.g. paint roller tray) to dissipate heat and maximise resin working life (see Working Properties).

Application

Gluing

Spabond 368 has a higher shear strength and toughness than multipurpose epoxies which makes it more suitable for bonding both high strength materials and dissimilar materials. Spabond 368 is a filled system which gives it much greater thixotropy than standard epoxy systems. Therefore, for most bonding operations no further fillers need to be added, and the product can be used directly as supplied.

A low temperature postcure (eg. overnight @ 40°C-50°C) is recommended for optimum performance.

Fillet Bonding

Spabond 368 adhesive is not suitable for fillet bonding.

Pigmenting

The addition of further pigments to Spabond 368 is not recommended.

Properties (Cont'd)

Working Properties				
	Resin/Extra Slow Hardener			
	15°C	20°C	25°C	30°C
Initial Mixed Viscosity (P)	874	804	501	415
†Gel Time - 150g mix in water (hrs:mins)	-	05:40	03:40	-
†Pot Life - 500g mix in air (hrs:mins)	-	02:00	01:10	00:50
*†Clamp Time (hrs:mins)	-	24:30	-	-
Sag Resistance (mm)	-	10	7	-

Cured System Properties		
	Room Temp. Cure (28 days @ 21°C)	Cured 24 hours @ 21°C +16 hours @ 50°C
Tg DMTA (Peak Tan δ)(°C)	93.5	94.6
Tg Ult - DMTA (°C)	75	77.5
Tg2 - DSC (°C)	59.2	66.6
Tg1 - DMTA (°C)	53	64
Cured Density (g/cm³)	0.68	0.68
Linear Shrinkage (%)	1.79	1.83
Cleavage Strength (N)	3458	3610
Shear Strength on Steel (MPa)	11.78	10.44
Shear Strength Wet Retention (%)	95.2	100

*Due to the thixotropic and filled nature of this system, these values are only indicative.

Notes: For an explanation of test methods used see 'Formulated Products Technical Characteristics'.

All figures quoted are indicative of the properties of the product concerned. Some batch to batch variation may occur.

† All times are measured from when resin and hardener are first mixed together.

Health and Safety

The following points must be considered:

1. Skin contact must be avoided by wearing protective gloves. SP-High Modulus recommends the use of disposable nitrile gloves for most applications. The use of barrier creams is not recommended, but to preserve skin condition a moisturising cream should be used after washing.
2. Overalls or other 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 vapours 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
- 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.

SP-High Modulus produces a separate full Material Safety Data Sheet for all hazardous products. Please ensure that you have the correct MSDS to hand for the materials you are using before commencing work. A more detailed guide for the safe use of SP-High Modulus resin systems is also available from SP-High Modulus, and can be found on our website at www.gurit.com

Applicable Risk & Safety Phrases

Resin

R 36/38, 43, 51/53
S 24, 26, 28, 37/39, 57, 60

Extra Slow Hardener

R 22, 35, 43, 52/53
S 20, 26, 28, 36/37/39, 45, 61



Transport & Storage

The resin and hardeners 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 for both the resin and hardener will result in a shelf life of one year. Storage should be in a warm dry place out of direct sunlight and protected from frost. The temperature should be between 10°C and 25°C. Containers should be firmly closed. Hardeners, in particular, will suffer serious degradation if left exposed to air.

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