

Spabond 340

Epoxy Adhesive System

- **Excellent gap filling properties**
- **High strength and toughness industrial adhesive**
- **Three hardener speeds to give a range of working times / clamp times**
- **Low exotherm and shrinkage**
- **Temperature performance up to 80°C**

Introduction

Spabond 340 is a toughened, thixotropic adhesive system with a simple 2:1 by weight and by volume mix ratio.

It is designed for use with a mixing machine and has a sag resistance of 30mm on a vertical surface.

The range of hardeners available make this product ideal for bonding small or large structures.

The components are pigmented to give a visual indication of mix quantity.

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 Gurit Solvent A (Fast Epoxy Solvent).

Metals usually require a chemical pre-treatment to create the best bond. Please contact Gurit for a Guide to Surface Preparation and Pre-treatments.

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.

Mixing & Handling

The Spabond 340 components are supplied pigmented. Please refer to the component properties table for component and mixed system colours.

Spabond 340 resin should be combined with any one Spabond 340 hardener in the following mix ratio:

Spabond 340 resin	Spabond 340 hardener
100	50 (by weight)
100	50 (by volume)

Mix thoroughly for at least one minute, paying particular attention to the sides and bottom of the mixing vessel, to ensure no streaks remain. Once fully mixed the adhesive should have a uniform colour. Use from pot quickly to maximise resin working life. See 'Working Properties' table for full details. Pot life can be extended by spreading the mixed system over a large surface area to allow the heat of the resin/hardener reaction (exotherm) to be dissipated.

The system is suitable for machine mixing and dispensing. Contact Gurit Technical Services for information about suitable machines and their set up.

Properties

Component Properties						
	Resin		Fast	Slow		Extra Slow
Mix Ratio (by weight)	100	100	50	50	50	50
Mix Ratio (by volume)	100	100	50	50	50	50
Viscosity @ 15°C (cP)	-	-	-	-	-	-
Viscosity @ 20°C (cP)	-	-	-	-	-	-
Viscosity @ 25°C (cP)	46000	46000	10500	6800	6800	19800
Viscosity @ 30°C (cP)	-	-	-	-	-	-
Shelf Life (months)	12	12	12	12	12	12
Colour	white	yellow	red	white	purple	blue
Mixed Colour	-	-	pink **	white*	grey**	green**
Component Dens. (g/cm ³)	1.10	1.10	1.14	1.06	1.11	1.05
Mixed Density (g/cm ³)	-	-	1.11	1.09	1.10	1.083
Hazard Definition	Xi	Xi	C	C	C	C

* When mixed with white resin

**When mixed with yellow resin

Working Properties

Working Properties												
	Resin/Fast Hardener				Resin/Slow Hardener				Resin/Extra Slow Hardener			
Ambient Temperature	15°C	20°C	25°C	30°C	15°C	20°C	25°C	30°C	15°C	20°C	25°C	30°C
Initial Mixed Viscosity (cP)	55200	34600	23600	16500	96400	49300	23900	20000	65700	50800	30200	26800
†Pot Life - 500g mix in air (hrs:mins)	0:20	0:16	0:12	0:10	01:00	00:45	00:34	00:26	3:10	2:20	1:40	1:15
*†Clamp Time (hrs:mins)	5:12	3:50	2:50	2:05	23:00	17:40	13:30	10:20	33:50	24:00	14:50	10:30
Sag Resistance (mm)	38	36	33	30	38	36	33	30	38	36	33	30

Cured System Properties									
	Room Temp. Cure (28 days @ 21°C)			Cured 24 hours @ 21°C +16 hours @ 50°C			Cured 5 hrs @ 70°C		
	Fast	Slow	Ex. Slow	Fast	Slow	Ex. Slow	Fast	Slow	Ex. Slow
Tg DMTA (Peak Tan δ)(°C)	65.8	60.0	60.9	74.1	81.7	76.3	80.8	79.7	77.4
Tg Ult - DMTA (°C)	92.4	80.5	86.4	92.4	80.5	86.4	92.4	80.5	86.4
Tg2 - DSC (°C)	55.0	52.8	54.2	71.8	67.4	63.7	72.3	69.1	66.5
Tg1 - DMTA (°C)	54.9	50.4	51.5	63.3	67.5	65.1	69.2	68.5	67.1
Cured Density (g/cm³)	-	-	-	-	-	-	1.12	1.11	1.09
Linear Shrinkage (%)	-	-	-	-	-	-	0.595	0.601	0.612
Cleavage Strength (kN)	10.7	11.1	10.7	11.0	11.9	12.0	10.6	11.7	11.0
Shear Strength on Steel (MPa)	24.9	27.0	30.7	28.0	31.0	32.2	33.3	34.5	33.4
Shear Strength Wet Retention (%)	70.5	75.6	80.2	-	-	-	-	-	-

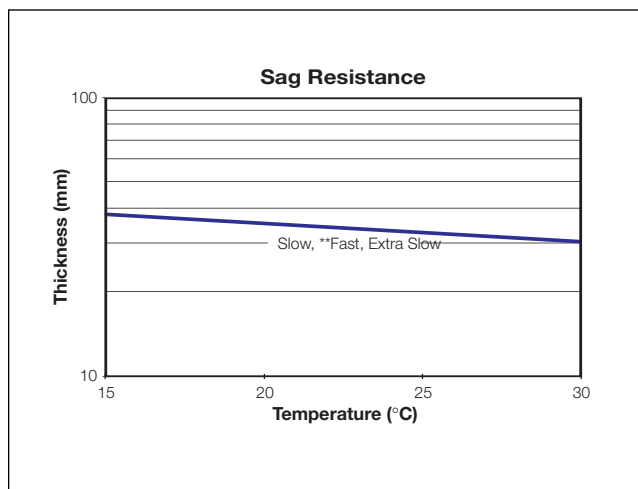
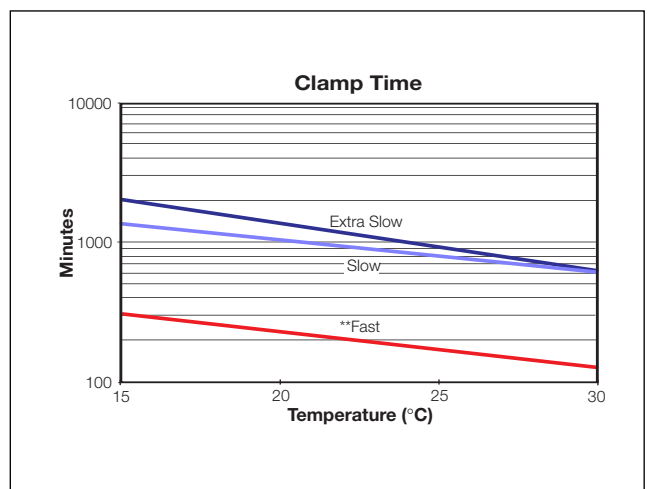
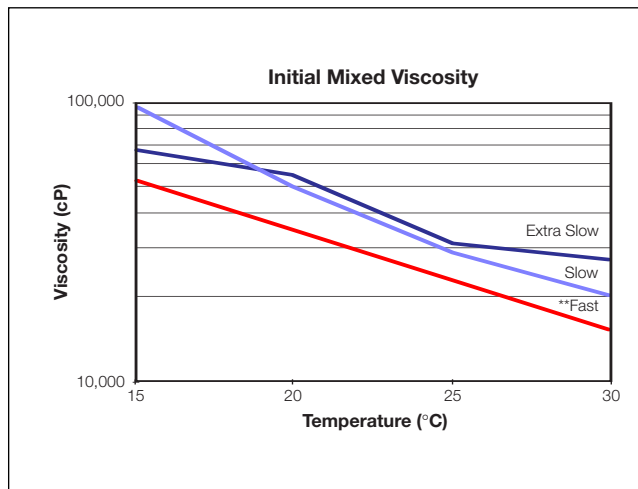
Notes: For an explanation of test methods used see 'Formulated Products Technical Characteristics'.

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

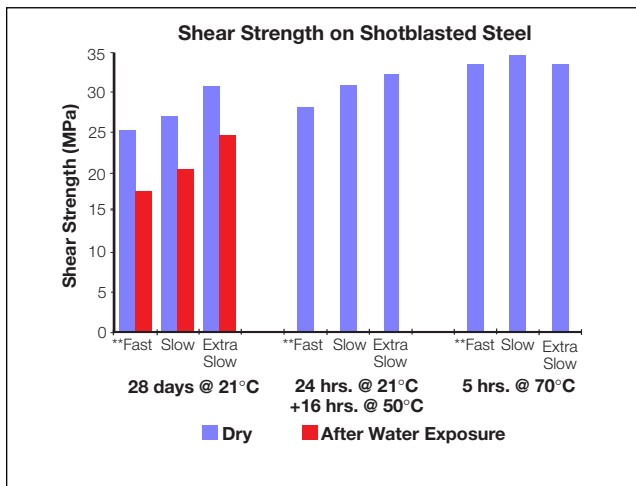
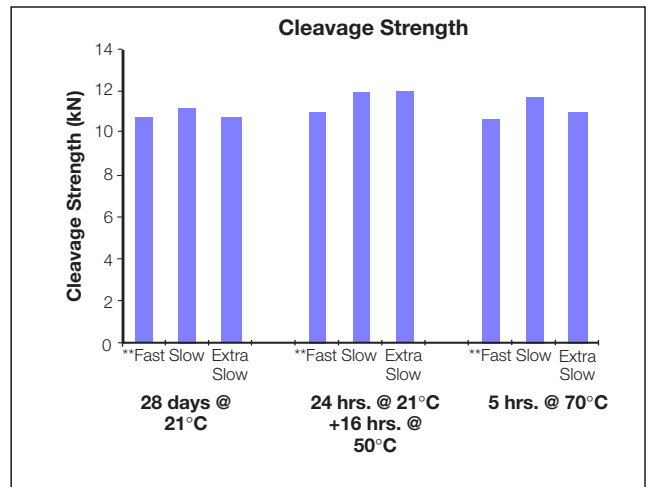
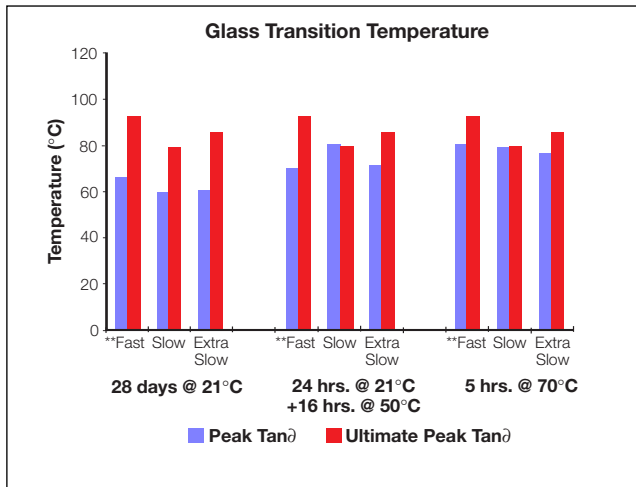
† All times are measured from when resin and hardener are first mixed together.

*Clamp time data shows the time taken to achieve a 2000N bond strength. This figure allows comparison of cure speed with other adhesive products of the Spabond range. However, because of the unusual cure development of this product at 15 - 30°C, the time to reach a safe handling strength should be extended by approximately 50%. Alternatively, an elevated temperature posture should be applied before handling.

Working Properties (cont'd)



Mechanical Properties



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 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.

Gurit 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 Gurit resin systems is also available from Gurit, and can be found on our website at www.gurit.com

Applicable Risk and Safety Phrases

Resin

R 36/38, 43,
S 24, 26, 28, 37/39

Slow Hardener

R 22, 34, 43
S 26, 36/37/39, 43, 45, 60

Fast Hardener

R 21, 23, 34, 43
S 20, 26, 36/37/39, 45

Extra Slow Hardener

R 34, 43
S 20, 26, 36/37/39, 45



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 will result in a shelf life of two years for both the resin and hardeners. 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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