

ISOBOND SR 5030 / SD 503x

Epoxy Paste for Fillet Joint and Structural Bonding

ISOBOND systems are high performance two component epoxy pastes dedicated to structural bonding and fillet joints, they are mechanically strong and highly thixotropic for a good behaviour in vertical surfaces.

ISOBOND **SR 5030** associated with the **SD 503x** hardeners have been specially formulated for bondings on vertical surfaces or ceilings as well as for wider gaps. This system allows wide gaps, up to 50 mm even though the parts are immediately post cured at high temperatures (up to 80°C)

ISOBOND **SR 5030 / SD 503x** has been DNV-GL approved.(WP 154 0009 HH)

The specific nature of the fillers used in ISOBOND **SR 5030 / SD 503x** confers in it an improved fatigue resistance and a low exothermic peak when used in high thickness.

The system is applicable either directly for non porous substrates or after having primed a highly porous surface with a liquid or slightly thixotropic system, please ask for advice. ISOBOND can then be applied directly after the primer or after settling slight gel.

Hand mixing of quantities above 200 or 300 grams can be very difficult and involve high production risks of inhomogeneous mixes. A dosing and/or mixing machine should be used to avoid such problems and to guarantee a reliable mix quality.

The bonding paste contains solid fillers to increase certain performances. It may happen that negligible amounts of visible impurities are within this material. However, these impurities do not affect the overall performance.”

ISOBOND SR 5030 epoxy resin

		ISOBOND SR 5030
Aspect		Thixotropic paste
Colour		Yellow
Viscosity (cps)	20 °C	120 000 ± 24 000
Rheometer	30 °C	75 000 ± 15 000
CP 50 mm	40 °C	60 000 ± 12 000
Shear rate 10 s ⁻¹		
Density :	20 °C	1.25 ± 0.05
Picnometer		
NF EN ISO 2811-1		
Storage stability:		24 months, crystallization free

ISOBOND SD 503x hardeners

		ISOBOND SD 5034	ISOBOND SD 5032
Aspect / colour:		Red thixotropic paste	Blue thixotropic paste
Reactivity		Fast	Slow
Viscosity (Pa.s)	20 °C	100 000 ± 20 000	80 000 ± 16 000
Rheometer	30 °C	75 000 ± 15 000	75 000 ± 15 000
CP 50 mm	40 °C	60 000 ± 12 000	70 000 ± 14 000
Shear rate 10 s ⁻¹			
Density	20 °C	1.10 ± 0.05	1.10 ± 0.05
Picnometer			
NF EN ISO 2811-1			

ISOBOND SR 5030 / SD 503x mix properties

		ISOBOND SR 5030 / ISOBOND SD 5034	ISOBOND SR 5030 / ISOBOND SD 5032
Aspect / colour		Orange thixotropic paste	Green thixotropic paste
Weight ratio		100 / 45 g	100 / 45 g
Volume ratio		2 / 1	2 / 1
Viscosity (Pa.s)	20 °C	110 000 ± 22 000	100 000 ± 20 000
Rheometer	30 °C	75 000 ± 15 000	75 000 ± 15 000
CP 50 mm	40 °C	60 000 ± 12 000	70 000 ± 14 000
Shear rate 10 s ⁻¹			

Processing

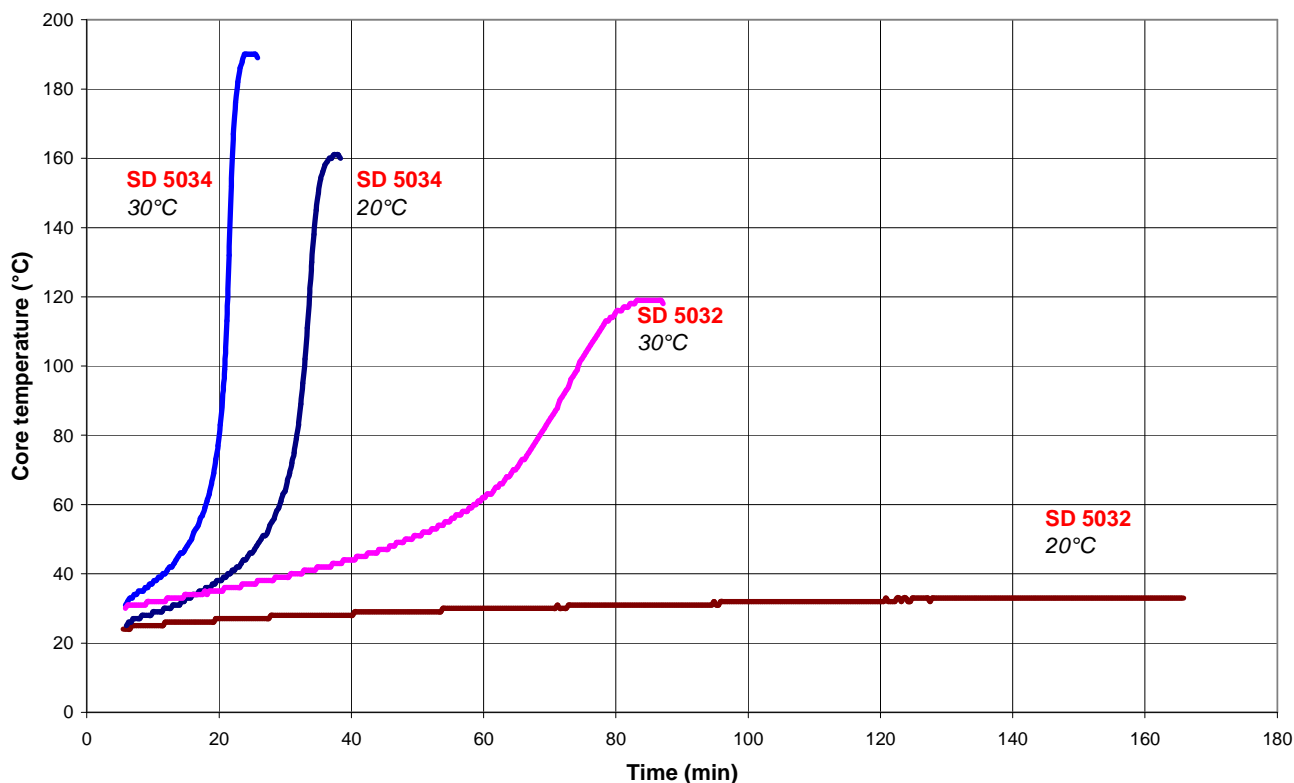
The resin and hardener must be mixed very thoroughly, this point is critical especially because both parts are pasty.

Mix until no clouding is visible. A transparent mixing pot should help seeing the colour mix. Take a special care to the sidewalls and the bottom of the mixing pot that should be free of any groove.

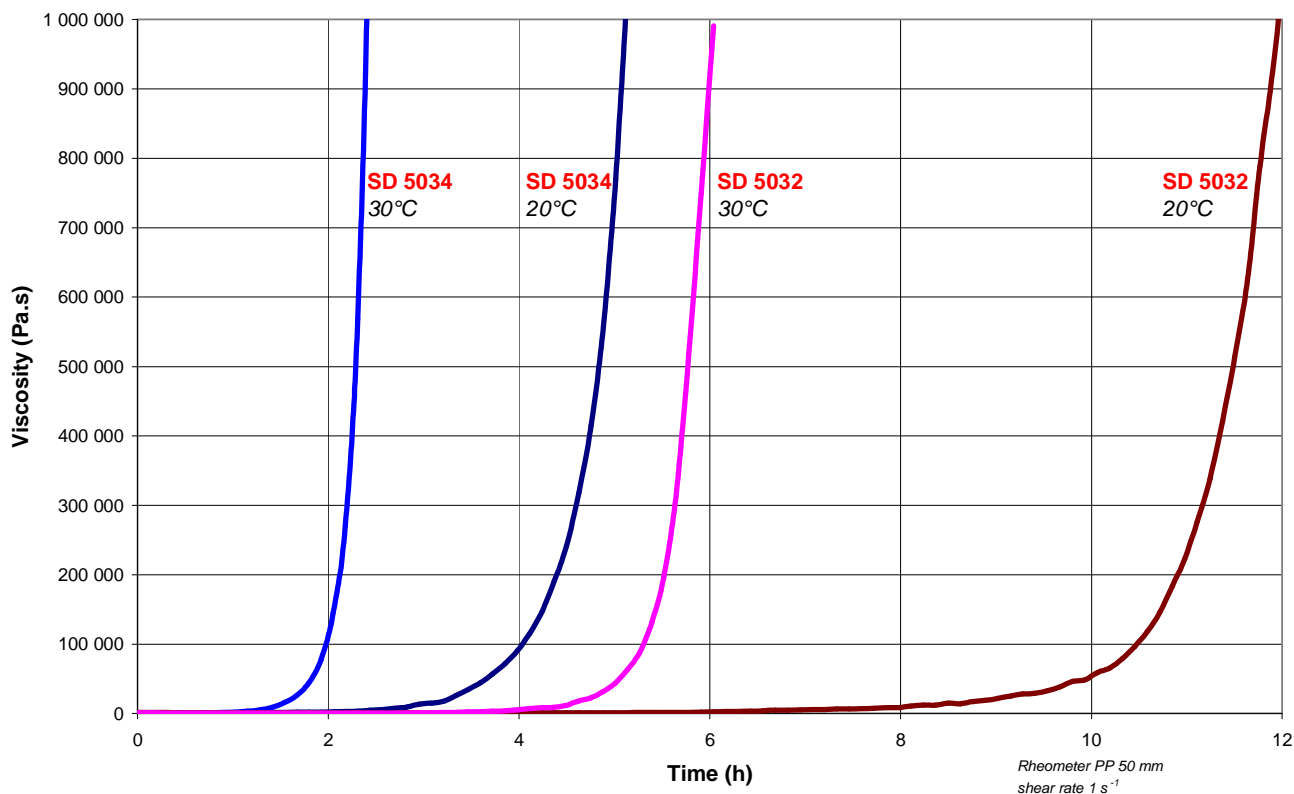
The yellow coloured resin and the either red or blue clouded hardener should help a lot for a visual verification of the mix quality.

Mass Reactivity

	ISOBOND SR 5030 / ISOBOND SD 5034	ISOBOND SR 5030 / ISOBOND SD 5032
Exothermic peak on 100 g mix :		
30°C	190 °C	120 °C
20°C	160 °C	33 °C
Time to reach exothermic peak on 100 g mix :		
30°C	24'	1h 25'
20°C	38'	2h 05'
Time to reach 50°C on 100 g mix		
30°C	16'	48'
20°C	26'	nr



Reactivity – Viscosity evolution on a 1 mm film



Mechanical Properties

		ISOBOND SR 5030 / ISOBOND SD 5034	ISOBOND SR 5030 / ISOBOND SD 5032
Curing schedule		24 h 23°C 10 h 70°C	24 h 23°C 10 h 70°C
Tension			
Modulus of elasticity	N/mm ²	4 550	4 500
Maximum resistance	N/mm ²	61	62
Elongation at break	%	2.8	2.9
Flexion			
Modulus of elasticity	N/mm ²	3 450	3 400
Maximum resistance	N/mm ²	75	77
Elongation at break	%	2.5	2.7
Tension shear strength			
Shear strength	N/mm ²	14.3	13.4
Glass transition / DSC			
Tg1	°C	88	81
Tg1 max.	°C	89	82

Tests carried out on samples of pure cast resin, without prior degassing, between steel plates.
Measures undertaken according to the following standards:

Tension:	NF T 51-034
Flexion :	NF T 51-001
Tension shear strength	NF T 76-107 .
Glass transition DSC :	ISO 11357-2 : 1999 -5°C to 180°C under nitrogen gaz
	Tg1 or Onset : 1st point at 20 °C/mn
	Tg1 maximum or Onset : second passage

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