



SR 1126

Fire resistant epoxy laminating system

Systems based on the resin SR 1126

Fire resistant laminating epoxy resin system.

Low fumes and low toxicity fumes

Bromine Free

With high temperature or fire, the system expands, produce solid char barrier that protects inner materials

Laminated can be approved UL 94 V0

Good temperature resistance

Slow hardener SD 8203

Suitable for manufacturing medium to large part by hand lay , press moulding and vacuum bagging.

Hardener SD 8203 must be post-cured at 40 °C minimum.

Suitable for parts with service temperature up to 60-70 °C, performance composites.

Polymerisation

The hardener has been developed to achieve excellent mechanical properties after post cure at a moderate temperature.

Epoxy resin SR 1126

Appearance		Viscous liquid / white	Method
Viscosity (m.Pas)	@ 20 °C	10 000 ± 2000	Brookfield LV4
	@ 25 °C	7 000 ± 1500	
Density (g/cm ³)	@ 20 °C	1.28 ± 0.01	Picnometer

Hardener SD 8203

Reactivity type		"slow"	Method
Appearance / colour		Yellow liquid	
Viscosity (mPa.s)	@ 20 °C	70 ± 15	Brookfield LV2
	@ 25 °C	50 ± 15	
Density (g/cm ³)	@ 20 °C	0.982 ± 0.005	picnometer

SR 1126 / SD 8203 mix.

Viscosity of mix (mPa.s)	@ 20 °C	1 500 ± 300	Brookfield LV3
Quantity by weight		100 g / 20 g	
Quantity by volume		100 ml / 17 ml	

Reactivity of mix SR 1126 / SD 8203

Exothermic temperatures (°C) for 150 g. mix	@ 30 °C	151 °C
	@ 25 °C	100 °C
	@ 20 °C	30 °C
Time to achieve exothermic peak for 150 g mix :	@ 30 °C	55'
	@ 25 °C	1 h 50'
	@ 20 °C	2 h 30'
Time to achieve 50 °C for 150 g mix:	@ 30 °C	28'
	@ 25 °C	1 h 10'
	@ 20 °C	nm
500 microns gel time film :	@ 40 °C	1 h 20'
	@ 30 °C	2 h 00'
	@ 25 °C	2 h 55'
	@ 20 °C	4 H 00
500 microns dust free film :	@ 40 °C	1 h 35'
	@ 30 °C	2 h 30'
	@ 25 °C	3 h 15'
	@ 20 °C	4 h 15'

Cure:

Minimum post-cure cycle time & temp.	SD 8203
	24 h at 40°C
Recommended post-cure cycle time & temp.	12 h at ambient
	+ 6 h at 40°C
	+ 4 h at 60°C
	+ 4 hours at 80°C

Fire resistant approval:

Laboratory: LNE– France
 Test / report: D100086/Cemat/67/AC
 According: UL 94, 5th edition / Oct, 1996 and July, 10 1998
 Samples: Glass laminates, 57% fiber content by weight, Thickness: 1.4 mm
 Result: **UL 94 V0 / vertical**



E glass laminates after test burning:
Brominated epoxy / Intumescent epoxy



Mechanical properties on cast resin:

Cure Schedule		4 days 30 °C	24 h Ta + 24 h 40°C	24 h Ta + 16 h 60°C
Tensile				
Modulus of elasticity	N/mm ²	3800	3200	3600
Maximum resistance	N/mm ²	23	33	31
Resistance at break	N/mm ²	23	33	31
Elongation at max. resistance	%	0.7	0.9	0.9
Elongation at break	%	0.7	0.9	0.9
Flexion				
Modulus of elasticity	N/mm ²	3900	4000	3600
Maximum resistance	N/mm ²	54	75	75
Elongation at max. resistance	%	1.3	2.1	2.3
Elongation at break	%	1.4	2.1	2.4
Compression				
Compressive yield strength	N/mm ²	91		
Offset compressive yield	%	5.80		
Charpy impact strength				
Resilience	KJ/m ²	5	4	6
Water absorption 48 h/70°C				
	%			
Glass Transition / DSC				
Tg 1	°C	63	70	85
Tg 1 max	°C		89	90

Tests carried out on samples of pure cast resin, without prior degassing, between steel plates.

Measures undertaken according to Afnor norms :

Tension: NF T 51-034

Flexion : NF T 51-001

Choc Charpy: NF T 51-035

Glass transition DSC : NF EN ISO 11357-2: 1999

Water absorption : Internal. Polymerisation according to a cycle weighting, time spent in distilled water à 70 °C / 48 hours weighting 1 hr after removal, drying 24 hr / 40°C

Mechanical properties of laminates based on SR 1126 resin:

Reinforcement		Twill 2/2 300 sq./m ²	Twill 2/2 300 sq./m ²	Twill 2/2 300 sq./m ²
Number of layers		15	15	15
Process		vaccum – 0.4 bar	vaccum – 0.4 bar	vaccum – 0.4 bar
Fiber content by weight	%	60.20	59.90	59.80
Post curing		4 days 30 °C	24 h Ta + 24 h 40 °C	24 h Ta + 16 h 60 °C
Flexion				
Modulus of elasticity	N/mm ²	15 900	16 000	15 900
Maximum resistance	N/mm ²	370	380	400
Elongation at max. resistance	%	2.6	2.7	2.8
Elongation at break	%	2.7	2.6	2.9
Shear strength				
Shear stress	N/mm ²	25	27	26
Charpy impact strength				
Resilience	KJ/m ²	177	180	173
Glass Transition / DSC				
Tg 1	°C	58	68	88
Tg 1 max	°C		91	93

Measures undertaken according to Afnor norms :

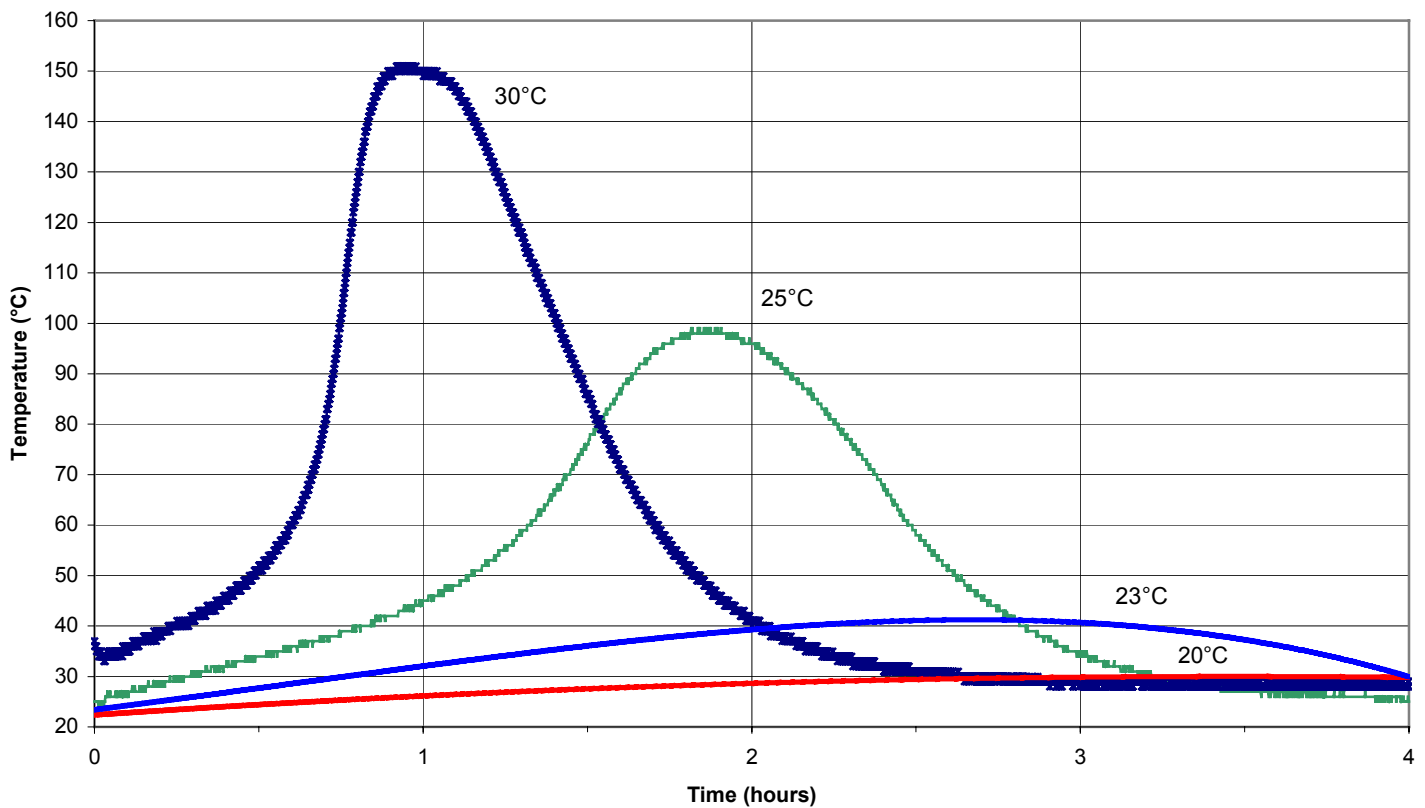
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SR 1126 / SD 8203 Reactivity on 150 g. mix.



Toxicity / Labelling regulation

Reference	Symbol	Danger	Risk phrase
SR 1126		Xi Irritant	36/38 - 51/53 43
		N Dangerous for the environment	
SD 8203		C Corrosive	21/22 - 34 - 43

EEC Classification according to doc. 1 of directive 67 / 548 / EEC

Kits (kg)

Delivery units	Resin SR 1126	Hardener SD 8203
1190	33 x 30 kg	200 kg
108	3 x 30	2 x 9
36	30	6
6	4.65	0.93
1.2	1	0.2

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