

## SR 6690

### Self-extinguishing laminating epoxy system

#### Description

The epoxy systems based on SR 6690 permit the manufacturing of fire resistant laminates. The composites obtained can be approved **M2** and **FAR 25-853**. These formulations have been developed for hand lay and cure at ambient temperature. A post-cure at 40°C minimum performs the thermal-mechanical properties.

	Resin <b>SR 6690</b>	Hardener <b>SD 2505</b>	Hardener <b>SD 2703</b>	Hardener <b>SD 8203</b>
Aspect :	Liquid	Liquid	Liquid	Liquid
Colour	White	Yellow	Reddish yellow	Yellow
Viscosity (mPa.s) à 25 °C	3 600 ±500	210 ±30	100 ±30	70 ±20
	à 20 °C 7 500 ±500	280 ±30	150 ±30	50 ±20
Density (Kg/l) à 20 °C	1.39	1.00	0.99	0.98

#### System SR 6690 / SD x

		<b>SD 2505</b>	<b>SD 2703</b>	<b>SD 8203</b>
Time and exothermic temperature on 500 g mix	@ 25 °C	25' / 250°C	40' / 245°C	52' / 220 °C
	@ 20 °C	30' / 190°C	50' / 230°C	75' / 220 °C
Time and exothermic temperature on 150 g mix	@ 25 °C	30' / 220°C	45' / 210°C	65' / 200 °C
	@ 20 °C	34' / 170°C	55' / 190°C	180' / 80 °C
Working time on 3 layers of 300 g/m <sup>2</sup> E glass fabric	@ 25 °C	2 h	2 h 45'	3 h 00
	@ 20 °C	3 h	3 h 30'	4 h 00
Mixing ratio by Weight <b>SR 6690 / SD</b>	<b>100 g</b>	<b>25 g</b>	<b>21 g</b>	<b>23 g</b>
Mixing ratio by Volume <b>SR 6690 / SD</b>	<b>100 ml</b>	<b>35 ml</b>	<b>30 ml</b>	<b>33 ml (3/1)</b>

#### Post-cure cycles

<b>SR 6690 / SD 2505</b> 12 hours @ ambient temp. then : 24 hours @ 40 °C or 16 hours @ 60 °C or 6 hours @ 80 °C	<b>SR 6690 / SD 2703 / SD 8203</b> 24 hours @ ambient temp. then : or 16 hours @ 60 °C or 8 hours @ 80 °C
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#### Storage

After a long storage the resin SR 6690 may decant: Mix thoroughly with a mixer before adding the hardener.





## Fire retardant approvals on SR 6690 / SD 2505

- M 2:** Ministerial decree of the 30<sup>th</sup> of June 1983 modified the 28<sup>th</sup> of August 1991  
Report of classification INERIS: N° 92-1741 of 8<sup>th</sup> of July 1992  
Result obtain on a laminate of 12 layers of 290 g/m<sup>2</sup> twill 2/2
- FAR 25-853 b and FAR 25-853 b2:** Trials on vertical and horizontal portico  
Report of trials ITF Lyon: N° 2884 / 1 / 93 du 3 August 1993  
Result obtain on a laminate of 3 layers of 290 g/m<sup>2</sup> twill 2/2

## Packaging (in Kg)

Kits	Resin <b>SR 6690</b>	Hardener <b>SD 2505</b>
37.5	30	7.5
7.5	6	1.5
		Hardener <b>SD 2703</b>
36.3	30	2.1 x 3
7.26	6	1.26
		Hardener <b>SD 8203</b>
36.9	30	3 x 2.3
7.38	6	1.38

## Health and safety informations

References	Symbols	Dangers	Phrases Risks
<b>SR 6690</b>		Xi : Irritant	36/38 40 43
		N : Dangerous for the environment	
<b>SD 2505</b> <b>SD 8203</b>		C : Corrosive	21/22 34 43
<b>SD 2703</b>		T : Toxic	45 48 20/21/22 37 43

EEC Classification in accordance with Annex I of the Directive 67 / 548 / EEC



## Mechanical properties on cast resin

SR 6690 / SD		SD 2505			SD 2703				SD 8203	
		48 h @ AT + 24h @ 40°C	48 h @ AT + 16h @ 60°C	48 h @ AT + 8h @ 80°C	48 h @ AT + 24h @ 40°C	48 h @ AT + 20h @ 50°C	48 h @ AT + 16h @ 60°C	48 h @ AT + 8h @ 80°C	48 h @ AT + 16h @ 60°C	48 h @ AT + 8h @ 80°C
<b>Tension</b>										
Modulus of elasticity	N/mm <sup>2</sup>	3620	3600	3530	3540	3450	3400	3380	3280	3130
Maximum resistance	N/mm <sup>2</sup>	77	84	83	47	54	54	53	57	61
Resistance at break	N/mm <sup>2</sup>	77	84	82	47	54	54	53	57	61
Elongation at max.load	%	2.7	3.6	4.2	1.4	1.5	1.6	1.7	2.0	2.5
Elongation at break	%	2.7	3.7	4.9	1.4	1.5	1.6	1.7	2.0	2.5
<b>Flexion</b>										
Modulus of elasticity	N/mm <sup>2</sup>	3680	3610	3550	3690	3720	3610	3590	3950	3800
Maximum resistance	N/mm <sup>2</sup>	113	131	134	77	87	90	87	102	117
Elongation at max.load	%	3.1	5.4	5.1	2.0	2.3	2.4	2.4	2.6	3.4
Elongation at break	%	3.1	5.7	5.7	2.0	2.3	2.4	2.4	2.6	3.4
<b>Charpy impact strength</b>	KJ/m <sup>2</sup>	16	19	20	5	8	7	7	7	10
<b>Glass Transition / DSC</b>										
Tg1	°C	64	75	79	75	84	83	94	88	100
Tg1 max.	°C			80				98		104

AT: Ambient Temperature

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

Charpy impact strength: NF T 51-035

Glass transition : Measure by DSC. Tg1: 1<sup>st</sup> point à 10°C / mn, Tg 1 max.: 2<sup>nd</sup> passage 180°C

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