



Compset

FR 191 FST Infusion System

Compset FR 191 Infusion System is the latest technology in fire resistant epoxy infusion allowing lightweight, high strength vacuum infused parts to be engineered without the limitations of ATH systems.



Test standards

- **UL 94-VO** **compliant**
- **DIN 5510 Part 2** **S4 SR2 ST2**
- **ISO 5658-2** **19.0 CFE(kW/m²)**
- **ISO 5660-1** **102.4 MARHE (kW/m²)**

This high performance fire resistant epoxy infusion functions with combinations of FST Gelcoat, laminating and infusion hardeners.

- **FR 191 Fire Resistant Surfacing Gelcoat**

The surfacing Gelcoat functions as a fire resistant barrier to the structural laminate as well as a decorative industrial finish.

Fire resistance ratings depend on the thickness of gelcoat and overall laminate design. The gelcoat is applied at a dry film thickness of 900µm to 1200µm or 1.40 to 1.80 kg / m². The gelcoat may be thinned with suitable solvents such as xylene or acetone of 8% by volume for spray application. Care should be taken that all thinning solvents have evaporated from the film before lamination.

- **LH 191 Fire Resistant laminating hardener**

LH 191 hardener is used for hand lamination such as tie layers or fully hand laminated designs. Its thixotropic viscosity reduces drainage with resin rich reinforcements such as CSM and heavy woven roving

- **RIH 191 Fire Resistant infusion hardener**

RIH 191 infusion hardener provides a ultra low viscosity infusible FST system. The unique fire retardant additives will not clog or be filtered out by the infusion process, which is the problem with other systems.

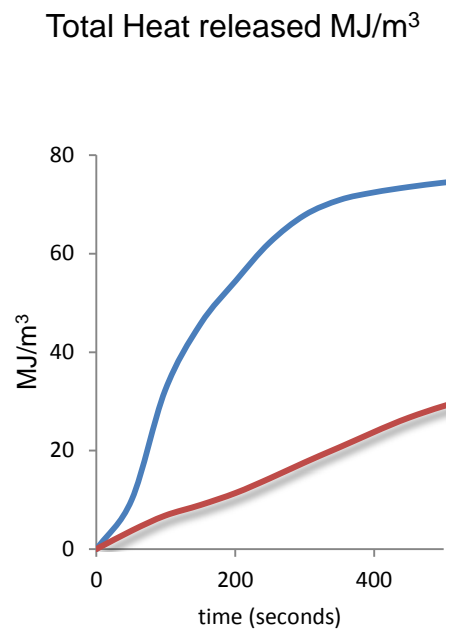
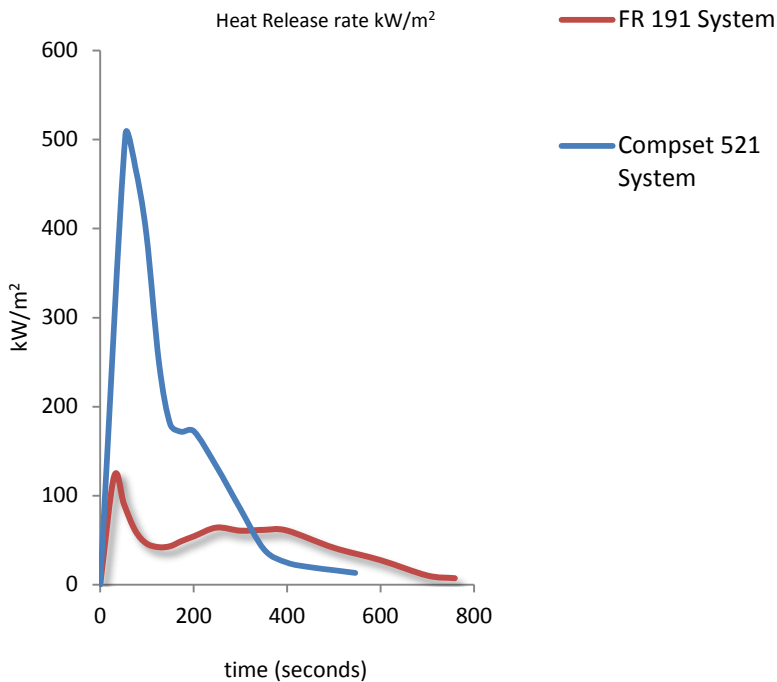
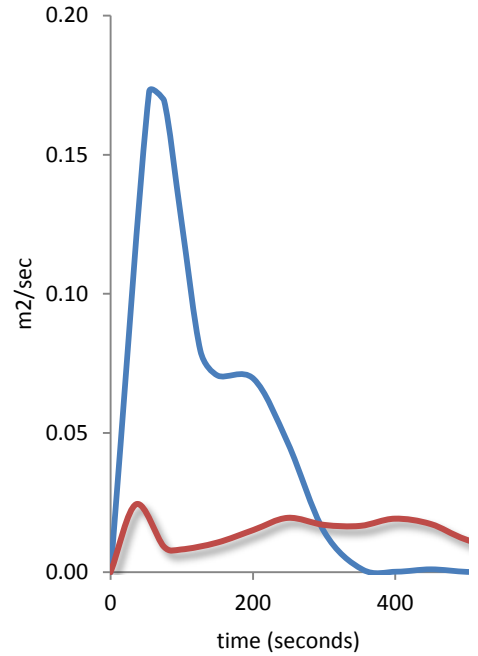


Laminate results : AS 3837 Heat and Smoke Release rates using Oxygen Consumption Calorimeter



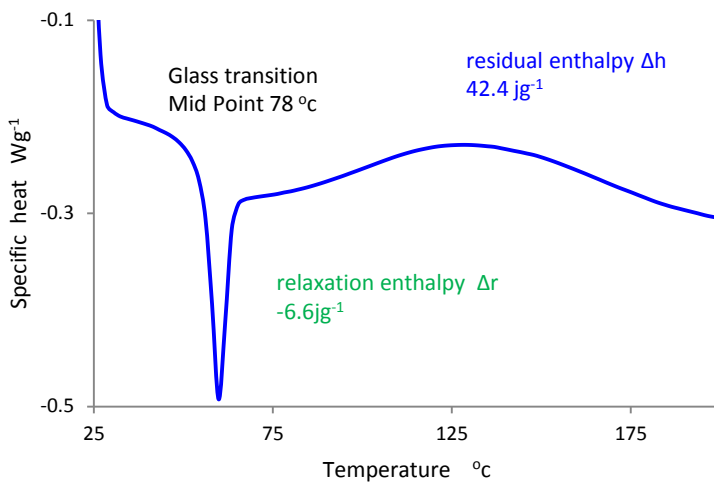
System	FR 191 Gelcoat System	Compset 521 (non FR control)
Heat release Rate kW/m ²	45.7	143
Specific extinction area m ² /kg	460	707
Irradiance kW/m ²	50	50
Peak heat release kW/m ²	125.1	505.5
Average heat at 60s kW/m ²	90.3	410.6
Average heat at 300s kW/m ²	63.7	231.2
Total heat release MJ/m ²	34.2	75.1

Smoke production rate m²/sec



Glass Transition Properties Tg

Post cure 16 hrs. 60°C



Cure Tg can be enhanced by the addition of heating the molding 40°C – 60°C during the process.

Warming the resin 25°C – 35°C before using will also accelerate cure.



Dynamic Mechanical Properties

Flexural properties

40°C

60°C

E' storage modulus

2750 MPa

3050 MPa

E'' loss modulus

61°C

78°C

Tan α

76°C

89°C

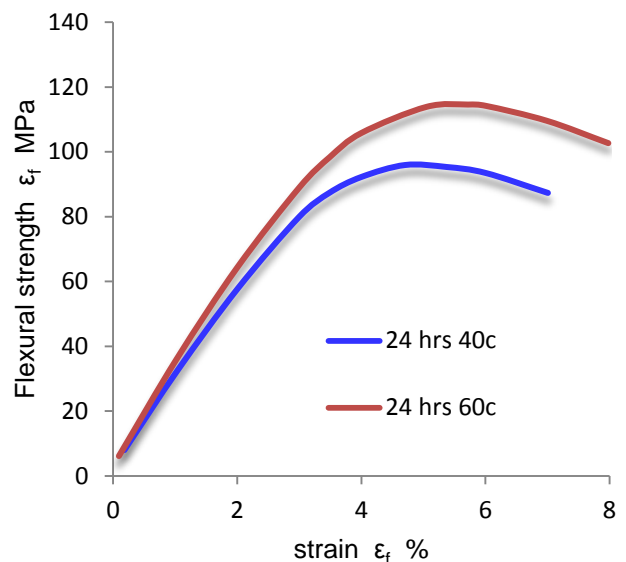
Tans delta δ

69°C

83°C

Static mechanical properties

	Post cure 16 hrs 40°C	Post cure 16 hrs 60°C
Tg °C dsc Mid point	63	78
Flexural Strength	91	115
modulus	2450	2950
Tensile Strength	52	77
Elongation	16	14



FR 191 Fire Resistant Infusion system

Caution:

Do not apply surfacing gelcoat when humidity is greater than 85% or when the surface temperature is less than 3 °c above the dew point. High atmospheric humidity or drops in temperature around dew point may result in condensation on the uncured film causing changes in the film surface as a result of hydration. This effect may cause loss of intercoat adhesion. In these conditions good adhesion may be obtained by re-roughening the surface

Notice:

The information provided in this data sheet is intended to help the user achieve positive results. It is the user's responsibility to fully test and qualify the resin system, along with ingredients, methods, applications or equipment identified herein, by the user's knowledgeable formulator or scientist, and to determine the appropriate use conditions and legal restrictions, prior to use of any information given in this data sheet.

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