RESOLTECH 2080 MF 40

Hardener 2085M

Self extinguishing structural Epoxy Foaming System

- **Density 430 kg/m^3**
- **Post Curing optional**
- **Excellent mechanical properties**




RESOLTECH 2080 MF 40 is a liquid foaming epoxy casting system formulated to produce low density , closed cell, self extinguishing structural cores.

RESOLCOAT 2080 MF 40 has a (free) expansion coefficient of 3,6, enabling the epoxy foam production **430 kg/m^3** epoxy foam. The slow, controlled foaming reaction makes un-necessary the use of mixing machines like with PU foams – The low pressure of the foaming will enable direct casting in the final parts with no conforming moulds without alteration of the dimensions of the composite.

The 2080M25 self extinguishing foam complies to UL94V0

This system is available in black, white or neutral colour (to be pigmented with any colour)

The main advantages of this epoxy foaming system over existing systems are:

- No fragile stage after the foaming making it un-necessary to cure before releasing from mould or to post cure depending on the mechanical characteristics needed.
- Perfect compatibility with pre-pregs and epoxy resins even in during their polymerisation
- Excellent resistance to water
- Major improvement of thermal and mechanical resistances compared to existing epoxy foams
- Homogenous structure of the foam
- No V.O.C emission

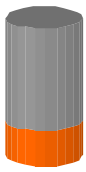
Resin 2080 MF 40

Hardener 2085M

Structural Epoxy Foaming system

MIXING RATIO

	By weight
Resin 2080 MF 40	100
Hardener 2085M	13



The mixing ratio must be respected neither excess nor default. The mixture should be homogeneous and intimate before the use.

APPLICATION

It is recommended to cast the mixed resin and hardener at a temperature around 18 to 25ºC in order to ease the mixing and casting process. Lower temperature will increase the viscosity of the mix while higher temperature will reduce the viscosity and the pot life.
Warning: During cold periods, the 2085M may have tendency to crystallize (appearance of a cloudy effect with some crystals). Once crystallized the hardener should not be used, The phenomenon is reversible, and heating the hardener at temperatures between 50ºC and 60ºC will be enough to obtain again the clear liquid that it was initially. This will not affect the properties of the final product.

PHYSICAL CHARACTERISTICS @ 23°C

Visual aspect

2080 MF 40 : Transparent opalescent liquid (exists in black)
2085M : Transparent to slightly yellow liquid
Mix : Transparent to slightly yellow liquid (exists in black)

Densities

Free expansion ratio: 3,6

	2080 MF 40	2085 M	Mix prior to foaming	Mix after foaming
Density	1.40	0.95	1.35	0.430

Viscosity

	2080 MF 40	2085M	Mix
Viscosity (mPa.s)	6000	29	2500

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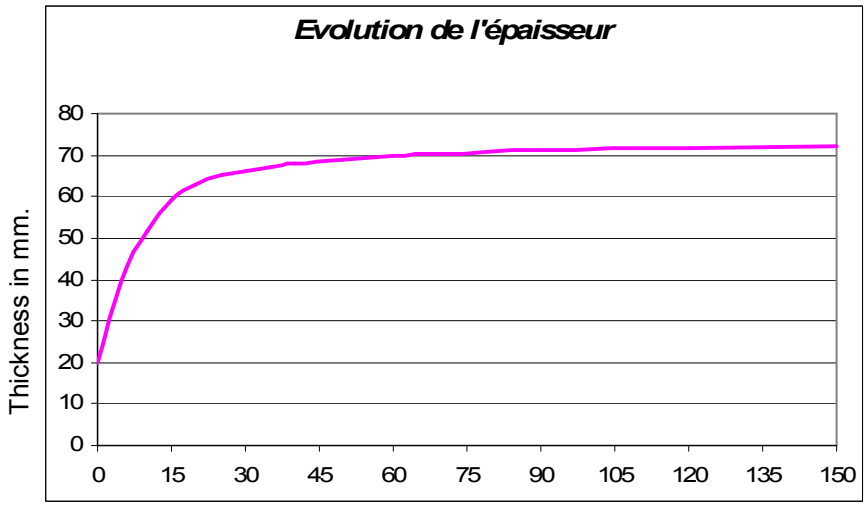
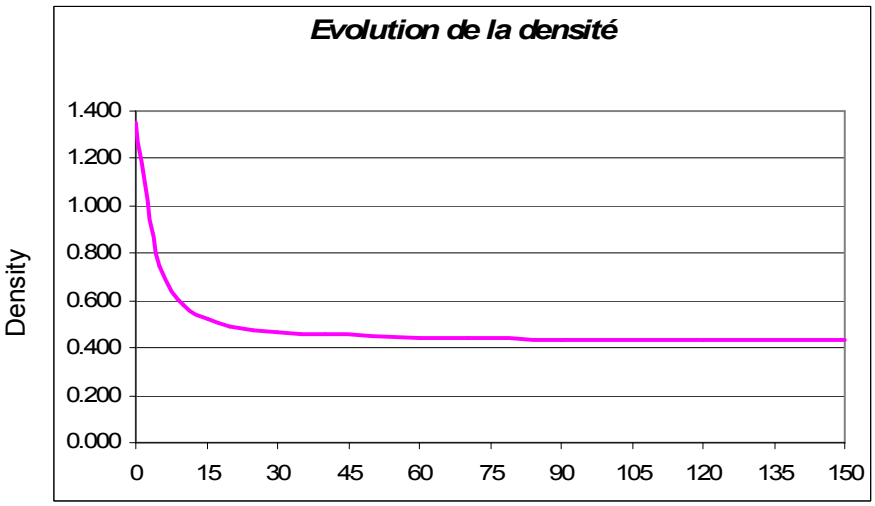
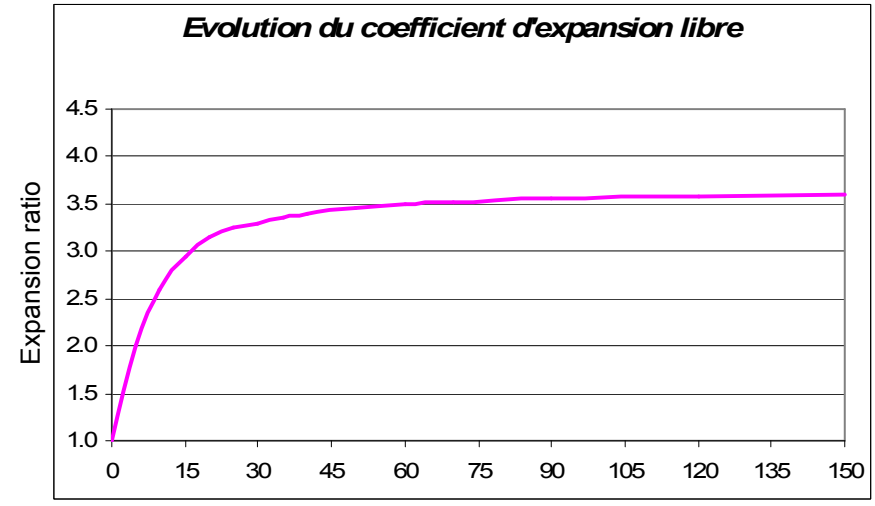
Foaming @ 23°C







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CURING & POST CURING

The foam obtained may be released from the mould and sanded after 24h to 36h at 25°C. Nevertheless, if higher thermo mechanical properties are required, a postcure cycle will reach the following TG:

48h @ 25°C + 6h @ 40°C	Tg >50°C
+ 12h @ 60°C	Tg>70°C
+ 4h @ 80°C	Tg 90°C
+ 4h @ 90°C	Tg 110°C

The reticulation process of the 2080 MF 40 is exothermic. It is recommended to proceed to preliminary tests or to contact us for very large applications.
It is recommended to cast the 2080M25 at temperatures inferior to 40°C in order to minimize risks of tensions happening during the cross-linking.

TG

@ Room Temperature: 48h @ 25°C

TGi :	52.2°C	Start of the vitreous transition
TGm :	**57°C**	**TG**
TGM :	58°C	Tº of vitreouse transition (calculated on relaxation of torque)
TGf :	65,5°C	End of vitreous temperature

W/ post cure cycle: 24h @ 25°C + 6h @ 40°C + 12h @ 60°C + 4h @ 80°C + 4h @ 90 °C

TGd :	92,5°C	Start of the vitreous transition
TGm :	**114°C**	**TG**
TGM :	110°C	Tº of vitreouse transition (calculated on relaxation of torque)
TGf :	126°C	End of vitreous temperature

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MECHANICAL CHARACTERISTICS ON SANDWICH COMPOSITE

LAMINATE COMPOSITION

Construction :	2 carbon fibre plain weave 1 mm thickness 6 mm 2080MF40 epoxy foam core
Curing :	48h @ room temperature **with no postcure**

COMPRESSION

Module :	TBD MPa
Maximum load. :	TBD MPa
Deformation @ max load :	TBD %

FLEXION

Module :	TBD MPa
Maximum load :	TBD MPa
Elongations @ max loadi :	TBD %

TORSION

Maximum Angle:	TBD
Maximum torque:	TBD

Fire resistance characteristics

HOMOLOGATIONS

- Autoextinguibility according to UL94 : **V0**

- Autoextinguibility according to **FAR 25.853 horizontal** ***Being validated***
- Autoextinguibility according to **FAR 25.853 vertical** ***Being validated***
- Autoextinguibility according to **AIRBUS ABD0031** ***Being validated***

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LABELLING

2080 MF 40

Dangerous for the environment

2085M

PACKAGING

- Kit of 1 kg + 0,13 kg
- Kit of 5 kg + 0,65 kg
- Kit of 25 kg + 3,25 kg
- Kit in metal drums of 200 kg + 26 kg

HEALTH & SAFETY

The usual precautions for the use of epoxy resins must be respected. Our health and safety datasheets are available upon request. It is important to wear protective clothing and avoid skin contact with the products. In case of contact, wash thoroughly with soap and water. In case of eye contamination, wash thoroughly with warm water. Consult a specialist.

TRANSPORT & STORAGE

Keep containers sealed and away from heat and cold preferably between 10°C and 30°C in a well ventilated area. Shelf life is minimum one year in sealed containers as provided.

Nota : The data provided in this document are provided good-faith and are based on the test in laboratory and our practical experience and is believed to be accurate. Considering the application of our products gets away from our control, we do not accept any responsibility over the mishandling of these

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