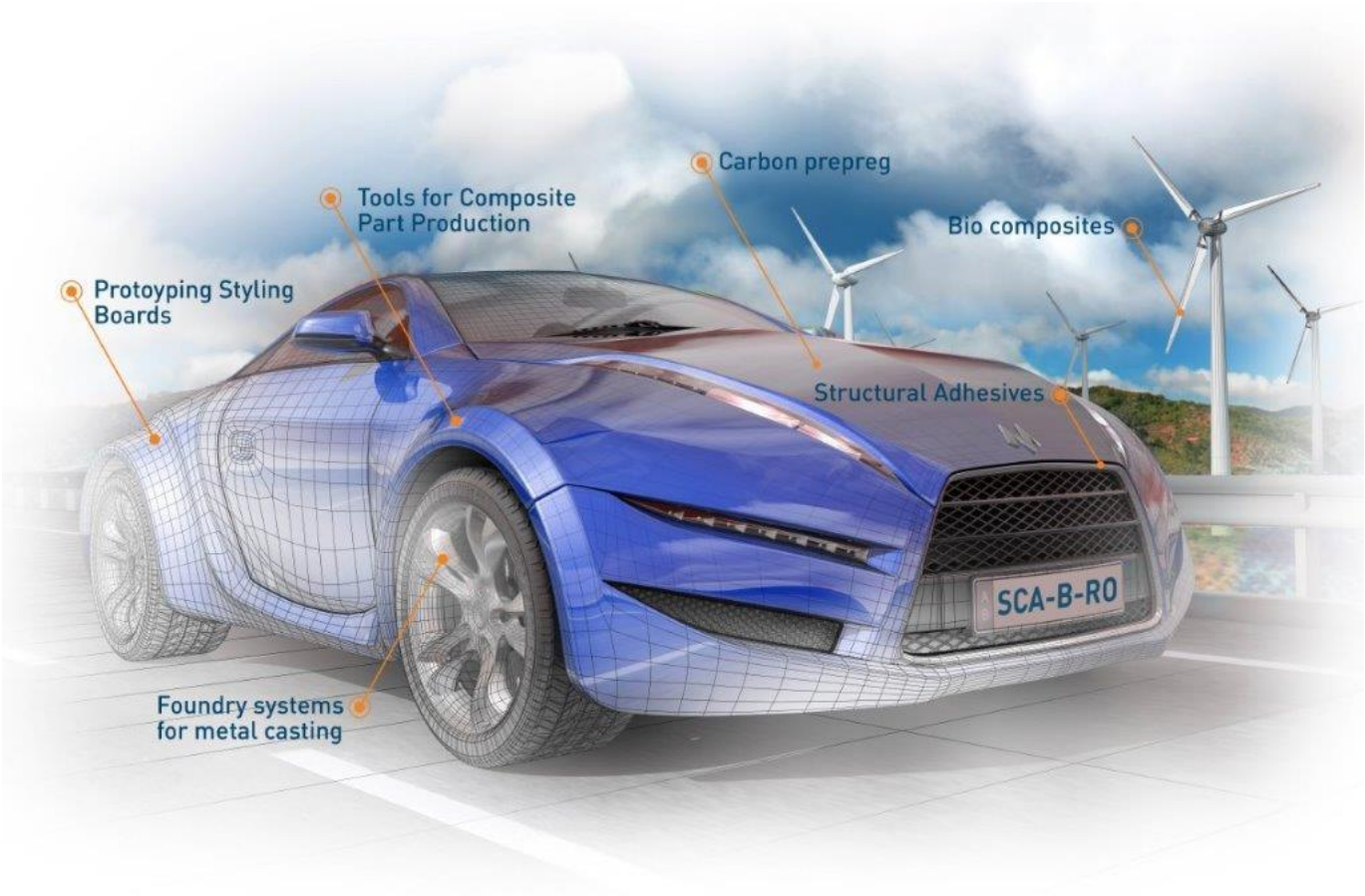
SCABRO
IDEAS TAKE SHAPE

TECHNICAL DATASHEET

RESOLTECH 2080M17

2085M



MALLENBOUW | COMPOSIETEN | LIJMEN

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RESOLTECH 2080M17

Hardener 2085M

Structural Epoxy Foaming system

- **Density 170 kg/m^3**
- **Post Curing optional**
- **Excellent mechanical properties**




RESOLTECH 2080M17 is a liquid foaming epoxy casting system formulated to produce low density , closed cell, strutural cores.

RESOLCOAT 2080M17 has a (free) expansion coefficient of 4, enabling the epoxy foam production **170 kg/m^3** epoxy foam. The slow, controled 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.

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

The main avantages of theis epoxy foaming system over existing systems are:

- No fragile stage after the foaming making it un-necessary to cure beofre releasing from mould or to postcure depending on the mechanical characteristics needed.
- Perfect compatibility with pre-pregs and epoxy resins even in during their polimerizationation
- 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

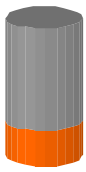
Resin 2080M17

Hardener 2085M

Structural Epoxy Foaming system

MIXING RATIO

	By weight
Resin 2080M17	100
Hardener 2085M	30



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

2080M17 : 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: 5,6 to 6,2

	2080M17	2085 M	Mix prior to foaming	Mix after foaming
Density	1.17	0.95	1.12	0.169

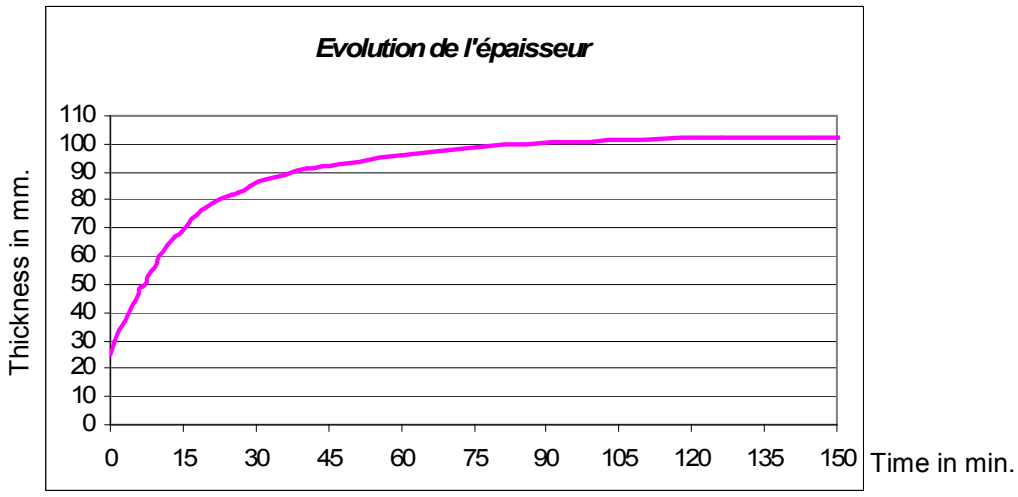
Viscosity

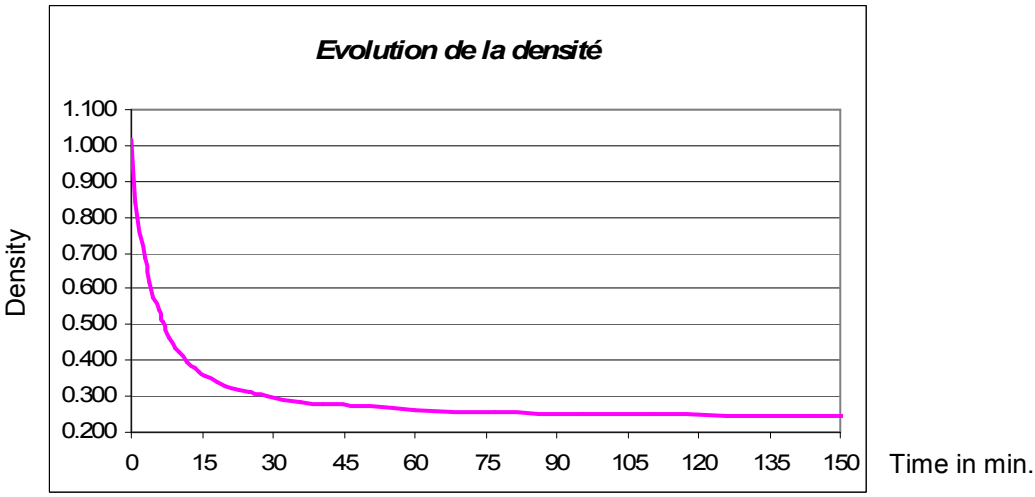
	2080M17	2085M	Mix
Viscosity (mPa.s)	4000	29	1950

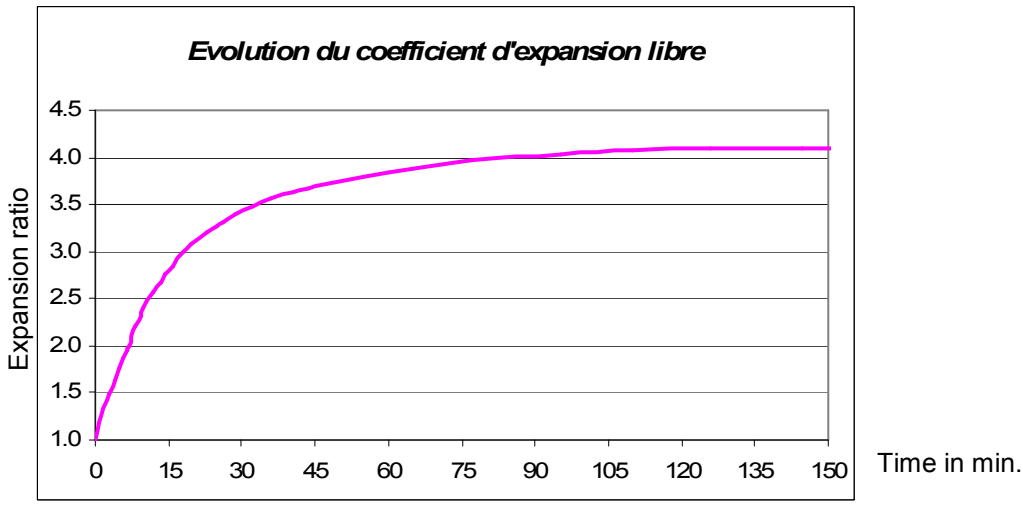
Resin 2080M17

Hardener 2085M

Foaming @ 23°C







Resin 2080M17

Hardener 2085M

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 @ 25ºC	Tg 57ºC
48h @ 25°C	
+ 6h @ 40°C	Tg >60°C
+ 12h @ 60°C	Tg>70°C
+ 4h @ 80°C	Tg 90°C
+ 4h @ 90°C	Tg 114°C

The reticulation process of the 2080M17 is exothermic. It is recommended to proceed to preliminary tests or to contact us for very large applications.
It is recommended to cast the 2080M17 at temperatures inferior to 40°C in order to minimize risks of tensions happening during the cross-linking.

THERMAL CONDUCTIVITY

Material	Density kg/m^3	Thermal conductivity W/m.K @ 20°C
Air (1 atm.)	1.2	0.026
Extruded polystyrene	45	0.027
Aramid fibre	1450	0.030
Expanded polystyrene	20	0.036
Airex PVC R63.140	140	0.039
Airex PVC C70.200	200	0.048
RESOLTECH 2080M17	**250**	**0.064**
Balsa wood	175	0.070
Expanded Polycarbonate	650	0.120
Epoxy Resin	1100	0.250
Water	1000	0.600
Glass Fibre	2600	1
Stainless Steel	7800	26
Aluminium	2800	237
Carbon fibre	1800	200
Gold	8800	317

Resin 2080M17

Hardener 2085M

MECHANICAL CHARACTERISTICS ON SANDWICH COMPOSITE

LAMINATE COMPOSITION

Construction :	2 carbon fibre plain weave 1 mm thickness 6 mm 2080M17 epoxy foam core
Curing :	48h @ room temperature **with no postcure**

COMPRESSION

Module :	1107 MPa
Maximum load. :	32 MPa
Deformation @ max load :	4.3 %

FLEXION

Module :	738 MPa
Maximum load :	51 MPa
Elongations @ max loadi :	9.1 %

TORSION

Maximum Angle:	187 °
Maximum torque:	1986 MPa

Resin 2080M17

Hardener 2085M

LABELLING

2080M17

Dangerous for the environment

2085M

PACKAGING

- Kit of 1 kg + 0,30 kg
- Kit of 5 kg + 1,5 kg
- Kit of 25 kg + 7,5 kg
- Kit in metal drums of 180 kg + 2x27 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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