



## **TECHNICAL DATASHEET**

### **EL116F**

EL116F is a low viscosity resin system that cures to a flame retardant, flexible product with good adhesion to a wide variety of substrates.

#### **METHOD OF USE**

##### **Twinpacks**

Twinpacks contain evacuated resin and are ready for use immediately after mixing. See separate mixing instructions.

##### **Bulk Material**

The resin has been formulated to minimise sedimentation. Any sediment that may have occurred resulting from long time storage should be dispersed either by rolling the can or stirring with a broad bladed spatula. This operation should be carried out, if necessary, BEFORE removal of any material from the can. Long-term sedimentation will be aggravated by storage at high temperatures and this should be avoided.

The resin is supplied after being evacuated and care should be taken when mixing with hardener not to stir in large amounts of air. If this is unavoidable, the mixed resin and hardener should be re-evacuated before use.

Mixing and dispensing machinery is available from Robnor Resins that will mix resin and hardener in the correct proportions without any risk of introducing entrapped air.

##### **Kits**

In kit form, resin and hardener are provided in separate containers to the correct ratio. In most cases, pour the hardener into the larger resin container and use it as a mixing vessel. Stir well using an appropriate mixer until homogeneous.

Note: Incomplete mixing will be characterised by erratic or even partially incomplete curing of material even after extended time periods.

#### **Characteristics of Resin: RL116F**

<b>Property</b>	<b>Value</b>	<b>Unit</b>	<b>Standard</b>
Colour	Grey	—	RTM : 10
Specific Gravity	1.5 ± 0.02	—	RTM : 3
Viscosity	3500	mPa.s	RTM : 8

#### **Characteristics of Hardener: HL116F**

<b>Property</b>	<b>Value</b>	<b>Unit</b>	<b>Standard</b>
Colour	Brown	—	RTM : 10
Specific Gravity	1.24 ± 0.02	—	RTM : 5
Viscosity	200 - 250	mPa.s	RTM : 8

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### Characteristics of Mixed System: EL116F

Property	Value	Unit	Standard
Colour	Grey	—	RTM : 10
Specific Gravity	1.47 ± 0.02	—	RTM : 3
Viscosity @ 23°C	2000	mPa.s	RTM : 8
Mix Ratio by Weight	7.83 : 1	—	—
Mix Ratio by Volume	6.49 : 1	—	—
Usable Life (250g @ 23°C)	20	min	RTM : 46
Gel Time (No Flow - 150g)	90	min	RTM : 15
Cure Schedule *	24	h	—

\*Allow a minimum of 24 hrs for light duty and a minimum of 6 days for resin to achieve maximum properties (ambient temperature)

### Chemical Characteristics:

Property	Value	Unit	Standard
Water Absorption (24h @ 23°C)	0.11	%	RTM : 26
Flammability	Self- extinguishing	—	RTM : 28
Chemical Resistance	Medium	—	RTM : 29

### Physical Characteristics:

Property	Value	Unit	Standard
Shore Hardness	A80 - 70	—	RTM : 18
Operating Temperature	-40 to + 100	°C	RTM : 24
Maximum short term exposure	125	°C	RTM : 24
Thermal Conductivity	0.35	W/mK	RTM : 31
Tensile Strength	~ 8	Mpa	RTM : 32
Elongation at Break	~ 50	%	RTM : 41
Compressive Yield Strength	< 10	Mpa	RTM : 33
Tear Resistance	Medium	—	RTM : 42
Lap Shear Strength	High	—	RTM : 21
Shrinkage	Low	—	RTM : 25
Coefficient of Linear Expansion	50 – 75	ppm/°C	RTM : 35

### Electrical Characteristics:

Property	Value	Unit	Standard
Volume Resistivity	10 – 12	Log <sub>10</sub> ohmm	RTM : 36
Surface Resistivity	13 – 15	Log <sub>10</sub> ohm	RTM : 37
Electric Strength	14	MV/m	RTM : 38
Permittivity (ε)	3.9	—	RTM : 39

**All measurements are at 25°C and have tolerance of ± 20% unless stated otherwise**

N.B. These results do not constitute a specification and are quoted for guidance use only. The information given is derived from test and/or extrapolations believed to be reliable. However, the product is offered for evaluation on the understanding that the customer will satisfy himself that the product is suitable for his intended use. Details of Robnor Test Methods (RTM) are available upon request.

### Cleaning Equipment

All equipment should be cleaned before the compound has hardened. Robnor Resins' TS130 is a suitable non-flammable cleaning agent, although other solvents may be found suitable. TS130 is also suitable for removing cured resins - data available on request.

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### **Storage of Bulk Resin and Hardener**

All polyurethane resins are Hygroscopic and absorption of moisture will effect both resin and hardener reactivity and physical properties of the resulting polymer. The material should therefore be stored in sealed dry containers. Once opened, the resin and hardener can be protected from atmospheric moisture by purging with dry Nitrogen gas - purging grade (available from British Oxygen Co.) Alternately desiccant traps can be used to dry the incoming air.

Cold temperatures between 7 and 10°C can be used to lessen any separation of resin ingredients, however, care must be taken to prevent condensation by allowing contents to return to ambient temperature prior to opening containers. The urethane Isocyanate hardeners must be stored above 15°C to prevent crystallisation. If crystals are visible, contact Robnor before use. The preferred storage temperature is between 20 and 25°C.

Under these storage conditions the shelf life of the resin and the hardener is 12 months.

### **Handling Precautions**

Polyurethane systems may cause sensitisation by "inhalation" and may be corrosive, harmful or toxic. It is therefore advisable that skin and eye contact are avoided by using appropriate personal protective equipment. Adequate ventilation of the working area is recommended. However, where vapour levels are likely to be above occupational exposure limits, or discomfort is experienced, appropriate respiratory protection should be worn.

It is essential that the specific hazards of the system being used be known before handling any material supplied by Robnor. Users should familiarise themselves with the Health and Safety information provided by the Company both in written correspondence and in the information sources listed below.

- The labels on the product packages and containers
- The product Health and Safety Data Sheet

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