



TECHNICAL DATASHEET

EL171C

EL171C is a halogen free, flame retardant, semi-rigid potting resin used in light to medium voltage electrical applications. It is specifically designed for the cost-effective encapsulation of electrical units and cable joints.

EL171C offers excellent adhesion and good water resistance.
The standard colour is black but other colours are available on request.

Product Features

Room temperature cure
Low cure exotherm
High impact resistance
Non-toxic
Good electrical insulation characteristics

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, which 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, which 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, simply pouring the hardener into the resin can, which is then used as the mixing vessel, effects mixing.

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

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Characteristics of Resin: RL171C

Property	Value	Unit	Standard
Colour	Black or Grey	—	RTM : 10
Specific Gravity	1.72 ± 0.02	—	RTM : 3
Viscosity	10000 - 15500	mPa.s	RTM : 8

Characteristics of Hardener: HL171C

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

Characteristics of Mixed System: EL171C

Property	Value	Unit	Standard
Colour	Black or Grey	—	RTM : 10
Specific Gravity	1.65 ± 0.02	—	RTM : 3
Viscosity	5000 - 9000	mPa.s	RTM : 8
Mix Ratio by Weight	8.5 : 1	—	—
Mix Ratio by Volume	6.0 : 1	—	—
Gel Time (No Flow)	30	Min	RTM : 15
Cure Schedule *	24	Hr	—

* 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 (24hrs @ 23°C)	< 0.2	%	RTM : 26
Flammability	Flame Retardant	—	RTM : 28

Physical Characteristics:

Property	Value	Unit	Standard
Shore Hardness	D/1:45 - D/15:40	—	RTM : 18
Heat Deflection Temperature	Flexible	°C	RTM : 30
Operating Temperature	- 40 to + 100	°C	RTM : 24
Thermal Conductivity	0.42	W/mK	RTM : 31
Tensile Strength	5.3	MPa	RTM : 32
Compressive Yield Strength	< 10	MPa	RTM : 33
Coefficient of Linear Expansion	75-100	ppm/°C	RTM : 35

Electrical Characteristics:

Property	Value	Unit	Standard
Volume Resistivity	11 - 13	Log ₁₀ ohmm	RTM : 36
Surface Resistivity	12 - 14	Log ₁₀ ohm	RTM : 37
Electric Strength	> 16	MV/m	RTM : 38
Permittivity (ε)	3.2 @ 1KHz	—	RTM : 39
Loss Tangent (Tanδ)	0.04 @ 1KHz	—	RTM : 40

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

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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 Resin 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.

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. Therefore the material should 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.

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 for the resin and the hardener is 20 - 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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Warning

We provide the above basic information in good faith but since we do not know the use to which our products may be put we cannot accept any liability for reliance placed on this sheet. We are always prepared to respond to enquiries regarding our products. Our responsibilities to our customers are only as set out in our Terms and Conditions.