3M

RoHS
2002/95/EC
REACH
1907/2007/EC

Scotchcast™

Resin Kits 92-NBA 0 up to 92-NBA 7
Inline Joint Kit Series with Resin 40

Application

3M™ Scotchcast™ resin joint kits 92-NBA x are designed to be used for 1-core up to 5-core non shielded, polymeric, low voltage energy cables. The application incorporates electrical insulation and mechanical protection of joints with compression or mechanical connectors. They can be used for indoor and outdoor, underground and submerged applications.

Features

- Resin 40 in transparent two chamber bags with integrated Closed Mixing and Pouring (CMP) system.
- One part Mould Body with Snap Fit closing system for quick and easy handling.
- Transparent Mould Body for easy control of connector distances in the joint.
- Snap in 5-core spacer to ensure the distance between connectors.
- Pre cut foam sealing elements to provide reliable sealing to the Mould Body without tooling for all cable application diameters.
- Closure cap to prevent any pollution.

Kit content

- Transparent mould body with closure cap
- Scotchcast™ 40 resin bag with CMP
- Pre-cut sealing elements
- Snap in 5-core spacer
- Abrasive sponge
- Detailed instruction

Product Description

3M™ Scotchcast™ resin inline joint kit will be delivered with a one part transparent mould body for simple and easy handling. Distances inside the body can be checked easily.
All necessary dimensions, like application range, cable preparation are given in the detailed instruction.

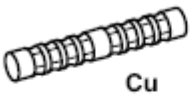
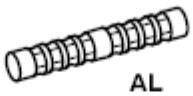
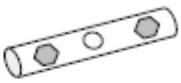
The two foam sealing elements can be adapted to the required cable diameter by removing the pre-cut adapter rings.

A snap in spacer ensures the minimum required distance to each connector. It can be applied for 3-core up to 5-core cables.

The resin 40 is delivered in two chamber bag with integrated spout and aluminium Guard Bag for protection against humidity.
The reopenable seam and integrated spout with a membrane does provide a Closed, Mixing and Pouring system.
After the seam of the two chamber bag was opened, the resin components can be mixed. To pour the resin into the mould body, the spout shall be connected with the dome by turning for 180°. While turning, the membrane is cut open to pour the resin.
The Closed Mixing and Pouring System does provide resin handling without any skin contact.
For protection against pollution, a closure cap is applied onto the dome.

After curing, the remaining resin in the bag can be disposed as house waste.

Product Selection

Application Range [mm²]							
Body Size	 Cu		 AL				 Ø mm
	4 x	5 x	4 x	5 x	4 x	5 x	
92-NBA 0	1.5 - 4	1.5 - 2.5	-	-	-	-	4 - 16
92-NBA 1	1.5 - 10	1.5 - 6	-	-	1.5 - 6	-	10 - 22
92-NBA 2	6 - 16	2.5 - 10	-	-	-	-	12 - 25
92-NBA 3	16 - 25	6 - 16	-	-	6 - 16	1.5 - 6	13 - 32
92-NBA 4	25 - 50	16 - 35	16 - 35	16 - 25	-	10 - 16	18 - 36
92-NBA 5	50 - 95	25 - 50	35 - 70	25 - 50	16 - 35	-	19 - 45
92-NBA 6	70 - 120	-	70 - 120	-	50 - 70	25 - 35	27 - 54
92-NBA 7	120 - 240	-	95 - 240	-	95 - 185	35 - 50	29 - 64

Testing

The full Scotchcast™ Resin Kit Series 92-NBA 0 up to 92-NBA 7 were tested according EN50393 Table 3 / I / A1

Type of Test according to EN50393 Table 3 / I / A1		Results
AC Voltage Withstand Test in air	4kV AC/ 1 min	passed
Insulation Resistance Test in air	1kV DC	> 10.000MΩ
Heat Cycle in air	63 cycles: 5h/3h	passed
Heat Cycle in water	63 cycles: 5h/3h	passed
AC Voltage Withstand Test in water	4kV AC/ 1 min	passed
Insulation Resistance Test in water	1kV DC	> 10.000MΩ

Usage Information:

The resin will be supplied, in two-chamber plastic pouches with peelable barrier in the correct stoichiometric proportion. This type of packaging will assure the correct mixing ratio for applying the resin.
The packaging includes a Closed Mix and Pour Delivery System. The integrated pouring spout will be opened while attaching the mixed resin bag to the housing of the joint or by using the supplied opener.
For other information, relevant for the usage of the resin, like Gel-Time, Pot-Life, viscosity, density etc. please see the relevant Data Sheet.

Storage:

3M™ Scotchcast™ Resin 40 has a shelf life of at least 36 months when stored between 15 °C and 35 °C with a humidity level < 75 % in the originally sealed bag.
The expiration date of each product appears on the product label.
Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. In this case however, it is the responsibility of the user to determine applicability of the resin.

Safety and Handling:

3M provides its customers with a product specific Material Safety Data Sheet (MSDS) to cover potential health effects, safe handling, storage, use and disposal information. 3M strongly encourages its customers to review the MSDS on its products prior to their use.

Product Stewardship:

3M has a fundamental concern for all who make, distribute and use its products, and for the environment in which we live. This concern is the basis of our philosophy and policies by which we assess the health and environmental information on our products and then take the appropriate steps to protect employee, the public health and the environment.

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Regulatory Status:

The 40 Resin is in compliance with all European directives and regulations, relevant for this product.
The 40 Resin is in compliance to EU directive 2002/95/EC (RoHS) and EU regulation 1907/2007/EC (REACH)

Important Notice

All statements, technical information and recommendations related to the Seller's products are based on information believed to be reliable, but the accuracy or completeness thereof is not guaranteed. Before utilizing the product, the user should determine the suitability of the product for its intended use. The user assumes all risks and liability whatsoever in connection with such use.

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Electrical Insulating Resin 40

Product Description

3M™ Scotchcast™ Resin 40 is a non filled, two component polyurethane resin for room temperature curing. The resin has been designed for electrical insulation and mechanical protection of electrical cables joints.
The 40 resin is classified as LIW (low voltage insulation water curable) according Cenelec HD 631.1 S2 Standard.
Once the hardening is complete, the resin provides impact resistance and durability against moisture and atmospheric corrosion.

Application

Mechanical protection and electrical insulation of low voltage electrical joints installed for indoor and outdoor, underground and submerged applications.

Features

Good adhesion on metals and different plastics.
Hydrophobic behaviour during the curing stage.
Excellent hydrolytic stability
Available with Closed Mix and Pour Delivery System
Low exothermic reaction temperature.

Process Figures

Mixing Ratio (pbw)	A : B	100 : 42
Pot Life	At 5 °C	39min
	At 23°C	20min
	At 40°C	11min

Typical Properties

Note: This data is not to be used for specifications.
Values listed are typical and should not be considered minimum or maximum.

Property	Value	Specification
Part A		
Density	1,07 g/cm³	ISO 3675
Viscosity 23°C	1700 mPa.s	EN ISO 2555

Property	Value	Specification
Part B		
Density	1,23 g/cm³	ISO 3675
Viscosity 23°C	210 mPa.s	EN ISO 2555
Part A&B (mixed)		
Density	1,16 g/cm³	ISO 3675
Viscosity 5°C	4600 mPa.s	EN ISO 2555
Viscosity 23°C	900 mPa.s	EN ISO 2555
Exothermic Reaction Temp 40°C	95 °C	HD 631.1 S2
Hydrophobic Behaviour	Passed	HD 631.1 S2
Volume Shrinkage	4,0 %	EN ISO 3521
Part A&B (cured*)		
Mechanical properties		
Hardness Shore D	57	EN ISO 868
Tensile Strength	15 MPa	EN ISO 527
Elongation at Break	50 %	EN ISO 527
Impact Strength (without notch)	No breakdown	EN ISO 179
Electrical properties		
Volume resistivity		IEC 60250
at 23 °C	1,35E+15 Ωcm	
at 80 °C	1,26E+13 Ωcm	
Dielectric Strength		EN 60243-1
at 23 °C	>20 kV/mm	
at 80 °C	>20 kV/mm	
Dissipation factor		IEC 60250
at 23 °C	<0,01	
at 80 °C	<0,03	
Dielectric constant		IEC 60250
at 23 °C	<6	
at 80 °C	9,5	
Elect. prop. after dry ageing		
Volume resistivity		IEC 60250
at 23 °C	> 1,0E+14 Ωcm	
Dielectric Strength		EN 60243-1
at 23 °C	> 20 kV/mm	
Dielectric constant		IEC 60250
at 23°C	<10	
Elect. prop. after wet ageing		
Volume resistivity		IEC 60250
at 23 °C	> 1,0E+14 Ωcm	
Dielectric Strength		EN 60243-1
at 23 °C	> 20 kV/mm	
Dielectric constant		IEC 60250
at 23 °C	<10	

*curing and aging cycles according to Cenelec HD631.1 S2

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