INTRODUCTION

Eazi-Resin is a cold vulcanizing complex blend of two liquid components, 100% solids, electrical grade, hydrolytically stable insulating polyurethane resin system that is processable at room temperature that is processable in a unique pre-weighed twinpack mixing & application pouch system in the correct ratio to enable a hand mixing technique without the need for scales, specialist equipment or skilled training.

The splice kit resin is designed for indoor, outdoor (weather exposed), direct buried or submersed applications. It is designed to be a fast, easy to use and extremely cost-effective that generates its own heat to cure on site and at room temperature. When mixed and applied correctly, the Eazi Resin yields a Shore hardness of 65 – 65 Durometer Shore D which is ideally suited for repairing and splicing electric cable joints and effective encapsulation of electronic components with minimum waste. The resin's physical features have been specifically developed for the joining - in a very special procedure - for repairing and splicing of certain low voltages cables and effective encapsulation of electronic components with minimum waste - which is certified to International Standards when mixed and applied correctly. Their unique electrical and physical properties also make them ideal for insulating and protecting electrical/electronic parts and assemblies.

TYPICAL PHYSICALS AND CHEMICAL PROPERTIES

Eazi Resin is a liquid two component urethane system that is processable by a pre-weighed pouch in the correct ratio to enable a hand mixing at room temperature. The resin has been – when applied correctly - yields a hard elastomer specifically developed for the electronic encapsulation industry.
The Eazi Resin which is dispensed into a special clear pouch with a divider in the middle at the factory, which in turn is packed in a special aluminium foil with processing instructions printed on the outside of the aluminium foil.

The special clear pouch is designed to keep the two chemicals apart until it is ready for the components to be mixed together in the pouch.

RESIN

The Urethane Resin
(A Component)
Appearance
Off White Coloured liquid

Chemical Composition
Polyols with special fillers

S.G at 25°C
1.4

Viscosity
1 500 cps

Flash Point (°C) (DIN 51755)
>160°C

Physical State
Free Flowing

CURATIVE

The Curative
(B Component)
Appearance
Pale yellow to dark brown liquid

Chemical Composition
Contains aromatic Isocyanate

S.G at 25°C
1.22

Viscosity at 25°C (mPa S)
200 cps

Physical State
Free flowing

Flash Point (°C)
Boiled at 238°C without igniting

Odour
None

Water Content
0.05%

Flash Point (°C) (DIN 51755)
>150°C

PRODUCT NAME

Eazi Resin

PRODUCT CLASS

Polyurethane Resin
21.08.2001

CURED RESIN

The Urethane Resin
(A + B Mixed and Cured)

Appearance
Cream Solid

Hardness
50 – 60 D Shore

S.G at 25°C
1.4

Shrinkage During Cure
<2.5%

Impact Strength
>20 J/cm^2

Surface Resistivity
>1 x 1010

Tensile Strength
>4 N/mm^2

Volume Resistivity
>1 x 1010

Tear Strength
>63 N/mm Thickness

Dielectric Strength
>15 kV/mm

Elongation
20%

Water Absorption
30mg@24hrs, 235°C

CABLE SIZE SELECTION TABLE

Kit No.	Max Cable OD (mm)	Mould Length (mm)	Cable Size (mm^2)	Cable Size (mm^2)
Size 0	**20**	**185**	**1.5 – 4**	**1.5 – 4**
Size 1	**30**	**240**	**4 – 10**	**4 – 10**
Size 2	**34**	**270**	**10 – 25**	**10 – 16**
Size 2.5	**42**	**310**	**25 – 50**	**16 – 35**
Size 3	**52**	**400**	**50 – 70**	**35 – 50**
Size 3.5	**56**	**432**	**70 -120**	**50 – 95**
Size 4	**65**	**550**	**95 – 150**	**95 – 120**
Size 5	**82**	**600**	**150 -240**	**120 – 240**
Size 6	**82**	**650**	**185 – 300**	**240 – 300**

WHEN FULLY CURED, EAZI RESIN IS A TOUGH, HIGHLY DURABLE ELASTOMER CHARACTERISED BY:

CURED

- Good toughness and outstanding weathering properties.
- Excellent low temperature properties.
- Good ageing resistance to heat, humidity, many chemicals, and good loading characteristics
- Low viscosity and easy processing characteristics.
- Excellent for water proofing and filling moulds for all cable sizes to prevent water permeation.
- Applied on site without any special equipment requirements.
- Certified to International Standards.
- Ideal for armoured and unarmoured cables.
- Tough and moisture proof.
- Shelf life of 24-months if stored correctly in the aluminium pouch un-opened or pierced and before splice assembly.
- Long lasting physical and electrical protection.

PROCESS INFORMATION

It MUST be noted that this is only a resin processing guide, and NOT an Installation Instruction for an LV electrical cable resin splice kit.

It is recommended that any LV electrical Splice Kit Installation be done by a qualified Electrician

Ground all electrical systems before splicing any cable.

Refer to relevant and applicable Installation Guide and Instructions for joining of electrical cable or contact your supplier of the electrical splicing kit for instructions to join and assemble an electrical cable correctly. Alternatively, one is available upon request.

RESIN FOREWORD

The Eazi Joint Resin has been specially formulated have a long open time so the liquid can flow and encapsulate all components then a relatively rapid cure time, so ensure all the resin is poured and mould filled before cure starts allowing the cure gradient to be such that it goes through to final cure without cracking or melting the mould on cooling down after initial cure for the whole LV range. On mixing, the resin may be slightly viscous ("*thickish*") and then after a few minutes the viscosity will drop to allow an even pour, rapid filling of mould and allow to fill all voids and let any bubbles mixed into the mix to rise to the surface before cure.

Not recommended for mixing and pouring in wet weather conditions

It must be noted the QC tests are done with the same weight each time to ensure consistency and reliability in comparing production batches, which is poured into a splice kit mould with no cable in consisting of 1.8kg (A Size 3 mould – middle of the range size) and monitored and may vary to an installation in the field. In the field the resin is in an enclosed mould increasing exotherm (heat generated from the 2 chemicals after being mixed) and possibly giving a differing result to the data sheet. All resins across the LV spectrum have been formulated to cure within 40 minutes.

Factors to consider that may have differing results to this data sheet may be –

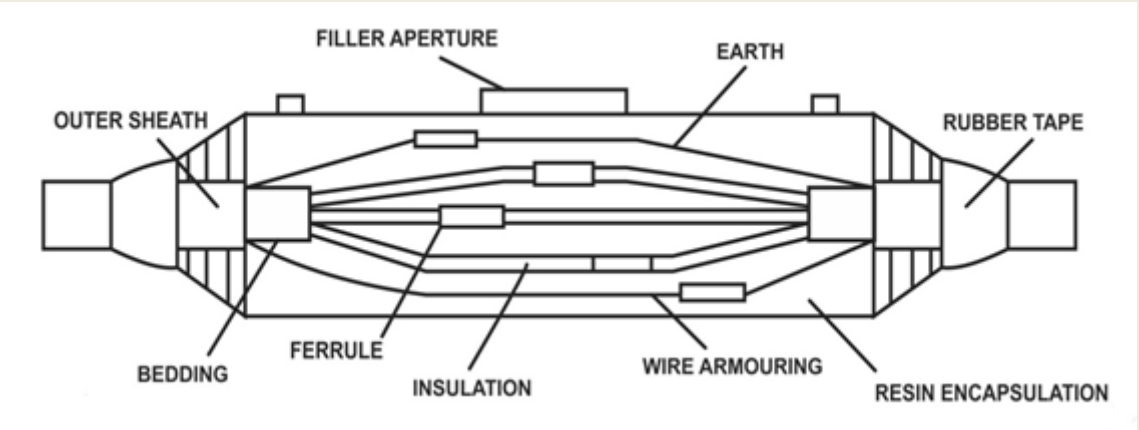
INSTRUCTION AND CABLE JOINT PREPARATION

- Cut the joint shell ends to suit the entry of the cable size.
- Overlap the cables to be joined to a length of 100mm. Centralise the overlapping for the stripping measurements.
- Strip the outer sheath and bedding to the prescribed dimension below. Use one half of the cable joint shell to mark and ensure that the measuring is correct.
- Connect the cable cores and armouring / earth in a recommended staggered pattern if possible. Insulate the connected cable ferrules (not included in the kit) and the removed insulation.

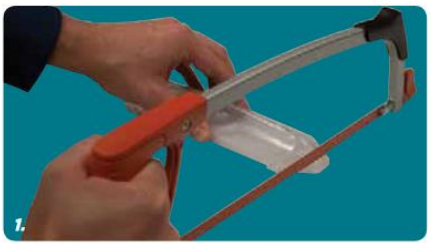
- Clean and roughen the outer sheath. Wipe with spirits to ensure good resin adhesion. Do NOT use soap and water.
- Fit the two halves of the moulds over the completed joint and check to ensure that the cut off ends suit the cable size. Clip the shells into place tightly – check that the cable cores are no less than 5mm apart and from the sides of the mould. Also ensure that the armouring / earth is well clear of the cable cores.
- Tape the ends of the cable joint to the cable to prevent resin leakage.
- Mix the resin bags b breaking the centre "membrane seal in the middle of the clear pouch and mix according to the instructions on the foil and in this brochure.
- Fill the joint
- Allow anything from 1 – 2 hours for the resin to fully cure (size of joint and ambient temperate dependant) before energizing the joint.

Stripping Dimensions – Outer Sheath and Bedding

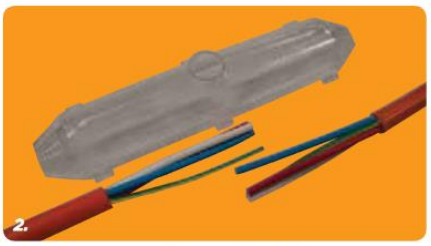
- Outer Sheath – Strip to the width of +- the OD of the cable sheath
- Bedding – Strip to approximately twice (2x) the width of the4 O/D of the bedding



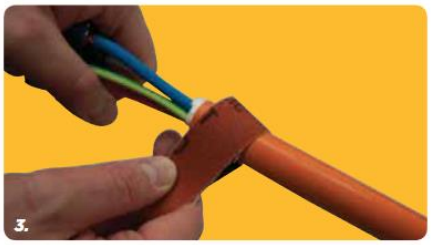
CABLE PREPARATION



Using a hacksaw, cut the ends of the shell to the appropriate size for your cable.

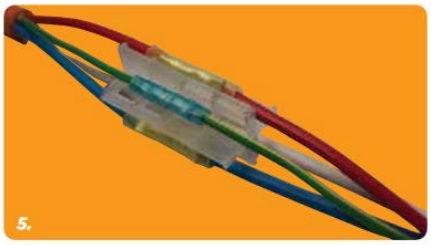


Cut and strip the cable according to the dimensions in the installation instruction supplied in the kit.

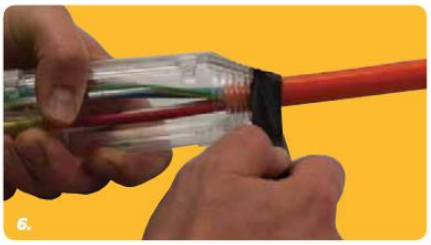


Abrade the cable to the dimensions in the installation instruction and clean with the supplied cleaning wipe.

Crimp the cables together.



Insert the core separator.



Use the supplied tape to seal the ends of the shell.

MIXING

Put protective gloves on

Ensure area to be repaired is clean, dry and free from grease and grit. If possible, sand the area to ensure a rough finish

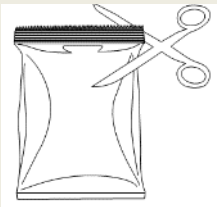
Do not touch the area once prepared. If using a solvent to clean area, allow about 5 minutes for any residual solvent to evaporate.

Never use water or any kind of soap to wipe down cable or joint.

PREPARATION

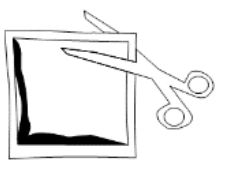
- Put protective gloves on (not enclosed in the kit);
- Wear goggles (not included in the kit);
- Connect the electrical cable to correct standards and ensure all cores and cable joined and prepared correctly before placing the mould around the cores to be joined; (An Installation Instruction is available on request or from supplier. **Note**, *there is no jointing instructions in the kit on how to connect and splice a cable*);
- Ensure area to be repaired is clean, dry and free from grease and grit. If possible, sand the area to ensure a rough finish;
- Do not touch the area once prepared. If using a solvent to clean area, allow about 5 minutes for any residual solvent to evaporate.

MIXING



- Cut the aluminium protective pouch along the bottom of the heat seal. If using a blade or scissor to cut the bag open, ensure the pouch inside is not damaged or cut in any way.
- Take the resin pouch out the aluminium protective foil pouch

- Grip the corners firmly of the side that contains the most resin, bend the corners to about 45° – in the shape of a boomerang - and then push the bulk of the resin toward the middle of the clear divider till the centre "bursts" and starts to flow into the curative.
- Once the seal has burst, grip the top and bottom of the bag in the burst area and pull the two plastic sides away and apart from each other to separate the rest of the clear divider to make one complete pouch in which to mix

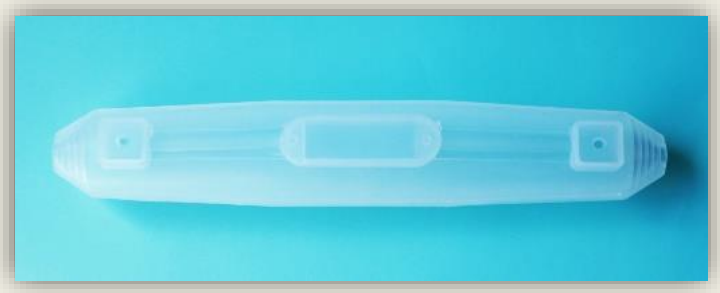


- Mix thoroughly for about 3 – 4 minutes by 'kneading' and 'squashing the bag in all directions. In cold weather, mix for 5 – 6 minutes.
- **IT IS IMPORTANT THAT BOTH CHEMICALS ARE MIXED HOMOGENOUSLY TO ENSURE BEST PHYSICAL PROPERTIES.**
- Push the bulk of the resin to one corner of the plastic pouch.
- Cut the opposite corner of the clear pouch and pour the resin into the top centre opening of the splice kit mould after mixing. It will flow into the desired area and self-level. Pour till mould is full. Leave to cure after placing cap on mould.

- **DO NOT MOVE OR ADJUST CABLE ONCE CURE COMMENCES as it may cause hairline cracks during the curing "*green" cheezy state*;**

Mix the two parts of the resin together thoroughly.

Pour the resin into the shell until filled. Top up due to shrinkage or resin flowing



CURING

- Once finished pouring the resin; leave the joint alone to allow the resin to cure. The resin should be cured within the 40 minutes. Power can be switched on after 2 hours, depending on temperature conditions.
- The hotter the climate, the better and quicker optimum physicals are achieved.

HANDLING PRECAUTIONS

- Product may be irritating to the skin. Avoid prolonged or repeated contact. If skin contact occurs remove by using soap and water. Wash contaminated clothing before re-use. Wash hands before coming into contact with any foods or smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Keep away from food products before cure.
- Refer to the MSDS for all safety and handling precautions associated with Eazi Joint Resin.
- Shelf life of resin is invalid if aluminium bag is pierced or opened.

HAZARD IDENTIFICATION

HAZARD	RATING

HAZARD RATING SCALE

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Severe

Health	1
Fire – Uncured Components	3
Fire – Cured	1
Reactivity with Atmosphere	2
Reactivity with Atmosphere - Cured	0

EMERGENCY OVERVIEW

The white resin has no odour. Non-flammable, off-white 'thickish' liquid supplied with an amber hardener (B-Component) which is non-flammable and with no vapour at room temperature

The curative (hardener) will reacts slowly with water to produce carbon dioxide which may rupture the packaging. This reaction accelerates at higher temperatures.

It is very important that when the clear pouch is removed from the aluminium foil, the two chemicals be mixed within 24 hours, otherwise it will start to absorb moisture and blow (expand – NOT BLOW UP) and potentially rupture the clear pouch.

Once mixed and fully cured, the final product poses no health or environmental hazard whatsoever under current legislation.

FIRST AID MEASURES

Carcinogenicity

Not regulated as a carcinogen by OSHA

Human Health Hazards

Once **Eazi Resin** is mixed into a polymer and allowed to cure fully according to the manufacturer's recommended processing guides and parameters, **Eazi Resin** poses no hazard whatsoever to humans or the environment.

Inhalation

The B- Component is harmful by inhalation. Neither product is respiratory irritant nor a potential respiratory sensitiser at room temperature. There is no vapour or mist from Eazi Resin at room temperature, but vapour or mist may emit when the reaction of both components goes above 50° C (122° F).

Possible irritant to the respiratory system can occur causing a variety of symptoms such as dryness of the throat, tightness of the chest and shortness of breath.

Remove patient from exposure, keep warm and at rest. Obtain medical attention. Treatment is symptomatic for primary irritation or bronchospasm. If breathing is laboured, oxygen should be administered by qualified personnel. Apply artificial respiration if breathing has ceased or shows signs of failing.

Skin Contact

Generally harmless, but can cause a moderate irritant after prolonged contact. Prolonged or repeated skin contact may cause dermatitis. Small amount of contact of either chemical should not cause any harm whatsoever if wiped off immediately with a dry cloth and skin is washed with soap and copious amounts of water afterwards.

It is recommended that protective clothing including PVC or latex gloves be worn at all times when handling any Eazi Resin.

Remove contaminated clothing. Contaminated clothing should be discarded.

Eye Contact

If vapour from Eazi Resin comes into contact with eyes, may irritate the eyes, may cause damage. Always wear safety goggles or approved safety glasses whenever handling any of the Eazi Resin components. Immediately irrigate with eyewash solution or clean water, occasionally lifting the upper and lower eyelids whilst flushing. Obtain immediate medical attention.

If contact lenses are worn, remove immediately before commencing washing.

Ingestion

Ingestion is not an expected route of entry in industrial or commercial uses. In such an event, provided the patient is conscious, wash out mouth with water and give 200 – 300 ml of water or milk to drink. Do not induce vomiting. Keep victim in a stable side position.

Obtain immediate medical attention.

FIRE FIGHTING MEASURES

Not classed as flammable in either liquid or solid form. Once Eazi Resin is fully cured, it will burn when exposed to an open flame, but will self-extinguish within 30 seconds once the open-source flame is removed.

FIRE FIGHTING

FIRE FIGHTING MEASURES

If the product is involved in a fire, it may emit noxious gasses Combustion products may include:
Carbon monoxide
Carbon dioxide
Nitrogen oxide
Hydrocarbons and HCN
Phosphorous Phthalates
Hazardous Polymerisation
Will not occur

EXTINGUISHING MEDIA

Foam, CO2, or dry powder. Water and foam may be ineffective. Water may be used if no other medium available and then in copious quantities. There will be no reaction between water and Eazi Resin. Reaction between water and hot isocyanate may be vigorous

Flash point 230°C (446° F) (Open Cup)

FIRE FIGHTING PROTECTIVE EQUIPMENT

Suitable respiratory protection with full face piece and positive air supply. PVC boots, gloves and protective clothing should be worn. During a fire, irritating and toxic gasses may be generated by thermal decomposition or combustion.

HANDLING AND STORAGE

Handling

Do not breathe vapour. Avoid prolonged contact with skin. Atmospheric concentrations when the polymer is warm or hot should be minimised and kept as low as reasonably practicable below the occupation exposure limit.

Storage

Keep the Eazi Resin kits and pouches properly sealed and stored indoors in a dry, well ventilated area. Keep away from moisture. If a package is contaminated or showing signs of leaking, re-seal. **Eazi Resin cannot be used safely when exposed for long periods to atmosphere**

Food Stuffs

Do not let any of Eazi Resin in liquid form come into contact with any foodstuffs whatsoever. Do not eat, drink or smoke with hands that have come into contact with the liquid components of Eazi Resin.