



SEFLEX

SUPERSHEATH RESIN & JOINTKITS



ENERGY
PLUS

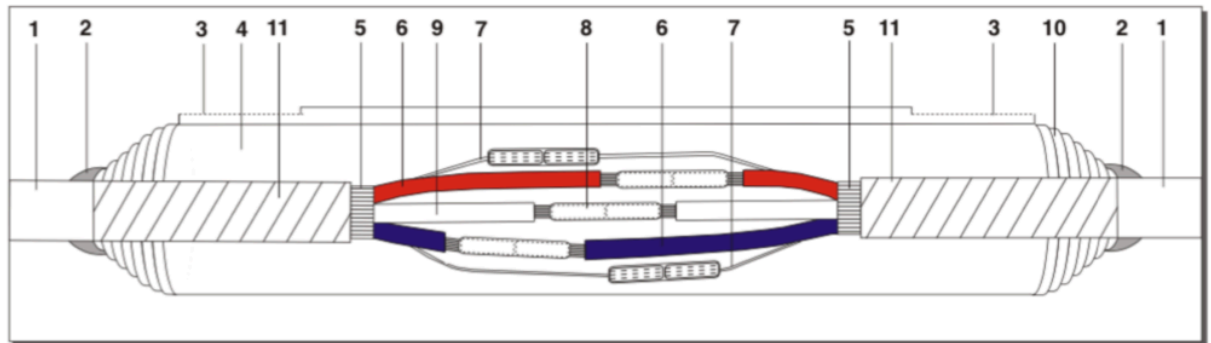


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YEARS
1984 - 2014

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SUPERSHEATH HT RESIN JOINTING INSTRUCTIONS



- | | | | |
|---|--------------------|----|------------------------|
| 1 | OUTER SHEATH | 7 | PILOT CORES |
| 2 | SEALING TAPE | 8 | FLANGE FERRULE |
| 3 | POURING VENT | 9 | POWER CORES |
| 4 | RESIN | 10 | MOULD |
| 5 | CUT BRAIDED SCREEN | 11 | ABRADE OF OUTER SHEATH |
| 6 | INSULATION | | |

KIT NO.	MIN CABLE O.D (MM)	MAX CABLE O.D (MM)	MOULD LENGTH (MM)	MAX MOULD I.D	CABLE TYPE
SS11 HT	47	55	575	75	Type 63 / 66 / 611 & ECC
SS13 HT	56	65	625	89	Type 611 & ECC
SS14 HT	65	80	680	100	Type 611 & ECC

HIGH VOLTAGE CABLE JOINTS, UP TO 15000 VOLTS

- Strip and prepare cable in the normal manner, taking the supplied mould into account, the shorter the internal joint the stronger the joint will be.
- Stagger the joint conductors using ferrules, in an attempt to make the internal joint as thin as possible.
- Re-instate the insulation over the conductors, utilising the High Voltage rubber tapes supplied with the kit.
- Bind the cores together using PVC tape supplied (optional).
- Prepare the cable sheath by thoroughly cleaning and then roughening the cable sheath with a Rasp making sure the area where the mould will cover is both clean and rough.
- Trim the ends of the moulds, to suit the cable size, and then apply the Releasing Agent to the inside of the moulds, making sure all areas are coated. Do not allow releasing agent to come in contact with the joint area.
- Apply the Adhesion promoter over the area to be encapsulated with the brush supplied and move immediately to the next step.
- Fit the mould to the cable being careful not to allow releasing agent to come into contact with the joint area. Use the slide binders to seal the mould and seal the ends of the mould with PVC tape.
- Immediately split the peelable strip and mix the resin thoroughly, making sure you reach all the corners. Snip a corner of the resin pack and commence pouring into the mould via openings in the top side of the mould, continue the process until the mould is full.
- Do not move the joint for 45 - 60 minutes, then remove the slide binders and the tape, slip off the mould, at this stage the joint can be trimmed, removing excess resin, and shaping the joint as required with the use of a knife and emery tape.
- Finally leave the joint for a further 3 hours at which time the joint is fully cured and ready to go back into operation.

SUPERSHEATH FLEXIBLE JOINT TECHNICAL DATA

SUPERSHEATH RESIN is a liquid urethane that is processable by a pre-weighted pouch in the correct ratio to enable a hand mixing technique which yields a shore hardness of between 78 - 85, which is ideally suited to the joining of flexible cables.

SUPERSHEATH RESIN is dispensed into a clear pouch at the factory, which in turn is packed into a special aluminium foil with the processing instructions printed on the outside of the aluminium foil. The clear pouch has a peelable strip in the center designed to separate the chemicals. When you are ready to mix the components together, simply separate the divide and mix the two chemicals thoroughly in the pouch.

When fully cured, **SUPERSHEATH RESIN** is a tough, highly resilient elastomer characterised by:

- Good toughness and outstanding abrasion resistance.
- Excellent low temperature flexibility.
- Good ageing resistance to heat, humidity, many chemicals and good loading characteristics.
- Low viscosity and easy processing characteristics.
- Applied on site without any special equipment required.
- Flame retardant. This defined as not being flammable, will not support combustion and self extinguish when flame is removed, but will burn in the presence of an open flame.

PHYSICAL AND CHEMICAL PROPERTIES:

THE POLYURETHANE COMPONENT

Appearance	Beige to pink in colour
Chemical Composition	Urethane polyols
Viscosity (25°C)	1900 MPA's at 25°C
Flash Point (°C)	165°C - DIN 51758
Ignition Temperature	470°C - DIN 51794
Vapour pressure	4m BAR at 25°C

THE ISOCYANATE COMPONENT

Appearance	Colourless to yellowish
Chemical Composition	TDI Polyol Prepolymer
Viscosity at 25°C (mPa S)	9 500 to DIN 53211
Flash Point (°C)	238°C - DIN 51758
Fire Point (°C)	460°C - DIN 51794

Full safety data sheet available on request.

PROCESSING PARAMETERS:

The mixing time will be shortened if the ambient temperature is elevated, such as in underground mines or on a hot summers day.

Conversely, a decrease in temperature will increase the gel and curing time of the resin, and will take longer to fully cure. (Approximately 10% per 10°C)

SUPERSHEATH FLEXIBLE JOINT PROCESSING INSTRUCTIONS

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. All chemicals in this kit are harmful if swallowed.

Only apply **SUPERSHEATH** kit in a well ventilated area.

Do not apply **SUPERSHEATH** in wet conditions or temperatures below 15°C.

Shelf life of resin is invalid if aluminium bag is pierced or opened.

PREPARATION:

Put protective gloves on.

Ensure cable 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 at least 5 minutes for any residual solvent to evaporate.

MIXING:



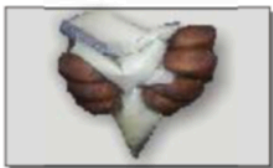
Cut the aluminium protective pouch along the bottom of the heat seal. If using a blade or scissors to cut the bag open, ensure the pouch inside is not damaged or cut in any way.

Take the resin pouch out of the aluminium protective foil pouch.



Pull the part of the bag that divides the two chemicals in the mix pack as if you are opening a bag of chips until it opens the two sections fully.

The two chemicals will now merge into one another in the bag.



Mix thoroughly for about 2 minutes by "kneading" and "squashing " the bag in all directions.

It is important that both chemicals are mixed thoroughly to ensure best physical properties.

CURING:

Once finished pouring the **SUPERSHEATH** into the clear plastic mould around the cable joint, the **SUPERSHEATH** should be cured within 25 minutes. The joint can be used in service after 3 hours depending on the temperature conditions. Optimum physicals achieved after two days.

The hotter the climate, the better and quicker optimum physicals are achieved.

PROCESSING TIME:

When the aluminium pouch has been cut and the clear pouch removed, there is no chemical reaction between the two chemicals until the divider is removed or ruptured, and the two chemicals are blended together.

150g mix at 25°C	Liquid for about	15 minutes
	Gel time	25 - 35 minutes
	Touch dry	1 hour

PHYSICAL PROPERTIES:**SUPERSHEATH**

Hardness	24 hours	78 Shore A
	7 days	82 - 85 Shore A
Tensile Strength (MPa)	(DIN 53504)	22.9
Elongation @ Break	(%)	420
Tear Strength	(Split)	13
Abrasion Resistance	mg Loss	60
Heat Resistance	°C	80 - 90

STORAGE:

Keep the aluminium foil properly sealed and store indoors in a dry, well ventilated area.

Keep away from frost.

Keep away from moisture.

If a package is contaminated or showing signs of expanding, do not re-seal. Mix the contents of the bag in the bag - do not open the clear pouch to let the resin out. Allow to react fully in the bag then discard.

STORAGE STABILITY:

If stored in a cool dry area and the aluminium pouch is not pierced or ruptured, it is very stable and will have a shelf life of 12 months.

STABILITY AND REACTIVITY:

HAZARDOUS REACTIONS: Stable at room temperature. When the products are mixed in the bag, it will cause an exothermic reaction, but the reaction will never be above 50°C. This exothermic reaction will not harm the person mixing whilst mixing in the sealed clear pouch.

HAZARDOUS DECOMPOSITION PRODUCT(S): Highly unlikely under normal industrial use.

DISPOSABLE CONSIDERATIONS: The generation of waste should be avoided or minimised wherever possible. Disposal should be in accordance with local, state or national legislation. Untreated or un-reacted material is not suitable for disposal. Waste, no matter how small in quantity, should never be poured down drains, sewers or water courses. Therefore, always mix the two components in the bag to generate a reaction to allow to cure to a solid, inert substance.

In the event that the clear pouch would leak, it is recommended that the whole pouch with the chemicals be incinerated under controlled conditions.

TRANSPORTATION:

Not classified as dangerous for transport.

SUPERSHEATH FLEXIBLE JOINT MATERIAL SAFETY DATA

PRODUCT NAME:

SUPERSHEATH RESIN

PRODUCT CLASS:

Polyurethane Resin

HAZARD IDENTIFICATION:

POLYURETHANE COMPONENT: contains polyol type resin. Any hazardous components, both singularly and / or cumulatively are below the concentrations at which they need to be declared or classified, but regarded as a health hazard to humans in ingested.

ISOCYANATE COMPONENT: (hardener) contains aromatic di-isocyanate, which can be irritating to the skin. Harmful by inhalation. This product is a respiratory irritant and potential respiratory sensitizer. If it comes into contact with eyes, may cause damage.

EMERGENCY OVERVIEW:

Beige to pink resin with no odour. Non-flammable thixotropic paste supplied with an amber hardener (Isocyanate Component) which is non-flammable and with no vapour at room temperature. The hardener will react 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 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 - IN THE EVENT OF OVER EXPOSURE:

INHALATION: 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 may cause a moderate irritation. Small amounts of contact of either chemical should not cause any harm whatsoever if wiped off immediately. Repeated or prolonged contact may cause skin sensitisation. It is recommended that protective clothing including PVC or latex gloves be worn at all times when handling these chemicals or in maintenance work. Remove contaminated clothing. Wipe skin area immediately with clean, dry cloth and then wash with a copious amount of water and soap. Contaminated clothing should be discarded. Prolonged or repeated skin contact may cause dermatitis.

EYE CONTACT: Can cause eye irritation. Immediately irrigate with eyewash solution or clean water, holding eyelids open whilst flushing. Obtain immediate medical attention.

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 - 300ml of water or milk to drink. Do not induce vomiting. Obtain immediate medical attention.

FIRE FIGHTING MEASURES:

Not classified as flammable.

If the product is involved in a fire, it may emit noxious gases.

FIRE FIGHTING MEASURES (cont.):

Combustion products may include:

Carbon Monoxide
Carbon Dioxide
Nitrogen Oxide
Hydrocarbons and HCN

EXTINGUISHING MEDIA: Foam, CO_2 , or dry powder. Water may be used if no other medium is available and then in copious quantities. Reaction between water and hot isocyanate may be vigorous.

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 gases may be generated by thermal decomposition of combustion.

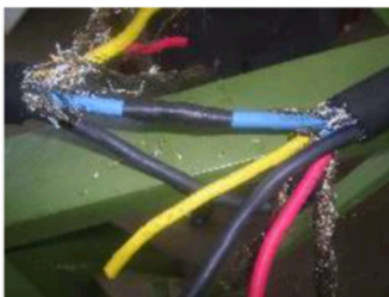
ECOLOGICAL INFORMATION:

ENVIRONMENTAL FATE AND DISTRIBUTION: By considering the production and use of the substance, it is unlikely that significant environmental exposure in the air or water will arise.

PERSISTENCE AND DEGRADATION: Immiscible with water when uncured, Both products will react with water to produce inert and non-biodegradable solids. Conversion to a mixed, fully cured elastomer is extremely tough, durable and will not bio-degrade under normal conditions.

DISPOSABLE CONSIDERATIONS: The generation of waste should be avoided or minimised where ever possible. Disposal should be in accordance with local, state or national legislation.

CABLE REPAIR PROCEDURE



STEP 1

Prepare the length of repair area.

NB: The shorter your preparation area, the stronger your joint will be.



STEP 2

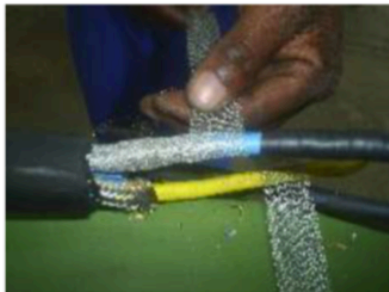
After crimping file all sharp edges until ferrule is smooth.

Any sharp edges left on your ferrule can cut through your non conductive tape.



STEP 3

After ferrule is smoothed and inserted, apply Scotch 23 tape to ferrule. Apply pressure to tape by stretching it slightly. Fill the area left over by the removal of the core insulation and extend approximately 25mm on either side.



STEP 4

Apply Scotch 24 across entire joint to ensure individual screen is in place.



STEP 5

When the core's and the earth have been replaced the cable should be twisted to reduce the size of the inner joint.



STEP 6

Place mould over the joint and mark the cable on both sides.



STEP 7

Using a rasp, roughen the outer rubber sheath, making sure it extends beyond the marks where the mould will fit.



STEP 8

Generously coat the inside of the mould with silicon releasing agent.



STEP 9

Using the applicator brush supplied in the joint kit, coat the entire joint with adhesion promoter.



STEP 10

Fit the mould to the cable and seal off the ends with PVC tape.



STEP 11

Mix the resin according to the instructions.



STEP 12

Pour resin into mould from both sides.



STEP 13

When mould is full, make sure there are no leaks and leave to gel for 45 - 60 minutes.



STEP 14

Remove mould.



STEP 15

Use a sharp knife and sand paper to smooth off excessive resin.

Leave the joint in the cable bench for a further 3 hours to reach total cure.



Good flexibility when cured.