



Epoxy Composite Repair Kit

Description

The **E190 Epoxy Composite Repair Kit** makes high-strength, versatile patch repairs to substrates such as metal, wood, glass, GRP and other composites where direct wrapping of a composite repair bandage like SylWrap HD is not possible.

It enables the refurbishment, reinforcement and strengthening of inaccessible pipes, difficult shapes, tanks, vessels and corners. The Epoxy Composite Repair Kit repairs areas of damage caused by pitting and offers excellent protection against corrosion, even under seawater immersion.

The E190 Epoxy Composite Repair Kit contains three 225g packs of **Sylmasta E190 Brushable Epoxy Resin**, one roll of 100mm x 50m **Sylmasta Fibreglass Tape**, along with mixing cups, stirrers and brushes for the application process.

E190 is either brush applied onto surfaces and overlaid with Fibreglass Tape, or coated onto strips of Tape which are then applied to areas requiring repair. The open weave of Sylmasta Fibreglass Tape allows the resin to easily saturate the fabric.

Once resin-soaked, the Tape cures to form a rock-hard, impact resistant outer shell. It increases pressure resistance, chemical resistance and hoop strength. Repairs can be made to multiple areas of damage, whereas a single SylWrap Bandage in contrast only covers one section.

E190 has a 30-minute work time, allowing careful application over difficult geometries without the threat of premature curing. It has a hard dry of 16 hours and a full cure of 24 hours, depending upon thickness of the application and temperature. E190 is temperature resistant to 100°C and its gel-like consistency means it does not run when applied to vertical surfaces.

Applications

- Patch repairing metal, wood, GRP and other composites
- Reinforcing and strengthening difficult pipe shapes
- Sealing leaking and damaged tanks and vessels
- Protecting surfaces against corrosion and chemical attack

Advantages

- Versatile repair method for complex shapes
- 30 minute work time of E190 enables careful application
- Multiple areas can be repaired using one Kit

E190 Brushable Epoxy Resin Technical Data

Minimum shelf life (months @ 24°C).....	24
Mix ratio (weight).....	2:1
Mix ratio (volume).....	2:1
Working time (minutes)	30
Thin film set (hours)	6
Recoat times	
Between (hours).....	4-6
After (hours)	24
Full cure (hours).....	24
Thickness per coat (mm).....	0.1-5.0
Shore D hardness (full cure, 24 hrs.)	81
Tensile strength (MPa)	50
Compressive strength (MPa)	59
Flexural strength (MPa).....	85
Density (gm/cm ³).....	1.12
Shrinkage (%)	<1
Non-volatile content (%).....	100
Maximum service temperature (°C)	100
Theoretical coverage (per kg)	
0.5mm thick (m ²)	1.8
0.020in thick (ft ²)	19

(values are typical and should not be used for specification purposes)



Whilst all reasonable care is taken in compiling technical data on the Company's products, all recommendations or suggestions regarding the use of such products are made without guarantee, since the conditions of use are beyond the control of the Company. It is the customer's responsibility to satisfy themselves that each product is fit for the purpose for which they intend to use it, that the actual conditions of use are suitable and that in the light of our continual research and development programme the information relating to each product has not been superseded.

Directions for Use

Surface Preparation

- Surfaces must be prepared prior to application.
- All surfaces must be dry and free of grease. Clean and roughen the surface for optimum adhesion.
- Remove all paint, rust and grime from the surface by abrasive blasting or with sandpaper.
- Roughen the surface first, ideally by grit blasting (8-40 mesh grit) or through grinding with a coarse wheel or abrasive disc pad. An abrasive disc may be used provided white metal is revealed.
- Aluminium: remove oxidation from surface for optimal adhesion
- GRP and wood: Remove all loose and rotten material. Scrape off flaking paint or lacquer. Thoroughly sand good paintwork to create good key.
- Metal which has been in contact with seawater or other salt solutions should be grit blasted, high pressure water blasted and then left overnight to allow salts in the metal to 'sweat' to the surface. Repeat this process if necessary to 'sweat out' all of the soluble salts.
 - Test for chloride contamination before application.
 - The maximum soluble salts left on the substrate should be no more than 40 ppm.
- Use a solvent cleaner to remove all traces of sandblasting, grit, oil, grease, dust or other foreign substances.
- In cold working conditions, it is recommended the repair area is heated to 37°C-43°C prior to application. This will dry off any moisture, contamination or solvents for maximum adhesion.
- Start application as soon as possible after preparation to avoid oxidation or rusting.

Mixing E190 Brushable Epoxy Resin

- Pour all 75g Hardener (Part B) into 150g Resin (Part A) container. Stir well until both parts are thoroughly mixed and streak free (approx. 2-5 minutes). To mix more or less than 225g, using the graded Mixing Cup provided to measure out and mix 2 parts Resin with 1 part Hardener by weight or volume.
- Mix together until the epoxy is streak free and a uniform colour (approximately 2-5 minutes).

Patch Repair Application Method

- Use a paintbrush to apply a generous coat of E190 around the area to be repaired.
- Cut a strip of Fibreglass Tape to the appropriate size and apply on top of the E190 layer.
- Use a stippling motion to embed the Tape into the E190.
- Apply a second coat of E190 followed by a second layer of Tape strips at right angles to the first layer. Repeat the embedding process.
- Add as many layers of E190 and Tape required to complete the repair, finishing with a final coat of E190. Leave to set.

Pipe Repair Method (via wrapping)

- Cut off required length of Fibreglass Tape for repair. One wrap-around to complete a layer takes approximately 3 times pipe diameter. Example - repair of a 150mm pipe requiring five layers would be calculated as $3 \times 150 \times 5$ (3 x diameter x layers) = 2250mm Fibreglass Tape length.
- Alternatively, the Tape can be spooled from the roll during application and cut when the number of layers is achieved.
- Ensure a complete coating of E190 is applied under each layer of Tape for maximum performance.
- Wind on Tape with half an overlap each layer. Apply complete coating of E190 between layers
- For multiple layers, wind subsequent layers in reverse direction and avoid cutting at end of each pass.
- Topcoat final layer with E190 and leave to set.
- For difficult applications like pipe bends, it may be easier to follow Patch Repair Application Method to prevent creases.

Storage

E190 Brushable Epoxy Resin should be stored out of direct sunlight in dry, frost free conditions at temperatures between 15°C and 20°C. Under such conditions, shelf life will be two years from the date of manufacture.

Health & Safety

E190 Brushable Epoxy Resin consists of epoxy resins and hardener systems. Please consult the individual Material Safety Data Sheet for hazard information. Wear eye protection and rubber or plastic coated gloves. Wash hands with soap and water immediately after use.

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