# Sprayglass SG-659

# GRP Laminate Liner

PRODUCT DESCRIPTION

A heavy duty lining formulated from a Novolac Epoxy Vinyl Ester Resin reinforced with chopped strand glass fibre mat. The lining is applied, by trowel and hand lay up to a suitably prepared steel or concrete substrate.

LAMINATE MAKE UP

- Sprayglass LP Primer.
- A Silica filled base coat approx. 1.5 m thick
- Two layers of 450 gsm chopped strand glass fibre mat impregnated with the Sprayglass 659 resin
- A layer of surface tissue
- A sealer coat of pigmented Sprayglass Waxed Top Coat, standard colours grey or blue.
- Nominal thickness of finished laminate 3 – 3.5 mm

SUGGESTED USES

SPRAYGLASS SG-659 is used primarily to protect concrete and steel from corrosive attack. The integral structural strength that this monolithic system offers makes it ideal for the protection of sound concrete substrates. Sprayglass SG-659 is widely used in the chemical process and oil related industries. It is particularly suitable for lining process vessels and storage tanks, water tanks, underground storage tanks, concrete tanks, and sumps, handling the most corrosive of chemical conditions. It is particularly suitable for all grades of bio-fuels.

PRINCIPAL CHARACTERISTICS

- Excellent corrosion resistance
- Superior physical properties
- Good erosion / abrasion resistance
- Excellent chemical resistance
- Low permeability
- Good application properties
- Good repair ability
- Monolithic seamless structure

CHEMICAL & TEMPERATURE RESISTANCE

SPRAYGLASS 659 resin is resistant to corrosive mineral acids, alkalis, salts and organic solvents. Suitable for operating temperatures between -15$^{O}$C and 100$^{O}$ dependant on operational chemical environment. Formulated from a Novolac epoxy vinyl ester resin it demonstrates excellent retention of the laminate properties. Refer to Sprayglass International Ltd for information on specific chemical environments.

STORAGE GUIDELINES

Sprayglass 659 resin should be stored in a dark dry place at a temperature between 5$^{O}$C and 25$^{O}$C. The 6 month shelf life of styrene dissolved vinyl ester resins will be significantly reduced when exposed to light.

PROPERTIES OF CURED SG-659 GLASS REINFORCED LAMINATE

| Characteristic | Standard | Result |
|---|---|---|
| Tensile Strength | ISO 527-2 | 111 MPa |
| Mod. of elasticity in tension | ISO 527-2 | 10.1 GPa |
| Flexural Strength | ISO 527-2 | 208 MPa |
| Mod. of elasticity in bending | ISO 178 | 9.8 GPa |

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|---|---|
| SURFACE PREPARATION | The Sprayglass SG-659 System should be applied to a suitably prepared and primed substrate. Steel substrates should be grit blasted to Swedish Standard SA 2.5 with a minimum surface profile of 50 microns. (See Doc. Ref. SG20) Concrete should clean and dry with any surface laitance removed either by grit blast or acid etch. (See Doc. Ref. SG21)<br><br>Prepare substrate should be primed with a single coat of Sprayglass LP Primer to a nominal dft of 50 microns. |
| APPLICATION CONDITIONS | Application temperature should be between 5$^{O}$C & 25$^{O}$C with a maximum RH of 90%. The substrate temperature should be no lower than is 5$^{O}$C and a minimum of 3$^{O}$C above dew point. |
| VENTILATION / LIGHTING | Do not use in a confined space without adequate ventilation or breathing equipment.<br>Use only EEx em ll T3 Zone 1 lighting and indirect fan blowers within an enclosed environment. |
| FLASH POINT (RESIN) | 31$^{O}$C |
| APPLICATION EQUIPMENT | A combination of Trowel, Roller & Paddle Roller. |
| POT LIFE | Once mixed 15 – 20 minutes |
| APPLICATION OF BASE COAT | Thoroughly mix the un-catalysed Sprayglass 659 resin using a mechanical whip. Catalyse according to quantity and ambient conditions using a medium reactivity peroxide based catalyst. As a general rule 1% to 2% catalyst for ambient temperatures between 10$^{O}$C & 20$^{O}$C. Mix the two components using a mechanical whip.<br><br>**A Catalyst ration of less than 1% will not produce a full cure of the coating material. Inadequate mixing will result in areas of inadequate cure.**<br><br>Add the RB Filler powder to the catalysed resin in a 2:1 filler/resin ratio. Fully blend in the filler powder with a mechanical whip. Never mix more material than can be applied within the stated pot life. The filler/resin ratio may vary slightly with temperature. Under no circumstances should the resin and filler be mixed together before the resin is catalysed. The base coat should be trowel applied to the substrate using a plasterer's or notched trowel in strips approx. 1.2 metres wide at a nominal thickness of 1.5 mm. |
| APPLICATION OF LAMINATE | Cut strips of 450 gsm chopped strand mat (CSM) and Surface Tissue. Strips should be approx. 50 mm smaller all round than the applied resin/filler base coat. Thoroughly mix the un-catalysed SG 659 resin using a mechanical whip. Catalyse according to quantity and ambient conditions. Whilst the base coat is still wet apply the first strip of CSM directly to the base coat and wet out with catalyzed resin expelling any entrapped air. Apply the second strip of CSM in a similar manner and roll out with a metal ribbed (paddle) roller to ensure a good bond between the base coat and the laminate. The surface tissue is applied, wet on wet, in a similar manner. Adjacent strips of CSM and Tissue should overlap by 50 mm at each joint. |
| APPLICATION OF TOP COAT | Once the laminate has cured it should be rubbed down with heavy grit sand paper or sanding discs to remove glass spicules / rough spots. Remove dust and debris by brush or vacuum. Thoroughly mix the un-catalysed Sprayglass waxed Top Coat using a mechanical whip. Catalyse according to quantity and ambient conditions using a minimum of 1.5% catalyst. Apply the Top Coat in a thin film by brush or roller ensuring full coverage. Application of the Top Coat should not be carried out until the laminate has cured sufficiently (approx. 6 hours) |

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