

**Alkali-resistant glass fibre sheet for impact resistance and containment reinforcement**

# weber.tec force glass sheet

## enforce glass fibre sheet AR



### Uses

Column wrapping to columns for:

- Impact resistance
- Resistance to explosion damage – blast walls
- Post reinforcement of historic buildings to limit deformation and contain movement
- Post strengthening to limit crack propagation and contain cracking
- Can be used on concrete, brickwork and stonework

### Typical applications

- Bridge columns
- Blast walls
- Car parks
- Masonry buildings

### Features and benefits

- ▲ Low-modulus fibre allows larger deformation leading to redistribution of the tension force
- ▲ Containment fabric preventing loss of section during deformation
- ▲ Versatile and easy to handle
- ▲ Lightweight and easy to apply
- ▲ Flexibility in applying the sheet allows it to be moulded around different shapes
- ▲ Easy to handle and easy to cut to shape on site

### About this product

**weber.tec force glass sheet** is a bi-directional 50/50 or 90/10 woven glass-fibre sheet used for reinforcement and column wrapping. Manufactured by S&P, Switzerland, the sheet is ideal for impact resistance and containment of structural members under sudden impact.

Applied with **weber.tec force EP primer** and **weber.tec force EP bonding adhesive** to form part of the **weber.tec force composite strengthening system**.

### Technical data

The following test results were obtained in laboratory conditions at 20°C and 4% relative humidity

| Physical properties                   | S&P 50/50              | S&P 90/10              |
|---------------------------------------|------------------------|------------------------|
| Colour                                | White                  | White                  |
| Size                                  | 680 mm width           | 680 mm width           |
| Fibre density                         | 2.6 kg/cm <sup>3</sup> | 2.6 kg/cm <sup>3</sup> |
| Sheet weight                          | 350 g/cm <sup>2</sup>  | 350 g/cm <sup>2</sup>  |
| Thickness for design (weight/density) | 0.135 mm               | 0.135 mm               |
| Cross section for design*             | 67 mm <sup>2</sup>     |                        |
| Fibre content v <sub>f</sub>          | 20 – 30%               | 20 – 30%               |
| Delivery                              | 50 m rolls             | 50 m rolls             |

### Mechanical properties

|                                       |                          |                          |
|---------------------------------------|--------------------------|--------------------------|
| Modulus of elasticity E <sub>cu</sub> | > 65 kN/mm <sup>2</sup>  | > 65 kN/mm <sup>2</sup>  |
| Tensile strength f <sub>cu</sub>      | > 2000 N/mm <sup>2</sup> | > 2000 N/mm <sup>2</sup> |
| Ultimate elongation ε <sub>cu</sub>   | 2.8%                     | 2.8%                     |
| Tensile force at 0.4% elongation      | 17 kN                    |                          |

\*based upon 1000 mm sheet width

# weber.tec force glass sheet

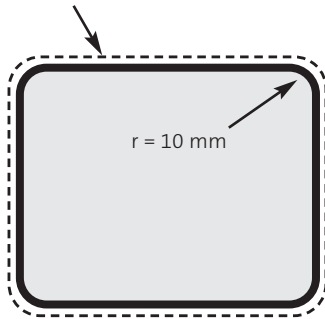
## Preparation

Before the application of the S&P G Sheet, the quality of the substrate has to be checked. The tensile strength has to be tested with a pull-off bond test. For load to be transferred from the glass fibre sheet into the bearing substrate a tensile surface strength of at least 0.4 N/mm<sup>2</sup> is required.

The bearing substrate shall be roughened by light grit blasting or sand blasting or grinding. Any unevenness must be tested with a straight edge. Maximum deviation shall be 1 mm per 300 mm.

The edges of the structural member must be rounded by grinding to achieve minimum radius of 15 mm.

S&P G Sheet



The substrate must be cleaned of any dust and the moisture content shall be less than 4%. Ensure all surfaces are clean and free from any contamination.

## Application

### weber.tec force EP primer

The epoxy resin primer must be mixed in accordance with the product data sheet and applied to the prepared substrate. Allow to touch-dry – normally up to 2 hours.

### weber.tec force EP bonding adhesive

The epoxy resin adhesive must be mixed in accordance with the data sheet and applied evenly to the primed substrate.

Immediately after the adhesive is applied, the first layer of glass fibre sheet is applied by hand and pressed into the surface with a rubber roller and squeegee.

Another layer of adhesive is applied by brush or roller over the first layer and is pressed into the sheet with a squeegee. Additional layers are applied in the same way onto uncured, wet epoxy resin adhesive.

For multiple layers, use the wet lay-up process. Pre-wet the aramid sheet with **weber.tec force EP bonding adhesive** and place the wetted-out sheet onto the first coat of adhesive.

Roller and squeegee into position, taking care to align the fibres correctly.

Encapsulate this layer with a second coat of **weber.tec force EP bonding adhesive**.

For multiple layers, repeat the above steps.

Pre-wetting of the glass sheet can be achieved by either:

- 1 Manual lamination on a table protected with plastic sheeting.
- 2 Machine lamination using the **weber.tec force laminator**, details available on request.

Allow the epoxy resin adhesive to fully cure.

## Cleaning

Clean tools carefully, using **weber.tec solvent 3**.

## Packaging

S&P G Sheets are supplied in 50 m length rolls at 680 mm width.

## Coverage

Area coverage is 34 m<sup>2</sup> per roll.

## Storage and shelf life

Store the glass fibre sheets in dry conditions and protect from exposure to direct sunlight.

Unlimited shelf life if stored correctly.

## Health and safety

Sheet reinforcement material.

Loose fibres may be sharp, strong and irritating. Always wear gloves when handling fibre sheets and avoid contact with the skin. Cut the rolls by applying adhesive tape across the width of the roll and cut with industrial scissors through the tape to avoid fraying loose fibres.

**For further information, please request the Material Safety Data Sheet for this product.**

### weber.tec force laminator machine



## Technical services

Weber's Customer Services Department has a team of experienced advisors available to provide on-site advice both at the specification stage and during application. Detailed specifications can be provided for specific projects or more general works. Site visits and on-site demonstrations can be arranged on request.

**Technical helpline**  
Tel: (01525) 722110

## Sales enquiries

Weber products are distributed throughout the UK through selected stockists and distributors. For UK sales enquiries and overseas projects, contact **Weber's** Sales office.

**Sales office**  
Tel: (01525) 722100  
Fax: (01525) 718988

**Saint-Gobain Weber Ltd**  
Dickens House, Enterprise Way, Maulden Road, Flitwick, Bedford MK45 5BY, UK  
Tel: 08703 330070 Fax: (01525) 718988 e-mail: mail@weberbuildingsolutions.co.uk

To the best of our knowledge and belief, this information is true and accurate, but as conditions of use and any labour involved are beyond our control, the end user must satisfy himself by prior testing that the product is suitable for his specific application, and no responsibility can be accepted, or any warranty given by our Representatives, Agents or Distributors. Products are sold subject to our Standard Conditions of Sale and the end user should ensure that he has consulted our latest literature.