

## Technical Data

## TCR Spray-up Roving

### Product Introduction

TCR glass is a boron-free and fluoride-free glass fiber. It provides higher mechanical properties (modulus of elasticity) than E glass, superior chemical corrosion resistance, especially very similar acid resistance with traditional ECR glass. Without any content of  $B_2O_3$  and  $F_2$ , TCR glass is environmental-friendly throughout all its production process. G1-AB is TCR roving designed for use in spray-up operations using standard or filled resin systems. This includes applications in tub/showers, FRP building materials, heavy trucks and utility boxes. Its excellent glass lay down makes it especially suitable for vertical surface spray-up. Roving doffs are square-edged, cylindrical packages which are firmly and evenly wound and have a constant traverse length. The packages are designed to provide a smooth run out, and their geometry is controlled to maintain the desired run out performance.

### Product Description

All G1-AB gun rovings are manufactured to meet ISO 9001 standards. Besides, these products have obtained the quality certification of Norway Boat code.

G1-AB gun roving is produced from a collection of continuous glass filaments gathered, without mechanical twisting, into a single bundle. The filaments, which make up the bundles, are bonded together with a special size. Multiple bundles are then pulled together to form a strand. The strand is wound into a tubeless package that is ready for use in customer applications.

### Packaging

#### Pallet dimensions

Pallet height, cm (in) 94 (37)

Pallet length, cm (in) 112 (44)

Pallet width, cm (in) 112 (44)

Number of layers: 3 or 4

48-roll pallet weight, kg (lb) 912 (2010)

64-roll pallet weight, kg (lb) 1216 (2681)

#### Doff dimensions

Doff height, cm (in) 26 (10)

Doff weight, kg (lb) 19 (42)

Doff diameter, cm (in) 26 (10)

Doffs/layer 16

Doffs/pallet 48 & 64

Doffs are wrapped in plastic bags, then packed in individual cardboard boxes or bulk packed. All pallets have ends that are spliced together. One-, two-, four-end run-outs are available depending on specific customer



requirements.

### Storage

Unless otherwise specified, it is recommended to store glass fiber products in a cool, dry area. Temperature should not exceed 35°C (95°F) and the relative humidity should be kept below 75%. Glass roving products must remain in packaging material until just prior to their use. If these conditions are respected, the glass fiber product should not undergo significant changes when stored for extended periods of time.

### Stacking

To ensure safety and avoid damage to the product, skids should not be stacked more than two high.

## Features and Product Benefits

- Easy chopping
- No static electricity
- No fuzz
- Flat lay down and uniform dispersion
- Easy rolling and air release
- Excellent mechanical properties
- Excellent performance on vertical parts

## Comparison of G1-AB Roving with E-glass & Advantex Roving

| Glass Type   | G1-AB     | E         | Advantex  |
|--|-----------|-----------|-----------|
| Density (g/cm <sup>3</sup> )   | 2.55-2.60 | 2.54-2.60 | 2.53-2.60 |
| Tensile Strength (MPa) ASTM D 2343   | 2250-2350 | 2150-2250 | 2250-2350 |
| Tensile Modulus (GPa) ASTM D 2343  | 80-82     | 73-75     | 80-82     |
| Glass Softening Point (°C)   | 905-920   | 835-850   | 890-905   |
| Acid Resistance, 10% H <sub>2</sub> SO <sub>4</sub> , 96°C, 48hr, Weight Retention | 97.0%     | 61.8%     | 95.18%    |
| Acid Resistance, 10% H <sub>2</sub> SO <sub>4</sub> , 96°C, 96hr, Weight Retention | 95.48%    | /         | 94.47%    |

## Product data

TCR gun roving combines the electrical and mechanical properties of traditional E-glass with the acid corrosion resistance of E-CR glass. This Roving has a sizing system with a silane coupling agent. It has been designed to provide optimal performance for spray-up applications.

| ID Number | Linear Density (NOM TEX) | Yield (NOM yds/lb) | % Organic Solid (LOI) | Filament Diameter (µm) | % Moisture Content | Compatible Resin |
|-----------|--------------------------|--------------------|-----------------------|------------------------|--------------------|------------------|
| G1-240-AB | 2400                     | 207                | 1.05 ± 0.20           | 11                     | ≤ 0.2              | Polyester        |
| G1-310-AB | 3100                     | 165                | 1.05 ± 0.20           | 11                     | ≤ 0.2              | Polyester        |

## Disclaimer of Liability

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