

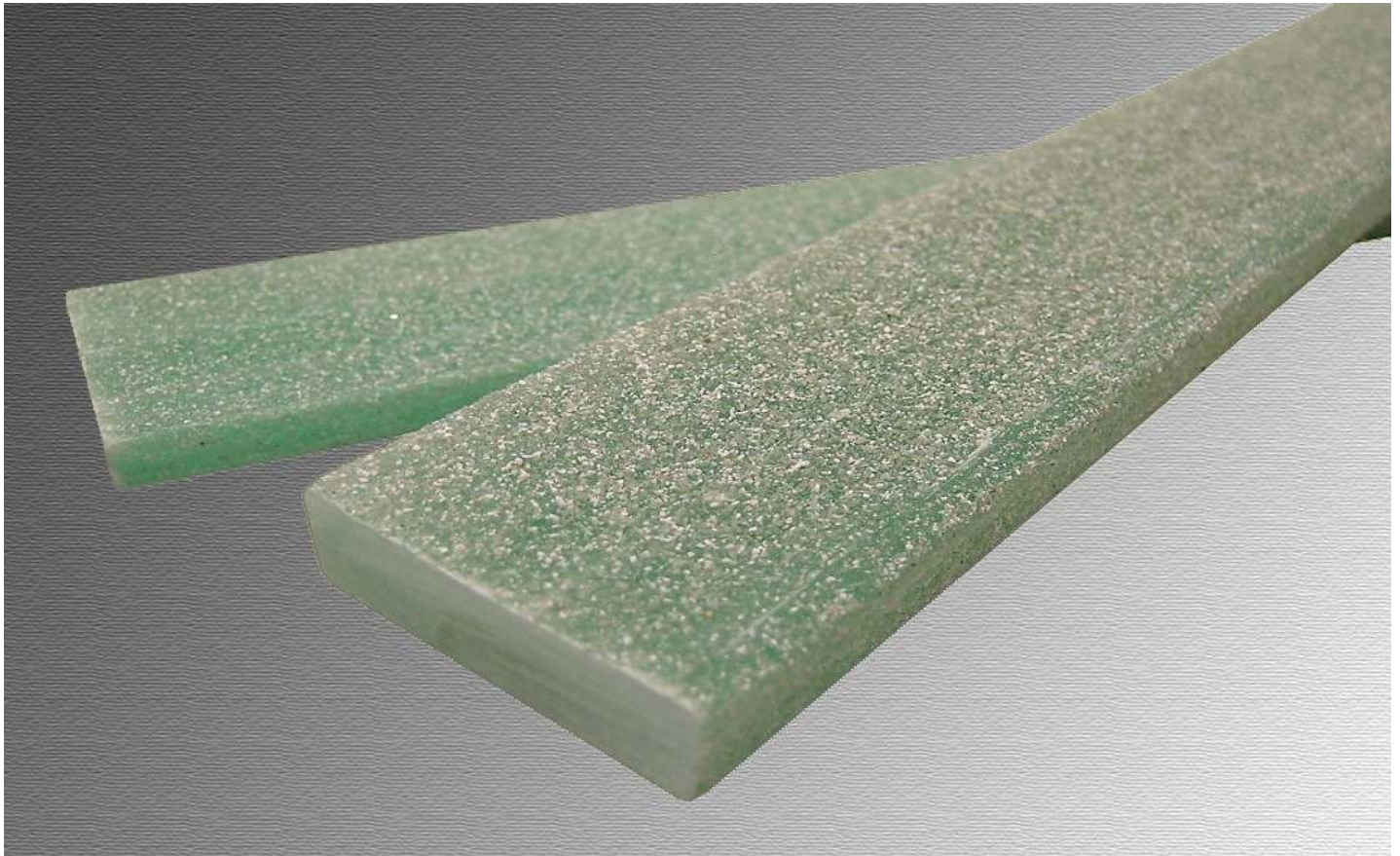


TECHNICAL DATA SHEET

Issue 09.2016
Rev 01/10.2016

GEOTECHNICS & CIVIL ENGINEERING

TDS-428



Durglass® FL E40 Flat Bars

Glass Fiber Reinforced Polymer Flat bar to be used in temporary application.
Externally coated with quartz sand and resin during continuous production process.



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DESCRIPTION	DESCRIPTION	DESCRIZIONE
Glass Fiber Round Flat bars obtained by pultrusion process impregnated with polyester resin, to be used as ground anchors and soil nails.	Barres plates de différents épaisseurs en fibre de verre et résine polyester fabriquées par pultrusion. Pour la réalisation de tirants et boulons en fibre de verre.	Barre piatte di vari spessori in fibra di vetro e resina poliesteri ottenute per pultrusione. Per la realizzazione di chiodi e tiranti in vetroresina.
MATERIALS USED	MATERIAUX UTILISES	MATERIALI IMPIEGATI
Glass: Direct "E" Roving - Density of fibres: $2.5 \pm 0.1 \text{ g/cm}^3$ - Tensile Strength: $\geq 2000 \text{ MPa}$ - Elongation: $\geq 4.0 \%$ - Elastic modulus: $\geq 70 \text{ Gpa}$	Verre: Roving direct "E" - Densité des fibres: $2.5 \pm 0.1 \text{ g/cm}^3$ - Résistance à traction: $\geq 2000 \text{ MPa}$ - Allongement: $\geq 4.0 \%$ - Module d'élasticité: $\geq 70 \text{ GPa}$	Vetro: Roving Diretto "E" - Densità delle fibre: $2.5 \pm 0.1 \text{ g/cm}^3$ - Resistenza a trazione: $\geq 2000 \text{ MPa}$ - Allungamento: $\geq 4.0 \%$ - Modulo elastico: $\geq 70 \text{ GPa}$
Polyester resin: - Density: $1.1 \pm 0.1 \text{ g/cm}^3$ - Tensile Strength: $\geq 50 \text{ MPa}$ - Breaking elongation: $\geq 2.0\%$	Résine polyester: - Densité: $1.1 \pm 0.1 \text{ g/cm}^3$ - Résistance à traction: $\geq 50 \text{ MPa}$ - Allongement à rupture: $\geq 2.0\%$	Resina poliesteri: - Densità: $1.1 \pm 0.1 \text{ g/cm}^3$ - Resistenza a trazione: $\geq 50 \text{ MPa}$ - Allungamento a trazione: $\geq 2.0\%$
Sand: natural quartz - Density: $2.65 \pm 0.10 \text{ g/cm}^3$ - Composition: $\text{SiO}_2 \geq 99.00\%$ - Grading curve: 0.125/0.5 mm	Sable: Quartz sphéroïdal natural - Densité: $2.65 \pm 0.10 \text{ g/cm}^3$ - Composition: $\text{SiO}_2 \geq 99.00\%$ - Granulométrie: 0.125/0.5 mm	Sabbia: Quarzo sferoidale naturale - Densità: $2.65 \pm 0.10 \text{ g/cm}^3$ - Composizione: $\text{SiO}_2 \geq 99.00\%$ - Granulometria: 0.125/0.5 mm
TECHNICAL CHARACTERISTICS	CARACTERISTIQUES TECHNIQUES	CARATTERISTICHE TECNICHE
- Density: $1.95 \pm 0.10 \text{ g/cm}^3$ - Glass Fiber Content: $> 65\%$ - Transverse Shear Strength: 150 MPa - Transition Temperature of Resin: $T_g > 110 \text{ }^\circ\text{C}$ per DSC method	- Densité: $1.95 \pm 0.10 \text{ g/cm}^3$ - Contenu en verre: $> 65\%$ - Résistance au cisaillement: 150 MPa - Température de transition de la résine: $T_g > 110 \text{ }^\circ\text{C}$ par méthode DSC	- Peso specifico: $1.95 \pm 0.10 \text{ g/cm}^3$ - Contenuto di vetro: $> 65\%$ - Resistenza a taglio: 150 MPa - Temperatura di transizione della resina: $T_g > 110 \text{ }^\circ\text{C}$, metodo DSC



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Round Straight Bars	Nominal Bar Area	Average Tensile Strength	Average Elastic Modulus	Average Elongation at break	Average Ultimate Load
Durglass FL 30x4 mm	120 mm ²	1000 MPa	40 GPa	> 1.5%	120 kN
Durglass FL 35x5 mm	175 mm ²	1000 MPa	40 GPa	> 1.5%	175 kN
Durglass FL 40x4 mm	160 mm ²	1000 MPa	40 GPa	> 1.5%	160 kN
Durglass FL 40x5 mm	200 mm ²	1000 MPa	40 GPa	> 1.5%	200 kN
Durglass FL 40x6 mm	240 mm ²	1000 MPa	40 GPa	> 1.5%	240 kN
Durglass FL 40x7 mm	280 mm ²	900 MPa	40 GPa	> 1.5%	250 kN
Durglass FL 40x8 mm	320 mm ²	900 MPa	40 GPa	> 1.5%	285 kN
Durglass FL 40x9 mm	360 mm ²	900 MPa	40 GPa	> 1.5%	320 kN
Durglass FL 40x12 mm*	480 mm ²	900 MPa	40 GPa	> 1.5%	432 kN

Other types on request

Tollerances: width ± 1.5 mm / thickness +2 mm

Rolls: all type (except Durglass FL 40x12 mm) are available in rolls of 120 meters or in straight bars.



SAFETY INDICATIONS

See the relevant Material Safety Data Sheet.

INDICATIONS DE SECURITE

Consulter la relative fiche de sécurité.

SAFETY INDICATIONS

Consultare la relativa Scheda di Sicurezza.

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