Advanced Energy Technologies
a subsidiary of GrafTech International Holdings Inc.

GRAFOIL®

TG-251 Metal-Reinforced Laminate

Technical Data Sheet 018

Product Family - Laminates (Metal-Reinforced)

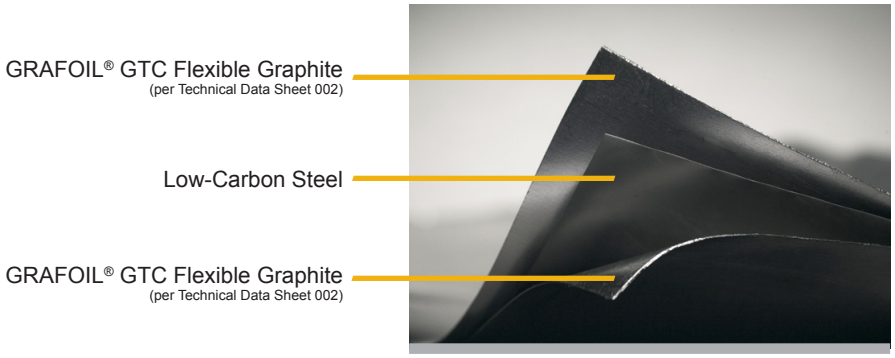
- GHH - GTC with Flat Low-Carbon Steel
- TG-251 - GTC with Thicker Low-Carbon Steel
- GHE - GTB with Tanged Stainless Steel
- GHR - GTB with Flat Stainless Steel
- GHT - GTB with C-276

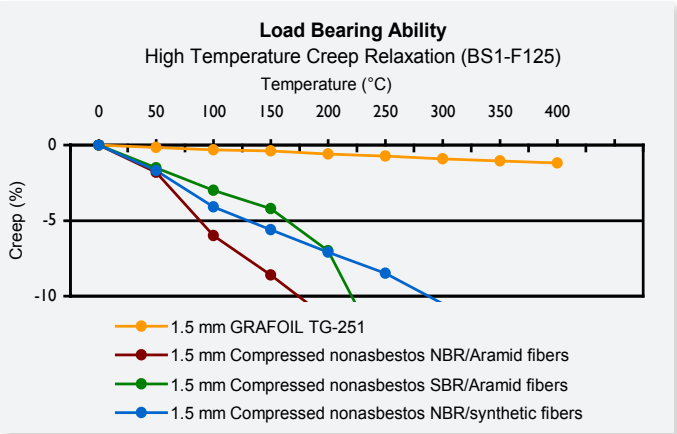
Product Overview

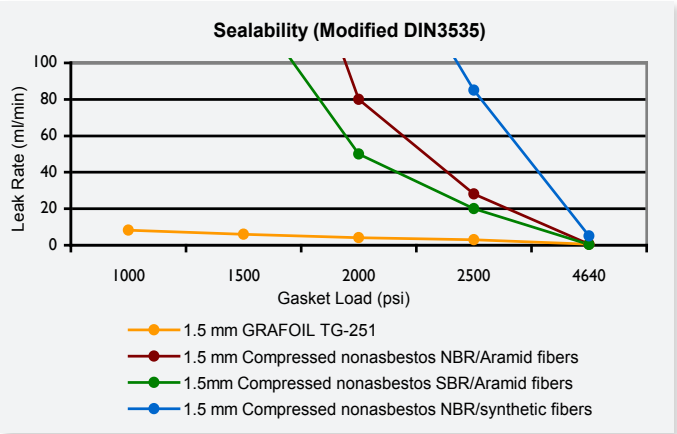
GRAFOIL® TG-251 metal-reinforced laminate consists of GRAFOIL® GTC flexible graphite chemically bonded to both faces of a flat, 0.0066" low-carbon steel core. TG-251 laminates offer improved handling over GRAFOIL® GHH laminates for larger gasket sizes.

Applications

- Exhaust sealing
- Gasoline/diesel head gaskets
- EGR valve sealing
- Turbo charger gaskets







While maintaining an effective seal, GRAFOIL® material exhibits virtually no creep relaxation. As a result, the need for periodic bolt tightening is greatly reduced.

Laminate Construction

1) GRAFOIL® GTC flexible graphite (per Technical Data Sheet 002)
   micro-thin, phenolic-based adhesive
2) 0.0066" thick Low-Carbon Steel Grade 1008 or 1010
   micro-thin, phenolic-based adhesive
3) GRAFOIL® GTC flexible graphite (per Technical Data Sheet 002)

Typical Properties*

Characteristic	Typical Value
Thickness of Laminate	0.037" (0.94 mm) 0.047" (1.19 mm)
Width	24" (610 mm)
Length	24" (610 mm) 100' (30.5 m)
Bulk Density (Graphite)	70 lb/ft^3 (1.12 g/cc)
Compressibility at 5000 psi (35 MPa) load	34%
Recovery after 5000 psi (35 MPa) load	31%
Creep Relaxation Method: BSI-F125 at 6391 psi (44.1 MPa) load up to 400°C	<3% for 70 lb/ft^3
Air Aging, 5 hours at 540°C Weight Loss Compressibility Recovery	 5% 39% 24%
Fluid Soaking Distilled Water, 22 hrs @ boiling 50/50 Glycol/Water, 48 hrs @ boiling	 No separation between GRAFOIL® material and steel No separation between GRAFOIL® material and steel

Notes:
* Properties listed are typical and cannot be used as accept/reject specifications.

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