Advanced Energy Technologies
a subsidiary of GrafTech International Holdings Inc.

GRAFOIL®

GHE Metal-Reinforced Laminate

Technical Data Sheet 131

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® GHE metal-reinforced laminate consists of GRAFOIL® GTB flexible graphite mechanically attached to both faces of a stainless steel tang metal insert.

Applications

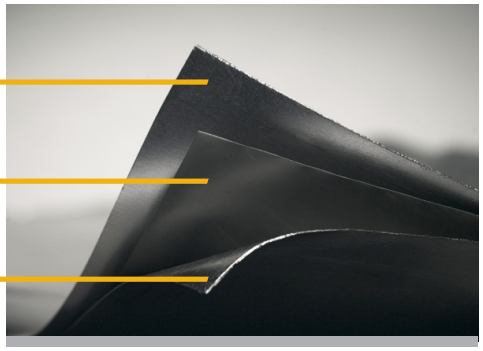
GHE material is suitable for standard industrial fluid sealing applications.

- Chemical
- Petrochemcial
- Refinery
- Steam Service
- Cryogenic Applications
- ASME Class 150 & 300 Flanges

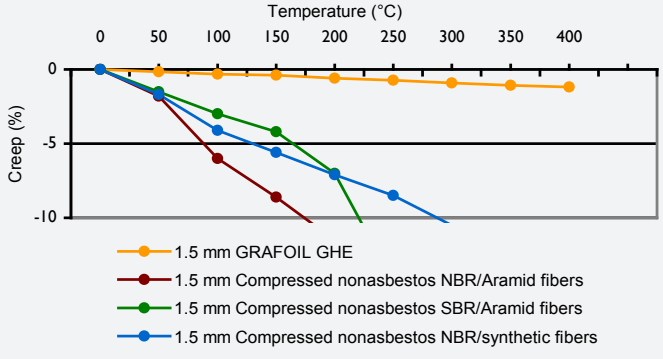
GRAFOIL® GTB Flexible Graphite
(per Technical Data Sheet 436)

316 or 316L stainless steel* tang metal insert
- Pierced to provide protruding tangs
- 0.004" thick (prior to tanging)
(per ASTM A-240)

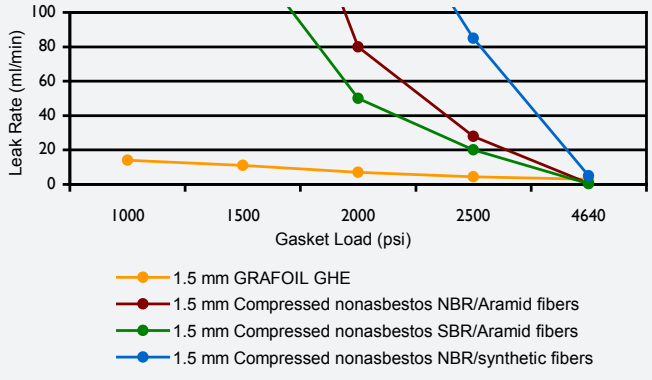
GRAFOIL® GTB Flexible Graphite
(per Technical Data Sheet 436)



Load Bearing Ability
High Temperature Creep Relaxation (BS1-F125)



Sealability (Modified DIN3535)



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

Typical Properties**

Characteristic	Typical Value
Thickness of Laminate	0.064” (1.63 mm) 0.124” (3.15 mm)
Width	39.4” (1000 mm)
Length	39.4” (1000 mm) 100’ (30.5 m) (< 0.064” thickness)
Bulk Density (Graphite)	70 lb/ft^3 (1.12 g/cc)
Compressibility at 5000 psi (35 MPa) load	36% for 0.064” thick
Recovery after 5000 psi (35 MPa) load	18% for 0.064” thick
Creep Relaxation Method: BSI-F125 at 6391 psi (44.1 MPa) load up to 400°C	<3% for 70 lb/ft^3
Sealability Method: Mod DIN 3535 at 580 psi N^2 at 32 MPa load	<1.5 ml/min for 70 lb/ft^3
Temperature Use Range	-400°F to 975°F (-240°C to 525°C)
Resistance in #3 Oil Thickness increase Weight change	 <12% <35%
Resistance in #1 Oil Thickness increase Weight change	 <8% <33%
Certification	Certify to Grade

Notes:
* Because teeth of the tanged metal interlayer may indent metals softer than 316/316L Stainless Steel, Grade GHE gaskets are not normally recommended for use with glass, bronze, aluminum or other softer metal flanges.
** Properties listed are typical and cannot be used as accept/reject specifications.

ASME Gasket Factors

- “m” Factor: 2
- “y” Stress: 2,500 psi (17.28 MPa)
- Max Gasket Unit Load: 24,000 psi (165.87 MPa)

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