

GHN Non-Metal Reinforced Laminate

TECHNICAL DATA SHEET 185

Product Family - Laminates (Non-Metal Reinforced)

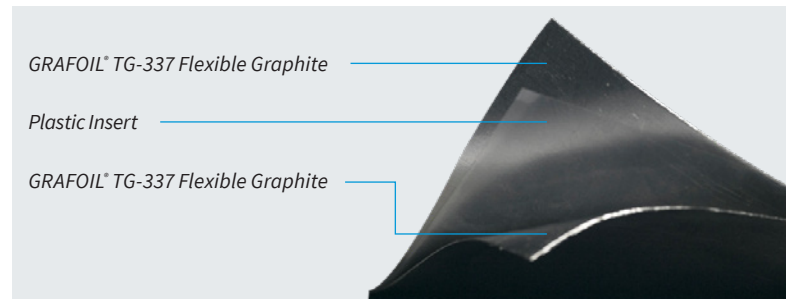
- GHP - GTB with Plastic Insert
- GHN - TG-337 with Plastic Insert
- GHW - GTB with Woven Glass Fiber Insert
- GRAFKOTE® - GTB with Plastic Facing

Product Overview

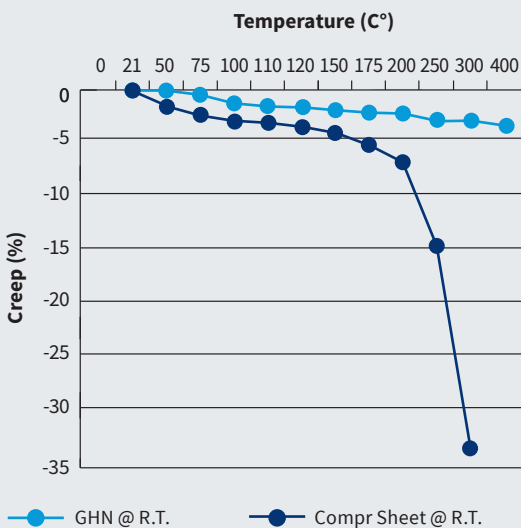
GRAFOIL® GHN non-metal reinforced laminate consists of GRAFOIL® TG-337 flexible graphite thermally bonded to both faces of a plastic insert.

Applications

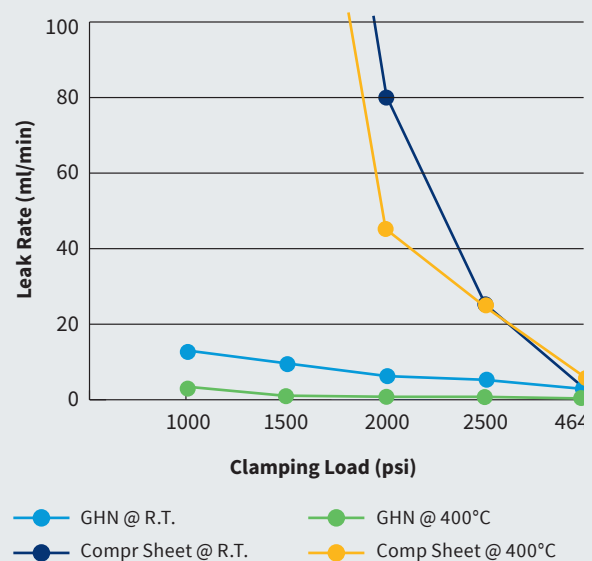
- General gasket service
- Blind flange gaskets
- Replacement for
 - current compressed sheet
 - beater-addition-type sheet
 - Other non-asbestos gasketing materials



LOAD BEARING ABILITY
High Temperature Creep Relaxation (BS1-F125)



LEAK RATE VS CLAMPING LOAD
Sealability @ Room Temperature & 400°C



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® TG-337 flexible graphite (per Technical Data Sheet 183)
- 2) 0.0015" thick plastic
- 3) GRAFOIL® TG-337 flexible graphite (per Technical Data Sheet 183)

NOTE: The plastic interlayer is primarily present to provide toughness in handling and can be expected to burn or melt away at elevated temperatures, leaving the GRAFOIL® flexible graphite facing to provide the long-term seal.

Typical Properties*

CHARACTERISTIC	TYPICAL VALUE
Thickness of Laminate	0.030" (0.76 mm) 0.060" (1.52 mm)
Width	39.4" (1000 mm)
Length	39.4" (1000 mm) 100' (30.5 m)
Bulk Density (Graphite)	62.4 lb/ft ³ (1.0 g/cc)
Compressibility at 5000 psi (35 MPa) load	50%
Recovery after 5000 psi (35 MPa) load	11%
Creep Relaxation Method: BSI-F125 at 6391 psi (44.1 MPa) load up to 400°C	<4% for 70 lb/ft ³
Tensile Strength	450 psi (3.1 MPa)
Temperature Use Range	-400°F to 750°F (-240°C to 400°C)

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

ASME Gasket Factors

- “m” Factor: 2
- “y” Stress: 900 psi (6.22 MPa)
- Max Gasket Unit Load: 24,000 psi (165.87 MPa)

Comparison to Compressed Sheet and Beater Addition Gasketing Materials

GRAFOIL® GHN laminate material outperforms other materials because

- It is composed of GRAFOIL® flexible graphite facing. The GRAFOIL® graphite facing has no binders, fillers, or additives and is capable of withstanding extreme temperatures (to 3000°C) with no degradation. Other materials have binders that become the weakest link in the temperature chain. GHN material will not break down over time and get brittle and dry out. It will not lose water of crystallization.

- It has a center layer of plastic that provides toughness for handling so it is not as fragile as unsupported flexible graphite. The center layer is extremely thin (0.0015") and disintegrates at elevated temperatures, leaving only the GRAFOIL® material in the joint. This means GHN flexible graphite is strong enough to handle but remains as flexible graphite for a long-term seal.
- It is inert and impervious to most fluids and chemicals. This means GHN materials won't break down and fall apart.
- It seals at low flange loads where other materials require higher loading to seal.
- It removes cleanly and does not bond itself to the flanges.
- No gasket sealants are required, saving assembly time, effort, and expense.

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