GRAFKOTE® Non-Metal Reinforced Laminate

Technical Data Sheet 144

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® GRAFKOTE® non-metal reinforced laminate consists of GRAFOIL® GTB flexible graphite with a polymer facing thermally bonded on one (“Single-Sided”) or both (“Double-Sided”) faces. The polymer facing enhances product handleability and durability.

Applications

- Valves
- Pumps
- Pipe Flanges/ASME/API/DIN flanges
- Glass-lined or low load flange equipment
- Steam traps
- Heat exchangers
- Compressors

Graphs showing sealability and load bearing ability.

www.grafoil.com  www.neograf.com
The PT Guidelines chart offers general recommendations for gasketing materials, based on pressure and operating temperature. This information is offered only as a guideline and should not be viewed independently from application environment, chemical compatibility and gasket thickness.

**Advantages of GRAFKOTE® Non-Metal Reinforced Laminate**
- Compatible with a wide range of chemicals
- Maximum continuous use temperature 400°C (750°F)
- No shelf life
- Material availability in rolls allows for maximum material utilization
- Easily cut
- Improved handleability, durability
- Superior to non-asbestos fiber sheet in every characteristic (Creep, Recovery and Sealability)

**Typical Properties**

<table>
<thead>
<tr>
<th>CHARACTERISTIC</th>
<th>TYPICAL VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness of Laminate</td>
<td>0.030” (0.76 mm) for Single-Sided</td>
</tr>
<tr>
<td></td>
<td>0.060” (1.52 mm) for Single-Sided</td>
</tr>
<tr>
<td></td>
<td>0.062” (1.57 mm) for Double-Sided</td>
</tr>
<tr>
<td>Width</td>
<td>39.4” (1000 mm)</td>
</tr>
<tr>
<td>Length</td>
<td>39.4” (1000 mm)</td>
</tr>
<tr>
<td></td>
<td>100’ (30.5 m)</td>
</tr>
<tr>
<td>Bulk Density (Graphite)</td>
<td>70 lb/ft³ (1.12 g/cc)</td>
</tr>
<tr>
<td>Application Temperature</td>
<td>400°C (750°F) Maximum for &gt;0.030”</td>
</tr>
<tr>
<td></td>
<td>200°C (750°F) Maximum for &lt;0.020”</td>
</tr>
<tr>
<td>Compressibility at 5000 psi</td>
<td>43%</td>
</tr>
<tr>
<td>(35 MPa) load</td>
<td></td>
</tr>
<tr>
<td>Recovery after 5000 psi</td>
<td>20%</td>
</tr>
<tr>
<td>(35 MPa) load</td>
<td></td>
</tr>
<tr>
<td>Creep Relaxation Method: BSI-F125 at 6391 psi (44.1 MPa) load up to 400°C</td>
<td>&lt;4% for 70 lb/ft³</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>800 psi (5.5 MPa) for ≥ 0.030” Thick</td>
</tr>
<tr>
<td></td>
<td>950 psi (6.6 MPa) for 0.010” Thick</td>
</tr>
<tr>
<td>Pressure classes</td>
<td>ASME 150, ASME 300, PN20, PN50</td>
</tr>
<tr>
<td>Certification</td>
<td>Certify to Grade</td>
</tr>
</tbody>
</table>
**Single-Sided Laminate Construction**
1. 0.0005” thick polymer
2. GRAFOIL® GTB flexible graphite (per Technical Bulletin 436)

**Double-Sided Laminate Construction**
1. 0.0005” thick polymer
2. GRAFOIL® GTB flexible graphite (per Technical Bulletin 436)
3. 0.0005” thick polymer

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**ASTM IRM 903 OIL (5 HRS AT 150°C)**
- Thickness Change: 2%
- Weight Change: 30%

**ASTM IRM OIL 1 (5 HRS AT 150°C)**
- Thickness Change: 3%
- Weight Change: 38%

**50/50 WATER GLYCOL (22 HRS BOILING)**
- Thickness Change: 3%
- Weight Change: 50%

**FUEL B (5 HRS AT ROOM TEMP)**
- Thickness Change: 5%
- Weight Change: 33%

**DISTILLED WATER (5 HRS AT 100°C)**
- Thickness Change: 1.5%
- Weight Change: 40%

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**ASME Gasket Factors**
- “m” Factor: 2
- “y” Stress: 900 psi (6.22 MPa)
- Max Gasket Unit Load: 6,526 psi (45 MPa)