Ancorsteel® 150 HP

**Typical Analysis and Properties**

**Composition (weight %) (w/o)**

<table>
<thead>
<tr>
<th></th>
<th>C</th>
<th>Mn</th>
<th>Mo</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;0.01</td>
<td>0.12</td>
<td>1.5</td>
<td>0.08</td>
</tr>
</tbody>
</table>

**Apparent Density**

2.95 g/cm³

**Flow Rate**

25 s/50g

**Sieve Distribution (w/o)**

<table>
<thead>
<tr>
<th>Micrometers</th>
<th>+250</th>
<th>-250 /+150</th>
<th>-150 /+45</th>
<th>-45</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Standard Mesh</td>
<td>(+60)</td>
<td>(-60 /+100)</td>
<td>(-100 /+325)</td>
<td>(-325)</td>
</tr>
<tr>
<td>Trace</td>
<td>11</td>
<td>66</td>
<td>23</td>
<td></td>
</tr>
</tbody>
</table>

**The Effect of Compaction Pressure on Ancorsteel 150 HP with 0.5 w/o Zinc Stearate**

- **Green Density**
  - Compaction Pressure (tsi)
  - Green Density (g/cm³)
  - Compaction Pressure (MPa)

- **Green Strength**
  - Compaction Pressure (tsi)
  - Green Strength (MPa)
  - Green Strength (psi)

**Graphs**

- Green Density vs. Compaction Pressure
- Green Strength vs. Compaction Pressure

- **Lines**
  - Ancorsteel 85 HP
  - Ancorsteel 2000
  - Ancorsteel 150 HP
  - Ancorsteel 4600 V
Ankorsteel® 150 HP

Properties of Sintered Compacts with Various Graphite Additions

Ankorsteel 150 HP plus various amounts of graphite. All specimens were compacted at 620 MPa (45 tsi) and sintered at 1120°C (2050°F) for 30 minutes in dissociated ammonia.

Properties of Sintered Compacts of Ankorsteel 150 HP

<table>
<thead>
<tr>
<th>Material</th>
<th>A</th>
<th>C</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel (w/o)</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Copper (w/o)</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Graphite (w/o)</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

All specimens were compacted at 620 MPa (45 tsi) and sintered at 1120°C (2050°F) for 30 minutes in dissociated ammonia.
Sinter-hardening (Effects of Accelerated Furnace Cooling)

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<tr>
<td>Copper (w/o)</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Graphite (w/o)</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

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**Tensile Strength**

- X-axis: Sintered Density (g/cm³)
- Y-axis: Ultimate Tensile Strength (MPa)

**Apparent Hardness**

- X-axis: Sintered Density (g/cm³)
- Y-axis: Ultimate Tensile Strength (10⁶ psi)

**Impact Energy**

- X-axis: Sintered Density (g/cm³)
- Y-axis: Impact Energy (Joules)

All compacts were prepared with 0.5 w/o graphite and 0.5 w/o zinc stearate. They were compacted at 620 MPa (45 tsi) and sintered at 1120°C (2050°F) for 30 minutes in dissociated ammonia followed by accelerated cooling in the water jacketed cooling zone.

**IMPORTANT NOTICE:** The data shown are based on laboratory processing standard test specimens. Results may vary from those obtained in production processing.