Ancorsteel® AMH

**Typical Analysis and Properties**

**Composition (w/o)**

<table>
<thead>
<tr>
<th></th>
<th>Fe</th>
<th>Carbon</th>
<th>Si</th>
<th>O</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance</td>
<td>0.01</td>
<td>0.02</td>
<td>0.15</td>
<td>0.015</td>
<td></td>
</tr>
</tbody>
</table>

**Apparent Density**

|       | 2.60 g/cm³ |

**Flow Rate**

|       | 28 s/50 g |

**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>65</td>
<td>24</td>
<td></td>
</tr>
</tbody>
</table>

**The Effects of Compaction Pressure on Green Properties**

**Green Density**

- **Compaction Pressure (tsi)**
  - 15, 20, 25, 30, 35, 40, 45, 50, 55
  - **Green Density (g/cm³)**
    - 5.8, 6, 6.2, 6.4, 6.6, 6.8, 7, 7.2, 7.4
  - **Compaction Pressure (MPa)**
    - 200, 300, 400, 500, 600

- **0.75 w/o Acrawax C Added**

**Green Strength**

- **Compaction Pressure (tsi)**
  - 15, 20, 25, 30, 35, 40, 45, 50, 55
  - **Green Strength (MPa)**
    - 0, 5, 10, 15, 20, 25, 30, 35, 40, 5000
  - **Green Strength (gpa)**
    - 0, 1000, 2000, 3000, 4000, 5000, 6000

**Compaction Pressure (MPa)**

- **Ankorsteel® AMH**
- **Ancor® MH-100**
- **Ancor® 1000**

**Ancorsteel AMH** is a low apparent density water atomized powder for structural applications. The atomizing process imparts a spongy morphology to the powder particles giving the material superior green strength for an atomized powder combined with good compressibility. The powder production process used to make Ankorsteel AMH involves refining of the liquid metal so that the oxide inclusions typically found in sponge products made using the reduction process are removed.
Comparison of Sintered Properties with Ancor® MH-100

Composition: Mixes contain 1.1 w/o graphite and 1 w/o zinc stearate
Sintered in dissociated ammonia at 1120 °C (2050 °F) for 30 minutes

![Graph showing comparison of sintered properties between Ancorsteel® AMH and Ancor® MH-100.](image-url)
**Ankorsteel® AMH**

**Comparison of Sintered Properties with Ankor® MH-100**

Composition: Mixes contain 1.1 w/o graphite, 2 w/o copper and 1 w/o zinc stearate
Sintered in dissociated ammonia at 1120 °C (2050 °F) for 30 minutes

[Graph showing relationship between Sintered Density (g/cm²) and Transverse Rupture Strength (MPa)]

[Graph showing relationship between Sintered Density (g/cm²) and Dimensional Change (% from Die Size)]

[Graph showing relationship between Sintered Density (g/cm²) and Apparent Hardness (HRB)]
Ankorsteel® AMH

Typical Powder Morphology

SEM Photomicrograph of Ankorsteel® AMH 800X

SEM Photomicrograph of Ankorsteel® A1000 800X

SEM Photomicrograph of Ankor MH-100 800X

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