**Firwin Plus**

**Description**
Firwin Plus uses a patented technology that manufactures high temperature insulation wool with low biopersistence. Firwin Plus is an Alkaline Earth Silicate (CAS number: 329211-92-9) offering the same benefits as our standard FWN 1800 but with improved handling strength and enhanced thermal properties.

**Firwin Plus**
- Is manufactured from pure raw materials using a new manufacturing technology.
- Has enhanced thermal properties; large nuisance dust particles have been effectively eliminated making the product soft to the touch and less irritating during use.
- Is made of long AES fibers
- Has the same chemical formulation as Firwin 1800
- Have outstanding insulating properties at elevated temperatures
- Offers excellent thermal stability
- Retains its original soft fibrous structure up to its maximum continuous use temperature
- Is needled from both sides and possesses high strength, before and after heating
- Contains neither binder nor lubricant and does not emit any fumes or smell during the first firing
- Is flexible, easy to cut and shape and easy to install
- Offers low heat storage
- Has good resistance to tearing
- Is immune to thermal shock
- Has good sound absorption
- Is exonerated from any carcinogenic classification under note Q of directive 97/69EC

**Classification Temperature**
- Rated Temperature 1200°C / 2192°F EN 1094 [Continuous use]
- Proven to withstand Continuous use in an oxidizing atmosphere at 1000°C.

**Properties**

| Color: | White |
| Density: | 64, 96, 128, 160 kg/m³ (4, 6, 8, 10) lbs/ft³ |
| Tensile strength: | 128 kg/m³ 75 kPa |
| Thickness: | ¼” – 2” [6.25 – 50mm] |
| Linear Shrinkage: | @1000°F [538°C] 2 |
| | @1800°F [982°C] 3 |
| | @ 2282°F [1250°C] - |

**High Temperature Performance**
Permanent linear shrinkage after 24 hours isotherm heating at 1200°C <1%

**Chemical Composition**
- SiO₂: 62-68%
- CaO: 26-32%
- MgO: 3-7%
- Other: <1%
### Thermal Conductivity (ASTM C-201)

<table>
<thead>
<tr>
<th>Mean Temperature</th>
<th>W/m.K (BTU in/hr/ft²/°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>64kg/m³ 4lbs/ft²</td>
</tr>
<tr>
<td>200°C 392°F</td>
<td>0.06 [0.42]</td>
</tr>
<tr>
<td>400°C 752°F</td>
<td>0.26 (1.80)</td>
</tr>
<tr>
<td>600°C 1112°F</td>
<td>0.10 (0.69)</td>
</tr>
<tr>
<td>800°C 1472°F</td>
<td>0.17 (1.18)</td>
</tr>
<tr>
<td>1000°C 1832°F</td>
<td>0.38 (2.63)</td>
</tr>
</tbody>
</table>

### Graph: Thermal Conductivity (ASTM C-201)

- **Superwool 96 kg/m³**
- **Superwool 128 kg/m³**
- **Superwool PLUS 96 kg/m³**
- **Superwool PLUS 128 kg/m³**

---

**Firwin Corp.**, 1685 Flint Road, North York, ON M3J 2W8 Canada
Tel: 416.745.9389 • Fax: 416.745.0782 • www.firwin.com