SPECIFICATIONS - DuraSafe Star™

Product description:
Mullite/corundum

Specification:
Pressed/high-fired

Main use:
Safety lining for steel casting ladles
VOD/VD treatment
Ladle furnaces
High thermal load

Typical physical values

<table>
<thead>
<tr>
<th>Guide value</th>
<th>Norm</th>
<th>Unit</th>
<th>Typical</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk density</td>
<td>DIN EN 993 - 1</td>
<td>g/cm³</td>
<td>2.9</td>
<td></td>
</tr>
<tr>
<td>Open porosity</td>
<td>DIN EN 993 - 1</td>
<td>Vol. %</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Cold crushing strength</td>
<td>DIN EN 993 - 5</td>
<td>MPa</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Cold modulus of rupture</td>
<td>DIN EN 993 - 6</td>
<td>MPa</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>RUL</td>
<td>DIN EN ISO 1893</td>
<td>°C</td>
<td>&gt; 1700</td>
<td>T 0,5</td>
</tr>
<tr>
<td>CO resistance</td>
<td>ASTM C288</td>
<td>---</td>
<td>Class A</td>
<td></td>
</tr>
<tr>
<td>Thermal expansion</td>
<td>DIN EN 993 - 19</td>
<td>%</td>
<td>0.7</td>
<td>at 1000 °C</td>
</tr>
<tr>
<td>Thermal conductivity</td>
<td>DIN EN 993 - 15</td>
<td>W/mK</td>
<td>2.8 at 800°C</td>
<td>2.8 at 1200°C</td>
</tr>
</tbody>
</table>

Typical chemical values

<table>
<thead>
<tr>
<th>Unit</th>
<th>Typical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al₂O₃</td>
<td>%</td>
</tr>
<tr>
<td>SiO₂</td>
<td>%</td>
</tr>
<tr>
<td>Fe₂O₃</td>
<td>%</td>
</tr>
</tbody>
</table>

Chemically pure raw-materials
Chemically inert
No free SiO₂!
The SiO₂ is bonded as mullite

DuraSafe Star™
DURABLE SAFE IN USE!
One single shape with 3 mm wedge for round and oval steel casting ladles. Liquid steel capacity from 80 to 400 t.

Why DuraSafe Star™?

Peripheral tongue & groove for:
- Optimal joint sealing
- Best protection against backflow
- Best mechanical stability
- Consistency

Wall design:
- Steel casing
- Insulating refractory bricks, pressure-resistant
- DuraSafe Star™
- MgO dry setting mix, flexible
- MgO-C wear lining

DuraSafe Star™ in use:
- High-fired, inert → dense surface → less C infiltration

DuraSafe Star™ for:
- Very good thermal shock resistance
- Long service life, consistency
- Break out safety

Leading to:
- Reduced maintenance costs
- Higher availability
- Cost savings

Durable safety!