# Spheroidal Graphite Cast Irons

## Technical Data

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<tbody>
<tr>
<td>Tensile strength $R_m$ (min)</td>
<td>N/mm²</td>
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<td>Elongation A (min)</td>
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<td>Brinell hardness (typical)</td>
<td>HB</td>
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<td>max 179</td>
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<td>max 201</td>
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<td>Impact resistance values (min) at (-40 ± 2) °C</td>
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<td>121 (93)</td>
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<td>N/mm²</td>
<td>180</td>
<td>195</td>
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<td>Specific heat capacity $c$ between 20°C and 500°C</td>
<td>J/(kg.K)</td>
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<td>Linear expansion coefficient $α$ between 20°C and 400°C</td>
<td>μm/(m.K)</td>
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<td>W/(m.K)</td>
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<td>Maximum permeability $μ$</td>
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<td>Hysteresis losses at B = 1T</td>
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Notes:
1) Mean value from 3 tests
2) Individual value
### Austempered Ductile Cast Irons (ADI)

#### Technical Data

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<th>Characteristic</th>
<th>Standard</th>
<th>Material designation: symbol and (number)</th>
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<td>Tensile strength Rm (min)</td>
<td>BS EN 1564 (1997)</td>
<td>EN-GJS-800-8 (EN-JS1100)</td>
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<td>EN-GJS-1000-5 (EN-JS1110)</td>
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<td>EN-GJS-1200-2 (EN-JS1120)</td>
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<td>EN-GJS-1400-1 (EN-JS1130)</td>
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<td>0.2% proof stress Rp0.2 (min)</td>
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<td>Elongation A (min)</td>
<td>N/mm²</td>
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<tr>
<td>Impact resistance values (min)</td>
<td>%</td>
<td>8</td>
</tr>
<tr>
<td>Charpy (notched) at (23±5)°C</td>
<td>J</td>
<td>10$^2$ (9$^2$)</td>
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#### Mechanical Properties

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>SI unit</th>
<th>Minimum values for properties¹) normative</th>
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<tr>
<td>Tensile strength Rm (min)</td>
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<tr>
<td>0.2% proof stress Rp0.2 (min)</td>
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<tr>
<td>Elongation A (min)</td>
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<td>Impact resistance values (min)</td>
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#### Other Properties

<table>
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<td>Compression strength σdb</td>
<td>N/mm²</td>
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<td>0.2% proof</td>
<td>N/mm²</td>
<td>620</td>
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<tr>
<td>Shear strength σdb</td>
<td>N/mm²</td>
<td>720</td>
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<tr>
<td>Torsional strength τdb</td>
<td>N/mm²</td>
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<tr>
<td>0.2% proof</td>
<td>N/mm²</td>
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<tr>
<td>Impact resistance values (min)</td>
<td>J</td>
<td>100</td>
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<tr>
<td>Charpy unnotched, at (23±5)°C</td>
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<tr>
<td>Fracture toughness KIc</td>
<td>Mpa-m$^{1/2}$</td>
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#### Typical Values

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<td>Brinell hardness HB</td>
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<tr>
<td>Modulus of elasticity E (tension and compression)</td>
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<td>Density ρ</td>
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<td>Linear expansion coefficient α</td>
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<tr>
<td>Thermal conductivity λ</td>
<td>W/(m.K)</td>
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**Note 1:** The minimum values can be obtained on wall thickness up to 50 mm. For heavier section agreement between purchaser and manufacturer is recommended.

**Note 4:** Notched after heat treatment.
# Grey Cast Irons

## Technical Data

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<td>Tensile strength $R_m$</td>
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## Malleable Cast Irons

### Technical Data

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<tr>
<th>Malleable Iron</th>
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