EXCELLENCE THROUGH EXPERIENCE

MATERIAL SPECIFICATIONS CATALOGUE

Manganese Steel
High Chrome White Iron
Alloy Steel
Carbon Steel
Stainless Steel
SG Iron
Cast Iron
OZZ Foundries has the capability and capacity to manufacture castings in a diverse and vast range of metals to suit customer specifications. Castings can be manufactured from 500 grams to 15 tons.

Skilled metallurgists select, customise and design material specifications and heat treatment programmes to suit specific products and applications. This ensures the optimisation of performance, product life, mechanical properties and ease of machining.
Manganese steels have excellent toughness and work-hardening properties, attaining surface hardness values of up to 550 BHN in service. Offered in a range of application specific grades with various alloying elements.

<table>
<thead>
<tr>
<th>OZZ Grade</th>
<th>Equivalent Specifications</th>
<th>Nominal Chemical Composition (Wt. %)</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>841 / 845</td>
<td>ASTM A128 Gr A &amp; B2 &amp; B3  BS 3100 Gr BW10  SABS 407 Type 1 &amp; 2</td>
<td>C 1.20  Mn 13.0  Cr -  Mo -  Ni -</td>
<td>Crusher and mill wear parts</td>
</tr>
<tr>
<td>840 / 846</td>
<td></td>
<td>C 1.30  Mn 18.0  Cr -  Mo -  Ni -</td>
<td>Crusher wear parts - 18% Mn</td>
</tr>
<tr>
<td>843</td>
<td></td>
<td>C 1.35  Mn 23.0  Cr -  Mo -  Ni -</td>
<td>Crusher wear parts - XAlloy - 23% Mn</td>
</tr>
<tr>
<td>847</td>
<td>SABS 407 Type 6</td>
<td>C 1.20  Mn 18.0  Cr 2  Mo -  Ni -</td>
<td>Crusher wear parts - 18% Mn 2% Cr</td>
</tr>
<tr>
<td>842</td>
<td>GX 130 MnCr 20.3</td>
<td>C 1.30  Mn 20.0  Cr 3  Mo -  Ni -</td>
<td>Crusher wear parts - 20% Mn 3% Cr</td>
</tr>
<tr>
<td>849</td>
<td>ASTM A128 Gr D             SABS 407 Type 4</td>
<td>C 1.00  Mn 13.0  Cr -  Mo 3.5</td>
<td>Thin sections, e.g. feeder pans, etc (as cast)</td>
</tr>
<tr>
<td>850</td>
<td></td>
<td>C 1.15  Mn 13.0  Cr 0.5  Mo -  Ni -</td>
<td>Good impact / strength properties</td>
</tr>
<tr>
<td>848 / 853</td>
<td>ASTM A128 Gr E             SABS 407 Type 5</td>
<td>C 1.05  Mn 13.5  Cr 1.0  Mo -  Ni -</td>
<td>High strength / wear resistance</td>
</tr>
</tbody>
</table>
HIGH CHROMIUM WHITE CAST IRONS

Extremely hard Cr-carbides in a Martensitic matrix at a bulk hardness of over 600 BHN offer superior abrasion and erosion resistance in crushing and milling applications.

<table>
<thead>
<tr>
<th>OZZ Grade</th>
<th>Equivalent Specifications</th>
<th>Nominal Chemical Composition (Wt. %)</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>505-514</td>
<td>ASTM A532 Class II Type B BS 4844 Gr 3A SABS 1338 Gr 3A</td>
<td>C: 2.60</td>
<td>Impact crusher wear parts (mining, aggregate and recycling) and mill liners</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cr: 15</td>
<td></td>
</tr>
<tr>
<td>520-523</td>
<td>ASTM A532 Class II Type D BS 4844 Gr 3C SABS 1338 Gr 3C</td>
<td>C: 2.20</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cr: 20</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mo: <em>See note</em></td>
<td></td>
</tr>
<tr>
<td>530-532</td>
<td>ASTM A532 Class III Type A BS 4844 Gr 3D SABS 1338 Gr 3D</td>
<td>C: 2.60</td>
<td>Hyper-eutectic for specific applications</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cr: 27</td>
<td></td>
</tr>
<tr>
<td>533-535 928</td>
<td>BS 4844 Gr 3E SABS 1338 Gr 3E</td>
<td>C: 3.30</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cr: 27</td>
<td></td>
</tr>
</tbody>
</table>

*Molybdenum specified according to microstructure and section thickness.*
Various grades of Martensitic alloy steels are produced to international and custom specifications for a vast range of crushing, milling and engineering applications.

### MARTENSITIC ALLOY STEELS

**Chemical Composition (% Wt)**

<table>
<thead>
<tr>
<th>OZZ Grade</th>
<th>Equivalent Specifications</th>
<th>Description</th>
<th>C</th>
<th>Si</th>
<th>Mn</th>
<th>Cr</th>
<th>BHN</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>820 - 829</td>
<td>BS 3100 Gr BT1</td>
<td>Alloy steel with high tensile strength</td>
<td>0.45 - 0.55</td>
<td>0.75</td>
<td>0.5 - 1.0</td>
<td>0.8 - 1.5</td>
<td>201-279</td>
<td>General engineering</td>
</tr>
<tr>
<td></td>
<td>BS 3100 Gr BT2</td>
<td></td>
<td>0.55 - 0.65</td>
<td>0.75</td>
<td>0.5 - 1.0</td>
<td>0.8 - 1.5</td>
<td>248-327</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BS 3100 Gr BT3</td>
<td></td>
<td>1.0% (max)</td>
<td>0.75</td>
<td>0.5</td>
<td>2.0</td>
<td>293-362</td>
<td></td>
</tr>
<tr>
<td>827 / 828</td>
<td>BS 3100 Gr BW2 &amp; BW3</td>
<td>1% Cr steel for abrasion resistance</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>444-495</td>
</tr>
<tr>
<td>732 - 740</td>
<td>BS 3100 Gr BW4</td>
<td>2% Cr steel for abrasion resistance</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>500-555</td>
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### PEARLITIC ALLOY STEELS

Pearlitic alloy steels are produced to international and custom specifications.

<table>
<thead>
<tr>
<th>OZZ Grade</th>
<th>Equivalent Specifications</th>
<th>Description</th>
<th>Chemical Composition (% Wt)</th>
<th>BHN</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>812</td>
<td>BS 3100 Gr BW2 &amp; BW3</td>
<td>1% Cr steel for abrasion resistance</td>
<td>0.45 - 0.55</td>
<td>0.75</td>
<td>0.5 - 1.0</td>
</tr>
<tr>
<td>813</td>
<td>BS 3100 Gr BW4</td>
<td></td>
<td>0.55 - 0.65</td>
<td>0.75</td>
<td>0.5 - 1.0</td>
</tr>
<tr>
<td>811</td>
<td>BS 3100 Gr BW4</td>
<td>2% Cr steel for abrasion resistance</td>
<td>1.0% (max)</td>
<td>0.75</td>
<td>0.5</td>
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</table>
# CARBON STEELS

A comprehensive range of Carbon steels is offered to international specifications.

<table>
<thead>
<tr>
<th>OZZ Grade</th>
<th>Equivalent Specifications</th>
<th>Chemical Composition (Wt. %)</th>
<th>Mechanical Properties</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>Mn</td>
<td>Yield (MPa)</td>
</tr>
<tr>
<td>801</td>
<td>ASTM A27 Gr U-60-30</td>
<td>0.25 (max)</td>
<td>0.9 (max)</td>
<td>230</td>
</tr>
<tr>
<td></td>
<td>BS 3100 Gr A1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>802</td>
<td>ASTM A27 Gr 70-60</td>
<td>0.35 (max)</td>
<td>1.0 (max)</td>
<td>260</td>
</tr>
<tr>
<td></td>
<td>BS 3100 Gr A2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DIN 1681 GS52 &amp; 52.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>803</td>
<td>ASTM A148 Gr 80-40</td>
<td>0.45 (max)</td>
<td>1.0 (max)</td>
<td>310</td>
</tr>
<tr>
<td></td>
<td>BS 3100 Gr A3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DIN 1681 GS60 &amp; 60.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>804</td>
<td>BS 3100 Gr AW2</td>
<td>0.40 - 0.50</td>
<td>1.0 (max)</td>
<td>325</td>
</tr>
<tr>
<td>805</td>
<td>BS 3100 Gr AW3</td>
<td>0.50 - 0.60</td>
<td>1.0 (max)</td>
<td>370</td>
</tr>
<tr>
<td>806</td>
<td>ASTM A148 Gr 80-50</td>
<td>0.18 - 0.25</td>
<td>1.2 - 1.6</td>
<td>320</td>
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<tr>
<td></td>
<td>BS 3100 Gr A4</td>
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<tr>
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<td>DIN 1681 GS62 &amp; 62.3</td>
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<tr>
<td>807</td>
<td>ASTM A148 Gr 90-60</td>
<td>0.25 - 0.33</td>
<td>1.2 - 1.6</td>
<td>370</td>
</tr>
<tr>
<td></td>
<td>BS 3100 Gr A5</td>
<td></td>
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</tr>
<tr>
<td>808</td>
<td>BS 3100 Gr A6</td>
<td>0.25 - 0.33</td>
<td>1.2 - 1.6</td>
<td>495</td>
</tr>
<tr>
<td></td>
<td>DIN 1681 GS70</td>
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</table>
## SG (Ductile) Irons

A comprehensive range of S.G. Irons is offered to international specifications for engineering applications.

<table>
<thead>
<tr>
<th>OZZ Grade</th>
<th>Equivalent Specifications</th>
<th>Mechanical Properties</th>
<th>Microstructure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yield (MPa)</td>
<td>U.T.S. (MPa)</td>
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<tr>
<td>750</td>
<td>ASTM A536 Gr 60-40-18</td>
<td>245</td>
<td>375</td>
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<td></td>
<td>BS 2789 Gr 400/18</td>
<td>DIN 1693 Gr GGG40</td>
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<tr>
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<td></td>
<td>SABS 936 Gr SG38</td>
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<tr>
<td>751</td>
<td>ASTM A536 Gr 65-45-12</td>
<td>275</td>
<td>420</td>
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<tr>
<td></td>
<td>BS 2789 Gr 420/12</td>
<td>SABS 936 Gr SG42</td>
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<tr>
<td>752</td>
<td>ASTM A536 Gr 80-55-06</td>
<td>310</td>
<td>500</td>
</tr>
<tr>
<td></td>
<td>BS 2789 Gr 500/7</td>
<td>DIN 1693 Gr GGG50</td>
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</tr>
<tr>
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<td>SABS 936 Gr SG50</td>
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<tr>
<td>753</td>
<td>ASTM A536 Gr 80-55-06</td>
<td>350</td>
<td>600</td>
</tr>
<tr>
<td></td>
<td>BS 2789 Gr 600/3</td>
<td>DIN 1693 Gr GGG60</td>
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<tr>
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<td></td>
<td>SABS 936 Gr SG60</td>
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</tr>
<tr>
<td>754</td>
<td>ASTM A536 Gr 100-70-03</td>
<td>400</td>
<td>700</td>
</tr>
<tr>
<td></td>
<td>BS 2789 Gr 700/2</td>
<td>DIN 1693 Gr GGG70</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>SABS 936 Gr SG70</td>
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<tr>
<td>755</td>
<td>ASTM A536 Gr 120-90-02</td>
<td>460</td>
<td>800</td>
</tr>
<tr>
<td></td>
<td>BS 2789 Gr 800/2</td>
<td>DIN 1693 Gr GGG80</td>
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<td>SABS 936 Gr SG80</td>
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</tr>
<tr>
<td>763</td>
<td>ASTM A123 Gr 850/550/10</td>
<td>550</td>
<td>850</td>
</tr>
</tbody>
</table>
### GREY CAST IRONS

A comprehensive range of Cast Irons is offered to international specifications.

<table>
<thead>
<tr>
<th>OZZ Grade</th>
<th>Equivalent Specifications</th>
<th>U.T.S. (MPa)</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>701</td>
<td>ASTM A48 Gr 25, BS 1452 Gr 180</td>
<td>DIN 1691 Gr GG20, SABS 1034 Gr 180</td>
<td>180</td>
</tr>
<tr>
<td>702</td>
<td>ASTM A48 Gr 30, BS 1452 Gr 220</td>
<td>DIN 1691 Gr GG20, SABS 1034 Gr 200</td>
<td>220</td>
</tr>
<tr>
<td>703</td>
<td>ASTM A48 Gr 35 &amp; 40, BS 1452 Gr 260</td>
<td>DIN 1691 Gr GG25, SABS 1034 Gr 250</td>
<td>260</td>
</tr>
<tr>
<td>704</td>
<td>ASTM A48 Gr 45, BS 1452 Gr 300</td>
<td>DIN 1691 Gr GG30, SABS 1034 Gr 300</td>
<td>300</td>
</tr>
<tr>
<td>705</td>
<td>ASTM A48 Gr 55 &amp; 60, BS 1452 Gr 350 &amp; 400</td>
<td>DIN 1691 Gr GG35 &amp; 40, SABS 1034 Gr 350 &amp; 400</td>
<td>350</td>
</tr>
<tr>
<td>708</td>
<td>ASTM A319 Class II Type D</td>
<td>-</td>
<td>Heat-resisting</td>
</tr>
</tbody>
</table>

### STAINLESS STEELS

A range of heat resistant Stainless steels is offered to ASTM specifications.

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This brochure only includes a selection of the most popular alloys produced. Additional technical information is available on request.
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