ZENITH STEEL GROUP, CHANGZHOU, CHINA
10-STRAND BILLET CASTER MODERNIZATION
In January 2019 Primetals Technologies was awarded a contract from the Chinese steel producer ZENITH STEEL GROUP Co. Ltd. to modernize their 10-strand billet caster located in the steelmaking shop #3 at Changzhou.

Primetals Technologies also supplied a bloom caster for big round casting sections in 2011 and added the new casting section 280x320 mm in 2016.

Start-up of the modernized billet caster is scheduled for March 2020.

**SOLUTION**

First SRD (Single Roll DynaGap) segments for long product casting machine worldwide with the possibility of soft and hard reduction of 20 mm and limited deviation of final casting section.

Modification to air-mist spray cooling and thus improved surface quality.

DynaPhase Online thermodynamic phase transformation model for calculation of material properties like thermal enthalpy, thermal conductivity, density and solid fraction.

Dynacs 3D secondary-cooling model capable of calculating the full 3D strand-temperature profile at any position along the strand for optimum adjustment of the secondary-cooling setpoints and the determination of the point of final strand solidification.

DynaGap Soft Reduction 3D fully automatic roll-gap control system allowing dynamic soft and hard reduction to minimize centerline segregation for improved internal strand quality.

**MAIN BENEFITS**

- Improved internal quality
- Reduced center porosity
- Reduced center segration
- Improved surface quality
- Increase of productivity up to 2 million tons per year
PLANT DATA

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat size</td>
<td>138 t</td>
</tr>
<tr>
<td>Billet caster capacity</td>
<td>2.0 Mtpy</td>
</tr>
<tr>
<td>Machine radius</td>
<td>10 m</td>
</tr>
<tr>
<td>Metallurgical length</td>
<td>31 m</td>
</tr>
<tr>
<td>Billet sections</td>
<td>160 x 160 mm</td>
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<tr>
<td>Billet lengths</td>
<td>6 - 12 m</td>
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<tr>
<td>Max. casting speed</td>
<td>2.4 m/min</td>
</tr>
<tr>
<td>Steel grades</td>
<td>cold heading, gear steel, wire rod, hard steel wire tyre cord, free cutting</td>
</tr>
</tbody>
</table>

SCOPE OF SUPPLY

- Roller blocks
- Spray headers
- Withdrawal and straightening units (WSU) with SRD segments
- New hardware for complete Level 1
- New soft and hard reduction models for billet casters, like: DynaPhase, Dynacs 3D and DynaGap Soft Reduction 3D
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