Steel Slag – Basic Oxygen Furnace Slag (BOS)

### Measures to influence the quality of the slag

<table>
<thead>
<tr>
<th>Process stage</th>
<th>Measures to influence the quality</th>
<th>Influenced properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw material preparation</td>
<td>selection, arrangement and pre-treatment of raw materials relating to the chemical composition of the BOS</td>
<td>chemical composition e.g. CaO, SiO₂, P₂O₅, FeOₓMgO, trace elements</td>
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<tr>
<td>Melting process</td>
<td>selection of appropriate process conditions (O₂ rate, lime and scrap rate)</td>
<td>temperature, composition of products (e.g. FeOₓ, CaO_free) volume stability</td>
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<tr>
<td>Heat treatment</td>
<td>controlled cooling</td>
<td>structure, porosity, strength, grain size distribution</td>
</tr>
<tr>
<td>Processing</td>
<td>crushing, sieving, grading, grinding</td>
<td>grain size, shape, grain size distribution</td>
</tr>
</tbody>
</table>

### BOS-Process

- **Hot metal**
  - **Liquid BOS**
  - **Converter gas**
  - **Scrap**

#### Processing

- **Air-cooling**
  - Slow cooling on air in slag pits to produce a crystalline material with grain sizes < 100 mm
  - weathering to achieve volume stable material
  - crushing, sieving, grading to be used as aggregates for road construction
  - grinding to a powdered material (< 300 µm) to be used as converter lime (fertiliser)

- **Crushing, sieving, grading**
  - to be used as aggregates for road construction and concrete
  - to be used as aggregates for road construction and hydraulic structures

#### Raw material preparation

- **Crushing, sieving, grading**
  - to be used as aggregates for road construction and hydraulic structures

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1) All process stages are subjected to a continuous production control like sampling, physical/chemical analysis and testing.