Key products and Solutions of BSEG

BAOSTEEL BSSF
TECHNOLOGY
FOR SLAG PROCESSING
Brief Introduction

With the cleaning of the production process as the center of the development of circular economy, and constantly improve the competitiveness of iron and steel industry at the same time, strengthen energy-saving emission reduction, environmental protection and comprehensive utilization of renewable resources is the inevitable choice for the development of iron and steel industry.

The BSSF slag processing technology developed by Baosteel is a world lead technology for molten slag processing and Baosteel owns patent for the technology. The greatest features of the process is environment friendly, short process flow and resource reusable.

The technology in the world takes the lead in realizing steelmaking slag does not fall to the ground, has been successfully in BaoSteel, Maanshan Iron and steel, Handan Iron and steel, JISCO, Qingdao Iron and steel, Liuzhou Iron and steel, DragonSteel, POSCO, JSW, Brazil CSP companies at home and abroad well-known steel enterprises application, the good environment benefit has been recognized by the society, won the customers and market recognition.
Use of different contraction of slag and iron
→ Good Separation of Slag from Iron

Use of medium for primary cooling & crushing, and use of separated space
→ High Safety

Adequate granulation
→ Good Stability
System process equipment
BSSF technological advantages

**short process flow**
Continuous treatment, from molten slag to granulated slag within 3-5 minutes
Small footprint

**cleaning of the production process**
Concentrate on the discharge of steam, is conducive to the installation of dust removal devices, reduce air pollution
Grain processing, storage silo slag, dust less to avoid environmental pollution

**resource reusable**
better separation between slag and steel
higher metal recovery rate
The finished product has uniform particle size, stable performance, and convenient for subsequent processing and utilization

**safety**
Use of medium for primary cooling & crushing.
Use of separated space
Features of BSSF

1. Better separation between slag & steel

Cooling steel  Slag  Steel separated by vibrating screen
### Distribution of Grain Sizes of Granulated Slag

<table>
<thead>
<tr>
<th>Particle Size (mm)</th>
<th>wt %</th>
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<tbody>
<tr>
<td>&gt;10</td>
<td>10.5</td>
</tr>
<tr>
<td>5-10</td>
<td>13.7</td>
</tr>
<tr>
<td>1.25-5</td>
<td>58.7</td>
</tr>
<tr>
<td>0.3-1.25</td>
<td>14.1</td>
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<tr>
<td>≤0.3</td>
<td>3.0</td>
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</table>

**Diagram:**
- The diagram shows the distribution of grain sizes of granulated slag with wt% values corresponding to different particle size ranges.

**Image:**
- An image of granulated slag is shown, indicating the physical material being discussed.
3 Machine Modal Series

- Single Chamber (3t/min)
- Dual-Chamber (2t/min)
- Single Chamber (2t/min)
- Single Chamber (1.2t/min)
4 Finished Slag Transporting System

- Combined Conveyor
- Bucket Elevator
- Vibrating Screen
- Storage Bin
- Discharge Valve

Ensure slag does not fall to the ground

No. 2 Steel Making Plant of Meishan Iron & Steel Co., Ltd

No. 1 Steel Making Plant of Baosteel
5 Trinity Technology

- tilting machine
- drum
- slag skimmer

Trinity technology make the system run more efficient

treatment rate $\geq 85\%$
Wet dust removal technology

- To overcome the smoke of the drum
- Large amount of steam
- Pipeline equipment is easy to scale
- Valve impeller is easy to corrosion

Spray tower
Chimney
Dewatering device
Fan

Dust emission $\leq 50\text{mg/Nm}^3$
Steel slag resource utilization

Tail slag → Micronization → Sand → Concrete

- Silicon fertilizer
- Soil conditioner
- Steel slag micropowder
- Rust removal blasting sand
- Special aggregate
- Permeable ground tile
- Wear resistant floor
- Floor tile, marble
# Key performance

<table>
<thead>
<tr>
<th>SN</th>
<th>Clients</th>
<th>Qty. (set)</th>
<th>Put into production</th>
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<tbody>
<tr>
<td>1</td>
<td>EAF Plant of Baosteel</td>
<td>2</td>
<td>2006/2009</td>
</tr>
<tr>
<td>2</td>
<td>Masteel No.4 Steel Slag Plant</td>
<td>3</td>
<td>2007/2008/2009</td>
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<tr>
<td>3</td>
<td>Luojing Steel Making Plant of Baosteel</td>
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<td>2007/2011</td>
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<td>4</td>
<td>Xinjiang Bayi Iron &amp; Steel Co., Ltd</td>
<td>2</td>
<td>2008/2009</td>
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<td>No.1 Steel Making Plant of Meishan Iron &amp;</td>
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<td></td>
<td>Steel Co., Ltd</td>
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<tr>
<td>5</td>
<td>India JSW Steel Ltd</td>
<td>3</td>
<td>2009/2009/2011</td>
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<td>7</td>
<td>Ningbo Iron &amp; Steel Co., Ltd</td>
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<td>2010</td>
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<td>8</td>
<td>No.2 Steel Making Plant of POSCO</td>
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<td>Steel Co., Ltd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SN</td>
<td>Clients</td>
<td>Qty. (set)</td>
<td>Put into production</td>
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<td>----</td>
<td>-------------------------------------------------------------------------</td>
<td>------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>10</td>
<td>Kwangyang Plant of POSCO</td>
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<td>11</td>
<td>Jiuquan Iron &amp; Steel Co., Ltd</td>
<td>1</td>
<td>2012</td>
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<tr>
<td>12</td>
<td>Handan Iron &amp; Steel Co., Ltd</td>
<td>2</td>
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<td>13</td>
<td>No.1 Steel Making Plant of Baosteel (new)</td>
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<td>2013, 2014</td>
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<td>Taiwan dragon steel</td>
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<td>2013, construction</td>
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<td>No.1 Steel Making Plant of Meishan Iron &amp; Steel Co., Ltd (new)</td>
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<td>2016</td>
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<td>CSP Brazil</td>
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<td>2016</td>
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<tr>
<td>20</td>
<td>Jiangsu Delong Nickel Industry Co. Ltd</td>
<td>2</td>
<td>Under construction</td>
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</table>

**Total application numbers:** 40 sets  
**Under construction:** 5 sets
Typical case  Baosteel steel slag treatment system
Project overview

- BOF: 300t × 3 sets;
  Steel design capacity: 8.3 million Tons/Annual;
  Slag production from BOF: 1.05 million Tons/Annual

- 5 sets of BSSF slag processing system

- 3 sets of wet spray dust removal system, the slag treatment process to produce the dust of the steam purification, so that the smoke into the atmosphere of the national emission standards.

- To build a comprehensive operation monitoring room to achieve remote visual centralized operation and production monitoring.

- Equipped with circulation water tank and a water supply system, drum and dedusting system uses the muddy water drain discharged into the circulation water tank, the precipitation overflow to the circulation of the clear water basin.

- Completed on 28 October 2014, With the annual processing capacity of 1 million 50 thousand tons of slag, to meet the requirements of a steel production capacity of 8 million 300 thousand tons/year, the drum processing rate reached 90%, becoming a world-class drum slag processing model works.
Process layout (plane)
Process layout (section)