LIBERTY Ostrava is an integrated steel business with an annual production capacity of approximately 3.6 million tonnes serving construction, machinery and oil & gas industries.

The company is a domestic leader in the manufacture of road barriers and tubes. In addition to the Czech market, it supplies its products to more than 40 countries around the world. Together with its subsidiaries in Ostrava, the company has 6,000 employees. The company manufactures its products with a minimum possible environmental footprint. It is part of LIBERTY Steel Group, which is part of GFG Alliance, a collection of global businesses and investments owned by Sanjeev Gupta and his family. The Alliance is structured into three core industrial pillars: LIBERTY Steel Group, ALVANCE Aluminium Group and SIMEC Energy Group. Headquartered in London, GFG Alliance employs 35,000 people, across 10 countries and has revenues of USD $20bn.

Liberty Ostrava Facilities
- 3 coke oven batteries
- 5 sinter belts
- 3 blast furnaces (2 operational)
- 4 tandem furnaces
- 3 continuous casting machines
- 6 rolling mills (incl. hot-strip mill, big and small Stiefel pipe mills, wire rod mill, heavy section mill, fine & medium section mill)
- Mine support and road barrier lines

Main Products
Hot rolled coils, sheets and strips, road barriers, merchant bars and sections, wire rods, tubular steels, mine supports, engineering products, transformer cores, threaded bars, rebars, hot rolled spring steel flat bars

Key Markets
Construction, machinery and automotive

Certification
ISO 9001
ISO 14001
OHSAS 18001
ISO 50001
Rock Bolts

Technical Characteristics of the System

- Easy length adjustment, due to the entire coarse thread over the whole length of the bar
- Shortening by cutting and extension by accessories also possible on the construction site
- Easier to screw compared to standard threads
- The coarse thread is resistant to rough handling and dirt, because the coarse thread cleans itself during assembling

On Request

- Special lengths & bundling
- Charpy-Test

Liberty Offers: Hot Rolled Right-Hand Threaded Bars

- Ø 16 mm in length of 6000 mm or 12000 mm
- Ø 22 mm in length of 6000 mm or 12000 mm
- Ø 25 mm in length of 6000 mm or 12000 mm
- Ø 28 mm in length of 6000 mm or 12000 mm

Hot Rolled Ribbed Bars

- Ø 18,5 mm in length of 6000 mm or 12000 mm
- Ø 20 mm in length of 6000 mm or 12000 mm
- Ø 21,7 mm in length of 6000 mm or 12000 mm
- Ø 31 mm in length of 6000 mm or 12000 mm

Service

- Worldwide shipments including all administrative formalities
- Fast communication, flexibility & reliability
- On time delivery
- Quick and accurate document handling
# Technical Specification

## Hot Rolled Ribbed Bars

<table>
<thead>
<tr>
<th>Diameter [mm]</th>
<th>Grade</th>
<th>$R_y$ (min) [MPa]</th>
<th>Yield Load [kN]</th>
<th>$R_m$ (min) [MPa]</th>
<th>Ultimate Load [kN]</th>
<th>Elongation $A_5$ (min) [%]</th>
<th>Weight [kg/m]</th>
<th>Area [mm$^2$]</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.5</td>
<td>470/570</td>
<td>470</td>
<td>120</td>
<td>570</td>
<td>145</td>
<td>15</td>
<td>2.11</td>
<td>255</td>
</tr>
<tr>
<td>20</td>
<td>450/650</td>
<td>450</td>
<td>141</td>
<td>650</td>
<td>204</td>
<td>20</td>
<td>2.47</td>
<td>314</td>
</tr>
<tr>
<td>21.7</td>
<td>640/800</td>
<td>640</td>
<td>237</td>
<td>800</td>
<td>296</td>
<td>17</td>
<td>2.90</td>
<td>370</td>
</tr>
<tr>
<td>31</td>
<td>450/700</td>
<td>450</td>
<td>351</td>
<td>700</td>
<td>547</td>
<td>20</td>
<td>6.28</td>
<td>781</td>
</tr>
</tbody>
</table>

By using the Liberty Rock Bolts you are assured that all above criteria are satisfied, which will be specified in a 3.1 certificate issued of each delivery.

## Thread Bar with Continuous, Right-Hand, Rolled on Thread

<table>
<thead>
<tr>
<th>Diameter [mm]</th>
<th>Grade</th>
<th>$R_y$ (min) [MPa]</th>
<th>Yield Load [kN]</th>
<th>$R_m$ (min) [MPa]</th>
<th>Ultimate Load [kN]</th>
<th>Elongation $A_5$ (min) [%]</th>
<th>Weight [kg/m]</th>
<th>Area [mm$^2$]</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>450/700</td>
<td>450</td>
<td>90</td>
<td>700</td>
<td>141</td>
<td>15</td>
<td>1.58</td>
<td>201</td>
</tr>
<tr>
<td>22</td>
<td>640/800</td>
<td>640</td>
<td>245</td>
<td>800</td>
<td>304</td>
<td>18</td>
<td>2.98</td>
<td>380</td>
</tr>
<tr>
<td>25</td>
<td>500/700</td>
<td>500</td>
<td>246</td>
<td>700</td>
<td>344</td>
<td>20</td>
<td>3.85</td>
<td>491</td>
</tr>
<tr>
<td>28</td>
<td>640/800</td>
<td>640</td>
<td>395</td>
<td>800</td>
<td>493</td>
<td>18</td>
<td>4.83</td>
<td>616</td>
</tr>
</tbody>
</table>

By using the Liberty Rock Bolts you are assured that all above criteria are satisfied, which will be specified in a 3.1 certificate issued of each delivery.
Accessories

Hex Nut

<table>
<thead>
<tr>
<th>Article No.</th>
<th>SW [mm]</th>
<th>L [mm]</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 R 2002</td>
<td>36</td>
<td>45</td>
<td>0.31</td>
</tr>
<tr>
<td>22 R 2002</td>
<td>41</td>
<td>50</td>
<td>0.39</td>
</tr>
<tr>
<td>25 R 2002</td>
<td>46</td>
<td>55</td>
<td>0.53</td>
</tr>
</tbody>
</table>

Coupler

<table>
<thead>
<tr>
<th>Article No.</th>
<th>SW [mm]</th>
<th>L [mm]</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 R 3003</td>
<td>36</td>
<td>100</td>
<td>0.60</td>
</tr>
<tr>
<td>22 R 3003</td>
<td>40</td>
<td>110</td>
<td>0.71</td>
</tr>
<tr>
<td>25 R 3003</td>
<td>45</td>
<td>120</td>
<td>0.94</td>
</tr>
</tbody>
</table>
Contact with the mill

Europe
Liberty Commercial Czech Republic k.s.
Vratimovská 689/117, 719 00 Ostrava (CZ)
ID: 05433266
VAT: CZ05433266
E: sales.ostrava@libertysteelgroup.com
T: +420 595 687 787

www.libertyostrava.cz

Liberty Commercial Germany GmbH
Am Brühl 17, 40878 Ratingen (DE)

Liberty Commercial PL Sp. z o.o.
ul. Francuska nr. 36, 40-506 Katowice (PL)

For further information visit www.libertysteelgroup.com