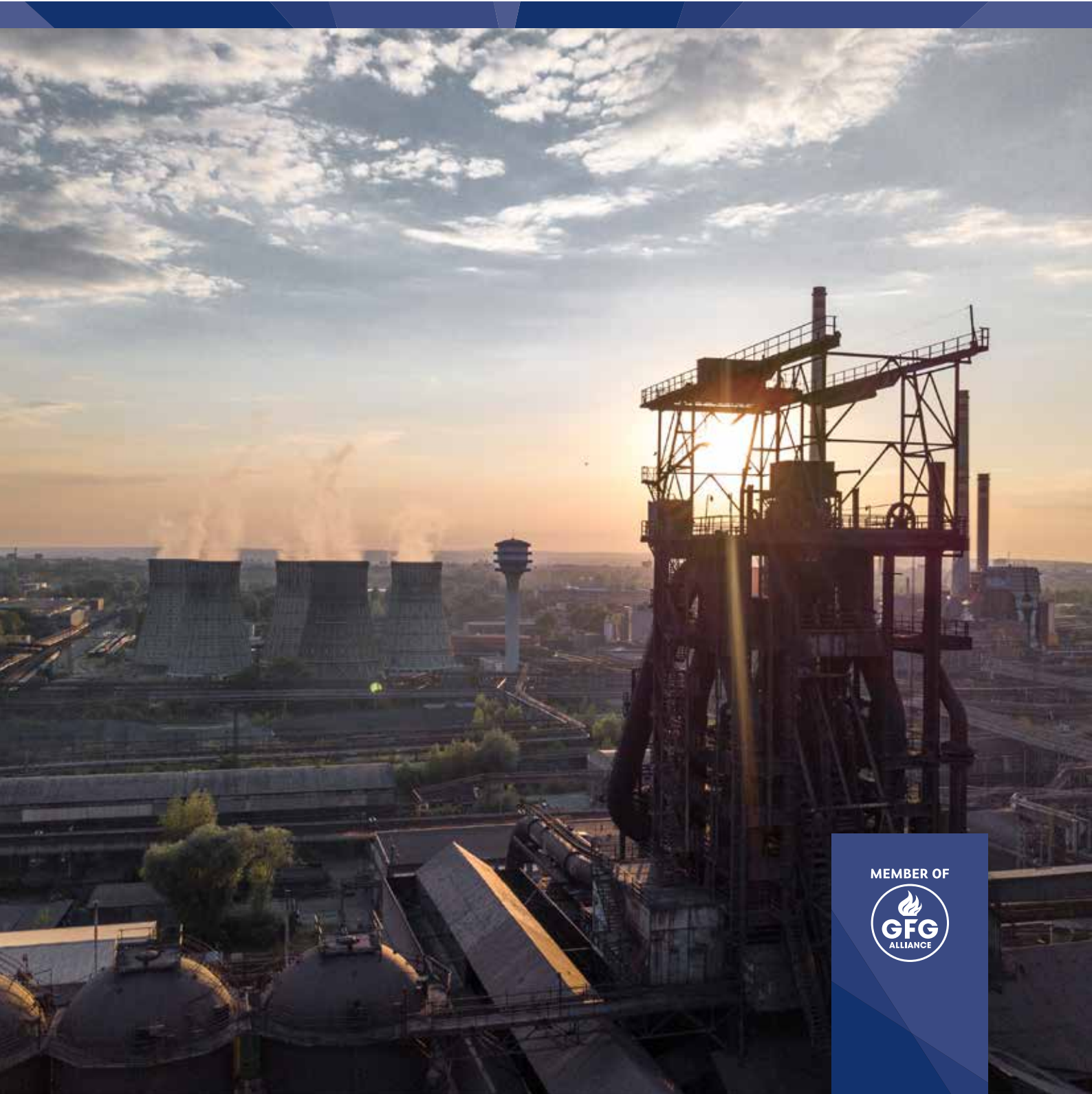


Rock Bolts



LIBERTY Ostrava
www.libertysteelgroup.com



MEMBER OF



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 manufacturing 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
- 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, thread bars, rebars

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

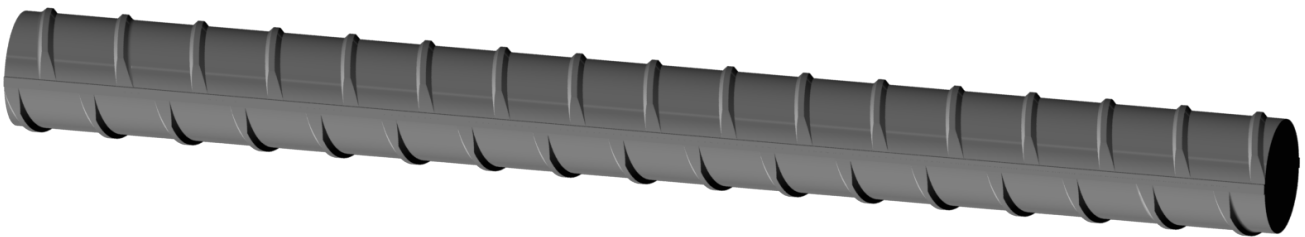
Service

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



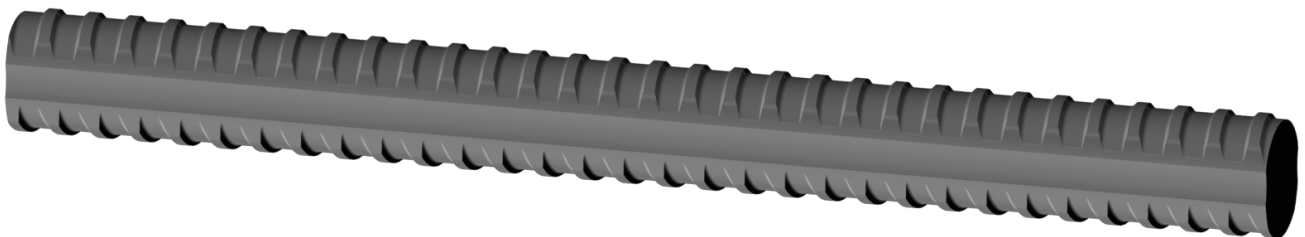
Technical Specification

Hot Rolled Ribbed Bars



Nominal Diameter d [mm]	Steel Grade	Yield strength $R_{e, nom}$ [MPa]	Yield Load $F_{e, nom}$ [kN]	Tensile strength $R_{m, nom}$ [MPa]	Ultimate Load $F_{m, nom}$ [kN]	Elongation A_5 [%]	Weight [kg/m]	Nominal Cross Section A [mm ²]
18.5	470/570	470	120	570	145	15	2.11	255
20	450/650	450	141	650	204	20	2.47	314
21.7	640/800	640	237	800	296	17	2.90	370
31	450/700	450	351	700	547	20	6.28	781

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

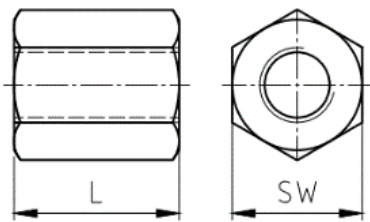


Nominal Diameter d [mm]	Steel Grade	Yield strength $R_{e, nom}$ [MPa]	Yield Load $F_{e, nom}$ [kN]	Tensile strength $R_{m, nom}$ [MPa]	Ultimate Load $F_{m, nom}$ [kN]	Elongation A_5 [%]	Weight [kg/m]	Nominal Cross Section A [mm ²]
16	450/700	450	90	700	141	15	1.58	201
22	640/800	640	245	800	304	18	2.98	380
25	500/700	500	246	700	344	20	3.85	491
28	640/800	640	395	800	493	18	4.83	616

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.

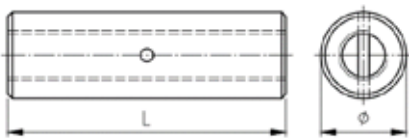
Accessories

Hex Nut



Article No.	SW [mm]	L [mm]	Weight [kg]
16 R 2002	36	45	0.31
22 R 2002	41	50	0.39
25 R 2002	46	55	0.53

Coupler



Article No.	SW [mm]	L [mm]	Weight [kg]
16 R 3003	36	100	0.60
22 R 3003	40	110	0.71
25 R 3003	45	120	0.94

Contact with the mill

Czech Republic and Other Countries

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

Germany

Liberty Commercial Germany GmbH

Am Brüll 17, 40878 Ratingen (DE)

E: matthias.scheibe@libertysteelgroup.com

T: +49 162 42 78 799

Poland

Liberty Commercial PL Sp. z o. o.

Francuska 36, 3rd floor, 40-506 Katowice (PL)

E: lcpl.biuro@libertysteelgroup.com

T: +48 32 661 98 90

For further information visit www.libertysteelgroup.com

