SANDVIK

Omega-Bolt® 120 / 120 C

Product code: OB12 / OB12 C
Product specification: Inflatable rock bolts
Category: Friction rock bolts for mining and tunneling

Introduction

Omega-Bolt® is manufactured from high-strength steel to assure high loading capacity and good elongation. Omega-Bolt® can accommodate large ground movement and can be utilized to stabilize underground excavation even in weak rocks. Omega-Bolt® is produced with modern tube-forming technology and 100% robotic assembly under strict quality control procedures. After two decades of experience, Omega-Bolt® now features a “full-open gap profile”, which allows the best quality of corrosion protection, avoiding areas with a too thin or too thick coating.

Main Advantages

- Immediate load-bearing capacity after installation
- Extra elongation to accommodate even large deformations
- Immediate full load-bearing capacity over the entire installed bolt length
- Trouble-free installation in water-bearing boreholes
- Low sensitivity to vibrations caused by blasting works
- Ability to maintain load-bearing capacity even when undergoing deformations
- Safe and easy installation
- No additional grouting materials are required for installation
- Flexibility in case of differing or varying boreholes



Omega-Bolt® 120 C - Thermoplastic coating for corrosion protection and improved service life

Major parts of Omega-Bolt® are delivered in black steel and are intended for temporary rock reinforcement
In a corrosive environment, or when a longer service life is required, Sandvik Ground Support offers a corrosion-protected version, where the entire rock bolt is covered by a scratch-resistant and flexible thermoplastic coating. The thermoplastic coating is applied evenly on all surface parts, thanks to advanced spraying technology. A specially developed “full-open gap” profile creates a physical barrier to prevent water and corrosive elements from attacking the external steel surface Omega-Bolt®.

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Technical Specifications

	Unit	Omega-Bolt® 120
Nominal Ultimate Load kN(1)	kN	120
Nominal Yield Load	kN	100
Minimum Elongation A_{125} (2)	%	10
External omega profile diameter	mm	27
External original round profile diam.	mm	41
Wall thickness	mm	2
Inflation ferrule stem diameter	mm	30
Inflation ferrule rim diameter	mm	38
Upper end-cup diameter	mm	28
Required borehole diameter	mm	32-40
Recommended borehole diameter	mm	36-38
Inflation water pressure	bar	300

(1) Tensile test performed on the entire bolt, after profile inflation, i.e., simulating real condition after rock bolt's installation
(2) Elongation measured on expanded profile, simulating real working conditions after installation

Type of coating - Thermoplastic Powder fused on steel surface

Chemical resistance in acid conditions (up to 60 °C)	Excellent	ISO 2812 and ISO 4628
Chemical resistance in alkaline condition (up to 60 °C)	Excellent	ISO 2812 and ISO 4628
Coating thickness on profile	≥150 µm	
Coating thickness on inflation bushing	<300 µm	
Durability (*) in class Im3	>15 years	ISO 12944 part 6, underground conditions
Durability (*) in class C5-M	>15 years	ISO 20340, for offshore applications

Omega-Bolt® Full Product Range of Bolts and Accessories

- Omega-Bolt® 240 – 240C for extra loading capacity
- Omega-Bolt® 160/200: cost-effective solutions for 45-51 mm boreholes
- Connectable Omega-Bolt® 240 for special applications when long inflatable rock bolts are required
- Complete range of flat and domed face plates, including the innovative Omega Opti-Plate 120
- Eye-ball to facilitate installation in broken ground, centralizers to facilitate installation through mining mesh, and ASTM color-code plugs
- Pneumatic, electric, and hydraulic high-pressure inflation pumps and chucks for manual or mechanized installation

All dimensions, weights, quantities and specifications are those applicable at the time of this publication and may be amended from time too time. Please contact your local representative for final confirmation of any key specifications.