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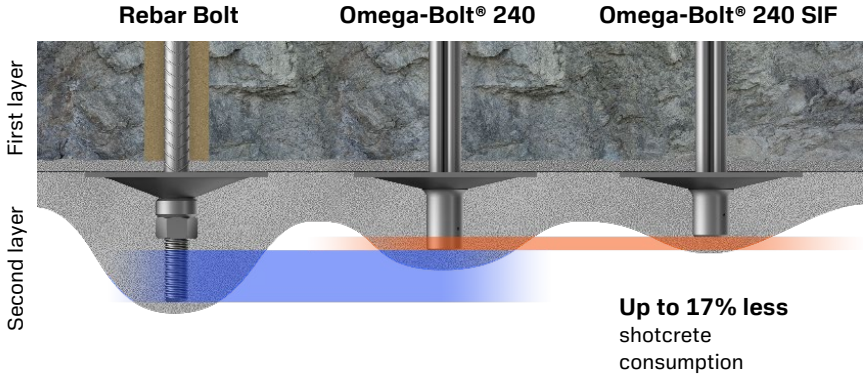
Omega-Bolt® 240 SIF/ 240 SIF C

Product code: OB24/OB24 C
Product specification: Mining and tunneling
Category: Friction bolts / Inflatable

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.

Omega-Bolt® 240 SIF (Short Inflation Ferrule) is a special version, featuring a new geometry for the two ends. Following installation, a part of any rock bolt remains outside the drilled hole. In some applications, our customers need to minimize the part of the rock bolt extruding the drilled hole. In mining, this occurs often in low-seam operations. In tunneling featuring waterproofing membranes, the protruding portion must be covered with additional shotcrete, resulting in unnecessary additional costs and time. In such scenarios, Omega-Bolt® 240 SIF provides the optimal solution.



Assumed shotcreting requirement:
- 15 mm shotcrete (total thickness)
- 3 mm bolt head coverage (levelling layer)

Main advantages

— 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
— No additional grouting materials are required for Installation
— Optimized protruding section for saving on shotcrete and providing free headroom
— Maximized “embedded length” i.e., expanded profile in direct contact with the surrounding rock

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Technical specifications

	Unit	Omega-Bolt® 240 SIF
Nominal ultimate load kN [1)]	kN	240
Nominal yield load	kN	200
Minimum elongation A_{125} [2)]	kN	10
External omega profile diameter	%	36
External original round profile diam.	mm	54
Wall thickness	mm	3
Inflation ferrule stem diameter	mm	41
Inflation ferrule rim diameter	mm	46
Upper end-cup diameter	mm	38
Required borehole diameter	mm	43-52
Recommended borehole diameter	mm	45-51
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

Net Embedded Length

Omega-Bolt® 240 SIF can be delivered in standard length, i.e., where the bolt's requirements refer to the end-to-end length measure.

End-to-end bolt length mm	Net embedded length mm
3000	2875
3600	3475
4000	3875
50000	4875

Omega-Bolt® 240 SIF 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 to 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®.

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 alkane conditions (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

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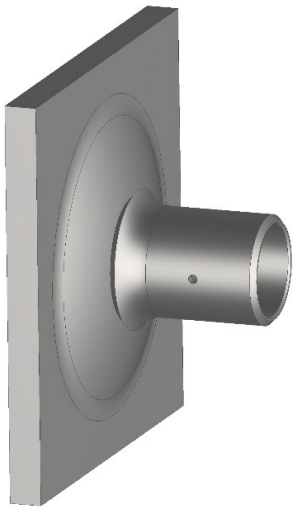
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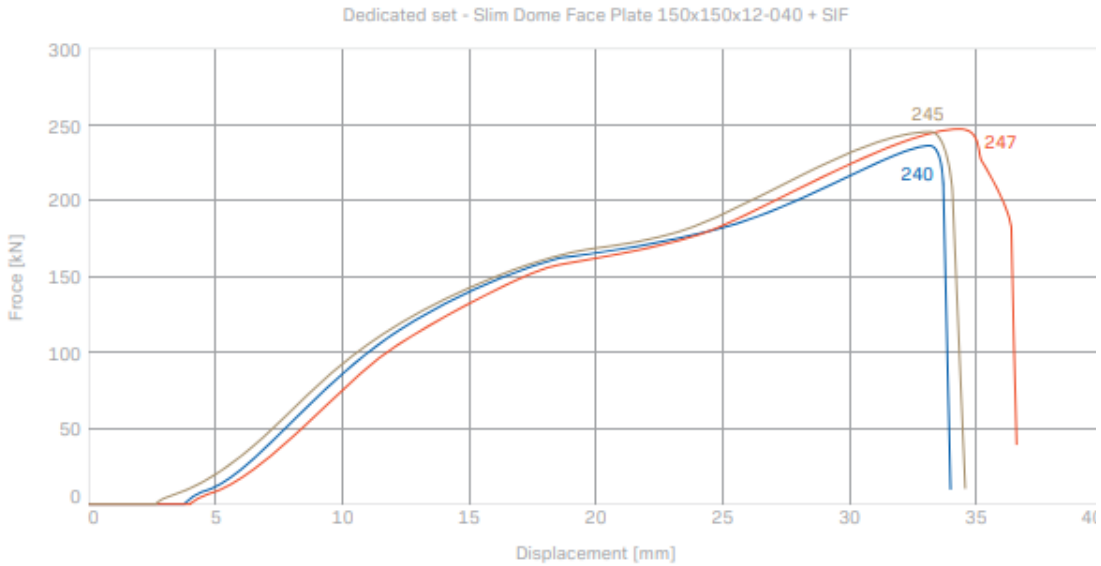
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Slim Dome Face Plate 12 mm optimized for Omega-Bolt® 240 SIF

The new “Slim Dome” face plate featured the following benefits:

- “Stick out” section further decreased to 75 mm in total (ferrule + plate) - Outstanding load capacity
- Progressive flattening grants a smooth absorption of any convergence of the walls
- Repeatable and reliable results - System reaching the maximum rock bolt loading capacity - No damage on the inflation ferrule





SIF kit for Omega inflation chuck

Due to a change in its geometry, the SIF ferrule requires a slightly modified Omega-Bolt® inflation chuck.

Sandvik can provide new Omega SIF installation chucks or a conversion ring for standard Omega inflation chucks.

Omega-Bolt® Full Product Range of Bolts and Accessories

- Omega-Bolt® 120 kN, the most popular mining bolt, 35-38 mm boreholes
- Opti-Load hemispherical washer and face plate for maximizing performance of Omega-Bolt® 120
- 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, ASTM color code plugs
- Pneumatic, electric, and hydraulic high-pressure inflation pumps and chucks for manual of mechanized installation

Legal disclaimer

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

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