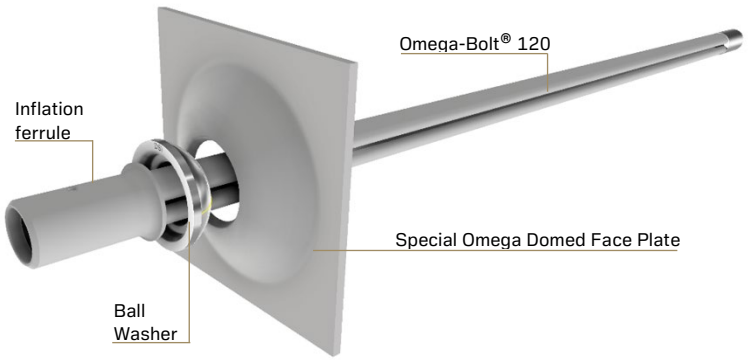
SANDVIK

Omega Bolt® Opti-Load System

Product code: OOPT120
Product specification: Mining and tunneling
Category: Friction bolts / Inflatable

Introduction

Opti-Load System is a complement to Omega-Bolt® 120 inflatable rock bolts, a best-seller product in underground mines all over the world. Opti-Load System is intended to optimize the performance of the rock bolt in its critical area, i.e. the interface between inflation ferrule and face plate. The system is formed by a patent protected Ball Washer and an Omega Domed Face Plate of appropriate geometry and steel grade. Both the ball washer and face plate are mounted on a regular Omega-Bolt® 120 just before installation. The ball washer grants a better load transfer between bolt and plate and enables compensating for misalignment between rock bolt and face plate.



Key features

- Dome plate flattening gives a clear signal about the tensile status of the bolt, triggering appropriate actions
- Punch-through occurs also at a load close to the maximum capacity of the bolt (120 kN), granting the maximum safety level available
- System failure occurs only at a great level of deformation (50 mm) and at a level close to maximum capacity of the bolt
- The Ball Washer can compensate for misalignment of up to 15% without a reduction in load capacity
- All-in-all this system can absorb higher deformation at high load, resulting in higher energy absorbed

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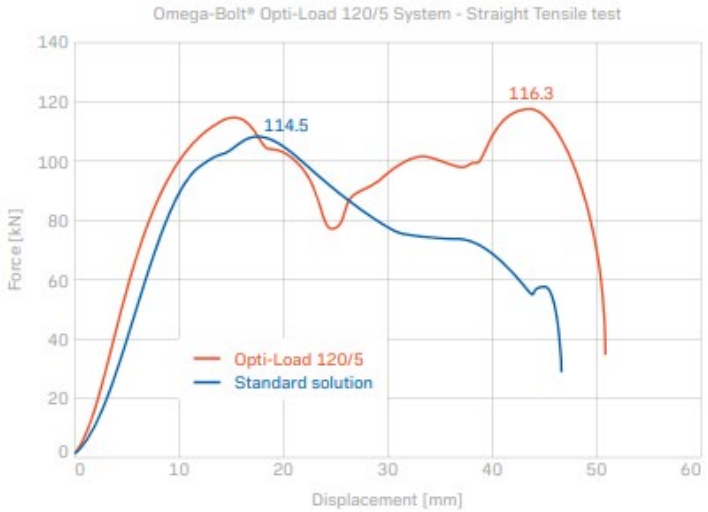
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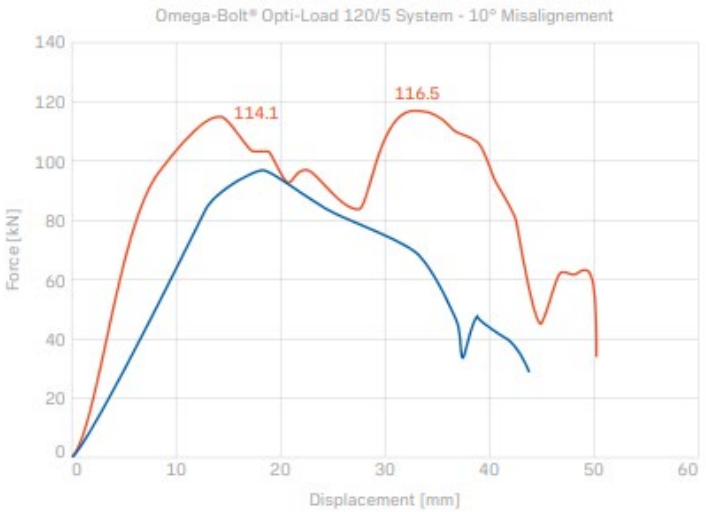
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Physical properties

Sandvik is committed to product optimization and the highest quality standards. Several case studies on inflatable rock bolts (including Omega 120) showed that the interface between the inflation ferrule and the face plate represented a weak point. Following ASTM F432 -13 recommendations, Sandvik performed a large number of laboratory tests to measure load and displacement, using a variety of face plates associated with Omega-Bolt® with or without the patented ball washer.

Test results prove that the ball washer positively impacts the load capacity of the systems, and associated with the correct face plate allows enhanced absorption of deformation. Finally, the ball washer improves the capacity of the system to compensate for misalignment between bolts and plate up to 10°.





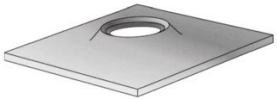
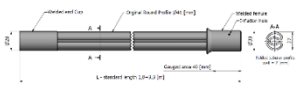
Product specifications

- Maximum load capacity of the system, with face plate capacity close but inferior to max profile capacity (= about 120 kN)
- The system absorbs a higher amount of deformation, in the range of 40-50 mm
- Load/deformation curve shows a two-step path
  - In the first step, the dome-shaped plate flattens at above mentioned high value of load (ca 110 kN)
  - In the second step, inflation ferrules deform until failure, which takes place at a similar value (ca 110 kN).
- The system tolerates up to 10° misalignment between bolts and face plates caused by uneven rock surface, a common situation in underground mining

Notes

We have a Quality Management System according to ISO 9001:2015

Product accessories

	Opti-Load Dome Plate	Opti-Load Ball Washer	Intended for Omega-Bolt® 120
Opti-Load System			

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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