

## Pc-Bolt M27/15 Combination Bolt/Rock Support (G3)

Combination Bolt designed for immediate and permanent rock anchoring



Pc-Bolt M27 combination bolt for rock support. The bolt is used with an expansion shell for immediate work safety support. The bolt is subsequently grouted for permanent anchoring. The bolt is approved by both the Norwegian Public Roads Administration and Norwegian National Rail Administration for use as a combination bolt/rock support bolt in tunnels.

### Stock program:

M27x1500\*      M27x4000\*  
M27x2400\*      M27x5000\*  
M27x3000\*      M27x6000

\* Supplied with the expansion shell fitted

### Technical information:

Material: 41Cr4/40Cr compliant with DIN EN 10083-3  
Heat treated in accordance with GB/T 16923  
Material tube diameter 25.0 x 5.0 mm  
Thread length: 2xM27x150mm (threads are cold rolled)  
Weight: 2.51 kg/m

### Specifications:

Reference drawing PTC-110 series

Characteristic values:

Dimension:	Tension area A <sub>s</sub> Thread – stem	Yield ReH	Tensile Rm	Ductility AGT
M27/15x3.0	314 N/mm <sup>2</sup>	Min. 500 N/mm <sup>2</sup>	Min. 600 N/mm <sup>2</sup>	Min. 8%

### Minimum load capacity:

Point anchored: Yield: 157kN      Failure: 186kN

Fully grouted: Yield: 157kN      Failure: 186kN

Typical test values show that we achieve approx. 200 kN for both shear and tension at failure load. Tests done at SINTEF. recommended torque: 200-300 Nm. Tests show that the specified torque range normally generates 40-60 kN of bolt tension, with the possibility of individual values as low as 10 kN or as high as 70 kN due to varying friction.

### Corrosion protection/Pc-Coat

Hot-dip galvanization is carried out in compliance with NS-EN-ISO 1461 and epoxy powder coating in compliance with NS-EN 13438. With regard to coating thickness and further information, please see Document Q/PTC-T19A – Specification for Pc-Coat – SVV/JBV. Please also refer to the Pc-Coat Product Data Sheet and accompanying FDV documentation.

**Grouting:** Typical water/cement-ratio is 0,3-0,4. For more detailed information, please see own brochure "Grout recommendations" on [www.pretec.no](http://www.pretec.no).

### Recommended drilling:

Drill diameter: 45-48mm

Drill depth: Bolt length + 150mm

### Accessories:

Spherical plate with holes for evacuation of air and expansion shell M27x45/45-48 zinc plated.

Pc-Packer to be used in the event water ingress to the borehole. See own product data sheet on [www.pretec.no](http://www.pretec.no).