

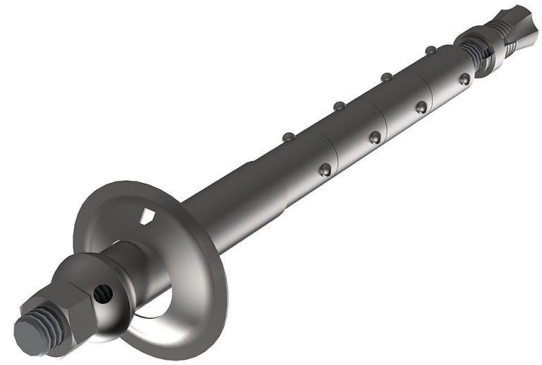
DESCRIPTION

A CT-bolt is a type of anchor used in underground mining to ensure the stability of rocks and prevent the collapse of galleries and tunnels. This type of bolt consists of a steel bar with a head at one end and an anchoring device at the other. The anchor device consists of a plate and bulb that expands when tension is applied to the rod, anchoring the bolt to the surrounding rock.

CT-bolts are used in a variety of underground mining projects, especially where rock conditions are unstable or higher strength is required. These can be projects for the extraction of minerals such as gold, silver or copper, or tunneling projects for the transport of materials or the construction of infrastructure such as dams and bridges

FIELD OF APPLICATION:

- **Underground mining:** CT-bolts are widely used in underground mining to ensure the stability of rocks and prevent the collapse of galleries and tunnels. These are used in all types of mines, from coal mines to gold and silver mines.
- **Tunnel construction:** CT-bolts are used in tunnel construction to maintain the stability of the surrounding rocks and prevent tunnel collapse. These are used in the construction of tunnels for railways, roads, and other infrastructure.
- **Dam and bridge construction:** CT-bolts are used in dam and bridge construction to ensure the stability of the surrounding rock and soil. These are used to secure tension cable anchors and structural supports.
- **Slope and embankment stabilization:** CT-bolts are used in slope and embankment stabilization in construction and mining to prevent landslides and ground collapse.
- **Projects with high seismic activity:** They are ideal bolts for projects, both tunnels and mines with high seismic activity, as they are dynamic bolts that combine different types of anchoring to offer greater resistance



ADVANTAGES OF THE CT-BOLTS

- **High strength and stability:** CT bolts are designed to withstand high tensile loads and provide a very solid fixation in the surrounding rock, which improves the stability and strength of structures and terrain.
- **Easy installation:** Installing CT-bolts is relatively simple and quick compared to other fastening methods, which can reduce costs and construction times.
- **Customization:** CT-bolts are available in different sizes and configurations, allowing them to be adapted to different situations and fastening needs.
- **Great seismic performance:** due to their combined anchoring system, CT-bolts are an ideal system in projects with high seismic activity.
- **Increased safety:** The use of CT-bolts reduces the risk of accidents in construction and mining, as they provide greater stability and reduce the risk of structure collapse.
- **Improved performance:** The use of CT-bolts can improve the performance of mining and construction machinery and equipment, as they provide greater stability and reduce vibration and terrain displacement

TECHNICAL PROPERTIES OF THE CT-BOLTS

SPECIFICATIONS	CT-M20	CT-M22	CT-M33
Variable lengths (m) maximum	8	8	8
Diameter (mm)	20	22	32
Thread	M20	M22	M32
Anchor Ultimate Load Yield Point (Kn)	141	194	345
Anchor Ultimate Load Breaking Point (Kn)	169	242	415
Grouted Ultimate Load Yield Point (Kn)	164	237	415
Grouted Ultimate Load Breaking Point (Kn)	198	296	480
Recommended Borehole Diameter (mm)	45-52	45-48	63-67
Weight (Kg x m)	2.9	3.7	8.15

INSTALLATION PROCEDURE

- Drill the borehole
- Insert the assembled CT-Bolt into the pre-drilled borehole
- Press the bolt plate energetically against the ground surface
- By the activation of the expansion anchor provides immediate mechanical point anchorage
- Attach the grouting adaptor to the anchorage and pump the grout into the bolt until the grout is visible

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