



X-Roc

Drill faster and deeper with less bit wear

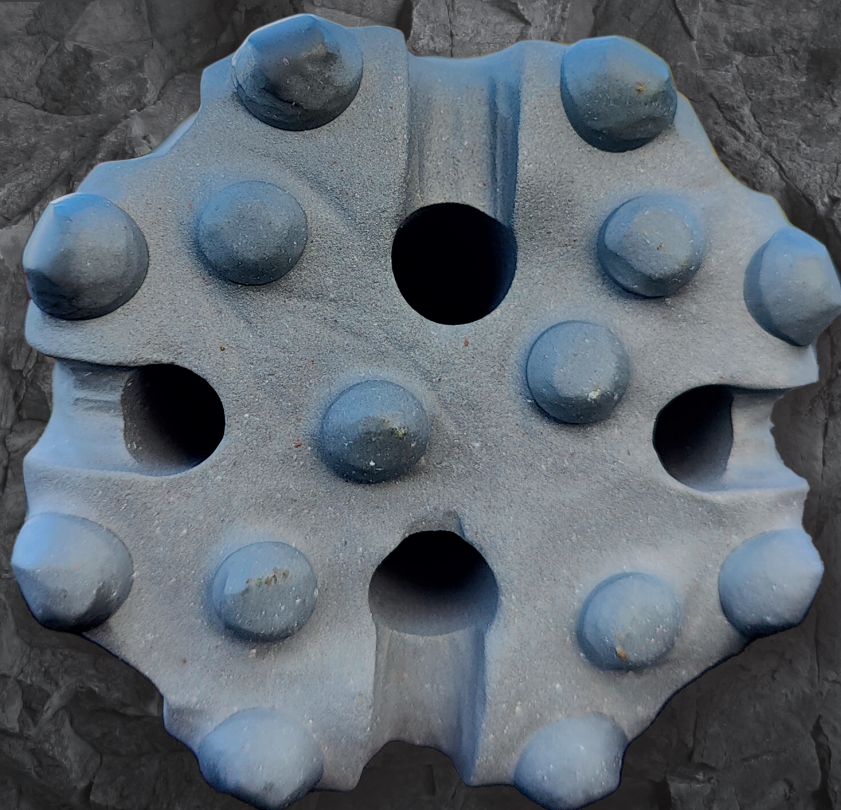


X-ROC

Drilling just got a whole lot faster

Introducing our new 115-millimeter X-Roc DTH drill bit that allows you to drill faster, deeper and with less wear than conventional DTH drill bits.

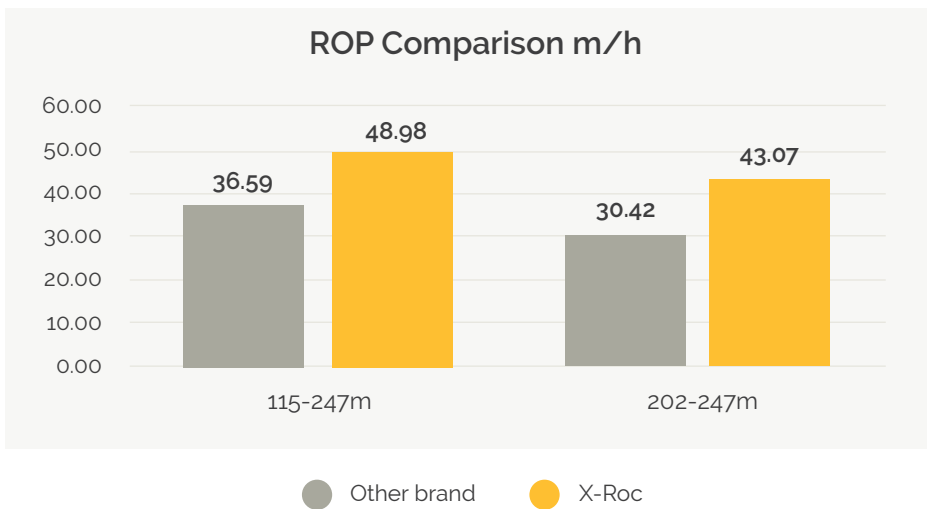
Tested on Scandinavian well and geothermal sites, X-Roc increased drilled meterage on each drill bit, saved on diesel and achieved operational time savings on each hole.



Drilled 745 m with Vacpro, Finland
in abrasive and hard Granite rock

X-Roc 115 DTH drill bits are capable of penetrating the hardest rock formations in Europe faster than conventional drill bits.

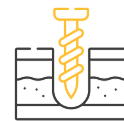
Discover how X-Roc can drive down your operational costs.



X-Roc 115 achieved in comparison tests



Diesel savings up to 15%



Increase of drilled meterage on each drill bit of 20-30%



Significant time savings on comparison holes

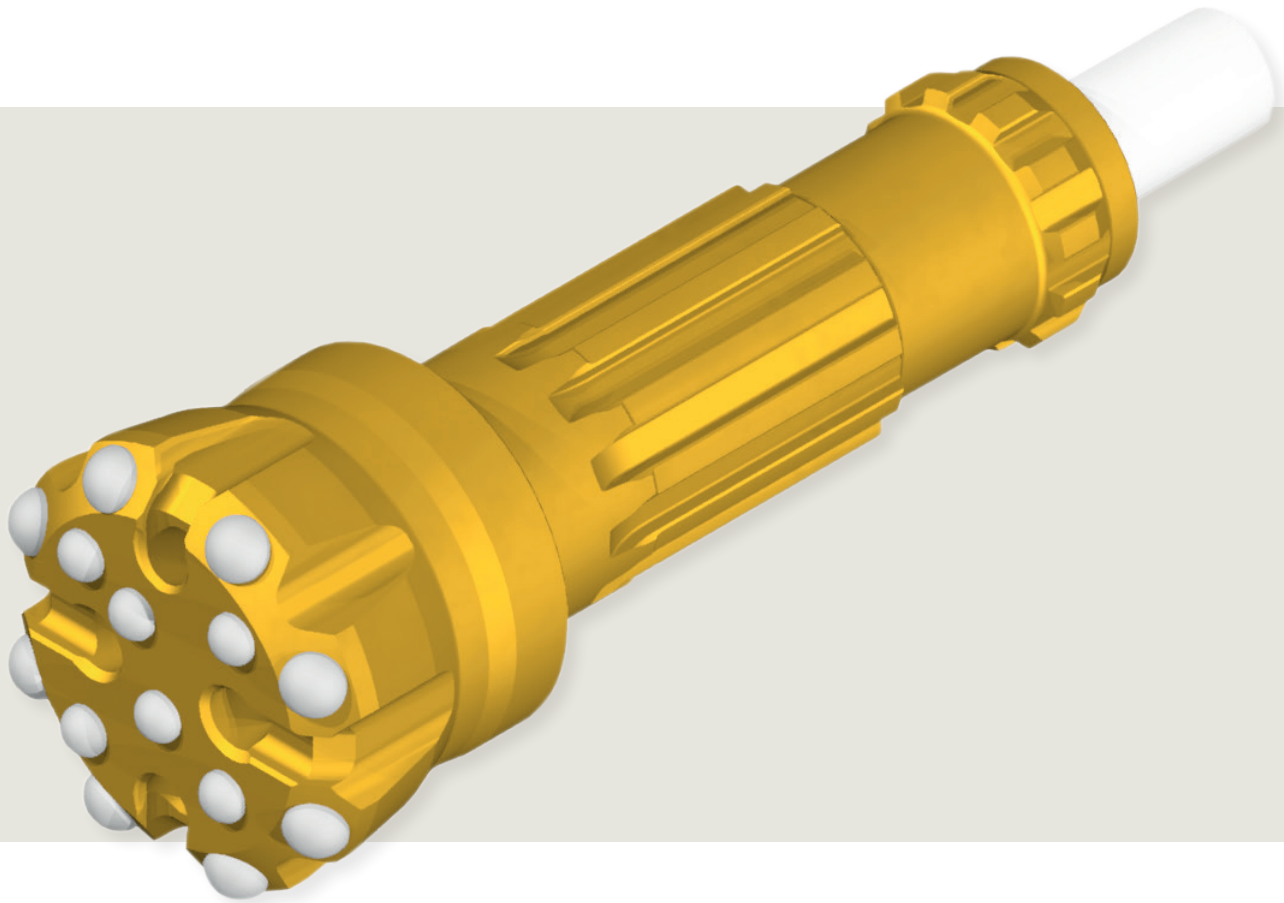
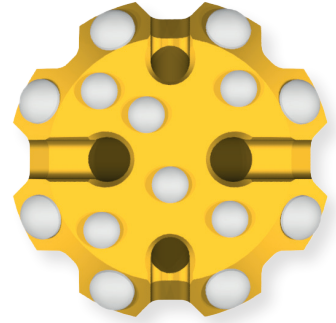
115 drill bit	Other brand	X-Roc	Result
Ø new in mm	115.72	115.73	
Ø used in mm	114.53	114.71	
Wear (mm)	1.19	1.02	-14.3%
Metres drilled	208	208	
Wear (mm/100 m)	0.572	0.490	
m/h from 115 m to 247 m	36.59	49.98	33.9%
m/h from 202 m to 247 m	30.42	43.07	41.6%
Drill time in minutes	230	175	-23.9%

All data is measured from 115 m to 247 m of rock drilling, except start od and end od, in this example.

X-Roc 115 in profile

The X-Roc 115 DTH drill bit is the culmination of extensive design, laboratory, and field tests to machine a drill bit that would surpass what is available on the market. The result is X-Roc, a powerful DTH drill bit that penetrates the toughest rock formations while reducing total operational costs.

The most visible feature is four flushing holes to minimize drilling time, lower wear, while efficiently removing cuttings.



Part number	Description	No. of gauge buttons	Size of gauge buttons	No. of face buttons	Size of face buttons	Flushing holes	Button shape
7020100001	X-Roc 115 FF SB TD40	8	16 mm	6	13 mm	4	Semi ballistic
7020100002	X-Roc 115 FF DM TD40	8	16mm	6	13mm	4	Dome

DRILL FASTER AND DEEPER WITH LESS BIT WEAR

The right choice on so many levels

TerraRoc recognizes its responsibilities to the environment. Our innovative drill bit delivers durability, longer life, with a low environmental impact compared to similar brands on offer today.

X-Roc drill bits are made from climate compensated, carbon neutral steel, close to the drilling sites in Scandinavia they were designed for. This cuts environmental impact on transportation, while the production process not only uses recycled raw material but also fossil free electricity.

THE
RESPONSIBLE
CHOICE
Made in Finland



Case Studies

KARESUANDO, SWEDEN

Site Data:

15- hole project, 18 to 20 m to bedrock. Hole depth 250 m

The project to provide energy heating to a school in the northern part of Sweden offered challenging ground conditions with highly fractured zones down to 150 m together with iron ore sections.

From 150 m to 230 m the bedrock was a hard and abrasive rock formation, which was challenging for the bit to pass through and keep intact and reach 250 m depth.

The outcome of the test which was made from 11 competitor bits and four X-Roc bits from TerraRoc was that none of the competitor bits came back up intact, some didn't even reach 200 m before total breakage.

All the X-Roc bits reached designated depth and on average with a lower drill time, one bit had carbide breakage which didn't change the penetration rate and was used in another hole at another site.

**Per Wessman,
Team Wessman AB**

VAASA, FINLAND

Site data:

21-hole project, 300 m deep wells

X-Roc was put to the test at a large 21-well site near Vaasa on the west coast of Finland. The customer said: "I am very pleased with the bit service life. After the first regrinding the bits still were like new and doing a second 300 meter deep well was no problem. The wear rate is lower than the other brand. The renewed flushing arrangement clearly improves the flushing and reduces clogging."

They used 21 X-Roc bits in total over several sites with both button configurations and all performed well, with no breakages. In terms of the penetration rate, the drilling speed of X-Roc was similar to the leading brand, but the other bits had a smaller remaining OD – the ROP of X-Roc bits were faster in relation to the bit size which results in longer bit service life to drill more wells.

The customer was pleased with the overall performance and would recommend X-Roc where a long lasting bit is beneficial.

**Pyry Nieminen,
Pohjanmaan Porakaivo Oy**



GÄVLE, SWEDEN

Site data:

92-energy wells, 300 m deep

Outside Gävle, a large project of geothermal wells for heating a factory has been done in two phases – April and June 2022 – where 50 pcs of 300 m holes were drilled with two rigs from Gävle Brunnsborning AB. As the rock in this area can be quite challenging, a lot of drill bits had broken and TerraRoc was contacted for a test of bits. At the site, several other leading brands had been run with very poor results. Hardly any bits had reached 300 m intact. TerraRoc provided 18 bits and all but two reached 300 m intact. 5225 m was spread on those 18 bits.

The drillers on site were really pleased with the X-Roc bit and asked if they could get more. Since this was an R&D verification test run in both Finland and Sweden, no more bits were available at the time but Mattias Bergström, Mattias Birgersson, and Daniel Malm with Gävle Brunnsborning were pleased with the TerraRoc X-Roc bit. There was also good feedback on the low and even steel wear on the bit and questions rose regarding some new steel types that were used in these bits.

The Geothermal project is a 1,6 MWh plant that includes a total of 92 x 300 m (50 completed in 2022) energy wells in groups of six wells drilled in a fan shape. A total of 2 km 110 mm PEM pipes lead this into three 20" containers where all holes are joined together and from there into heating pumps.

Mattias Bergström, Mattias Birgersson and Daniel Malm, Gävle Brunnsborning

"I'm very happy with the speed and wear of this bit! Drills on average 40-60 minutes faster on a 230-meter hole."

**Mattias Bergström, Gävle
Brunnsborning**

"Bits runs more efficiently on 30 bar than on 35 bar. Rate of penetration doesn't increase to justify running the compressor at 35 bar, so I will save diesel and I still have less carbide wear."

**Markku Piiparinen, Bergums
Brunnsborning**

"I'm so surprised of the result and I will continue buy this bit when you launch them! Feels like it keeps the hole cleaner and it drills really fast!"

**Gunnar Björk, Sydab Vatten
och Energi**

"Very happy with the result of this bit! We had an average rate of penetration at 51 meter an hour, which is very good in this area!"

**Fredrik Johansson, Ö-Viks
Brunnsborning**

TerraRoc is a market leader in geotechnical drilling consumables operating in Europe, North America and Asia. The company specializes in casing advancement systems, down-the-hole hammers and core drilling.

Three manufacturing plants in Finland, Scotland and the United States, supported by a global supply chain, provide a range of products, services and customized solutions for engineers to overcome the most challenging rock formations faced in drilling and excavation works.

Customized Geotechnical Solutions.

Full range of drilling tools and consumables for casing advancement systems, down-the-hole hammers and core drilling, all customized to your needs.

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