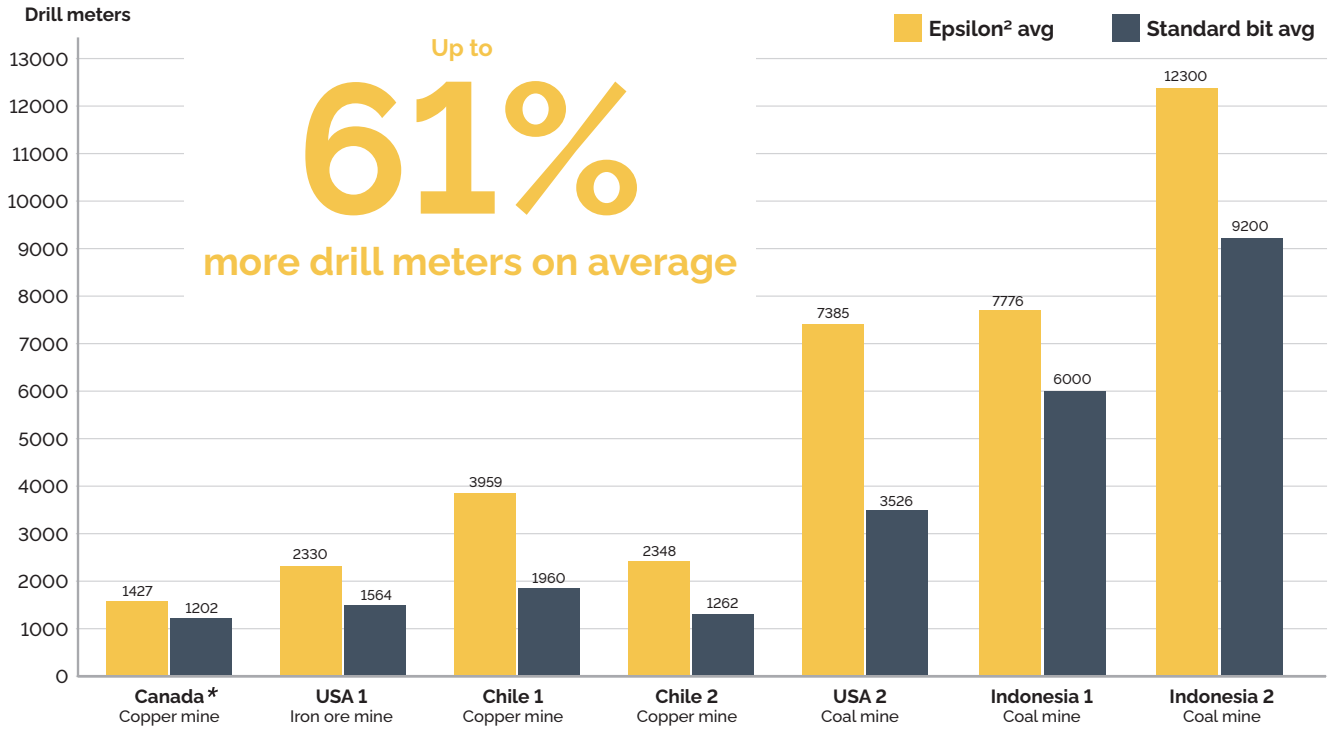
Proven performance

Epsilon² has been put to the test in numerous drill tests. Before launch, we tested hundreds of bits across the globe in collaboration with selected customers. The tests were made independently and offer strong evidence of the new bit's superior performance. See for yourself!



Test results show that Epsilon² provides up to **61 percent** more drill meters on average before discard than a standard bit. The chart shows the location of the sites used for testing.

**Average of six measurements, the highest of which was a 42 percent improvement as shown in the test case on page 13.*

Two test cases

So how did we test Epsilon²? Here we present two of our test cases, including rig model, bit dimension and performance data.

Canada

Site characteristics

A conventional open pit, truck and shovel operation. The mine has a 40 kiloton per day plant that utilizes a conventional crushing, grinding and flotation circuit to produce copper concentrates, with silver and gold credits.

Method

Various designs were tested with variations in the Epsilon² feature, including nozzle position, air-water separation and Enduro premium carbide inserts. Six test sets were made to measure distance drilled and penetration rate improvements compared to a standard bit.

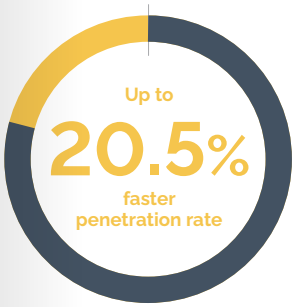
Equipment

- Drill rig: **Epiroc Pit Viper 351**
- Speed: **65–75 rpm**
- Airflow: **3,040 CFM (5,164 m³/h)**
- Pressure: **72 psig (5 bar)**
- Drill bit: **Epsilon² tricone bit, 10-5/8 inches (270 mm)**

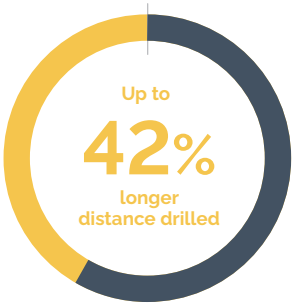
Results

Rate of penetration: **up to 20.5 percent faster**

Distance drilled: **up to 42 percent longer**



The rate of penetration was up to 20.5 percent faster with Epsilon² than with a standard tricone bit.



The distance drilled was up to 42 percent longer with Epsilon² than with a standard tricone bit.

USA

Site characteristics

Testing was made in different Appalachian coal mines, allowing us to get feedback from several customers. The geological and operational conditions in the mountainous region are highly varied. Despite these differences – and other large variations such as a mix of old and newer rigs and different bench patterns – customers request to use only one robust, universal bit.

Method

Numerous Epsilon² tests were made, using mainly mid-range DML and DM-45 drill rigs. As one of the most commonly used dimensions in the region, the 6-3/4 inch Epsilon² bit was selected for testing and comparison with a standard air bearing bit.

Equipment

- Drill rig: **Epiroc DML and DM-45**
- Drill bit: **Epsilon² tricone bit, 6-3/4 inches (171 mm)**

Results

Distance drilled:

Standard bit: **up to 11,569 feet (3,526 meters)**

Epsilon²: **up to 24,230 feet (7,385 meters)**

The average distance drilled was up to 109 percent longer with Epsilon² than with a standard tricone air bearing bit design.