

WHAT IS IT ?

Our What is it? series answers questions about some of the lesser known objects found on the construction site.

DRILLING DOWN TO BUILD UP

What is it? A drill tooth.

What are the drill teeth used for?

The drill teeth are attached to a drill tool and are the first point of contact with the ground. They are used to break the soil or bedrock into smaller pieces. On the Gordie Howe International Bridge project site we have used three different types of drill tools depending on the application – a core barrel, an auger, or a bailing bucket.

What are the teeth made of?

The teeth are made of hardened steel. Each tooth is approximately 13 cm/5 inches in length and weigh approximately 1 kilo/2.2 pounds.

How many teeth are on each drill bit?

The number of teeth on each drill bit differs depending on which drill bit is used. Augers can have as little as 24 teeth and core barrels can have up to 100 teeth. More teeth does not necessarily mean that there is more cutting power. In fact, the less number of teeth helps increase the force on each tooth and therefore increases the cutting power and effectiveness.



Close up of the drill teeth



Drill teeth attached to an auger



The complete drill rig setup

What are the dimensions of the drill tool attachment?

The core barrel, auger, and bailing bucket attachments vary from 1.5 to 3m/5 to 10 feet in diameter and weigh between 2 and 10 tons/1.8 to 9 tonnes.

How is it used?

The drill tool is attached to a drilling rig which rotates the bit into the ground. Drilling rigs are used in many ways on construction projects such as the Gordie Howe International Bridge project. The largest drilling rig used on the project was fitted with an auger drill tool and used to dig down 37 metres/121 feet to the bedrock layer to prepare for the installation of the foundations for the bridge towers. In addition to the auger, a bailing bucket was also used to empty the debris out of the hole.

Do the teeth need to be replaced?

There is considerable wear and tear on the teeth especially as they drill into bedrock. Some of the teeth fall out and some need to be removed and replaced if they have been broken or show signs of wear.

Approximately how many teeth have been used so far?

Over 700 teeth have been used so far.