



Impregnated Diamond Core Bits



Impregnated Diamond Core Bits are manufactured with very small, high quality synthetic diamonds, mixed evenly through a metal alloy matrix. The matrix erodes away at the same rate as the diamonds become worn and rounded so that new sharp diamonds are exposed to continue cutting through the rock. In most geological formations, impregnated bits are more economical to use than other bits.

The optimum diamond size, concentration and matrix composition is dependent on the hardness and abrasiveness of the formation to be drilled.

Guidelines below.

Applications

- Geotechnical investigation
- Environmental investigation
- Mineral exploration

Features

- Fast penetration
- Good core recovery
- Suitable for water, polymer or air flush
- Mohs hardness scale 1 to 8 depending on matrix type

Depth of impregnation (D.I.) The standard matrix height is 6mm but 8mm, 9mm, 10mm, 12mm, 14mm are available on request. 6mm is typically recommended for conventional Bits whereas 8mm or higher is recommended for wireline bits.

Face profiles Thin kerf bits (<10mm face thickness) are usually manufactured with a flat profile, and thicker kerf bits (>10 mm) with a W profile. The number and depth of waterways is optimized for the formation to be drilled.

Waterways The number and depth of waterways can be chosen for the type of formation to be drilled.

Series	Formation Hardness
1	Soft
2	Medium
3	Medium to hard
4	Hard
5	Hard to very hard
6	Very hard
7	Very hard
8	Very hard
9	Very to ultra-hard
10	Ultra-hard

Standard Type (no discharge hole) Waterway without discharge hole is the standard type, used in many normal formations.

Wide Type This waterway is wider than the standard type, used in formations where there is a lot of rock debris, e.g. clay, shale, coal etc.

Turbo Type Suitable for relatively hard fractured formations or hard competent formations.

Wide Turbo Type Suitable for medium hard fractured formations where there is a lot of slurry and rock debris.

Round Face Discharge Hole Type Suitable for triple core barrels, to improve recovery rate. It reduces core erosion by the flush medium during drilling.

Dimensions		
H Gauge		
HWF	98.98/98.6	76.33/76.08
HWF Coreliner	99.36/98.98	77.089/76.885
412F	107.19/106.88	75.38/74.98
412F Coreliner	107.19/106.88	72.99/72.69
P Gauge		
PWF	120.78/120.4	92.33/91.95
PWF Coreliner	120.78/120.4	87.12/86.86
PQ	122.30/121.8	85.09/84.84
S Gauge		
SWF	145.67/145.16	112.95/112.5
SWF Coreliner	146.18/145.8	107.18/106.78
Geobore S	146.27/145.99	102.18/101.98