



General Application Chart for Mineral Exploration Bits

Formation Type	Representative Rock Types	DCDMA Code	Mohs Hardness	UCS (MPa)	Drill Bit Cutting Media Type			
					Tungsten Carbide Bits	PCD (PDC) Set Bits	TSP* Set Bits	Impregnated Diamond Bits
Soft Fractured Abrasive	Plastic Clay, Gypsum	-	1		Yes	Yes	Yes	No
	Sand, Marl, Soft Shale	-	2	2	Yes	Yes	Yes	No
	Soft Sandstone, Calcite, Lignite, Frozen Soil, Sandy Limestone	-	3	5	Yes	Yes	Yes	No
	Hard Clay, Shale, Soft Schist	-		10	Yes	Yes	Yes	Yes
	Limestone, Sandstone, Siltstone, Fluorite	1	4	15	Yes	Yes	Yes	Yes
	Slate, Claystone, Apatite	2		20	Yes	Yes	Yes	Yes
				30	Yes	Yes	Yes	Yes
	Alluvial Deposits, Serpentine, Hard Sandstone	3		40	Yes	Yes	Yes	Yes
	Dolomitic Limestone, Norite Granite, Marble, Schist	4		60	Yes	Yes	Yes	Yes
				6	Yes	Yes	Yes	Yes
Hard Consolidated Non-Abrasive	Granite, Dolomite, Mica Schist, Diorite, Diabase, Hematite, Magnetite, Syenite	5		80	Yes	Yes	Yes	Yes
	Quartz, Andesite, Conglomerates, Trachyte, Porphyry, Basalt, Gabbro, Gneiss, Pegmatite, Silicified Volcanics	6		100	Yes	Yes	Yes	Yes
				7	Yes	Yes	Yes	Yes
				120	Yes	Yes	Yes	Yes
	Chert, Rhyolite, Banded Ironstone, Glassy Quartzite, Taconite	7		160	Yes	Yes	Yes	Yes
				200	Yes	Yes	Yes	Yes

* Note that surface-set natural diamond has been excluded from this data as this type of cutting media is considered to be a second choice to thermally stable polycrystalline (TSP) elements. Surface-set natural diamond and TSP elements have approximately the same range of application. Surface-set diamond should only be selected in cases where TSP is unavailable as cutting media for a particular size of bit.

The technical application data in this document is intended as a basic guideline for the selection of the appropriate tools for your job. As drilling conditions and the capabilities of drilling equipment vary considerably from site to site, it is impossible to define absolute parameters for the application of our drilling tools. Some experimentation on the part of the end user may be required as parameters outside of those recommended in Dimatec's product literature may be applicable. Every effort has been made to ensure the accuracy of the data contained in this document. Dimatec Inc. cannot accept any liability due to errors or omissions in the data that we provide. Dimatec Inc. is constantly working to improve our products and therefore reserve the right to make changes to materials, specifications, prices and technical data without prior notice.