

DRILLING PARAMETER GUIDE

	ROCK HARDNESS	BIT LEVEL FROM SELECTION CHART	BIT WEIGHT		BIT RPM
			kg	lb	
B	SOFT ↕	1	1150 - 1600	2500 - 3500	800 - 1200
	HARD	2	1600 - 2725	3500 - 6000	1000 - 1200
		3	2275 - 3650	5000 - 8000	1000 - 1400
N	SOFT ↕	1	1150 - 1600	2500 - 3500	600 - 1000
	HARD	2	1800 - 2725	4000 - 6000	800 - 1200
		3	2725 - 3650	6000 - 8000	1000 - 1200
H	SOFT ↕	1	1350 - 2725	3000 - 6000	600 - 800
	HARD	2	1800 - 3650	4000 - 8000	600 - 1000
		3	2725 - 4550	6000 - 10,000	800 - 1000
P	SOFT ↕	1	1800 - 3650	4000 - 8000	300 - 500
	HARD	2	2275 - 4550	5000 - 10,000	400 - 600
		3	2725 - 5500	6000 - 12,000	

Penetration Index - RPC (RPI)

This is a useful calculation to help assess if the bit is being optimized in relationship to RPM and ROP

$$\text{RPC (RPI)} = \text{RPM} / \text{ROP}$$

e.g. $\text{RPC} = 1200 \text{ RPM} / 15 \text{ cm} = 80 \text{ rotations per centimeter}$
 $\text{RPI} = 1200 \text{ RPM} / 6 \text{ inches} = 200 \text{ rotations per inch}$

A good target is 80 - 100 RPC (200 - 250 RPI)