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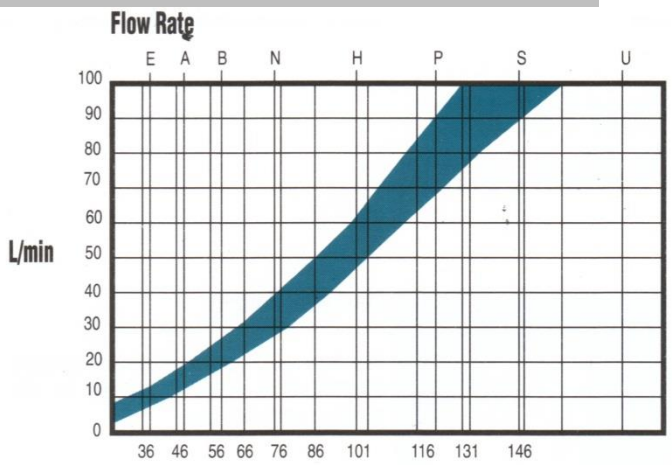
Impregnated Coring Bits – Recommended Operating Parameters

Fluid Flow Rate

Maintaining the correct circulation fluid flow rate over the bit is critical to drilling performance. Drilling fluid does the following: Cools the bit; removes cuttings; and lubricates the drill string (not including drill mud parameters for hole control.

The correct guideline flow rates for different hole sizes are provided on the chart on the right. These will give the correct annular fluid velocity for cuttings removal.

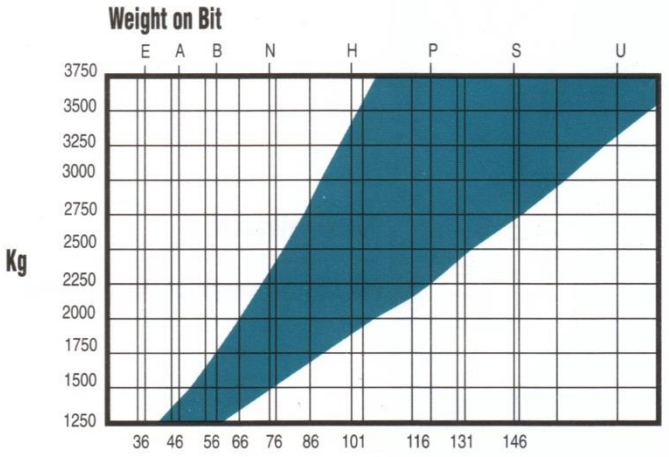


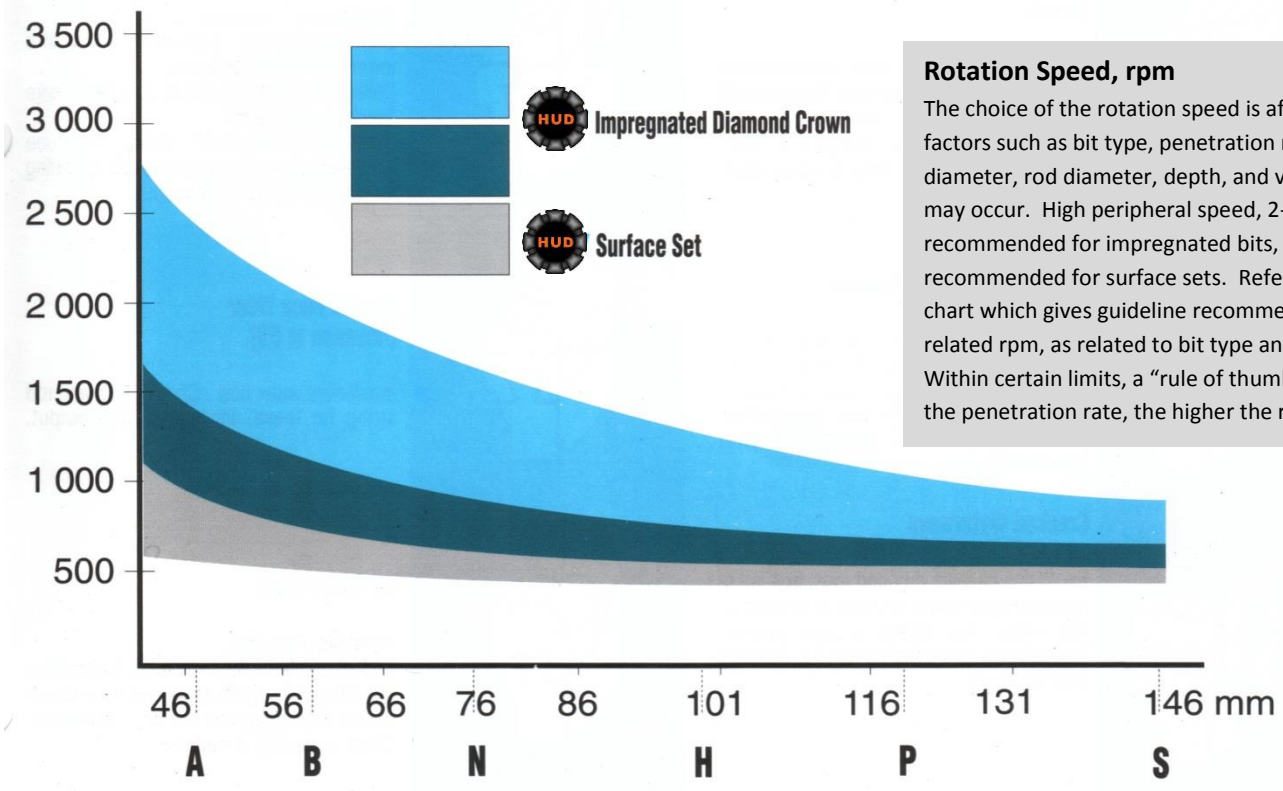
Weight on Bit

The WOB is an important indicator of drilling conditions. The aim is always to try to maintain a targeted penetration rate by increasing the WOB if the penetration rate falls, and decreasing WOB if it rises.

Too much WOB can give: un-even bit wear; damage the core barrel and or rod string; and directional deviation.

Too little WOB can result in a polished bit.





Rotation Speed, rpm

The choice of the rotation speed is affected by many factors such as bit type, penetration rate, hole diameter, rod diameter, depth, and vibration that may occur. High peripheral speed, 2-5m/s is recommended for impregnated bits, while 1-3 m/s is recommended for surface sets. Refer the attached chart which gives guideline recommendations for related rpm, as related to bit type and hole size. Within certain limits, a "rule of thumb" is, the higher the penetration rate, the higher the rpm.