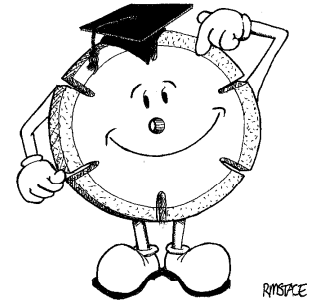


DIAMOND BLADEMAN

DIAMOND DRILLING TIPS



STAY OUT OF TROUBLE DRILLING

Diamond core drilling reinforced concrete is both an art and a discipline, requiring patience, structural appreciation, a mechanical aptitude, and considerable fitness.

The basics for successful core drilling are having a rigidly set up drill rig, diamond core bits with adequate clearances on the outside diameter and inside diameters, constant water flow, and the right speed range and power for the bit.

Lets consider some of the potential problem areas for the relatively inexperienced.

Jamming of the diamond bit can be caused by about five different things. Firstly a loose drilling machine which needs anchoring firmly to the concrete (perhaps the vacuum pad is leaking or the anchor bolt is loose) and realigning. It may be caused by mobile bits of stone or reinforcing steel in the hole which should be removed. Inadequate flushing of the core creates friction and jamming as does a bent or damaged corebit.

A core jammed in the diamond core barrel is most likely caused by a broken core of concrete. In this case the corebit will have to be removed from the drill and the concrete core forced out of the barrel. Lack of water can cause the concrete to expand through frictional heat and jam in the barrel. Gently working the core free without force is a good remedy. A concrete core which is almost identical in size to the barrel inner diameter can cause a problem, solved only by the use of a diamond bit with adequate internal diameter clearance.

Rapid wear of the diamond bit occurs when an unstable drilling machine is used particularly if the drill spindle bearings are worn and insufficient speed is used. Drilling at a faster speed will often result in better penetration rates and longer bit life. Try. Excessive feed pressure, insufficient water or very abrasive material can also reduce bit life, as will heavy concentrations of steel reinforcement. Generally the harder the job the bit has to do the shorter the bit life.

Segments come off bits through being ripped off by loose material jamming the bit in the hole, insufficient water to cool the segment fixtures,(they melt off) vibration, hammering from a poor set up, and excessive pressure on the bit.

Slow core drilling can be caused by a blunt bit (sharpen by drilling highly abrasive material until bit is sharp ie diamonds feel aggressive again.), insufficient bit pressure, slow bit speed, very heavy steel reinforcement, or the wrong diamond bit specification for the material.

