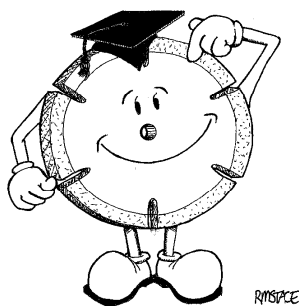




Diamond blademan Resource Centre Info sheet

The importance of blade surface speed.

Every diamond saw blade is factory pre conditioned to run true at a predetermined cutting speed. This is achieved by flattening the blade and then hammer or roll tensioning it, until the stresses in the steel are such that the blade will run true at it's intended load speed.

Saw doctors true and tension blades, frequently by hand, up to several metres in diameter and have a very good feel for each individual steel blade blank.

It is well known that each steel blank, or core, is quite unique, and will exhibit different qualities. Some steel cores are more crack and "tension loss" resistant than others. Modern manufacturing methods are, however, reducing variation.

Diamond saw blades designed for cutting cured concretes perform best at approximately 9500 surface feet per minute (ie the speed of an individual diamond on the cutting face of the blade) (48.26 metres/second) for which they are usually preconditioned.

At this speed it is likely that the best results will be obtained. Outside these limits higher wear rates may occur through glazing, diamond pullout, catastrophic diamond failure, core cracking, segment breakage etc.

This table shows typical blade shaft rpm requirements to achieve 9500 s.f.p.m.

250 mm (10")	3629 rpm
300 mm (12")	3024 rpm
350 mm (14")	2592 rpm
400 mm (16")	2268 rpm
450 mm (18")	2016 rpm
500 mm (20")	1814 rpm

Soft concretes may benefit from higher speeds, up to, say, 11000 sfpm. (55.88 metres/second)

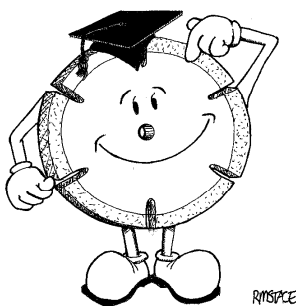
$$\text{s.f.p.m.} = \frac{3.1416 \times \text{blade diameter in inches} \times \text{rpm}}{12}$$

$$\text{metres per second} = \frac{\text{s.f.p.m.}}{196.85}$$

“ Working safer working Smarter”

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