HERTFORDSHIRE DIAMOND PRODUCTS

The 4 keys parts of what makes up a Diamond Blade

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1. Diamond Crystals

Diamond grit used in blades is manufactured in various grit sizes and quality grades.

2. Bonding Matrix

A metal bonding matrix holds the diamond crystals in place.

Metal powders including (among other metals) cobalt, iron, nickel, tungsten and bronze are used in various combinations.

The bonding matrix plays several vital roles:
Dispersing and supporting the diamonds
Providing controlled wear while allowing diamond protrusion
Preventing diamond pull-out
Acting as a heat sink
Distributing impact and load as the diamond crystals grind the cutting surface

In the cutting process, the diamonds in the metal bond grind the material being cut. This grinding action 'cuts' the material. At the same time, the material wears the metal bond, which exposes more diamonds on the surface, refreshing the blade and extending its useful life.

3. Segments

The mixture of diamond crystals and bonding metal powders is hot pressed into segments.

These segments are wider than the core to provide clearance during cutting.

These segments are specifically designed to wear at a rate appropriate to the aggregate being cut. Diamond concentration in the segments can vary from low to very high, depending on specific cost and application requirements.

4. Steel Core

The segments are attached to a premium steel alloy core.

The steel core is a precision-made steel disc with slots. These slots (also called 'gullets') provide faster cooling by allowing water or air to flow between the

Most blade cores are tensioned at the factory, so the blade will run straight at cutting speeds. Proper tension allows the blade to remain flexible enough to bend slightly under cutting pressure and snap back into position. An arbor hole is precisely bored into the centre.