

# How to Choose the Right Diamond Saw Blade



Whether you're sawing control joints, enhancing concrete with decorative scoring, or cutting out existing concrete for patching or replacement, you can't do the job without a top-quality saw blade. But like a master chef who needs an assortment of knives to prepare various gourmet specialties, you can't rely on just one type of blade to do all these cutting tasks well, or even to perform the same task in different types of concrete.

Diamond saw blades are typically the best choice when it comes to making clean, professional cuts in concrete. However, within this category, you'll find myriad blade options at a wide range of price levels. How do you choose the perfect blade for the job at hand? To achieve optimum cutting performance for your investment, follow these seven steps before you buy.

## 1. Learn the basics.

Understanding how a diamond blade works will help you choose a blade with the right characteristics and cutting quality for your needs. Here are the four basic blade components:

The metal core, a precision-engineered steel disk with a segmented rim that holds the diamonds.

The synthetic diamond crystals, the sharp cutting teeth that slice through the concrete.

The matrix, a metal bond that holds the diamond particles in place until they wear away.

The weld, which attaches the cutting segments to the core (most segments are laser welded or soldered).

## 2. Know what you're cutting.

For maximum cutting speed and blade life, you should match the blade as closely as possible to the material you're cutting. Characteristics of the concrete you need to know include the compressive strength, the size and hardness of the aggregate, and the type of sand.

## 3. Decide when you want to make the cut.

If you're placing new concrete, you have the option of cutting control joints while the concrete is still green (about 1 to 2 hours after finishing) or the next day after the concrete has hardened. The timing of the cut will dictate the type of blade you select.

Some decorative concrete contractors prefer to cut concrete while it's still green because it minimizes the occurrence of ugly random cracking (especially in warm weather, when concrete hydrates faster) and permits shallower joint depths of an inch or less. However, green concrete will be softer and more abrasive than the same concrete in a cured state. That's because the sand in the mixture hasn't yet bonded to the mortar and it acts as an abrasive. Blade manufacturers offer hard-bonded diamond blades specifically for cutting green concrete.

## 4. Choose wet or dry cutting.

Often the decision of cutting wet or dry depends on your preference and job requirements. Dry cutting eliminates messy wet slurry and the need to equip saws with water tanks and hoses. Using a blade wet, on the other hand, reduces dust but makes it necessary to contain or clean up the slurry. For indoor jobs where you need to keep the work area dry, a dry-cutting blade and compatible saw may be your only option.

## 5. Make sure the blade is compatible with your sawcutting equipment.

What type of handheld saw or flat saw are you using? What is the horsepower and operating speed (or rpm)? Blade manufacturers provide charts with recommended operating speeds and maximum safe operating speeds for their blades. You'll also find this information stamped right on the blade itself. Always match the blade with the speed range of the saw. Operating the blade at a lower speed than recommended can diminish its cutting life and performance. Exceeding the blade's maximum rpm rating can damage the blade and risk injury to the saw operator.

## 6. Choose optimum performance vs. maximum economy.

Manufacturers typically offer diamond blades at various quality and cost levels, ranging from basic economy to top-of-the-line premium or professional versions. Generally the key difference among these options is the diamond content, which is the greatest raw material cost in manufacturing the blade. Moving up from a standard to a premium blade may boost the cost 20% or more, but you'll get a higher concentration of diamonds and significantly longer blade life.

## 7. Determine if a decorative cut is important.

Want to achieve the look of a decorative hand-tooled joint without all the labor? It's possible by using beveled saw blades with a special cutting edge that produces chamfered or radiused cuts in green concrete.