

## LOSS OF TENSION

Diamond saw blades are designed to run true at a prescribed RPM. A blade that is overheated or suffers a shock such as being dropped can lose its tension. This causes the blade to wobble or flutter when used. In the event a blade has lost its tension it needs to be returned to the manufacturer for retensioning.

## OUT OF ROUND

A blade is out of round when one portion of the blade is higher than the other.

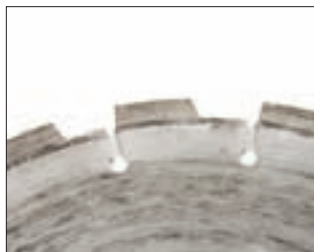
If the arbor shaft on the saw is worn, the blade does not fit true on the shaft. The wear pattern on the blade shows half the segments high with the other half low. The difference between the segment heights is the wear on the shaft. The solution is to replace the arbor shaft.

If the bearings are worn the wear pattern is known as quartering. The wear pattern shows one quarter of the blade high, the next low, the following high and the final low. The remedy is to replace the bad bearing.

If the bond is too hard for the material being cut, the diamonds will become dull and the blade will begin to glaze over. When the blade is glazing over it will have a tendency to hammer pound as it is sawing. The solution is to use a softer blade specification.

If the problems are not corrected they will lead to short blade life. Once a blade is out of round it may need to be returned to the factory to be redressed.

## SEGMENT CRACKING



There are two types of segment cracking, vertical cracks perpendicular to the blade center and horizontal cracks parallel to the weld.

Vertical cracks are typically caused by using a bond that is too hard for the material being cut. As the diamonds become dull the blade will pound leading to cracked segments.

Horizontal cracks can be caused by several different reasons. If a wet cutting blade overheats it can lead to a weld failure. If the blade twisted it can jam in the cut and crack the segment. If there is a defect in the pad, the diamond bearing area of the segment can break free.

Blades with cracked segments should be returned to the manufacturer for evaluation and repair.

## FATIGUE



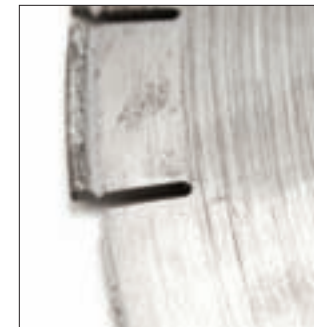
Fatigue cracks are hairline cracks originating in the gullets (slots) or along the flange line in the core.

When dry cutting, fatigue cracks can be caused when the blade overheats. When the blade overheats it will begin to flutter or snake in the cut causing core fatigue. To avoid overheating when dry cutting, do not force the blade into the cut. Allow the blade to spin freely every 30 to 45 seconds, and take shallow cuts no deeper than 1" per pass.

Other causes of core fatigue can be defective flanges that cause the blade to flutter. Improper saw alignment or failing to saw straight with over correcting can cause the blade to jam or twist in the cut.

Inspect blades regularly for fatigue cracking. If cracking is detected the blade cannot be used.

## UNDERCUTTING

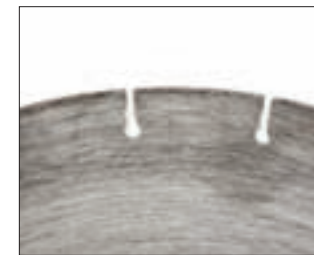


Undercutting occurs when sawing abrasive materials, such as asphalt or green concrete.

The abrasive action sets up a wear pattern at the point where the segment is welded to the core. The abrasive slurry causes the core to knife at this point. The knife edge weakens the weld causing the segment to break off.

Wear protected cores should be used when cutting abrasive materials. These cores break up the slurry pattern and extend the life of the blade. A good flow of water is also essential for longer blade life.

## WORN OUT (SHORT LIFE)



There are several factors that can lead to diamond blades wearing out prematurely. These include improper blade specification, improper blade RPM, inadequate water flow or improper use of dry cutting blades.

To get maximum life from a diamond tool it is important to select the proper blade specification for the application. For example, using a cured concrete blade in abrasive materials such as green concrete or asphalt will cause the blade to wear out prematurely or using a high speed saws blade on a walk behind saw will also lead to short life.

Another cause of short blade life is improper blade RPM. Diamond saw blades are designed to run at a surface speed of 11,000 feet per minute. A blade run at a lower than recommended RPM will act softer and wear faster.

Inadequate water flow on a wet cutting blade will also lead to short life. Water not only acts as a coolant, but it flushes the fines out of the cut.