

Diamond Blades

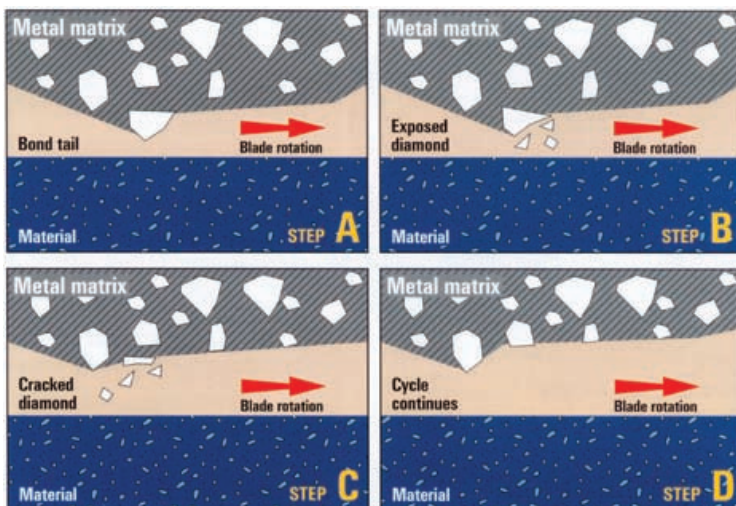
Blade Type	Diameter (mm)	Order no.
Continuous Rim	105	GC105CR
Segmented Tile	105	GC105ST
Turbo Super	105	GC105TS
Laser Segmented	105	GC105LS
Laser Segmented	115	GC115LS
Turbo Super	115	GC115TS
Continuous Rim	115	GC115CR
Turbo Super	127	GC127TS
Turbo Super	152	GC152TS
Laser Segmented	152	GC152LS
Laser Sintered	178	GC178ST
Turbo Super	178	GC178TS
Laser Segmented	178	GC178LS
Turbo Super	230	GC230TS
Laser Segmented	230	GC230LSG
Laser Segmented	230	GC230LSE
Laser Segmented	230	GC230LS
Laser Demolition	302	GC302LD
Laser Welded	302	GC302LW
Australian Paver	356	GC356AP
Laser Demolition	356	GC356LD
Laser Block	356	GC356LB
Brazed Segmented	356	GC356SB
Laser Welded	356	GC356LW
Laser Asphalt	356	GC356LK
Laser Demolition	405	GC405LD



Cup Grinding Wheel

105mm Double Rim	GCW105DR
105mm Single Rim	GCW105SR
180mm Double Rim	GCW180DR
180mm Angle 12 Segment	GCW180TCW
180mm Angle 5 Segment	GCW180TSW

Material removal process



Factors affecting the cutting characteristics of a diamond saw blade

Cutting conditions

- Cutting depth
- Feed rate
- Cutting pressure
- Quality of coolant

Machine

- Power drawn
- RPM
- Condition of the machine
- Coolant supply

Material

- Density
- Abrasivity
- Nature of aggregates
- Size of aggregates
- Type of reinforcement
- Type of foundation

Diamond blade guide

CR Continuous Rim

Wet and dry cutting blade for ceramic tiles with minimum chipping. Not suitable for porcelain tiles, natural stone and cement products.

ST Sintered Diamond

Widely used as a low cost alternative to segmented blades. Wet and dry cutting of natural stone and cured concrete. Recommended for low volume usage.

TS Turbo Super

Wet and dry cutting of hard materials, hardi board, natural stone, granite, hard concrete, bricks and paves. A very versatile blade. Not suitable for soft materials, blocks and green concrete.

LS Laser Segmented

Laser welded wet and dry saw blade for old cured concrete. A good quality blade with soft matrix not designed for hardi board, soft paves and green concrete.

LSE Laser Segmented (Economical)

An economical blade for brick, block and pavers.

LB Laser Block

Brick and block blade. Trade quality.

LSG Laser Segmented (Green Concrete)

Wet and dry cutting of block and green concrete and soft materials. Not suitable for stone and hard materials.

LD Laser Demolition

Wet and dry demolition with hand saws for old cured concrete. Not suitable to cut medium to heavy reinforcing.

LW Laser Welded

A general purpose blade with medium to hard bond. Not suited to hard cured concrete or prolonged asphalt.

LK Laser Welded

Dry or wet cutting for asphalt and green concrete.

AP Australian Paver

Brazed wet cutting blade with soft matrix for Australian bricks and paves only. Very low noise level. Must only be used for very, hard materials.

SB Segmented Blade

A professional wet cutting hand and floor saw blade with large 9mm diamond segments for cured medium concrete.

DR Double Rim

Floor grinding wheel, general purpose.

SR Single Rim

Floor grinding wheel, general purpose and lower cost.

TWC Turbo Shape

Five and 12 segment grinding wheels for paints and sticky materials. Quicker cutting than DR on concrete, but less life. Will not produce swirl patterns.

Guide to dry cutting blades suitability



Material

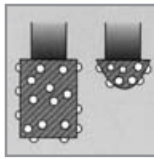
Slate	LSG	LW	SB	ST	TS	LSE	LB	LD	LK	AP	
Asphalt	LK	LW	LSG								
Cement Sheet	TS	CR	LSE	LB	LSG	LW	ST	LD			
Concrete	LD	SB	ST	LS	LSE	LW	TS	LB	LSG	LK	AP
Reinforced Concrete	TS	LS	LB	LSE	LD	LW	SB	ST	AP		
Aerated Concrete	LSG	LK	LW	TS	LSE	LB					
Green Concrete	LSG	LK	LW	LB	LSE	LD					
Concrete Kerbstone	LW	ST	LS	LSE	LB	LD	SB	LSG	LK		
Hard Brick	TS	LS	AP	LB	LD	LSE	SB				
Soft Brick	LSG	LK	LSE	LB	LW	ST	LD				
Tiles/Ceramic	CR	ST	TS								
Renders	LSG	LK	LW	LSE	LB						
Granite*	TS	AP	ST	LS	LSE	LB	LD	SB	LW		
Gravel	TS	LS	SB	ST	LW						
Sandstone Hard	TS	LS	LB	LD	LW	SB	ST	LSE	AP		
Sandstone Soft	LSG	LK	ST	LB	LSE	LD	LW	SB			
Mortar Joints	LSG	LB	LK	LW	LSE	ST	LS	LD	SB		
Marble	TS										
Concrete Block	ST	LSE	LB	LSG	LW	LK	LD	SB	LS		
Limestone	ST	TS	LSG	LK	LSE	LB	LD	AP			
Hard Natural Stone	TS	LS	AP	LD	SB	ST	LSE	LB	LW		
Soft Natural Stone	LSG	ST	LSE	LW	LK	TS	LS	LB	LD		
Pumice Stone	LSG	LK	TS								
Concrete Roofing Tiles	LW	ST	LSE	LB	LD	TS	LS	LSG	LK	CR	
Concrete Pipes	TS	LS	AP	LB	SB	CR	ST	LSE	LD		

*Special blades available for this specific application

Rapid Wear

Possible causes

- Blade specifications is too soft for the material being cut causing the diamond to become over-exposed. Use a blade with a harder bond system.
- Blade wears out of round which accelerates wear normally due to bad bearing worn shaft or blade specification too hard for material.
- Loose drive belt results in low blade specification.
- In adequate water supply, caused by blocked or damaged water tubes.

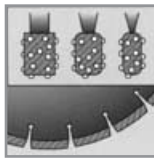


Undercutting

The effect of premature wear of the steel is a particular problem in highly abrasive materials such as asphalt and fresh concrete. The steel core wears to a knife edge just below the segment and may result in segment loss.

Possible causes

- Ensure the blade specifications has offset segments to assist removal of slurry from the cut.
- Ensure the blade is not cutting below the asphalt into the sub-base below, as constant rubbing of the loose material results in premature wear and has no beneficial effect on the cut surface.
- Check the water supply as increased water flow will wash slurry supply from the contact area and reduce undercutting.



Blades will not cut

Possible causes

- The blade is too hard for the material being cut; check the specification is correct – dull blades can be sharpened by cutting a soft abrasive material.
- Machine has insufficient horsepower for the specification being used or the machine drive belts need retensioning.
- Ensure correct direction of rotation

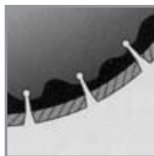
Overheating

The most common cause of blade failure.

Overheating can cause many other problems such as loss of tension, core cracks and segment loss. Overheating can be shown by black or bluish discolouration on the steel core.

Possible causes

- For wet cut blades – inadequate water supply can be caused by blocked or damaged water tubes or poor water pressure. Dust suppression systems are inadequate for wet cut blades.
- Or dry cutting – excessive cutting pressure results in heat build up. Allow the blade to do the work. With hand held blades, use a gentle reciprocating action in hand materials and avoid cutting too deep in a single pass.



Segment Loss

Possible causes

- The material was not held firmly, causing the blade to twist or jam in the cut.
- Twisting or turning the machine while the blade is in the cut.
- Blade is too hard for the material being cut, resulting in the blade hammering in the cut.
- Blade flanges are worn or deformed and fail to provide proper support, causing the blade to defect in the cut and the blade core causing the blade to flutter, which results in segment loss due to impact or fatigue.
- Blade core has undercut die to cutting below the asphalt into the sub-base.



Segment Cracks

Possible causes

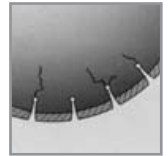
- Blade specification is too hard for material being cut, causing hammering in the cut. Use a blade with a softer bond system.



Core Cracks

Possible causes

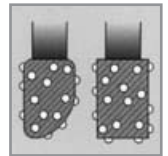
- Blade is too hard for the material being cut.
- Excessive cutting pressure caused by too high infeed, results in the blade core bending and flexing. Metal fatigue will eventually cause the core to crack. If the machine continually rides out of the cut or wanders off line, then the infeed is too high.
- Damaged machine bearings, worn shafts or mismounting of the blade.



Uneven Segment Wear

Possible causes

- Wet cutting – insufficient water, generally on one side of the blade. Flush water System and ensure water is equally distributed to both sides of the blade.
- Blade is worn out of round due to bad bearing or worn arbor. Replace and repair bearings or shaft as required.
- Segments worn on one side reducing side clearance (check alignment). Check wheels and wheel alignment on floor saw and carriage alignment on masonry bench saws.



Out of Round

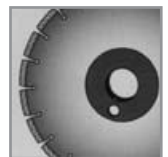
Possible causes

- Blade shaft bearing may be worn. Fit new bearing and ensure regular lubrication.
- The blade is too had for the material being cut, resulting in the blade hammering and wearing out of the round. Choose a blade with a softer bond system.
- The machine spindle may have a groove scored in it as a result of a previous blade slipping in the spindle.

Loss of Tension

Possible causes

- Blade core has been overheating. Ensure sufficient water supply for wet cut blades.
- The blade is too hard for the application causing the blade to deviate in the cut.
- Check machine is running at the correct RPM, that there is no wear on machine bearing shaft and that the flanges are of the correct and same size.
- Ensure blade is secure and not spinning on the spindle. Check that the drive pin is in place on all floor saws.
- Ensure that the blade cuts in straight lines only.



Damaged or Distorted

Possible causes

- Blade incorrectly aligned when mounting, resulting in the blade hammering. Ensure blade is mounted on the proper diameter of the spindle before tightening. Ensure that pin hole slides over drive pin.
- Flanges are not properly tightened, allowing blade to spin or vibrate on spindle.
- Saw shaft is badly worn or grooved, allowing the blade to pound.

