Resource library » glossary of terms A-Z

A

Adapter: A thread or bushing which attaches a tool to a piece of equipment.
Arbor: the middle hole on a blade, which attaches to the machine. The most common sizes are 1"- 7/8" - 20mm - 5/8".
Asphalt: Bitumen, sand and gravel mixed and commonly used as a paving material. Note that this material is highly abrasive.
Asphalt over Concrete: Refers to a type of diamond blade, which will successfully perform while cutting a layer of asphalt placed over a concrete base. The bond stays open and free cutting because of the ABRASIVENESS of the asphalt on the top layer which allows it to cut the hard cured concrete below. This type of blade is not the most efficient to cut the individual materials separately. If only used in Asphalt it would wear quickly and if only used only on a cured concrete cured application it would quickly dull and stop cutting.
Aggregate: Generally refers to the local geological formations (conditions) that would be present in locally quarried stone used for concrete production.

B

Backing Pad: The bottom portion of the diamond segment that does not have any diamond crystal content.
Blade Flange: A machined plate, which attaches the blade to the machine.
Blade Guard: The shroud on a machine, which covers the blade to protect the operator from cutting debris and in some cases also provides cooling lubricant.
Blade Rotation: The proper direction a blade should operate. This is designated by an arrow on the blade or determined by looking at the diamond wear trails along the segment. The blade should be rotated in the direction that the "comets" are pointed.
Blade Wear Gauge: A gauge, which the blade is placed on, so as to measure the wear on the wearing edge of the blade. This is used by rental companies so as to establish a wear charge based on per thousand of an inch wear.
Blank: Refers to the steel centre of the tool.
Bolt-On Adapter: A back plate which bolts on to large diameter bits for its easy removal and substantially lightens the tool over a welded in place adapter.
Bond: The metal part of the diamond segment or rim which holds the diamond crystals.
Bore: The arbor or hole in the centre of the saw blade.
Braze: Refers to the silver solder portion which attaches the segment to the tool piece.
Bridge Saw: A gantry style saw for cutting stone. Blade sizes range from 12" to 12 foot diameter for cutting different thicknesses of stone.
Bushing: A metal or plastic adapter which changes the size of the arbor hole.

C

C.S.D.A.: Concrete Sawing and Drilling Association. A professional organization of professional specialty contractors who cut, core, grind, and groove concrete.
Cart: A two-wheel system that is used to mount a high speed gas cut off saw.
Chain Saw (Diamond): Diamond segments on a cutting chain, which is used on a hydraulic chain saw. The most popular applications are plunge cuts, notch cuts and corner cuts.
Cobalt: A high quality metal alloy used in the manufacturing of premium diamond tool bonds. Characteristics are exceptional diamond crystal retention and excellent wear factors.
Combination Blade: A term used for a masonry blade that has a bond characteristic of being able to cut the harder bricks and provide good life in abrasive block cutting applications. This allows the mason to have one blade, which can be economically used to cut most materials encountered.
Concentration: The amount of diamond crystal as a % volume of matrix material.
Concrete: The mixture of powdered cement, sand, aggregate and water mixed with various chemicals (admixtures).
Concrete Saw: The term used for a manual or self propelled saw with a motor arranged on a frame with four wheels and stand up controls. Other terms commonly used include walk behind, floor and pavement saws.
Continuous Rim: The style of blade that has a smooth diamond rim section for cutting brittle material providing chip free cuts. Also referred to as a tile blade.
Control Cuts: Cutting of green concrete to provide a joint plane where the concrete will crack along during the curing process.
Core: Same as saw blank or steel centre.
Core Drill Rig: Refers to the motor, drill stand and motor carriage.
Core Drill Stand: A stand is made up of a base, mast, and carriage which holds a core drill motor in position.
Crack Chasing: The grooving or cutting of random cracks in concrete. This provides a reservoir to hold the sealant material.
Cup Stone:A saucer shaped tool piece with diamond segments on the flat edge used as a grinding tool.
Cured Concrete: Concrete which is hard, non-abrasive and has a low percentage of water present in its composition. Engineering standards establish cured concrete as being at least 28 days old. Because of ground, weather conditions or chemicals used in the concrete cure rate can vary dramatically.
Curb Saw: A special saw which allows the cutting of a driveway opening in an existing curb by flush cutting the curb even with the existing roadway.

D

Diamond Depth: The depth of diamond crystal in the usable diamond rim.

Diamond Retention: The ability of a bond to hold the diamond crystals in place so that diamond crystal can work longer before being loosened and discarded from the matrix.
Diamond Wire: Diamond bearing beads strung on a loop of thin cable, which is then pulled through the material to be sawn with a wire saw.
Dressing: The process of exposing or re-exposing diamond crystals in the matrix by wearing down the matrix down between the diamond crystals.
Drive Pin: The pin is on the outer blade flange, which goes through the drive pin hole in the blade and locks into the inner blade flange which prevents the blade from spinning on the blade shaft.
Drive Pin Hole: The hole beside the arbor where the pin on the blade flange goes through.

E

Electroplated Diamond Tools: A single layer of diamond, which is plated to the tool piece. This is effectively used for the precise cutting of non-abrasive materials such as tile or marble. When the single layer of diamond is worn, the tool is consumed.
Extension: A threaded rod used to extend the drilling depth of a coring bit.
Expansion Joint Cuts: Same as control cuts or stress relief cuts.

F

Fines: The cuttings generated from the material being cut.
Form Wheel: A shaped tool piece, which cuts the edge of the material to the same shape. It is also referred to as a profile wheel.
Flush Cut: A blade mounted to a machine shaft, which allows the blade to cut flush to the material.

G

Grinding Head: Usually refers to a 10" diameter plate with 10 or 20 brazed diamond segments used on a concrete floor grinder (crete mower).
Grinding Bar: A square tube with diamond segments mounted on one side and replaces conventional abrasive bricks used on a concrete grinding machine.
Green Concrete: Newer concrete containing a high moisture content and is usually recognized by the lack of stress cracks. This material is generally very abrasive and is cut to form stress relief (control) joints.
Grooving: The scoring of concrete or asphalt to prevent hydroplaning on highways and airport runways, or to prevent slippage in industrial and agricultural settings.
Gullet: The break or vertical cut or space in the blade between the segment. The gullet clears the cuttings, provides lubrication or cooling and absorbs the shock that the blade encounters during the cutting action.

H

Hydraulic Power: The use of a hydraulic pumper unit used to power equipment such as wall saw, handsaw, chainsaws and core drills.
High Speed blades: Refers to blades that are designed to be operated on high-speed saws, (4,000-6,300), usually of 12"-16" diameters.
High Cycle: Refers to special electric powered concrete cutting equipment.

I

J

Joint Widening: The widening of a joint in concrete to provide a reservoir for sealant materials.

K

Kerf: The width of the segment.
Kicker Segment: Another style of diamond undercut segment, which is placed vertically in the blade gullet.

L

L.A. Rattler Test: A test to determine the hardness of aggregate materials, which would be used in concrete or asphalt paving material. The results of this test would determine the optimum blade bond to used to match the aggregate conditions.
Laser Welded: Refers to a blade that has its segments attached to it by use of a laser welding technique.

M

Masonry Saw: A table saw used to cut brick, block or refractory materials. Blade size normally ranges from 10" to 20" diameter and 1.5 HP to 5 HP electric or gas motors provide the power.
Matrix: Refers to the metal portion of the segment which holds the diamond crystals.
Mesh: Sometimes refers to the steel mesh used to reinforce concrete.
Mesh Size: Refers to the size of the diamond crystal used in the bond. Mesh refers roughly to the count of wires per inch in the weave of a sieve used for sorting diamond particles. A larger mesh size number designates a smaller particle.
Monocrystalline Diamond: A type of diamond used in electroplating and knife sharpening stones. These crystals have a very

limited life and fracture only once. Because of their limited life, they cannot be used successfully in impregnated tools.
Mooning: A core drilling term to explain the cutting of a piece of rebar which is cut in a crescent shape. This thin piece of steel then easily breaks away from the concrete and wedges itself between the segments and the material being cored. This results in the bit jamming and shearing segments from the core bit barrel.
Mounting Bracket: Attaches the coring drill to the core drill carriage.

N

Non-Coring Bits: Small diameter bits primarily used in the stone industry for drilling anchor holes for granite cladding. The bit has a solid diamond head with only a narrow slot in it to allow coolant to flow.

O

P

Pad: Same term as "backing pad".
Pointer: Device on the floor saw which aligns the blade with the cut line.
Polishing Pads: These pads have a ceramic matrix and are used on a special polishing grinder with water attachment. Grit sizes range from 50 to 10,000.
Polycrystalline Diamond: A type of diamond which is normally used in impregnated tools. The feature of this diamond crystal type is that it has many facets, and fractures many times during its "life". Because this type of diamond has many "lives" it extends the tool life considerably. Higher quality crystals will have more facets and will be harder and more resistant to wear.
Profile Wheel: A special shaped blade that cuts a profile shape into the material. This is usually used in the stone industry to create finished edges in granite or marble.
Random Cracking: Concrete shrinks as it dries and the movement of the concrete will take place randomly unless there is a plane of weakness in the slab. A joint produced in the concrete will produce such a plane, and the cracking of the concrete can be usually contained to the joint area.

Q

R

Rebar: Steel reinforcement rod that is used in concrete.
Reducer Coupling: A male 5/8"-11 thread to 1 1/4"-7 female threaded adapter used to attach small diameter bits under 2" to the core drill.
Refractory: Refers to heat resistant brick used in ovens or kilns.
Retipping: The re-manufacturing of a core bit where the old tool piece is used and refurbished with new diamond segments. This is economical only on larger sizes, usually 6" diameter and larger.
Ring Saw: A unique tool which features a centreless (ring style) blade being powered by a driving mechanism on the inner edge of the blade. Because the blade is centreless the depth of cut on a 14" diameter blade is 12".
Rip Guide: An adjustable bar which mounts to the saw table to hold the material being cut in place.
Roof Jack: A threaded jack which screws from the top of the core drill stand is used with a pipe to wedge the stand against the roof and floor to hold the core drill rig in position.

S

Sandwich Segment: A segment that features a soft matrix material in the centre of the segment encapsulated with a harder matrix on the sides. This allows for free cutting with the centre of the segment while protecting the side clearance of the segment with the harder outer matrix.
Sheer Pin: This breakable pin is used in some core drilling motors to prevent motor damage in the event the core drill becomes jammed in the cut.
Side Clearance: The space the diamond segment overlaps the steel centre.
Silent Core: A core which dampens most of the steel centre's resonating sound during the cutting action. There are two styles of silent cores available. The copper clad core is a sandwich style core with a copper inner piece with metal cladding on the outside. The other style features a laser scroll pattern etched into the steel body which is used to absorb the sound.
Sintered: The process of cooking diamond crystal and metal powders to form a segment. It also refers to the style of blade where the diamond portion is cooked onto the tool piece.
Slab Saw: Another name for a concrete, pavement or walk behind saw.
Slant Segment: A style of undercut segment. A segment with an anvil style extension at the lead of the segment.
Sloughing: A term used to describe the shedding of diamond crystals from the surface of the bond.
Slurc: A type of undercut segment, which is a regular segment mounted on an angle onto the steel centre to produce a swirling effect to clear the cuttings.
Slurry: The mixture of water coolant and material cuttings.
Solid Back Adapter: A built in adapter on a coring bit which allows it to attach to a core drill machine. Common thread sizes are 1 1/4"-7 and 5/8"-11.
Stress Relief Cuts: Same as control or expansion joint cuts.
Swarf: Another term for slurry.

T

Tails: The term used to describe the matrix portion behind the diamond crystal. This part appears as a "comet tail" behind the diamond crystal in the matrix and shows the direction the blade has been operated.
Tension: The process of working the steel plate with a roll tensioner or hammer so that the blade will run true.
Three Piece Expandable Adapter: It is used on open back bits. The adapter fits onto the tread of the core drill or extension and when tightened, squeezes the middle split ring which expands inside the core barrel to hold the bit tightly in position.
Tile Saw: A table saw used to cut tile and thin stone materials. Blade capacity ranges from 4" to 14" diameter blades and various table sizes to accommodate different material dimensions. Motor sizes range from 1/2 HP to 2 HP electric.
Trails: Same term as "diamond tails"
Tuck Pointing: The removal of mortar from the masonry joint. Usually a small diameter blade with a .250" diamond segment width is used to grind the mortar.

U

Undercutting: The eroding action of the material cuttings on the steel centre directly under the diamond segment. Continued erosion results in the steel centre wearing like a knife, which results in eventual segment loss. This is caused by allowing the blade to cut abrasive materials or in the soft foundation material below the material being cut.
Undercut Protection Segments: A segment positioned on the steel centre that breaks the stream of cuttings and prevents them from eroding the steel centre. Usually the stream is redirected away from the blade or is dispersed over a wider area of the steel centre.

V

Vacuum Base: A vacuum pump placed on a sealed drill base, which creates a vacuum that allows the core drill stand to be secured to the floor without having to install concrete anchors or using a roof jack.

W

Wall Saw: A saw which mounts on tracks that is mounted on a wall, which is used to cut openings for doors or windows.
Water Swivel: It is used to operate wet coring bits with a standard drill press or hand held drill. It features a morse taper shank to 5/8"-11 thread to attach it to a coring bit. It also contains a water jacket, which allows coolant to be transferred to the bit.
Water Guard: Same term as blade guard.
Water Jets: The coolant system contained within a blade guard.
Wear Bars: Another type of undercut segment which is usually a vertically placed diamond or carbide segment in the gullets of the blade.
Wire Saw: A saw consisting of a set of various pulleys which creates tension on a loop of diamond wire and pulls it through the material.