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QUALITY TOOLS



Diamond Cutting Blades Safety Guide

Diamond blades are a safe and cost-effective method of cutting many materials used in the construction industry.

When using cutting blades of any type it is imperative that the user fully understands the correct method of use and is familiar with the contents of this safety guide. Improper use of diamond blades is dangerous and can result in blade breakage and serious injury.

Always use a guard, personal protective equipment and carry out the proper mounting and test procedures.

Cutting Machine

1. Refer to the manufacturer's operating manual for the blade specifications and setup. Ensure the maximum operating speeds of the machine and blade are compatible.
2. Never operate a grinder or cut off saw without a correctly fitted and adjusted guard.
3. Check the mounting flanges to ensure that they are flat, of equal size and the correct diameter and do not show signs of excessive wear.
4. The blade must be mounted on a correctly sized blade shaft between the clamping flanges and securely hand tightened with the pin wrench provided with the machine.
5. Prior to use check the condition of the machine. Spindle bearings should be free of end and radial play. Mounting flanges must be in a good condition the power cord and plug should also be checked for signs of damage before use.
6. Maintain a firm grip on hand-held grinders during cutting operations.



Diamond Blade Do's

1. Check the blade is of the correct type for the material being cut.
2. Visually inspect the blade before mounting for possible signs of damage caused during shipping or when in prior use.
3. Check the grinders/cut off saws maximum operating speed against the established maximum safe operating speed marked on the blade.
4. Ensure the arrow of rotation on the blade coincides with the direction of rotation of the machine.
5. Always use a safety guard that covers at least one-half of the blade and ensure that it is correctly position for the cutting task in hand. The guard should always be positioned between the operator and the disc.
6. Always run the blade for thirty seconds after fitting, facing away from any persons in the vicinity.
7. Inspect the diamond blade periodically during use for flatness, fatigue cracks, segment damage or damage to the blade core and centre arbor hole.
8. Ensure the material to be cut is adequately supported and falls away from the blade as the cut is completed.
9. Maintain the blade at a right angle to the cut to avoid twisting, jamming or wedging. Trapping the blade in this manner can result in bouncing and subsequent blade failure and breakage that could result in a severe injury.



Diamond Blade Do Not's

1. Do not operate a grinder or cut off saw without the correct safety guard in place.
2. Do not (side grind) by applying pressure to the side of the wheel.
3. Do not use a diamond blade without checking manufacturer's recommendations for the material to be cut.
4. Do not use a new or used diamond blade with a core that is not flat is cracked or showing any signs of damage.
5. Do not mount a blade on a machine that does not meet the minimum requirements set in the machines manufacturer's operating manual.
6. Do not exceed the maximum operating speed as indicated on the blade.
7. Do not stand in direct line of a diamond or abrasive blade during a start-up or when in operation.
8. Do not start cutting unless you have a clear work area and secure footing.
9. Do not touch the blade after cutting. It is extremely hot and will cause major burns.
10. Do not operate the grinder or saw in areas were combustibile material are stored. Sparks could cause fire or explosion.

Performance

Always follow the manufacturer's recommended blade specifications for material to be cut. Correct product selection will ensure the best cutting performance and safe operation.

1. Do not make long continuous cuts or deep cuts in a single pass with a dry diamond blade. Utilise a slight pendulum movement to help keep the blade running cool.
2. Do not cut too deep, it is recommended that no single pass should exceed 25/32mm in depth.
3. Do not apply excessive pressure to force the blade through the cut quickly, this will generate extreme heat at the cutting edge of the blade, resulting in rapid wear and a reduced cutting performance. The weight of the machine itself should be sufficient to make the cut.
4. Do not attempt to cut curves, grind or rake out mortar joints with flat diamond cutting blades. (Specialist blades are available for these applications)
5. Cool the blade by running it in the air every few minutes. Remove the blade from the cut to run "free" with no load. This allows air to flow around the blade helping to dissipate the heat build-up. The harder the material being cut, the more often the blade should be allowed to cool.
6. Blades can lose their cutting edge when used to continuously cut hard materials, the cutting performance can be returned by 'dressing' the diamond segments. Make a few cuts in soft material such as a concrete block, soft brick or an old silicone carbide sharpening stone. this will help restore the cutting edge.

Wet Cutting Applications

7. Ensure there is a continuous water flow to each side of the blade. Gravity feeds do not necessarily supply a sufficient water flow. Water pumps on concrete saws are "booster" pumps only and they are not suitable as a primary pressure source. An adequate coolant supply is required for wet cutting blades to maintain blade life and cutting efficiency.

Personal Safety

Always wear the correct protective safety equipment which should include the following.

Respiratory, Eye, Ear and Hand protection are required in all uses.



1) Glasses or goggles and additional eye or face protection if required.



2) Suitable respiratory protection.



3) Ear Protection.



4) Gloves.



5) Head protection.



6) Foot protection.

7) Disposable coverall.

Dust Protection

Using cutting equipment generates dust that can contain particles from masonry, concrete, metal or other materials or create mists and fumes that contain chemicals.

If you are unfamiliar with the risks associated with a particular process or material being cut, review the material safety data sheets(MSDS) or consult your employer the manufacturers or supplier.

Silica

Silica is a basic component of sand, quartz, brick clay, granite and numerous other minerals and rocks. Repeated or substantial inhalation of airborne crystalline silica can cause serious or fatal respiratory diseases, including silicosis. When cutting with diamond or other types of abrasive blade always wear suitable respiratory protection.

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