

BLADE BUYING GUIDE

BLADES ASAP

Diamond Tools & More

5 Steps for Selecting the Right Diamond Blade

1.What Material Are You Cutting?

Understanding the material being cut is crucial when choosing the correct diamond blade. Different materials such as concrete, tile, stone, or asphalt each demand specific blade types for optimal cutting performance.
Hard materials need softer metal segments to expose diamonds quickly, while softer materials fare better with harder segments, ensuring efficiency and longevity when the blade matches the material.

2. What Equipment You Are Using?

Blades are specifically designed for different types of saws.
To prevent safety risks and achieve optimal cutting performance, ensure that the chosen blade matches the equipment in terms of size, arbor size, and speed capacity.

3. What is Your Depth of Cut?

he depth of cut you require is a key factor in selecting the right diamond blade. Different blade diameters are designed for varying depths of cut, so it's vital to choose a blade that can handle the required depth without overextending the blade's capabilities.
Using a blade that's too small may not achieve the necessary depth, while one that's too large can strain the equipment and reduce cutting efficiency.

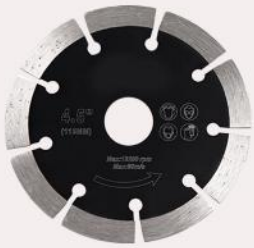
4. Are you Wet or Dry Cutting?

Diamond blades are designed for either wet or dry cutting, and selecting the right type is crucial for safety and blade longevity.
Wet cutting blades use water to reduce dust and cool the blade, extending its lifespan, while dry cutting blades are made to dissipate heat without water. The work environment and material being cut will determine whether a wet or dry blade is more suitable for the project.

5. Are You Maximizing Value?

It is essential to balance your immediate budget with your long-term requirements when choosing a blade. Consider factors such as the blade's life expectancy, which is influenced by cutting conditions, material hardness, and whether you're using the blade for wet or dry cutting. Blades designed for longer life may have a higher initial cost but can be more cost-effective in the long run, particularly for extensive cutting needs..

Type of Diamond Blades



SEGMENTED BLADES

Segmented blades feature distinct gaps between segments, helping keep the blade cool and removing slurry. This makes them perfect for cutting through hard, dense materials such as concrete, brick, and stone.

The segmented design allows for more aggressive cuts with faster speeds, but they might not produce as smooth a finish as other types.



CONTINUOUS RIM BLADES

Continuous rim blades have a continuous smooth edge that enables precise, chip-free cuts, particularly on materials prone to chipping. This design makes them ideal for cutting materials such as porcelain tile, granite, and marble.

These blades cut slower than segmented and turbo blades but offer the cleanest cut.

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TURBO BLADES

Turbo blades have a continuous rim with a serrated edge, enhancing cutting speed and ensuring a smooth cut. This versatility allows them to cut various materials like granite, marble, stone, brick, and pavers.

These blades cut faster than segmented blades while still providing a relatively clean cut, closer to what you'd expect from a continuous rim blade.



SEGMENTED TURBO BLADES

Segmented turbo blades combine the design aspects of both segmented and turbo blades, featuring segments that have a serrated, turbo-like edge. suitable for cutting hard, dense materials quickly while still achieving a relatively smooth finish. Most used for Hard Brick, Pavers, and Concrete Block.

This design provides the fast cutting speed of a turbo blade with the added cooling and debris removal benefits of a segmented blade.

Diamond Pro Tips

Essential tips for maximizing the efficiency and longevity of diamond blades

Initial Blade Preparation:

Initiate your new blade's cutting efficiency by making shallow passes in soft, abrasive materials. This practice prevents the blade from vibrating or skipping during its initial use.

Step Cutting Advantage:

Opt for multiple shallow cuts over a single deep cut during regular usage to enhance cutting precision and blade longevity.

Avoid Blade Force:

Applying excessive force or twisting the blade can lead to dullness, rapid wear, overheating, distortion, and damage to the segments.

Side Grinding Prohibition:

Never use the blade for side grinding as it is not designed for this action and can cause damage.

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Monitoring Slurry Color:

A change in slurry color to brown or red suggests cutting into dirt or sub-base, which accelerates blade wear. In such cases, lift the blade to minimize wear.

Changing Directions Safely:

When altering directions with a floor saw, ensure the machine is turned off and the blade is lifted out of the cut to avoid damage

Directional Use of Blade:

If there's no direction indicator on the blade, look for a "comet tail" pattern behind the diamonds, indicating the correct direction. Reversing the blade may slightly reduce its efficiency and lifespan, even though it won't immediately damage the blade.

Blade Size and Cutting Efficiency:

Using a smaller blade on your machine reduces cutting depth but can enhance power and cutting speed. For example, opting for a 12-inch blade instead of a 14-inch one on a compatible saw can increase cutting efficiency.

Dry Use and Blade Longevity:

While using the blade dry is not recommended due to dust and safety concerns, if you do so, ensure to cool the blade intermittently by removing it from the cut to prevent overheating and prolong its life.

Know Your Materials

- Diamond blades effectively cut through a wide variety of materials, including

Asphalt	Cured Concrete	Marble	Porcelain Tile
Block	Glass	Masonry	Reinforced Concrete
Brick	Granite	Medium Stone	Roofing Tile
Ceramic Tile	Green Concrete	Natural Stone	Sand Stone
Construction Aggregate	Lime Stone	Pavers	Soft Stone

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-Select diamond blades based on the materials you are cutting

Concrete (Soft, Medium, Hard, Cured)
For soft concrete, use a blade with a hard bond to prevent too rapid wear of the blade.
Medium concrete requires a moderately hard bond to balance the wear and effectiveness of the blade.

Hard and cured concrete is best cut with a blade that has a soft bond to allow for easier diamond exposure for efficient cutting.

Brick
Bricks are relatively soft compared to other materials, so a blade with a hard bond is recommended to ensure the blade doesn't wear down too quickly.

Block
Concrete blocks or masonry blocks should be cut with a hard bond blade to manage the abrasive nature of these materials without rapid degradation of the blade.

Asphalt
Asphalt is abrasive and soft, necessitating a hard bond blade to mitigate the fast wear and tear associated with cutting such materials.

Steel
For cutting steel, a different type of blade is generally used, often with an abrasive edge rather than diamond. If a diamond blade is used, it should be specifically designed for steel with adequate tension and bond strength.

Iron
Like steel, iron cutting requires a specialized blade. If a diamond blade is used, it must be appropriate for metal, with properties that prevent overheating and rapid wear.

Granite
Granite is hard and requires a blade with a soft bond to allow for the diamond segments to be exposed consistently for effective cutting.

Stone
The type of stone (soft, medium, hard) determines the bond of the blade. Soft stones require hard bonds, while harder stones need soft bonds.

Porcelain
Porcelain is extremely hard and brittle, necessitating a soft bond blade for precise and effective cutting without causing chipping.

Tile
Tiles, being generally brittle and sometimes hard, should be cut with a soft bond blade, particularly for porcelain or ceramic tiles, to ensure clean cuts without chipping.

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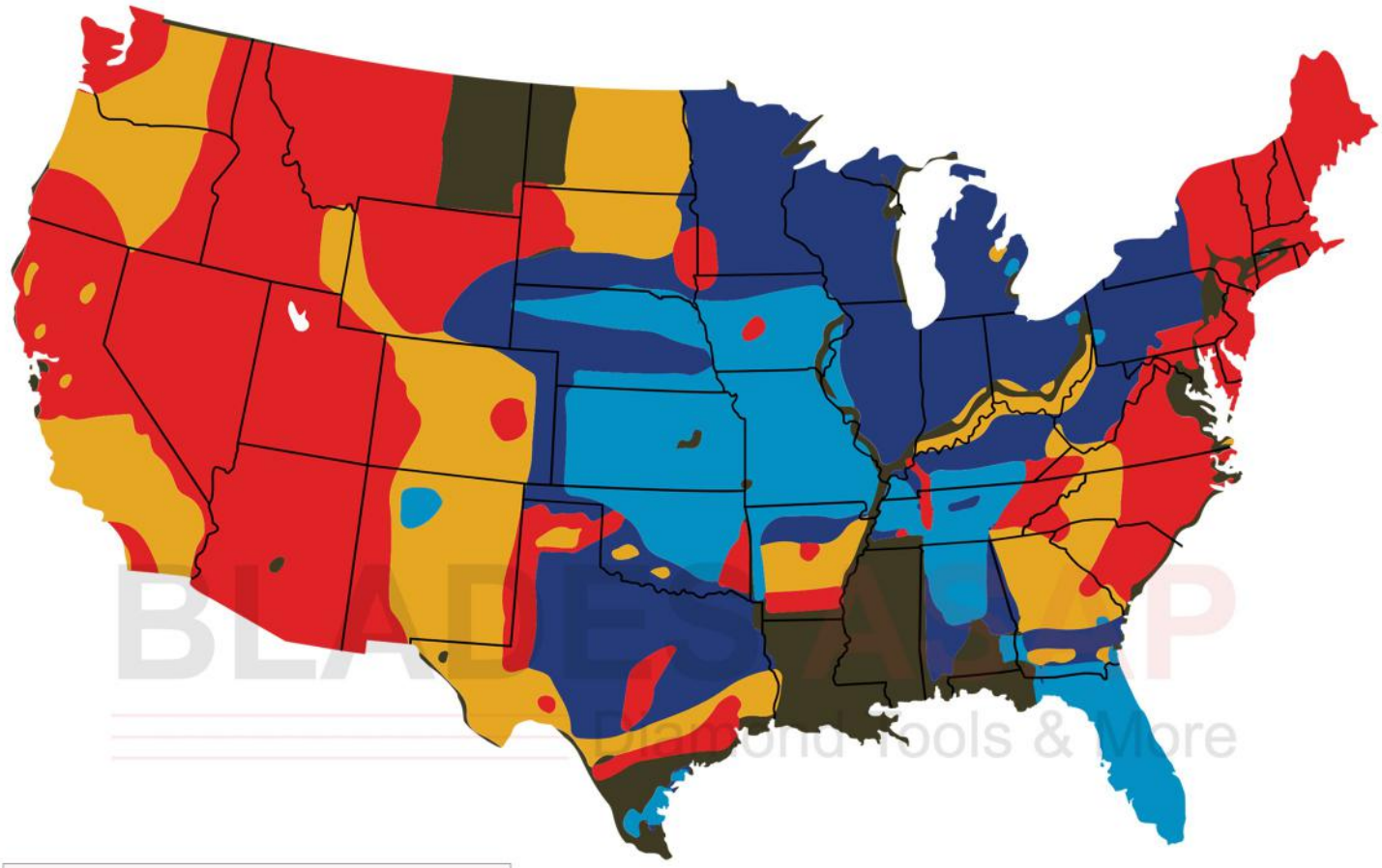
Use a hard bond to cut softer materials and a soft bond to cut harder materials

Use narrow gullets for hard materials and wide gullets for soft materials

Material Application Guide



US Aggregate Hardness Map



Ultimate Rule for Diamond Blades

- Use a Harder Bond to Cut Soft Material
- Use a Soft Bond to Cut Hard Material

Soft	Medium Soft	Medium	Medium Hard	Hard
Soft Limestone	Medium Soft	Medium Hard River Rock	Granite	Hard Chert
Sandstone	Pit Gravel	Gravel	Slate	Hard Quartz
Dolomite Limestone	Limestone	Medium Traprock	Traprock	Flint Rock
Siliceous	Dolomite	Decomposed Granite	Basalt	Hard River RockIpsum
Soft Shell			Quartzite	

*The referenced materials are the primary aggregates found in each respective region, while various other types of aggregates are found nationwide.

Diamond Blade Maximum Cutting Depths

Blade Diameter (inch)	Cutting Depth (inch)
Walk-Behind Saw Blades	
12"	3 5/8"
14"	4 5/8"
16"	5 5/8"
18"	6 5/8"
20"	7 5/8"
24"	9 5/8"
26"	10 5/8"
30"	11 5/8"
36"	14 3/4"
42"	17 3/4"
48"	19 3/4"
Wall Saw Blades	
18"	6 1/2"
24"	9 1/2"
30"	11 1/2
36"	14"
42"	17 3/4"
48"	20 3/4
Cut-Off Saw Blades	
12"	4"
14"	5"
16"	6"
Masonry Saw Blades	
14"	5"
18"	7"
20"	8"
High speed Saw Blades	
4"	1
4.5"	1 1/4
5"	1 1/2
7"	2 1/2
8"	3
10"	3 3/4
12"	4
14"	4 5/8
16"	6
Tile Saw Blades	
6"	1 3/4"
7"	2 1/4"
8"	2 3/4"
9"	3 1/4"
10"	3 3/4"
Hand-Held Grinder Blades	
4"	1"
4 1/2"	1 1/4"
5"	1 1/2"
7"	2 1/2"
8"	3"

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Diamond Blade Operating Speeds

Blade Diameter (inch)	Recommended Speed (RPM)	Maximum Speed (RPM)
4"	9072	15000
4 1/2"	8063	13300
5"	7257	12000
6"	6048	10185
7"	5184	8730
8"	4536	7640
9"	4032	6790
10"	3629	6115
12"	3024	5095
12" High Speed		6300
14"	2592	4365
14" High Speed		5400
16"	2268	3820
16" High Speed		4725
18"	2016	3395
20"	1814	3055
22"	1649	2780
24"	1512	2550
26"	1396	2350
28"	1296	2185
30"	1210	2040
32"	1134	1910
36"	1008	1700
42"	864	1455
48"	756	1275

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Diamond Blades Do's & Don'ts

DO's

Select the right blade for the right material

Selecting the right blade for the material you are cutting is crucial for ensuring optimal cutting performance, extending the lifespan of the blade, and maintaining safety

Make sure your blade is properly warmed up

Gradually warming up your diamond blade before engaging in full-speed cutting is essential for preventing premature wear and extending the blade's life. A proper warm-up cycle allows the blade to gradually reach its optimal cutting temperature, reducing the risk of thermal shock and diamond segment loss. This practice ensures more consistent cutting performance and can significantly enhance the blade's overall efficiency and longevity.

Choose the correct saw

Matching the correct blade to the right saw is crucialjust like selecting the appropriate blade for the material be ing cut. It's important that the saw's power output matches the blade's specifications for optimal cutting performance. Using the right saw not only improves cutting efficiency but also prolongs the blade's lifespan and ensures safety and precision in the cuts.

Use a hard bond for softer materials and a soft bond for harder materials

The bond of the blade affects how the diamonds are held in place.
Use a hard bond for soft material -This allows the blade to wear appropriately, exposing new diamonds at the right rate for efficient cutting.
Use a soft bond for hard material - A soft bond for hard materials prevents premature wear, ensuring the blade remains effective over time.

DON'Ts

Assume any blade will work for the job

Assuming that any blade can be used for different materials can lead to several problems, including inefficient cutting, increased wear and tear on the blade, and potential safety hazards

Jump immediately into cutting with a cold blade

Starting to cut with a cold diamond blade can shock the blade's segments, leading to potential segment loss or even blade warpage. This abrupt start can significantly reduce the blade's effectiveness and lifespan. It also poses a safety risk, as unpredictable blade behavior can lead to accidents. Ensuring the blade is appropriately warmed up maintains its structural integrity and ensures safer operation.

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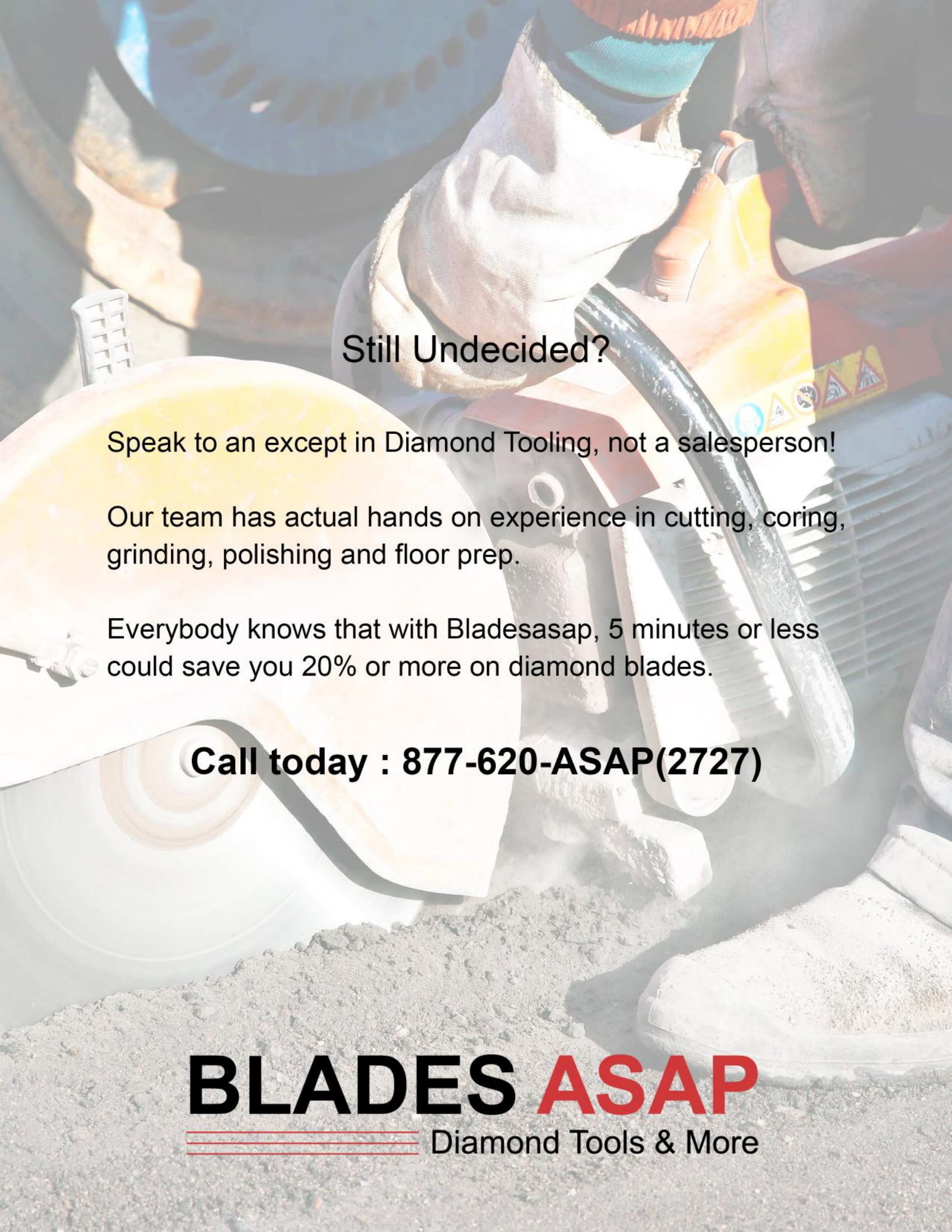
Use a blade for low horsepower on a high horsepower saw or vice versa

Using a blade designed for low horsepower saws on a high horsepower saw can lead to rapid wear or even catastrophic failure of the blade. Conversely, using a blade designed for high horsepower on a low-power saw can result in inadequate cutting performance and inefficiency. Ensuring the blade and saw power levels are compatible is essential for safe and effective cutting.

Allow the blade to overheat

Overheating can cause the blade's diamond segments to wear out faster and can lead to loss of tension in the steel core, resulting in blade warping or failure.



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