Q. Can I use a masonry grinding wheel to cut metal?
A. Yes, says Chris Roberts, western sales manager at Mercer Abrasives. “Masonry grinding wheels will cut metal, it’s just that they won’t last as long. That’s good to know if you are in a jam. Don’t be afraid to use it, it won’t melt in your hands just because a masonry wheel touched metal.”

Q. Can I get a straight metal cut with a thinner bonded abrasive wheel?
A. You can use the newer .045" wheels and get remarkably straight cuts, says Roberts. “The thinner the wheel, the faster the cut. And that’s why the .045” wheels have taken over cutting flanges and rebar on jobsites. Their design allows them to remain stiffer during the cut so they cut straight. In the past, you needed to use a 1/16” wheel to get a straight cut, but they are much slower because they have to cut through more material.”

Q. Can I use a chopsaw blade that has a chunk out of it?
A. Yes, but only if it is the only way you can keep working and proceed only with extreme caution, says Roberts. “If there is a chunk out of a chopsaw blade, you still may be able to use the blade, but it will vibrate and may shorten the tool’s bearing life. If you are in a bind, you can continue to cut with it, but replace it as soon as possible. If you have any doubts about its safety, replace it right away,” Roberts says.

Q. Are flap discs for grinding, or polishing?
A. Both. “Flap discs aren’t just for finish work,” says Roberts. They can do heavy stock removal when you bear down on them, then when you want to finish the piece, you back off a bit and they will give you a nice finish. A flap disc can eliminate work by combining grinding and polishing into one step.”

Roberts says that flap disc users sometimes don’t get full wear out of the disk. “Many times, when users hit the flap disc backer, they think it is used up, but if the flap discs has a plastic backer it probably can be trimmed. You can get as much as 30 percent more life from it. Many flap discs have markings on the plastic backer as to where it should be trimmed for added life. If the backer is fiberglass, it’s not made to be trimmed, and don’t try to trim it.”

Q. What are the advantages of a flap disc vs. a grinding wheel?
A. “The operator will be more comfortable and able to grind for longer periods of time with a flap disc. You are also able to grind and finish in one step, greatly increasing productivity,” says Tony Hufford, abrasive product manager at Weiler Corporation. The layered abrasive flaps are very aggressive because they constantly expose new grain and act as a cushion so they make less noise and vibration than a grinding wheel. Flap discs won’t gouge the work piece as fast as a grinding wheel, so a less-skilled operator can use a flap discs more efficiently without damaging a work piece.”

Q. Aren’t all abrasives alike? It’s just grit and a bonding agent, right?
A. Wrong. While they tend to have the same ingredients, it’s how they are put together that makes a difference in removal rates and abrasive life, says Colin Johnson, Diablo abrasive new product development manager at Freud. “It’s like making a cake. The ingredients have to be in the correct portions and put together in the right way for maximum effectiveness. If the recipe is wrong or put together incorrectly, the product won’t work as well. The base materials, which are aluminum oxide, zirconium, silicon carbide...
or ceramic grit, are put together in specific combinations, then oriented onto a backing but held in a certain position so the abrasive particles are oriented for best cutting ability.”

Q. For surface sanding, which grit should I start with?

A. “Sanding is part art, part science. It takes experience to see where to start and how to finish sanding,” says Johnson. “You want to use the finest grit that allows you to accomplish the job. If you use a 40 grit to take paint off of a door, for example, it will take a lot of finish sanding to get the finish back. Surface scratches made while removing the paint must be taken out.”

Coarser grit will remove material faster, but then you need to step through grit sizes to get to the finish required. “If you are lucky, you will be able to skip one grit size per step. But you can’t go from a 36 grit to an 80 grit abrasive in one step,” Johnson says. The table above on the next page shows typical grit ranges and their best application.

Q. How can I get my abrasives to last longer?

A. Keep them cool. “Heat is the enemy of coated abrasives. Heat will build up quickly if you are using too-fine of a grit for the job. That will cause the abrasive to either load up or fail,” Johnson says.

Bonded abrasives must be matched to the job, especially when cutting concrete. “Use a blade with a soft bond to cut hard concrete and a blade with a hard bond to cut soft or green concrete or asphalt,” says Roberts.

Q. We do a lot of production-style grinding and sanding. What would be a better option to a heavy 7” grinder?

A. “We are finding that 6” grinders are becoming very popular on jobsites. They are as light as a 4 1/2” grinder but they make a bigger depth of cut while producing more surface speed per minute,” says Hufford. “This increases the productivity while not creating the operator fatigue common with operating a heavy 7” grinder.”

Q. I get overwhelmed when I look at the wall of grinding wheels at the distributor showroom. Aluminum oxide, zirconium, ceramic, silicon carbide, diamond and then combinations of these minerals… how do I select the best abrasive for the job?

A. The best way is to look at the applications listed on the wheel instead of concentrating on its composition, recommends David Veprek, DeWalt senior product manager. “Generally, choose aluminum oxide for metal cutting, grinding and finishing; but you can also use treated aluminum oxide, which has a coating that increases bond strength for longer lasting abrasives. Look to bonded zirconium wheels for rugged stock removal on metals or coated abrasives for stock removal on metal and wood. Ceramic grains offer the highest stock removal on metal, but are more expensive. Silicon carbide bonded abrasives can cut or remove concrete and are also used to grind very soft or very hard metals, and coated silicon carbide abrasives are used for very fine finishing of metal and coatings. Diamond grains can cut and grind concrete and metal,” he says.

Q. Can I use a wheel that’s rated a slower speed on my grinder or can I remove the guard and run larger-diameter wheels to get more productivity?

A. Most definitely not a good idea, says Roberts. Always make sure the wheel or disc is the same as the tool’s rated speed. “If you put a slow wheel on a faster rated grinder, there is a good chance the wheel will disintegrate, which could cause operator or bystander injury. Always wear personal protective gear when using these tools,” he says.