

Explaining the Processing Process and its Complexities

By Jim CuvIELLO

FULL REFINEMENT OF THE CONCRETE SURFACE EXTENDS BEYOND replacing the scratch pattern created by the previous grit abrasive with the next progressively finer grit abrasive. Once the scratch pattern has been replaced from the previous grit, more refinement of the concrete can be achieved. Not performing full refinement from one progressively finer grit to the next will not produce the best possible results, not allow the floor to have its maximum durability and will cause the surface to prematurely wear.

It is heavily recommended that you not skip a grit in the processing sequence, and when transitioning from metal bonded abrasives to resin bonded abrasives the first resin bond grit abrasive used must be one grit lower than the last metal grit abrasive used. In rare situations you may be able to skip a grit or not drop back a grit, but it can never be used as a standard rule. If you do attempt to skip a step in the polishing process, you should perform comparison testing in several areas of the slab to determine what type of quality you are giving up by skipping a grit or not dropping back a grit. It will be up to the contractor to determine at what grit to start the process since he or she knows the goal to reach.

The following example is an accepted grit sequence depending on the concrete surface given to work with:

Start with a metal 50 or 70 grit, two or three segments per abrasive. Move up to a 100 or 120 grit with six segments per abrasive. Switching from a two or three segment abrasive to a six segment abrasive allows the concrete surface to be closed up and refined as quickly as possible to obtain the best clarity of reflection and durability. The more surface area an abrasive has, the faster the surface of the concrete will be closed. There are situations where you may need to go higher in metal bond abrasives and situations where metal bond abrasives are not needed.

Now it's time to move to the resin abrasives, remembering to drop back one grit. A typical sequence would be: 30/50, 100/120, 200/220, 400, 800, 1,500/1,800 and 3,000/3,500. All of the resin bonded diamonds are full faced diamonds that close up the surface of the concrete quickly to obtain the best clarity of reflection and durability. Depending on your desired results, you may stop at any grit.

You will find that not all manufacturers use the same grit designation. Some will use 70 instead of 50, 120 instead of 100, 220 instead of 200, etc. There are some manufacturers that also offer a 600 grit resin and some that label their abrasives as 1, 2, 3, 4, etc. It should be noted that some manufacturers produce hybrid abrasives where a combination of metal and resin is used.

When moving from one grit abrasive to the next it is imperative to thoroughly clean the floor. Removing any particulate grit that is larger in size than what your next grit cut will produce. You don't want to grind back into the floor grit that was produced for example by a 50/70 metal when you go to a 100/120 metal. Until you reach the polishing grits dust on the floor is no big deal.

Continued on Page 2

Continued from Page 1

The concrete would dictate at what grit a densifier would be applied. There are three types of densifiers that are most commonly used — sodium, potassium and lithium. Each manufacturer has specific directions for application that should be followed.

Just because two contractors have the same grit sequence specified, the outcomes they achieve polishing on the same concrete can be drastically different. Remember all the variables that are within the contractor's control and work with them for the best results.

Remember: To properly grind, hone and polish concrete and obtain the maximum "clarity of reflection" and "durability" the concrete surface will allow a proper grit sequence must be used that allows for full refinement of the concrete surface with each grit abrasive before moving to the next progressively finer grit abrasive. Even if the desired result is not a deep clarity of reflection, to obtain the "clean crisp look" of the concrete surface at a 200, 400 and 800 grit resin each grit must be performed and refined to its maximum potential.

Full refinement of the concrete surface extends beyond replacing the scratch pattern created by the previous grit abrasive with the next progressively finer grit abrasive. Once the scratch pattern has been replaced from the previous grit more refinement of the concrete can be achieved. Not performing full refinement from one progressively finer grit to the next will not produce the best possible results, not allow the floor to have its maximum durability and will cause the surface to prematurely wear.

At no time can a grit in the sequence be skipped and when transitioning from metal bonded abrasives to resin bonded abrasive the first resin bond grit abrasive used must be one grit lower than the last metal grit abrasive used.