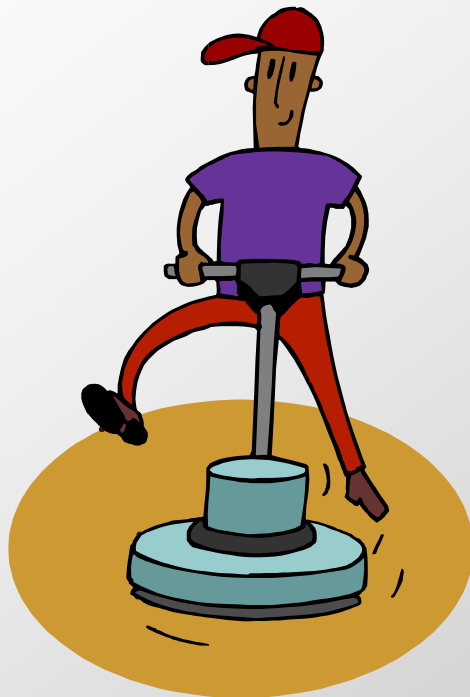




Guide to Buying Concrete Polishing Supplies

By Anne Balogh, The Concrete Network



Thanks to recent advances in polishing equipment and techniques, you can now grind concrete floor surfaces—whether new or old—to a high-gloss finish that never needs waxes or coatings. Offering superior durability and ease of maintenance, polished concrete has become a popular flooring surface in warehouses, retail spaces, schools, and other high-traffic facilities. But polished concrete serves much more than a utilitarian purpose. It's also an economical flooring alternative for homeowners or businesses that can't afford pricey marble or granite floors but want the same brilliant, mirror-like finish. [*Continue >*](#)



As with any other specialized technique, polishing is a multistep process requiring use of the proper tools and equipment to achieve top-quality results. To help you get started, here's a brief overview of the polishing process and a checklist of basic equipment and supply needs, along with some buying tips. Note that each job will present different conditions and challenges, so be sure to consult with your equipment and material suppliers for recommendations as to the products best suited for your application.



Photo courtesy of [Polished Concrete Images](#).

Polishing basics

Polishing concrete is very similar to sanding wood. Machines equipped with diamond-segmented abrasives (akin to sandpaper) are used to grind down concrete surfaces to the desired degree of shine and smoothness. As when sanding wood, you gradually progress from coarser-grit to finer-grit abrasives. (In this case, grit is the particle size of the diamond.) The result is a glossy, mirror-like finish.

You can polish concrete using wet or dry methods. Although each has its advantages, dry polishing is the method most commonly used in the industry today because it's faster, more convenient, and environmentally friendly. Wet polishing uses water to cool the diamond abrasives and eliminate grinding dust. Because the water reduces friction and acts as a lubricant, it increases the life of the polishing abrasives. The chief disadvantage of this method is the cleanup. Wet polishing creates a tremendous amount of slurry that crews must collect and dispose of in an environmentally sound manner. With dry polishing, no water is required. Instead, the floor polisher is hooked up to a dust-containment system that vacuums up virtually all of the mess.





Checklist of equipment and supply needs

Floor polisher. This is the indispensable workhorse on any polishing project. Look for a machine with a planetary drive system—a large primary polishing head (ranging from 17 to 36 inches in diameter) fitted with three or four smaller satellite heads that hold the diamond abrasives. When the machine is operating, the satellite heads rotate in the opposite direction of the primary head to eliminate linear grinding marks in the floor.

Buying tips: Floor polishers can weigh anywhere from 250 to 1,250 pounds. Heavier machines produce greater friction levels, resulting in a better polish. If you're polishing dry, be sure your machine is equipped with a built-in vacuum port to collect the dust.

Handheld polisher or walk-behind edging tool (7 inches in diameter or smaller) to work along edges or in tight spots where a large walk-behind floor polisher can't maneuver.

Set of diamond-segmented abrasives in various grit levels, ranging from about 16 to 3000 (the higher the number, the finer the abrasive level). You'll need two basic types of abrasives: Coarse diamond segments bonded in a metallic matrix for surface preparation and initial grinding (from 16 to 300 grit) and finer diamond segments embedded in a resin matrix for honing and final polishing (from 100 to 3000 grit). See the: [*Summary of the Basic Polishing Steps*](#).

If the job requires removing thick elastomeric membranes, coatings, or mastics from an existing floor, it may be necessary to purchase a more aggressive grinding head specifically designed for removing heavy coatings and mastics, such as the T-Rex from HTC Sweden AB (www.htc-sweden.com). This tool achieves high removal rates, often completing the job after one pass.



Photo courtesy of [HTC-America](#).



Buying tips: The choice of polishing abrasives depends on the condition of the surface and the hardness or softness of the material being polished. Consult with your supplier to determine the right diamond tooling to use for a particular application. A basic starter's kit should include at least three abrasives at each grit level. (Most suppliers color-code their diamond abrasives by grit level for easy identification.) Be sure the diamond tooling is sized to fit the satellite heads of your polisher.

Dust-collection equipment to capture the dust generated from grinding of the concrete surface. Look for a machine capable of extracting about 99% of the dust from polishing (many of today's models do). This will keep the worksite clean and the air quality safe.

Penetrating chemical hardener. After performing initial coarse grinding with the metal bonded diamond abrasives, it's often beneficial to apply a liquid chemical hardener to the concrete to help solidify and densify the surface and provide extra protection from water penetration and staining. Hard concrete also produces a better polish. These products, which can be applied to new or existing floors, work by reacting chemically with the calcium hydroxide in the concrete to form a hard, crystalline structure. They are sold under different trade names, but are usually made of sodium-, potassium-, or lithium-based silicates.

Repair filler for patching any cracks in existing floors during the surface preparation stage.

Buying tip: Use an epoxy or other semi-rigid crack filler, making sure to level the filler at the surface. This will enable the polishing heads to move more easily over the floor.

Topical stain-guard treatment. Once you obtain the look and polish you're striving for, you may want to protect the surface by applying a commercial stain-guard product, especially if the floor will be exposed to grease, oil, or chemicals. Similar to Scotchgard for fabric, these solutions penetrate the surface to make the floor more resistant to stain absorption and dirt. They are usually applied by pump sprayer or wax applicator, but must be reapplied every few months or so to maintain their effectiveness.





Supplemental power and lighting. Floor polishing machines consume a lot of juice (from 220 to 460 volts and up to 40 amps). Make sure the facility you're working in has the right electrical outlets and enough power to operate your equipment. Consider investing in a portable generator to eliminate downtime due to insufficient power. Also check the lighting: Is it bright enough to clearly illuminate the surface you're working on? If not, you'll need to bring in portable halogen lights.

Optional decorative enhancements. You can enhance the lustrous beauty of polished concrete by using various coloring products and specialty treatments. To add color, you can apply chemical stains or dyes to the concrete during the polishing process. For new concrete floors, colored aggregate, glass pieces, or bits of metal can be seeded into the freshly placed concrete before it sets. The polishing process will reveal these decorative embellishments.

SUMMARY OF THE BASIC POLISHING STEPS

- Remove existing coatings (for thick coatings, use a 16- or 20-grit diamond abrasive or more aggressive tool specifically for coating removal, such as a T-Rex™).
- Seal cracks and joints with an epoxy or other semi-rigid filler.
- Grind with a 30- or 40-grit metal-bonded diamond.
- Grind with an 80-grit metal-bonded diamond.
- Grind with a 150-grit metal-bonded diamond (or finer, if desired).
- Apply a chemical hardener to densify the concrete.
- Polish with a 100- or 200-grit resin-bond diamond, or a combination of the two.
- Polish with a 400-grit resin-bond diamond.
- Polish with an 800-grit resin-bond diamond.
- Finish with a 1500- or 3000-grit resin-bond diamond (depending on the desired sheen level).
- Optional: Apply a stain guard to help protect the polished surface and make it easier to maintain.





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SUMMIT DATE

This document reached the summit (was created) on March 10, 2006 and is based on the best information available to the Sherpa at that time. To check for updates please click here <http://www.ConcreteSherpa.com/polishing>.

NAVIGATION & USER TIPS

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KEYBOARD SHORT CUTS

| | PC | MAC |
|--------------------------------|------------|---------|
| Zoom in (Larger) | [Ctrl] [+] | [⌘] [+] |
| Zoom out | [Ctrl] [-] | [⌘] [-] |
| Full screen/normal screen view | [Ctrl] [L] | [⌘] [L] |

ABOUT THE CONCRETE SHERPA

The Concrete Sherpa is a team of people that represent the experience, teaching and learning of our team members and other industry leaders *on a mission to make life better for the concrete contractor*. We are an idea center striving to deliver thought provoking ideas based on “Concrete Advice for Business and Life” to stimulate you to reach new heights. As a user, you should remember to consider all information you receive, here at the Concrete Sherpa or elsewhere, not as a *cast in concrete* recommendation, but rather as an idea for you to consider and ponder.



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THE JOURNEY LEADING TO THE CONCRETE SHERPA PROJECT

The Concrete Sherpa Project (A [Sherpa](#) is a “guide”) was born at The Concrete Network in mid 2004. Here is how it happened:

The biggest surprise, or gift, since starting The Concrete Network in 1999 has been the concrete contractor friends from around the country we’ve made and witnessing the passion they have for what they do. These people include Dave Pettigrew, up in the San Francisco Bay Area, or the Verlennich brothers in Minnesota, or Bob Harris in Georgia, the list goes on and on. It’s quite inspiring.

We were once asked, “How are you so excited every day about concrete?” Well the answer is simple, it is impossible to not be excited about concrete when you have the job we do—interacting with hundreds of concrete contractors from every state in the country.

The thing we’ve learned about concrete contractors is that most are passionate *craftsmen*—they are often less passionate and experienced in the “office stuff”. Human nature channels us to do what we are most comfortable with; learning how to use a new saw-cutting tool is comfortable; learning and implementing a new estimating strategy, or job management tool, is not so comfortable.



Sherpa info

THE JOURNEY CONTINUES...

So Sherpa was born to provide FREE and easy to use information on topics many contractors are not too comfortable with.

- Concrete Sherpa is here to provide help to contractors who are often 'Lone Rangers' and don't have anyone to get solid business advice from.
- Concrete Sherpa is here to provide help for contractors who have to work too hard and too many hours in their business, and one day realize they need to work *on their business, not in their business*.
- Have fun with Concrete Sherpa and go faster towards reaching success than you might have on your own.
- To skeptics who think something free can't be valuable, or there must be a trick- visit Concrete Sherpa and decide for yourself.

We hope you make great use of the Concrete Sherpa and it helps you to become an awesome success for yourself, your family, your church, and your community.

VISIT THE CONCRETE SHERPA

To visit the Concrete Sherpa click here <http://www.ConcreteSherpa.com>.

