3M | Abrasives

FOR WHEN ENDURANCE MATTERS

Choose the Right Abrasive for the Job

When it comes to sanding, not all abrasives are created equal. To choose the appropriate product for each project, you need to consider the surface you're sanding, what you're trying to accomplish and what form of abrasive to use. So what exactly should you keep in mind when making your choice?
Let's talk about it.

Why does selecting the right abrasive matter?

All abrasives scratch. It's what they're designed to do. But each abrasive scratches differently. The scratch varies by the type of surface you're sanding and the grit level of the abrasive. Above all, it's the intent for sanding (remove, smooth or finish) that will influence what abrasive you'll want to use and the level of grit to choose.

Scratches will need to be removed or softened by subsequent grits as you move up the grit range. The finer the finish, the finer the scratch needs to be. Abrasives are generally multipurpose, but some abrasive types are specifically designed to perform better on specific substrates. Choosing the correct abrasive and grit will get you to the end result quicker and more efficiently.

How do I approach choosing the right form of abrasive?

Sponges

For some, it's about comfort preference. Sponges were designed to fit comfortably in the hand. It's a ready-made, single-piece tool that's convenient and requires no expertise or extra tools to use. It's easy to use and conforms to a substrate's curves and contours or for details that a sheet doesn't sand easily.

Sheets

Sheets are a more efficient option for jobs on larger surfaces or jobs that require heavy removal or flattening. Since sanding sponges are flexible, allowing the mineral to be pushed in when pressure is applied, sheets will have a much more aggressive result than a similar-grit sponge. When used with a hard-backed hand tool, sheets apply the full pressure to a sanding substrate.

Discs

Discs used with a power tool are a fast and more efficient sanding method, especially if the job requires heavy removal on large surfaces.

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What does it mean when an abrasive claims to last longer? Why does this matter?

After prolonged use, an experienced user can feel an abrasive begin to “skate” when the abrasive surface has dulled or clogged with “loading” (build-up of material on the abrasive surface). Sometimes, knocking off the loading will return some cutting power, but eventually, the abrasive won’t be able to perform. Different synthetic minerals used today have improved the life and cut an abrasive can have. Many of today’s abrasives are almost entirely synthetic minerals that are able to maintain their sharp edge, providing longer life with less loading. Sheets use an anti-loading layer and some sponges use dust channeling technology to cut back on loading.

They say “time is money,” and it’s really true when it comes to sanding. It’s a multistep process, where it’s normal to go over the same space three times or more. The time it takes to replace abrasives on a tool — especially hand tools — can be significant during a painting job. If you can speed up the time by having an abrasive that cuts better and lasts longer between replacements, you can put that time saved to use on something else.

What grit should I choose for my project?

Let’s take some common tasks for examples.

Windows & Doors: You’re likely encountering lots of windows and doors with years of paint layers. A proper refinishing job would start with removing the paint with a very coarse grit (60 or 80). After the top layers have been removed — and before deep scratching occurs — it’s recommended you switch to a medium grit (100 or 120). This will remove any paint staining that remains and soften any scratching that occurred with the coarser grit. Depending on the finish you’re sanding, abrading could stop, or move to a finer grit (150, 180 or 220) to remove any scratches from the previous abrasive grit used, or if a stain or clear finish is to be applied.

Woodworking: The conventional wisdom for wood furniture has changed over the years. Lumber mills have tremendously improved the bare wood used for furniture and other high-grade uses, to the point where coarser grits are rarely used anymore. Start with higher grits (150 or 180) for smoothing, and a 220 grit as an abrasion to the bare wood before applying a finish. Continue with a 320, 400 or even higher grit as a between-coat abrasion to give the next layer a scratch that the finish can anchor to.

Painting & Drywall: When it comes to painting walls, it’s a common misunderstanding that paint and primers cover scratches, when in most situations, paint can actually amplify scratches on walls and ceilings. Smooth drywall sanding makes seams invisible once painted. It’s rare to use a coarse grit when sanding drywall mud, except when removing excessive build-up. The goal is a soft, low-scratch finish, with as little sanding as possible. Both pros and DIYers highly prefer sponges when sanding drywall mud, since they offer a quick, convenient tool that gives an ideal scratch on the mud. Plus, the dust channeling feature keeps the sanding environment cleaner by channeling 60% of the dust straight down (better than 100% of it going airborne when using a flat sander).

3M PRO GRADE PRECISION™

REMOVE

Sanding Sheets	Sanding Sponges	Sanding Discs
60 COARSE	36 X-COARSE	60 COARSE
80 COARSE	60 COARSE	80 COARSE

SMOOTH

Sanding Sheets	Sanding Sponges	Sanding Discs
100 MEDIUM	80 MEDIUM	100 MEDIUM
150 MEDIUM		120 MEDIUM
120 MEDIUM		

FINISH

Sanding Sheets	Sanding Sponges	Sanding Discs
180 FINE 220 FINE	120 FINE	220 FINE
320 X-FINE	180 X-FINE	
400 X-FINE	220 X-FINE	

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What specialty abrasives might be a better fit for my business?

Today's abrasives are designed to be universal in their use. They work great on all substrates and when used properly, provide consistent finishes. That said, there are abrasives that are designed for specific substrates.

- Garnet abrasive is a softer, natural mineral used mainly on bare wood.
- Wet-or-Dry is a harder silicon carbide mineral used for removal or finer finishes with higher grits. Wet-or-Dry is designed to provide lubrication and heat reduction, and wash away any build-up that can leave undesired marks in the substrate when used wet.
- Emery cloth is another hard mineral with a cloth backing designed for aggressive abrasions.
- Abrasives with higher ceramic blends are especially good for metal applications or high-volume cutting and finishing.

Ready to choose?

At the end of the day, you'll want to work with the right abrasive solution that works best for you and your projects. Choose the abrasive and grit that will get the results you're after. You can find it all at your nearest Sherwin-Williams store.

What is the surface of the project? ▶ **What is the stage of sanding?** ▶ **Determine the grit needed.** = **Professional results.**