Klingspor's Woodworking Shop Sandpaper A to Z

Aluminum Oxide is the most common abrasive used. It is available from P24 grit to P1500 grit and comes in the form of belts, discs, sheets, and rolls. AO is recommended for use on metal, steel, aluminum, and wood.

OPTIONS:

-Stearated AO paper has a coating to help prevent loading (PS33, PS73W, PL36)
-Latex AO has an extremely strong backing to prevent tearing (VP73W).
-Film AO is a 3mil polyester film which is tear resistant and waterproof (FP73W)
-Heavyweight Paper backed AO is tough and durable (PS22, PS29)
-Lightweight Paper AO is lighter grade for economical use (PS31)
-Cloth backed AO is made of cotton and polyester for a more durable product. It is available in a flexible material for more conformability (LS309, CS311, LS312 (gold), KL361, KL385, CS710) .
-Fiber AO is an extremely heavy paper backing where several layers are bonded together using a process called "vulcanizing".

Silicon Carbide is a harder abrasive than AO, but not as durable. SC is friable, which means it stays sharp as edges break off. It is available from P16 grit to P2000 grit and comes in the form of belts, discs, sheets, and rolls. SC is recommended for sanding glass, plastics, rubber, ceramics, solid surface non-ferrous metals, and between coats of finishes and is best used with light pressure

-SC paper is mostly used by woodworkers for sanding between coats of finishes (PL35 Stearated, & PS11 & PS14 - Wet/Dry)
-SC Cloth (CS321 Wet/Dry & CS333 more flexible)

Alumina Zirconia is a more durable abrasive than Aluminum Oxide or Silicon Carbide. It is available from 24 grit to 400 grit and comes in the form of belts, discs, sheets, and rolls. AZ is best used for grinding stainless steel, titanium, and dimensioning of wood.

-AZ paper is heavy weight and available from 36g to 220g (PS36- AZ plus)
-AZ cloth used for heavy grinding and is available 24g-120g (CS416 & CS411- Planer Belts (Wet/Dry)

Emery is a natural mineral used for hundreds of years. We offer a synthetic version that we call "Shop Rolls" (KL361, KL385).

Garnet is a natural mineral that mostly comes from a mine in New York State and is a good economical choice.

-Garnet paper is available in sheet form only (PS10)

Crocus is a very fine abrasive used for polishing metals.

-Crocus cloth is offered in 800 grit only (KL371)

Grading Scales

-P-grade is used by the Federation of European Producers of Abrasives (FEPA) and has very tight tolerances. Klingspor uses this scale on its Aluminum Oxide & Silicon carbide products.
-CAMI-grade is used by the Coated Abrasives Manufacturers and has less stringent standards. Grading is similar to P-grade up to 180 grit then it begins to vary. It is mostly used by US manufacturers.
-Micron is a grading system that is measured by particle size in microns. The lower the number, the finer the grit.

KLINGSPOR'S WOODWORKING SHOP
"Quality Tools and Supplies for the Woodworker"

TIPS:

1) Orbital Sanding
   -When sanding with an orbital sander, sand in an "S" pattern across the grain from one side to the other, overlapping until you reach the end. Then sand with the grain in an "S" shape pattern from one end to the other, overlapping until the surface is covered. This will ensure an even and flat surface.
2) Penetrating Oil finishes
   -Sand bare wood to at least 180 grit (sanding higher will burnish the wood & hinder oil penetration).
   Wet/Dry Silicon Carbide sheets (320 grit to 1200 grit) can be used to "sand in" the oil. This will act as a lubricant for the abrasive and will smooth the wood & oil surface.
3) Staining
   -When stain will be applied, sand the wood to at least 150 grit using Aluminum Oxide (the final grit will vary depending on if the wood is a hardwood or softwood, the type of stain is water based or oil based, and if the stain color is dark or light).
4) Sanding Sealers
   -Sanding sealers should be sanded lightly with Silicon Carbide 220 grit paper. Foam sanding pads and non-woven abrasive pads also work well.
5) Lacquers
   -Sand lacquer finishes with 220 - 320 grit Silicon Carbide paper or foam sanding pads to remove dust nibs, runs, etc. This also flattens out the surface and prepares it for following coats. Sanding after the final coat levels out the surface and can be polished into a high gloss finish.
6) Varnishes
   -Sand varnishes and urethanes in between all coats using Silicon Carbide paper. Remove dust from surface between coats.
7) Waterborne Finishes
   -When a waterborne finish will be used, sand the wood surface as normal up to the next to last grit in your process. Using a paper towel, lightly dampen the whole surface of the wood. Allow it to dry and raise the grain, then sand with the final grit.
   *Ex: If sanding to 180 grit; stop at 150g, raise the grain, and sand at 180g to finish out.
8) Putty & Fillers
   -Sand up to 100 grit and then apply the putty or filler to the wood (This gets rid of tool marks and surface flaws). Sand the dried putty with 120 grit to flatten it out to bare wood. Sand the wood and finish as normal.

TROUBLESHOOTING:

1) Abrasives loading too quickly
   -Excessive sanding pressure
   -Inadequate or excessive dust extraction
   -Excessive speed
   -Moisture content of wood too high
   -Grit is too fine
   -Improper sandpaper for the application
2) Abrasives dulling prematurely
   -Grit too fine
   -Excessive pressure
   -Wrong product for application
3) Streaking of work piece
   -Sandpaper loaded or dull
   -Sanding pressure is too high
   -Dust or debris on surface of work piece
   -Overloading due to glue or pitch on the work piece
4) Sandpaper not removing surface scratches
   -Skipped too many grits in the range at one time (NEVER DO THAT, as the finer grit can't effectively remove the scratches from the coarser grit. Ideally, never skip more than one grit in the range at one time).
   -Started with too fine a grit