



Sanding Disks

Hook-and-loop sanding disks are disposable items, but we separate the performers from the throwaways **BY ANDY BEASLEY**

Sanding can seem like a mindless task: Plunk a disk onto a random-orbit sander, and run it until the surface feels smooth. If you value your time and money, though, it's worth asking a few questions first: Do all sanding disks perform the same, or are there noticeable differences between them? Which brands work fastest? Which are the most durable? How long should an individual disk last? To find the answers, the *Fine Homebuilding* staff searched for a person gullible enough to spend hours sanding the same piece of wood over and over. That's where I came in.

Some twists on disks

I compared the performance of three commonly used grits—80, 120, and 180—across eight different product lines. Each disk relied on aluminum oxide as its primary abrasive, although a few added an extra dimension.

Norton disks use a ceramic and aluminum-oxide blend for aggressive cutting, and the Norton, Mirka Gold, and Klingspor VD900 disks have a stearate coating to prevent the abrasive from clogging with dust.

Most of the disks I tested were backed with the commonly used C paper, although the

Klingspor VD980 disks used the heavier, and noticeably stiffer, F paper. Mirka's Abranet took an entirely different approach, however, relying on a polyamide fabric with thousands of holes for improved dust collection. The thin fabric has a downside, though: Prolonged sanding with Abranet can wear out the hooks on a sander's backing pad. (Mirka recommends using its pad-protector disk, about \$14 for a two-pack, to avoid this problem.)

Five of the product lines featured the usual eight-hole disks that mate with a sander's dust-collection ports. The other designs—Mirka's Abranet, Norton's universal five- or eight-hole style, and 3M's highly perforated Clean Sanding disks—all worked well with my sander. Dust collection was uniformly excellent for all brands tested.

Save time and money

An old saying holds that there are two types of people in the world: those who divide everything into two categories and those who don't. The two-category approach certainly applies to sanding. It seems that everyone either wastes sandpaper to save time, or they flog a disk to its last abrasive molecule to save money. The most important thing I learned

is that you can have it both ways: Some disks work both fast and cheap.

Once the dust settled, I rated each disk based on its cutting speed and its cost-effectiveness (chart, p. 74). For most of the competitors, disk price can be a moving target, depending on where you shop and how many disks you purchase at a time. I computed an average retail price (without tax or shipping cost) based on the purchase of five or 10 disks. Although I could find Mirka Gold and 3M only in lots of 50, buying in bulk will lower your cost per disk if you have much sanding to do.

The best disks, period

The performance differences between disks were most pronounced at 80 grit, then narrowed significantly over the finer grades. However, the clear overall winner was Klingspor's VD900 series. The stearate-coated, aluminum-oxide disks in this series cut aggressively, resisted loading, and were the most cost-effective of the group.

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BIGGER SLICE, BETTER DISK

MY FIRST STEP in ranking these disks was to gather three vital statistics for each: its cost, the number of minutes it ran before wearing out, and the number of grams of material removed during its life span. I combined the last two—endurance and material removed—to yield a grams-per-minute rating. This is a measure of average cutting speed, so if you're in a hurry, choose the disk with the largest number in this category. If you're focused on your budget, look at grams per penny, which relates material removed to disk price. The largest number here indicates the disk that removed the most material for the money you spent on it. Don't be misled into thinking that endurance is a factor in cost-effectiveness; your goal is to remove wood, not to while away your spare time. If, like me, you prefer to work fast without wasting money, choose the disk that scores highest (has the largest slice of the circle) on both the per-minute and per-penny ratings.

80 GRIT

ENDURANCE measured in minutes



**MIRKA
ABRANET**
140 minutes

120 GRIT



**KLINGSPOR
VD980**
35 minutes

180 GRIT

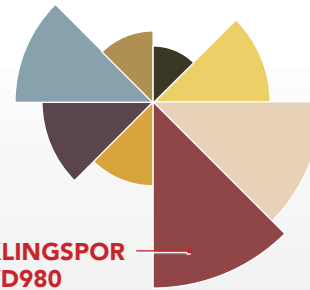


**KLINGSPOR
VD900**
20 minutes

STOCK REMOVAL measured in grams



**KLINGSPOR
VD900**
307 grams



**KLINGSPOR
VD980**
62 grams

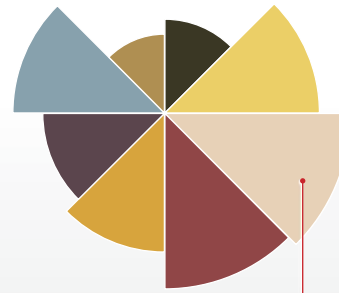


**KLINGSPOR
VD900**
25 grams

CUTTING SPEED measured in grams per minute



KLINGSPOR VD900
2.67 gpm

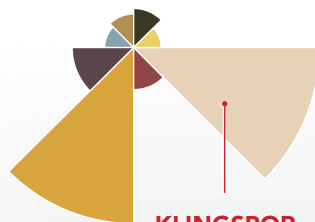


KLINGSPOR VD900
1.87 gpm

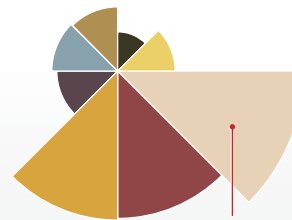


KLINGSPOR VD980
1.40 gpm

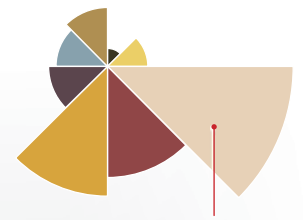
COST-EFFECTIVENESS measured in grams per penny



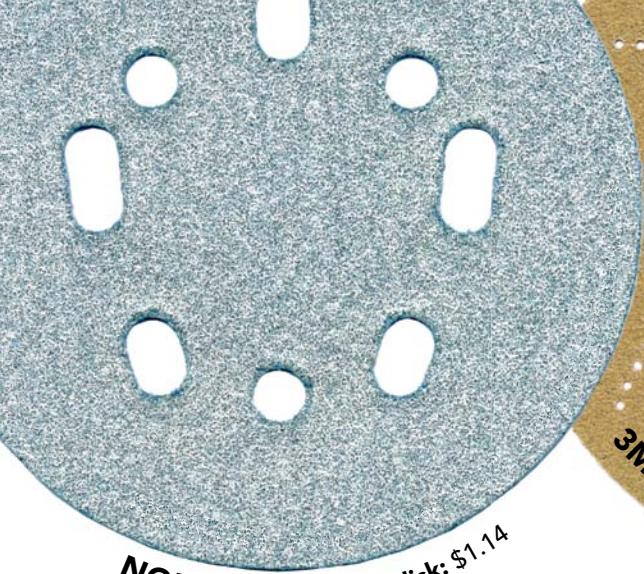
**KLINGSPOR
VD900**
6.14 gpp



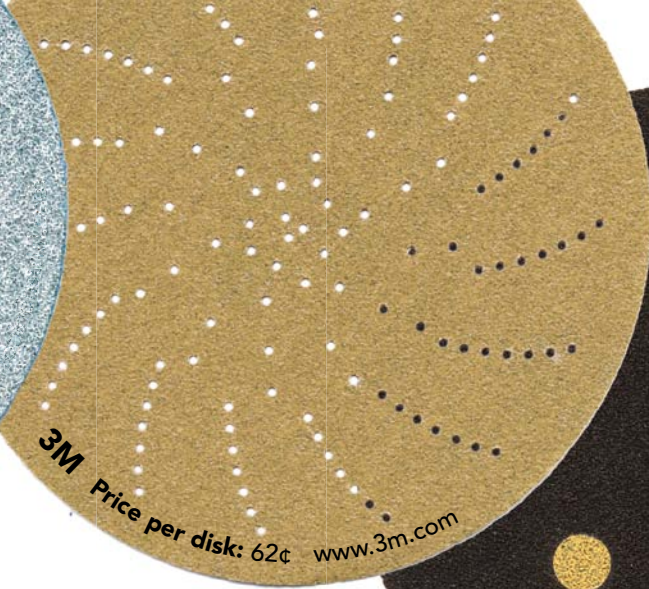
**KLINGSPOR
VD900**
1.12 gpp



**KLINGSPOR
VD900**
0.50 gpp



NORTON Price per disk: \$1.14
www.nortonabrasives.com



3M Price per disk: 62¢ www.3m.com



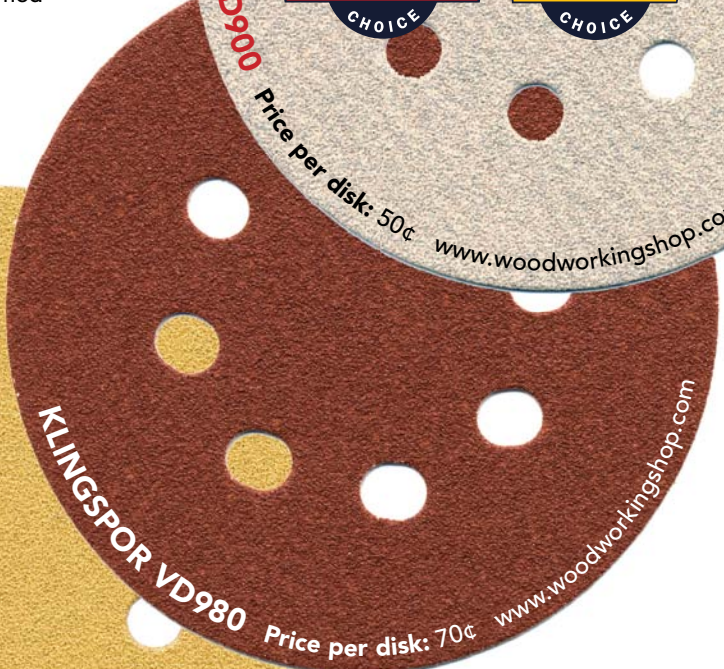
GATOR Price per disk: 80¢ www.gatorfinishing.com



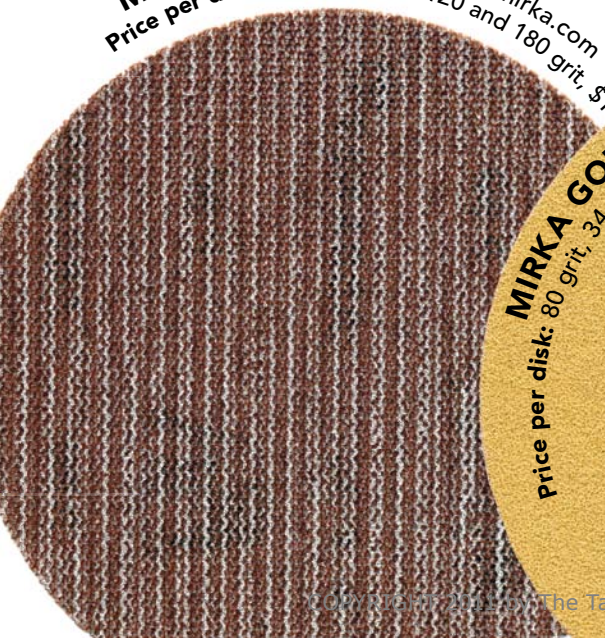
GRIZZLY Price per disk: \$1.10 www.grizzly.com



KLINGSPOR VD900 Price per disk: 50¢ www.woodworkingshop.com



KLINGSPOR VD980 Price per disk: 70¢ www.woodworkingshop.com



MIRKA ABRANET
Price per disk: 80 grit, \$1.30; 120 and 180 grit, \$1
www.mirka.com



MIRKA GOLD
Price per disk: 80 grit, 34¢; 120 and 180 grit, 31¢
www.mirka.com

HOW WE TESTED

USING A 5-IN., EIGHT-HOLE Bosch ROS20VS random-orbit sander paired with a variable-suction Festool CT vacuum, I ran each disk through the same testing procedure: I weighed a short length of poplar, sanded it for five minutes, then reweighed it. The amount of wood removed during that first sanding period became the disk's baseline, and I repeated this process until the material sanded away in a subsequent five-minute period dropped to 50% of that initial score. If, for example, a disk removed 14 g of poplar in its first five minutes, I retired the disk once its removal rate fell to 7 g. This milestone marked a significant reduction in cutting speed, as well as the point where a disk had carved out the majority of all the material it was capable of removing. The entire point of sanding is to end up with a surface ready for finish, and that was the final thing I considered with each product line. Fortunately, when I completed the 180-grit sanding step, I found that all brands left a smooth surface without visible sanding defects. Much of this surface quality can be attributed to the tool, so choose wisely. (Visit FineHomebuilding.com/toolguide.) Finally, one of the toughest tasks for a sanding disk is removing an existing finish, so I tested each brand on a surface coated with latex paint. I found that all the disks performed well, cutting aggressively without excessive clogging.