BY MARK SCHOFIELD

True grit

Your sandpaper may have changed without you knowing

Sandpaper has many confusing specifications, from the type of abrasive to the weight of the paper, but at least the grit size has always been easy to understand. Unfortunately, this is no longer true: The world of sandpaper grits is undergoing a quiet revolution, and the grits you've always relied on for each stage of woodworking may no longer be the most appropriate.

CAMI once was dominant

A generation ago, most sandpaper sold in the United States had its abrasive size graded on a scale developed by the Coated Abrasives Manufacturers' Institute (CAMI) and approved by the American National Standards Institute (ANSI). This standard was so common that reference to it was not even included on the back of a sheet of sandpaper; it simply stated the grit number: 180, 220, etc.

In Europe, the Federation of European Producers of Abrasives (FEPA) had its own metric grading scale, but to avoid confusion, FEPA-graded paper carried the prefix P with the grit number: P180, P220, etc. Not only was the distinction clear, but FEPA sandpaper sold in the United States also was confined largely to that made by European companies such as Klingspor and Mirka.

Having two grading methods would be of only academic interest if the same numbered papers produced the same results.

Unfortunately, the finer the grits become, the more the two grading systems diverge (see the chart at right). Below 220 grit, the size of the abrasive

Photos: Michael Pekovich

CAMI vs. FEPA grits

The two main methods of grading abrasives for sandpaper are the CAMI system and the FEPA system. A FEPA-grade grit generally is coarser than its CAMI equivalent but is produced with a tighter tolerance for particle sizes within each grit (see the graph at bottom).

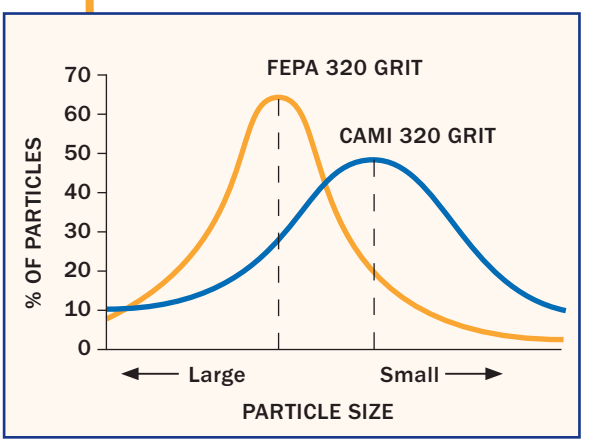
CAMI GRADING SYSTEM	FEPA GRADING SYSTEM
60	P60
	P80
80	
	P100
100	
	P120
120	
	P150
150	
180	P180
220	P220
	P240
240	
	P320
320	P400
400	P600
600	P1200
800	P1500

THE FINER THE GRIT, THE MORE THE GRADES DIFFER

Below about 220 grit, the size of the abrasive particles on both types of sandpaper is roughly equal. Above that level, FEPA sandpaper is increasingly coarse relative to the same grit number on the CAMI scale.

For coarse- to medium-grit paper, there is very little difference between the two grading systems.

For fine sanding and finishing, it is important to know which type of sandpaper grade you are using.



FEPA: ROUGHER BUT MORE CONSISTENT

The FEPA grading system requires that a higher percentage of the abrasive particles on the paper be close in size to the stated grit. This results in a narrower bell curve of particle-size distribution than for CAMI-graded grits.

particles represented by each number is almost the same. But to match the abrasive on CAMI-graded 600-grit paper, you need to use FEPA-graded P1000 or even P1200 paper.

FEPA papers gain wider use

A large producer of abrasives estimates that 10 years ago 50% of its customers used FEPA-graded sandpaper; today, the number is around 90%. The reason for the increase has to do with the advantages of FEPA papers. For one, in the grit sizes most used for sanding bare wood (80 to 150 grit), FEPA papers are slightly coarser and tend to cut more quickly than their CAMI equivalents. This is appealing to production shops where time is money; the slightly coarser scratch pattern left by FEPA sandpaper is of less importance.

Another advantage is that while all sandpaper is coated with a range of grit sizes, FEPA-graded papers have a greater percentage of particles close in size to the stated grit. Because of this, the scratch pattern left by FEPA sandpaper tends to be more uniform, an important characteristic as you begin to work in finer grits.

Advice for picking the right grit

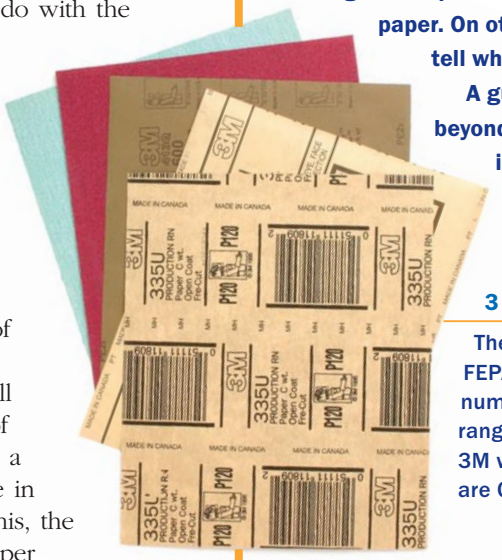
The first recommendation would be to check your current stock of sandpaper and separate it by grading method (right). You may find that when rubbing out a finish, you have inadvertently used CAMI 400-grit paper followed by P600 paper, even though the latter is slightly coarser.

For sanding bare wood, the differences between the two grades aren't as important. But for finer sanding between coats of finish and for rubbing out a finish, stick with FEPA papers because their tighter range of particle sizes for each grit results in a more consistent scratch pattern.

The industry consensus is that FEPA sandpaper will be increasingly dominant but that certain niche markets will remain on the CAMI system. Because of this, in the future, anytime a grit size is mentioned in *Fine Woodworking*, the number will be preceded by a P and refer to the FEPA scale, unless another scale is specified. □

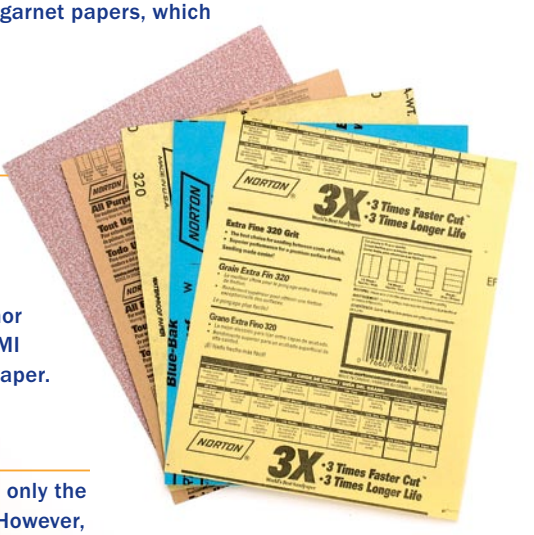
Grading grits, brand by brand

When I began investigating this subject, I assumed that differentiating between CAMI and FEPA papers would be a simple case of looking for the P prefix on the back of a sheet of sandpaper. The deeper I dug, the more confusing the picture became, not only for me but often for the manufacturers and retailers I questioned. On some FEPA papers, the letter P is no longer stamped before the grit size but appears elsewhere on the sandpaper. On others, the letter P appears nowhere, leaving no way to tell whether the grit is graded on the CAMI or FEPA scale. A guide to every single type or brand of sandpaper is beyond the scope of this article, but the following generalizations can be made about sheets of sandpaper used by amateur woodworkers. Fortunately, most of the observations apply to sanding disks as well.



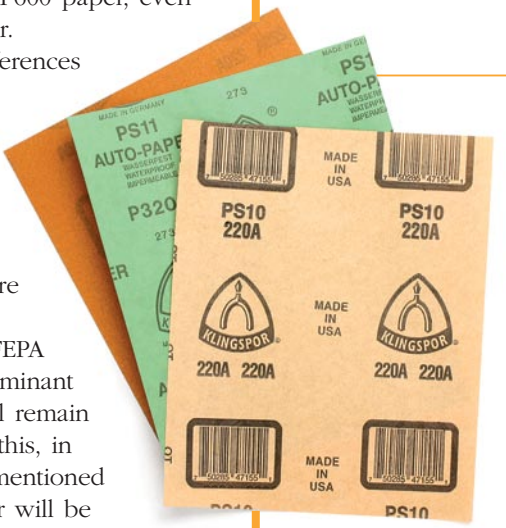
3M

The manufacturer 3M promises that all of its FEPA sandpaper has the letter P before the grit number. This includes the Sandblaster and Gold range of aluminum-oxide papers, but not some 3M wet-or-dry and garnet papers, which are CAMI graded.



NORTON

Norton has switched over almost entirely to FEPA grading. This includes the popular 3X range of sandpaper, but be warned: The P prefix is neither on the sandpaper nor on the packaging. Norton's only CAMI grade is silicon-carbide wet-or-dry paper.



KLINGSPOR

Klingspor uses only the FEPA system. However, while its silicon-carbide sandpaper has the P prefix, some of the garnet and aluminum-oxide papers do not.

MIRKA

Mirka uses the FEPA system, and all of its sandpaper appears to be labeled with the P prefix.