

A New Look at Eye Protection

Comfortable glasses, goggles, and face shields leave you no excuse

BY STEVE SCOTT

As beautiful as it might look to you, a woodshop is an unfriendly environment for your eyes. Sanders kick up clouds of irritating dust. The tablesaw throws sharp chips, while small workpieces can burst into flying shards at the miter saw. The lathe peppers its user with wood chips, and grinders throw sparks and abrasive fragments. Hand work also presents dangers: A chisel and mallet can launch chips like little missiles. Less likely perhaps, but just as dangerous, is a caustic splash from a jostled container of solvent or finish.

According to government estimates, hospitals in 2004 treated about 15,000 eye injuries from tools found in most woodshops. Many of these injuries could have been avoided if the victim had worn an inexpensive set of safety glasses or goggles.

"These are not high-ticket items, compared to saving your sight," said

Dr. Larry Jackson, an epidemiologist who studies workplace injuries at the National Institute for Occupational Safety and Health.

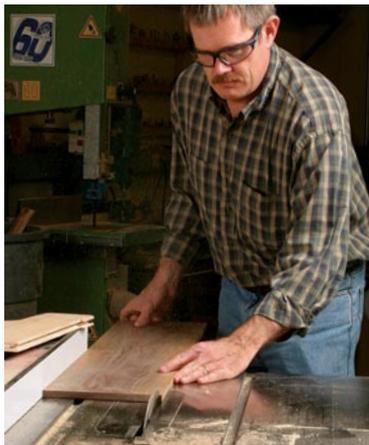
Jackson, who helped develop U.S. industry standards for safety glasses, recommends that every woodshop be equipped with all three basic types of safety eyewear—glasses, goggles, and face shields. Woodworkers should use some type of eye protection at all times in the shop, he says.

No doubt some woodworkers will balk at that suggestion—it's hard to believe that your eyesight is threatened when you're taking shavings with a block plane or laying out dovetails with a marking gauge and a bevel. But it's also hard to argue against a sure way of keeping your eyes safe: making a rigorous habit of wearing the right protective gear. The argu-



Three lines of defense

Safety experts say there's a need in every woodshop for each of these forms of eye protection: safety glasses for jobs that shoot lightweight chips into the air, goggles to keep heavy dust out of your eyes, and face shields (used with glasses or goggles) to protect your face and repel heavier chips or other projectiles.



Safety glasses ward off small chips and dust

With impact-resistant lenses and frames, and wraparound protection, safety glasses shield your eyes from small flying chips, whether they're launched by a mallet and chisel or by a powerful shop machine. There also are great options for woodworkers with corrected vision.

ment tilts further when you consider how easy it is to find comfortable and effective eye protection.

Every woodworker will strike his or her own balance between convenience and eye safety. Three *Fine Woodworking* editors recently sized up a broad selection of glasses and goggles, looking for models that offer both protection and comfort. Here's an informal overview of the eyewear that's available with some tips on what to look for.

Safety glasses are a must

Any protective eyewear—glasses or goggles—should meet the American National Safety Institute standard known as Z87.1-2003. This means that the lenses, typically made of tough polycarbonate, won't shatter and the frames won't break when smacked by a 1/4-in. BB moving at 150 ft. per second. They must also offer generous side protection to keep dust and flying objects out of the corners of your eyes. The lenses, frames, and packaging should all be stamped with a Z87+ to indicate that they meet this safety standard.

Don't wear glasses?—For the woodworker who doesn't wear glasses or who wears contact lenses, the selection of safety glasses is wide and varied. Most fit and look like lightweight sport sunglasses.

We liked lightweight models from Elvex (about \$5) and Edge Eyewear (\$5) that had large, wraparound lenses for good peripheral vision. UVEX, Crews, and AO Safety also make suitable and inexpensive models.

To aid in a snug and comfortable fit, some models come with a padded or flexible nose bridge, padding at the browline, and adjustable earpieces.

Plenty of options for glasses wearers—If you wear glasses, you might think they give you adequate eye protection in the shop. They don't.

Your glasses very likely offer no side protection at all, and they probably leave too much room between your brow or cheekbones and the rims of the glasses. Wood-chip projectiles

GOOD PROTECTION ISN'T COSTLY

For \$5, the Elvex Triad offers no-nonsense eye protection in sporty wraparound frames. The glasses feature a flexible nose bridge and earpieces for added comfort.



Elvex Triad

THE CADILLAC

The ESS ICE 2.4 offers military-level impact resistance and greater visibility. The frameless design doesn't interfere with peripheral vision, a common complaint about some protective eyewear. The military cachet comes at a price, though—\$42 per pair.



ESS ICE 2.4

PRESCRIPTION SAFETY GLASSES CAN BE STYLISH

Optometrists, vision centers, and online retailers offer plenty of styles for safety frames and prescription lenses that meet industry standards for impact protection. Frame prices start as low as \$25 for a utilitarian pair.



Phillips Safety Products



Eye Armor



GLASSES FOR YOUR GLASSES

Safety eyewear designed to fit over street glasses is a relatively inexpensive way for prescription wearers to protect their eyes in the shop. This pair from Eye Armor (\$25) offers a snug fit.



Goggles seal out dust

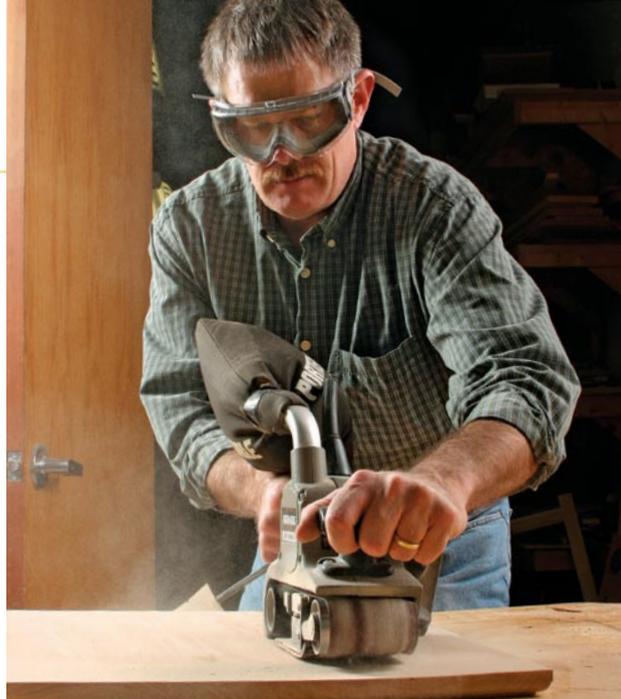
They offer the same impact protection as safety glasses, but safety goggles close all the gaps between your face and the lens with a foam or rubber lining. This full protection is needed when you're filling the air with clouds of fine dust.



LOW PROFILE

For folks who don't wear prescription lenses, many goggles offer a streamlined profile. Uvex Spoggles (\$17.50) are one example.

Uvex Spoggles



can dart through that gap. Some street glasses also have lenses of glass or acrylic that might not stand up to a direct hit from flying debris.

Safety glasses go a long way toward correcting these flaws. They are designed to fit closely to your brow and cheekbones, and they feature wraparound lenses or side shields to protect the corners of your eyes. The lenses and the frames both are impact resistant.

There are plenty of safety glasses designed to fit over the glasses you already wear. They are sturdy and inexpensive (some cost as little as \$4 per pair), but the challenge lies in getting a good fit.

Safety frames for prescription lenses range from bland and square to sleek and stylish. There are a few wraparound models, but lenses of this shape cannot be ground to fit some prescriptions.

If you wear contacts, you still need safety glasses or goggles to keep your eyes safe. Some safety experts go further and advise against wearing contacts in environments with a lot of dust or chemical fumes in the air, because either of these could become trapped behind the lens and damage your eye. Hard lenses are more likely to trap dust; soft lenses are more vulnerable to chemicals, the experts say. Injury statistics typically don't track contact-lens use, so it's hard to gauge the threat. The safest course may be to always use goggles over contacts or to take the contacts out and wear glasses instead when you're in the shop.

Jackson and others recommend wearing safety glasses for any light-duty shop activity that doesn't involve power tools. For power tools that throw dust and chips at high speed, they recommend stepping up to goggles.

Goggles provide more comprehensive coverage

Goggles are the most certain way of protecting your eyes from fast-flying debris and heavy floating dust.



Crews Verdict Goggles

ROOMY ENOUGH TO FIT OVER GLASSES

It's easy to find goggles that fit comfortably over your street glasses. Verdict Goggles by Crews (\$9) offer indirect air baffles for fog control and splash protection.



Wiley-X SG1

CONVERTIBLE MODELS

Some glasses or goggles can be fitted with inserts that hold prescription optics. Others, like the SG1 from Wiley-X (\$90) can be fitted directly with prescription lenses.



Face shields protect head and neck

A face shield is essential at the lathe, which can spray its user with heavy chips. Flying sparks or disintegrating grinder wheels also are a threat. Be sure to wear safety glasses or goggles underneath; flying debris can ricochet behind the mask.

They're better at this than safety glasses because they completely enclose the eyes, and they're held snug to your face with an elastic head strap. Models with baffled air vents provide the best dust protection and also can protect your eyes against chemical splashes.

For the best field of view, we preferred the full-face models that resemble a diver's mask to the motorcyclist style with separate eyepieces.

Some models, like the goggles you wore in high-school chemistry lab, are designed to fit over glasses. Those very goggles, in fact, or ones much like them (Pyramex, \$3), are a great and inexpensive way to protect your eyes in the shop. But with their rubbery, scuba-mask feel, you might not want to wear them for long. A roomy, updated version from Crews has baffled air vents and a foam lining. It's more comfortable but still bulky.

When the heavy chips fly, reach for a face shield

Any task in which the tool forcefully throws large wood chips or other heavy flying particles (wood turning, for instance) calls for a face shield.

A face shield consists of a large, clear visor mounted on a piece of adjustable headgear to flip up and down like a welder's mask. Inexpensive models are available from both Woodcraft and Lee Valley Tools. Just like its name implies, a face shield is designed to prevent flying objects from striking the wearer in the face.

It's easy to feel like your eyes are well protected behind this clear shell, but safety experts say otherwise. Because a face shield is more or less open at the bottom, wood chips or other projectiles could get past it and into your eye. For that reason, the experts say, you should always wear safety glasses or goggles under a face shield. A face shield for your face, glasses or goggles for your eyes. □

Steve Scott is an associate editor.



Jackson 'The Shield'

UPDATED VERSION OF THE BASIC SHIELD

Jackson and Uvex offer two slightly different takes on the familiar face-shield design. Jackson's "The Shield" (\$17) mates a set of safety goggles with an impact-resistant shield for the lower face. The Bionic Face Shield by Uvex (\$30) provides extended coverage for the chin and the top of the head.



Uvex Bionic Face Shield

SOURCES OF SUPPLY

Safety eyewear is available at home centers and online. Prescription safety glasses can be found at your local optometrist.

Elvex, Edge Eyewear, ESS, U.S. Safety, Wiley-X, Crews, AO Safety
www.safetyglassesusa.com

Uvex Spoggles, Radians AV
www.woodcraft.com

Prescription safety frames and lenses
www.RXSafetywear.com;
www.phillips-safety.com

Face shields
www.discountssafetygear.com;
www.labsafety.com