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**Instructor** : Use the guidance questions on the left to promote discussion of the eye safety issues at your work site. You should include those questions marked with \*\*\* and a selection of the remaining questions that apply to your work site. The limited information on the right is designed to provide the background information needed in each section of the toolbox talk. It may be supplemented with other materials and samples of the eye protection available at your work site. This discussion is expected to take ~15-30 minutes or more. Involve your workers in the discussion.

<b>Instructor Questions and Guidance</b>	<b>Discussion Highlights</b>
<p><b>***How many work-related eye injuries are there each day?</b></p> <p>Go over Key Points</p> <p>Ask if anyone has ever had an eye injury or knows someone who did</p> <p>Ask them to describe the injury event</p> <p>Ask for ideas about how it could have been avoided</p>	<p><b>Key Points</b></p> <ul style="list-style-type: none"> <li>• ~2000 eye injuries occur everyday at work in the US</li> <li>• Construction workers have one of the highest eye injury rates</li> <li>• Particles of dust, metal, wood, slag, drywall, cement etc. are the most common source of eye injury to carpenters</li> <li>• Even “minor” eye injuries can cause life-long vision problems and suffering—a simple scratch from sawdust, cement, or drywall can cause corneal erosion that is recurrently painful</li> <li>• Hammering on metal which gives off metal slivers and the rebounding of the ordinary nail are two of the most common causes of vision loss in construction workers</li> </ul>
<p><b>***What are the eye hazards at your site?</b></p> <p>What are the most dangerous jobs (by task or tools used)?</p> <p>Where are the most hazardous areas for eye safety (by location in the site)?</p>	<p><b>Potential Eye Hazard Examples</b></p> <ul style="list-style-type: none"> <li>• Hammering, grinding, sanding, and masonry work that may produce particles</li> <li>• Handling chemicals may lead to splashes in the eye</li> <li>• Wet or powdered cement in the eye can cause a chemical burn</li> <li>• Welding leads to exposure to arcs and flashes (intense UV radiation) for welders, helpers, and bystanders</li> <li>• Dusty or windy conditions can lead to particles in the eye</li> <li>• Eye injuries can result from simply passing through an area where work is being performed</li> <li>• Coworkers around or above you may generate the hazard</li> </ul>
<p><b>***How can you reduce the eye hazards at your site?</b></p> <p>Discuss solutions to preventing eye injuries at your work site</p>	<p><b>Example: 3-Part Eye Safety Strategy</b></p> <ul style="list-style-type: none"> <li>• Use engineering controls (best) such as machine guards that prevent the escape of particles or welding curtains for arc flash protection</li> <li>• Use administrative controls (good) such as making certain areas “off limits” unless that is your work assignment area or putting passage ways out of active work zones</li> <li>• Use the proper protective eyewear (required, but doesn’t remove all risk)</li> </ul>

<p><b>***Do workers at your site wear proper eye protection when needed?</b></p> <p>Look around—what do you see?</p>	<ul style="list-style-type: none"> <li>• How many workers at your site wear any eye protection at any time? None, some, or a lot?</li> <li>• Are they wearing the correct or proper eye protection? Never, sometimes, usually, or always?</li> <li>• The most common answer given by construction workers with eye injuries when asked why weren't you wearing safety glasses:</li> </ul> <p><i><b>I didn't think that I needed it!</b></i></p>
<p><b>***What is safety eye and face protection?</b></p> <p>Find the Z87 marking on your safety glasses.</p>	<ul style="list-style-type: none"> <li>• Safety eye and face protection includes non-prescription and prescription safety glasses, clear or tinted goggles, faceshields, welding helmets, and some full-face type respirators that meet the ANSI Z87.1 Eye and Face Protection Standard</li> <li>• The safety eyewear must have "Z87" or "Z87+" marked on the frame and in some cases the lens</li> </ul>
<p><b>***What are the primary hazards for which you use safety glasses?</b></p>	<ul style="list-style-type: none"> <li>• Safety glasses (spectacles) are commonly used as protection against impact and optical radiation</li> <li>• Tinted safety glasses used in torch soldering must have a shade number (1.5-3) on the lens, but do not provide adequate protection for gas or arc welding which need shades 4 or higher</li> <li>• Common tasks: sawing, hammering, and drilling</li> </ul>
<p><b>***When are you required to have "side protection" or "side shields" on your safety glasses?</b></p>	<ul style="list-style-type: none"> <li>• Side protection is required any time that there are hazards from flying particles or objects</li> <li>• Older styles used side shields</li> <li>• Many newer styles provide side protection as wrap around safety glasses</li> <li>• Some styles also have brow protection along the top of the glasses</li> <li>• Many eye injuries have occurred because there was not adequate side protection, proper fit, or particles fell from above such as when drilling overhead</li> </ul>
<p><b>***When should you wear goggles?</b></p>	<ul style="list-style-type: none"> <li>• Goggles are stronger than safety glasses</li> <li>• Goggles are used for higher impact protection, greater particle protection, chemical splashes, and welding light protection</li> <li>• Goggles for splash or high dust protection should have indirect venting</li> <li>• Goggles with direct venting (a mesh of small holes around the sides) tend to fog less, but should not be used with liquid or fine dust hazards</li> <li>• Common tasks: sawing, chipping, grinding, masonry work, using a nail gun, pouring cement, and working with chemicals</li> <li>• When goggles are used for welding make sure they are the proper shade # (the shade number is marked on the lens and shows how dark the lens is)</li> </ul>
<p><b>***When should you use a faceshield?</b></p>	<ul style="list-style-type: none"> <li>• Faceshields are used for even higher impact protection and to protect the wearer's face in addition to the eyes</li> <li>• Faceshields should always be used over safety glasses or goggles</li> <li>• Particles or chemicals can easily go around a faceshield and the curve of the faceshield can direct them into the eye</li> <li>• Faceshields are frequently lifted leaving the eyes unprotected without the safety glasses or goggles</li> <li>• Common tasks: spraying, chipping, grinding</li> </ul>

<p><b>***When do you use a welding helmet instead of welding goggles?</b></p>	<ul style="list-style-type: none"> <li>• Welding helmets are needed for all arc welding requiring shade numbers 10-14</li> <li>• Typically welding goggles can be used for gas welding or cutting with shade numbers 4-8</li> <li>• Welding helmets should always be worn over safety glasses or goggles</li> </ul>
<p><b>Check the fit of your safety glasses.</b></p> <p><b>Where are the biggest gaps?</b></p> <p><b>Do the glasses fit snugly against the face or slide down your nose?</b></p>	<ul style="list-style-type: none"> <li>• The biggest gaps are usually near the corners of the glasses</li> <li>• The bigger the gap the more exposure to hazards coming from a slight angle from above or below</li> <li>• Glasses that are not snug against the face also create larger gaps in protection</li> <li>• Some safety glasses are made in different sizes to fit different shape faces</li> <li>• Different styles also may fit one person better than another</li> <li>• Adjustable temples and eyewear retainers or straps help hold the glasses in the proper position close to the face</li> </ul>
<p><b>Are your safety glasses comfortable?</b></p> <p><b>Do your safety glasses look cool?</b></p>	<ul style="list-style-type: none"> <li>• Safety glasses have hard or soft nose pieces, padded temples, and a variety of other features that improve comfort without adding great cost</li> <li>• Safety glasses come in many styles from the Buddy Holly heavy frames, to the old visitor specs, frameless lens, frames with football logos, aviator metal frames, and the most stylish wraparound glasses</li> <li>• Tinted safety glasses are now common that rival the most expensive commercial sunglasses but cost much less and are safer</li> </ul>
<p><b>What are the lenses made of in your safety glasses?</b></p>	<ul style="list-style-type: none"> <li>• Most non-prescription ( plano ) safety glasses have polycarbonate lenses</li> <li>• The non-prescription safety glasses are tested by shooting a 1/4" BB at 100mph at the lens and dropping a 1 lb pointed weight from 4' on the lens—if it breaks in either test it won't have the Z87 mark</li> <li>• Prescription safety glasses may have polycarbonate, glass, or a plastic called CR39 but these glasses only have to pass a test of dropping a 2oz steel ball from 4' unless they are marked Z87+; then they must pass the high velocity/impact tests</li> <li>• Polycarbonate lenses are much more impact resistant than glass or plastic lenses. Glass and plastic lenses usually shatter into small sharp pieces, but polycarbonate usually just cracks</li> </ul>
<p><b>Are your safety glasses scratched?</b></p>	<ul style="list-style-type: none"> <li>• Polycarbonate lenses scratch easier than other lenses, but new anti-scratch coatings help if the glasses are cared for properly</li> <li>• Wear an eyewear retainer strap that will let the glasses hang around your neck when not in use instead of laying them down on the job</li> <li>• Store them in an old sock before they are tossed into a tool chest or the seat of a car or pickup</li> <li>• Use a glasses cleaning station or wash and wipe with a soft clean cloth (old T-shirts work fine, but the sweaty shirt that you're wearing may have as much drywall dust as your safety glasses, creating a muddy mess on the lenses by day's end)</li> </ul>

<p><b>When do you take your safety glasses off?</b></p>	<ul style="list-style-type: none"> <li>• When finished with a tool or specific task—but what’s going on around you?</li> <li>• At your break—but are there still hazards around you from other workers?</li> <li>• At the end of the day, but while still on the job site—a carpenter took his glasses and tool belt off and left them on the roof at the end of the day; while climbing down the ladder he lost an eye from a coworker dropping pliers on him from above</li> <li>• As you leave the site and are out of the hazard zone</li> </ul>
<p><b>What do you do to stop your safety glasses from fogging?</b></p>	<ul style="list-style-type: none"> <li>• Buy safety glasses that have anti-fog coatings put on during manufacturing</li> <li>• Use anti-fog solutions on the lenses regularly, if needed</li> <li>• Wear a sweat band on your forehead or a cool rag in your hard hat</li> <li>• Keep the lenses clean and unscratched</li> </ul>
<p><b>***Describe the eye safety policy at this site</b></p>	<p><b>Key points:</b></p> <ul style="list-style-type: none"> <li>• When must you wear safety eye protection</li> <li>• What are the enforcement processes</li> <li>• How and where do you get your safety glasses</li> <li>• How do you get replacements</li> <li>• What do you do if you go to a work station and the eye protection that usually hangs by the power tool is missing</li> </ul>
<p><b>***Discuss ways to increase safety eyewear use at your job site</b></p>	<p><b>Examples of what other carpenters have said...</b></p> <p>They would use their safety eye protection if:</p> <ul style="list-style-type: none"> <li>• They had well-fitting, stylish, and comfortable eyewear</li> <li>• They had a choice of safety eyewear</li> <li>• They had both dark and clear lenses</li> <li>• They had safety eyewear holders/straps to make safety eyewear always accessible and help prevent scratching</li> <li>• The bosses always wore their safety glasses on site</li> <li>• Their employer had a company policy that eye protection be worn on the job at all times</li> <li>• The policy was enforced</li> </ul>
<p><b>***What suggestions should be given to your employer to help eye safety at this site?</b></p>	<p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• Recommend some new work zone practices, for example route foot traffic around the masonry cutting area</li> <li>• Set up eye wash and glasses wash stations</li> <li>• Have employee input in to the styles of safety glasses available</li> <li>• Recommend a new mandatory eye protection policy</li> </ul>
<p><b>Don't accept eye injuries as just a part of the job!</b></p>	