PRESENTER'S GUIDE

"PERSONAL PROTECTIVE EQUIPMENT IN CONSTRUCTION ENVIRONMENTS"

Part of the Construction Safety Kit Series

Quality Safety and Health Products, for Today... and Tomorrow

OUTLINE OF MAJOR PROGRAM POINTS

OUTLINE OF MAJOR PROGRAM POINTS

The following outline summarizes the major points of information presented in the program. The outline can be used to review the program before conducting a classroom session, as well as in preparing to lead a class discussion about the program.

- **Every day, thousands of construction workers like you risk serious injury on the job, yet most of them still go home safe at the end of the day.**
  - Often, that's because of the personal protective equipment (PPE) that they use.

- **PPE is anything that you wear to prevent injuries.**
  - It can be as simple as a hard hat, safety glasses or a pair of gloves.
  - But to really do its job it must be the right PPE for the work that you're doing, and you have to use it and maintain it properly.

- **To help everyone with this the Occupational Safety and Health Administration (OSHA) has created a series of personal protective equipment standards to ensure that workers can stay safe on the job.**

- **The standards require employers to make appropriate PPE available to all employees, and to provide them with training on:**
  - Why they need PPE.
  - How it works.
  - How to use it and maintain it.

- **While each type of PPE has its own features and capabilities, there are some "rules" that apply to all of it.**

- **First, you must use PPE whenever you're working in hazardous conditions. These can include:**
  - "Dangerous procedures" such as with some masonry and carpentry jobs.
  - "Environmental hazards" which are any conditions on a worksite that could hurt you... like falling objects, dangerous contaminants and open pits.
  - "Chemical hazards" including substances that could injure you immediately as well as those that could have long-term effects on your health.
  - "Radiological hazards"… these normally don't exist in most construction environments, but can sometimes be found when working on large scale healthcare and pharmaceutical projects.
  - "Mechanical irritants" which are any objects that could scrape, cut or puncture your skin.

- **Whenever one of these conditions is present, your employer will provide you with personal protective equipment that is:**
  - Appropriate for your work conditions.
  - Properly maintained.
  - Sanitary.

- **In some cases, you might want to use your own personal protective equipment instead of the PPE your employer supplies.**
  - No matter who owns the equipment, your employer is ultimately responsible for its suitability and upkeep.

- **In addition to the equipment itself, your employer will also provide you with training about the PPE that you'll be using, including:**
  - What type of protection is required for your job.
  - When the PPE is necessary.
  - How to properly put on, take off, adjust and wear your PPE.
  - The limitations of your PPE.
  - The proper maintenance, useful life and disposal of the equipment.

- **You will receive re-training in these areas as your employer thinks it’s necessary.**

- **Whenever there's danger from falling objects or low clearances, you need to wear a "protective helmet".**
  - Usually this means a hard hat.

- **Hard hats can protect you from:**
  - Falling or flying objects.
  - Chemical splashes and molten metal.
  - Or when you're working somewhere you’re liable to bump your head.

- **While hard hats come in a variety of styles and colors, the most important thing is that you have one that fits.**
  - It can't be too tight or too loose.
  - A hardhat that doesn't fit you correctly can't provide the protection you need.
  - That's why they're available in different sizes, and have "suspension systems" that can be adjusted to fit your head.

- **If you work near exposed electrical wires your hard hat should be made of material that will protect you from electrical shock hazards as well.**

- **But no matter what their design, all hard hats must comply with American National Standards Institute (ANSI) regulations.**

- **If you're working in areas with low head clearances and all you need is protection from scrapes, cuts and light impacts, you can use another type of protective headgear, called a "bump cap".**
  - Bump caps are strictly "light-duty" and should never be used where conditions are hazardous enough to require a hard hat.

- **Because your face and your eyes are two of the most vulnerable parts of your body, a number of different types of PPE are available to protect them.**
  - The most common of these is safety glasses.
  - Their shatter-resistant lenses protect your eyes from frontal impacts by flying particles.

- **If they're equipped with "side shields," safety glasses will also protect you from impacts coming from the side.**
  - Today many safety glasses have built in side shields.
  - Detachable "clip-on" or "slide-on" side shields can be used as well, as long as they meet OSHA standards.

- **If you work near sources of intense light, such as lasers or welding torches, your safety glasses must have special optical filter lenses.**
  - These lenses all have “shade numbers”, that specify what types of light they protect you from.
  - Be careful to use glasses with shade numbers that match the light you're being exposed to.
  - Otherwise they won’t provide the protection you need.

- **Other conditions, such as large quantities of dust or some liquid splashes, require more protection than safety glasses can provide.**
  - This is when goggles may be needed.
  - They fit closely over your eyes, and can protect the eye area from all angles.

- **If you need to wear goggles along with prescription glasses the goggles must fit over the glasses without disturbing the proper position of the glasses or the goggles themselves.**
  - Another option can be custom goggles that have your prescription built in.

- **If you wear contact lenses, ask about your company’s policies regarding them.**
  - Contacts may not be safe to wear in some work areas, or may cause significant irritation if dust, liquids or particles are trapped under them.

- **Some situations call for even greater eye and face protection.**
  - When there's the potential for significant chemical splashing or lots of flying particles, you'll need a full face shield.
  - Anyone who is welding or doing other work that can create intense light and throw off sparks will need a welder's helmet or similar protection.

- **Being able to identify the PPE that workers are using is important as well.**
  - All types of eye and face PPE must be distinctly marked, so its manufacturer is easy to determine.
  - This allows your employer to identify an employee's eye protection at a glance.
  - If someone isn't wearing the proper eyewear, they can be issued the necessary equipment before an accident happens.

- **Some work environments contain airborne hazards such as dust, mists, fumes and vapors that are serious enough to require you to wear a respirator.**

- **There are three types of respirators to choose from:**
  - Disposable masks.
  - Air-purifying respirators (APRs).
  - And air-supplying respirators (ASRs).

- **Disposable masks are the simplest of the three.**
  - Made of fibers that trap airborne contaminants, they keep hazardous particles out of your nose and lungs.
  - These masks are frequently used on construction jobs where a lot of nuisance dust is generated, or when you're cleaning up at the end of the day.

- **But if there are large quantities or concentrations of contaminants in the air, or the substances are particularly hazardous, disposable masks can't provide adequate protection.**
  - In these situations, you'll need to use an air-purifying respirator (APR).

- **APRs come in "half" and "full-face" models, and trap airborne contaminants in disposable cartridges.**
  - These cartridges filter the air and capture impurities before you can inhale them.

- **There are a number of cartridges to choose from, each engineered to capture a specific substance or family of substances.**
  - When you wear an APR, you must make sure that its cartridges are designed for the substances you are working with.
  - Otherwise, the respirator won't provide the protection you need.

- **To make selecting the correct cartridge easier, they are color-coded and marked with standardized labels.**
  - Remember, wearing the wrong filter can be the same as wearing no filter at all.
  - You need to be sure that you have the correct filter for the job you're doing.
  - If you're not sure, ask your supervisor about which APR cartridges you should use in your work area.

- **There are some specialized construction environments that even APRs can’t handle, where atmospheres don’t contain enough oxygen or are full of toxic gases.**
  - Most construction workers don't encounter these situations.
  - If a job takes you into this type of environment, you must wear an air-supplying respirator (ASR).

- **ASR's provide clean air from pressurized tanks.**
  - Your supervisor will work with you in choosing which type you should use and how to use it.

- **Your hands are the "built-in tools" that make it possible for you to do your job.**
  - To protect them, you often need to wear some type of gloves.

- **Cloth gloves are good for light jobs like grounds-keeping or cleaning up your work area.**
  - They protect your hands against minor physical hazards, like dust, dirt and abrasions.
  - Leather and aluminized gloves will protect your hands from sparks and metal flakes, as well as moderate heat.

- **Metal mesh gloves are designed to shield your hands against cuts from sharp edges on the tools and materials you're working with.**

- **Disposable latex and similar gloves provide protection from biological or health hazards, such as blood and other body substances.**

- **Rubber and plastic gloves help protect your hands against many types of chemicals, including acids and corrosives.**

- **Some of these gloves are also shock-resistant.**
  - This can be important, since electricity doesn't just affect your hands… it can kill you.

- **To be acceptable as electrical PPE, rubber gloves and the "sleeves" that are often used with them must be able to insulate against significant levels of both AC and DC current.**

- **As with all personal protective equipment, you must maintain your electrical PPE properly to stay safe.**
  - Gloves and sleeves should be inspected for wear and tear at the beginning of each work day, and immediately after any incident that could have damaged them.

- **You should never use electrical PPE that has:**
  - Holes.
  - Tears.
  - Punctures.
  - Cuts.
  - Embedded foreign objects.

- **Damage that looks like interlacing cuts or cracks in the rubber is called "ozone cutting" or "checking".**
  - If you find ozone checking in gloves that you're using, take them out of service immediately!

- **The same goes for gloves that show texture changes, such as swelling, softening, hardening, or become sticky or inelastic.**
  - If the insulating properties of any electrical PPE may have been compromised, you have to play it safe and not use it.

- **Whatever type of protective gloves you wear, they should always fit correctly.**
  - If they're too loose, they can snag in equipment, or make handling small objects difficult.
  - If they're too tight, they can restrict your hand movement… even cut off your circulation.

- **If you need help finding the right hand protection for the job you do, talk to your supervisor.**

- **The workplace also has plenty of hazards that can injure your feet.**
  - Heavy objects like loaded pallets or tools can crush them.
  - Sharp objects like nails or spikes can puncture them.
  - Hot surfaces and molten metal can burn them.

- **Don't forget electricity.**
  - Shocks and sparks can be dangerous... sometimes disastrous.

- **Proper foot and leg protection can help you avoid all of these.**
  - You need to know what types of protection are available, and how they work.

- **The most common form of foot PPE is a work boot with steel toes that guard against crushing and other impacts.**
  - Some boots have puncture-resistant metal insoles as well, to protect your feet if you step on something sharp.
  - Boots with heat-resistant soles also "insulate" your feet from hot or cold.

- **If you're working around power lines or with energized equipment, non-conductive boots will protect you from electric shock.**

- **Conductive footwear, on the other hand, is designed to prevent the build-up of static electricity.**
  - They should be worn when there's a potential for explosive atmospheres and it's important to prevent sparks.

- **Other types of foot and leg protection are designed to fit over your shoes and legs. These include:**
  - Toe guards.
  - Metatarsal guards.
  - Foot and shin guards.
  - Leggings.

- **Whatever safety footwear you're using, you should inspect it for cracks and holes, tearing, and broken buckles or laces… before you put it on.**
  - Check the soles for pieces of metal or other embedded objects that could cause electrical or tripping hazards, too.
  - If you find problems, take the footwear out of service!

- **Falls are the leading cause of fatalities in construction.**
  - Almost every day, a construction worker dies on the job because of a fall.
  - For each fatality, many more workers are injured and hospitalized.
  - And the numbers are increasing each year.
  - The solution to this problem is a type of PPE called "personal fall protection", also known as a "fall arrest system".

- **A basic fall arrest system consists of:**
  - A full body harness
  - A lanyard
  - A lifeline
  - An anchor point.

- **Basically, the system stops your fall by keeping you safely connected to the anchor point.**

- **The anchor point is typically part of a building or other structure.**
  - It must be strong and secure enough to support your weight and absorb the stresses of a fall.
  - OSHA requires that it be able to support at least 5,000 pounds.

- **You connect your body harness to the anchor point with a lifeline, a lanyard, or both.**
  - A lanyard is a rope, wire rope or strap that attaches either directly to the anchor point itself, or to a lifeline that is secured to the anchor point.

- **There are two types of lifelines.**
  - "Vertical lifelines" hang down from a single anchor point.
  - "Horizontal lifelines" are stretched side-to-side from one anchor point to another.

- **When a fall arrest system stops a fall, the full body harness prevents injury by distributing the stresses of the fall evenly over your thighs, shoulders, chest and pelvis.**

- **Before you use a fall arrest system, you should inspect each component for wear or damage.**
  - Don't use a component if it's defective in any way.
  - Get a replacement!

- **Any components that have actually stopped a fall should also be removed from service as well, until they have been inspected and determined to be safe to use again.**

* * * SUMMARY * * *

- **Personal protective equipment can help guard against all sorts of hazards, but you have to wear the right PPE and use it correctly to avoid injury.**

- **Your employer will evaluate your workplace to determine if it's hazardous… and if you need to wear PPE to work safely.**

- **If your job does require protective equipment, you will be provided with the PPE that is suitable for the work you're doing.**

- **Your employer must train you on how to use your PPE, and you must demonstrate that you know how to handle it before you're allowed to wear it on the job.**

- **All personal protective equipment must be maintained in a safe and undamaged condition.**

- **Doing your job requires protection. Find out what personal protective equipment you need for your job. Learn how to use it correctly and wear it… every day!**