

## **PRESENTER'S GUIDE**

# **"WALKING AND WORKING SURFACES IN CONSTRUCTION ENVIRONMENTS"**

**Part of the Construction Safety Kit Series**

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

# **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.

- **When it comes to safety, the "floor" beneath our feet might be the last thing we think about.**
  - It's easy to take the surfaces we walk and work on for granted.
  - But that would be a big mistake.
  
- **Whether we're standing, walking or climbing, we depend on these surfaces to provide the support we need to:**
  - Position ourselves properly.
  - Use our muscles efficiently.
  - Keep our balance.
  - Do our work safely.
  
- **But slips, trips and falls continue to make up the majority of on-the-job accidents.**
  - They cause almost 20% of disabling occupational injuries, and thousands of fatalities every year.
  - Most of these accidents could have been prevented.
  
- **That's why the Occupational Health and Safety Administration (OSHA) developed regulations focusing specifically on "walking and working surfaces".**
  - The principles and practices behind these regulations can help you get your job done and go home safe at the end of the day.
  
- **Construction work usually involves creating or improving structures, and sometimes tearing them down!**
  - Unlike in other industries, this means that you often work in areas that are liable to be pretty rough, either because they haven't been improved yet, or are unfinished.
  - There may be no floors in place, and the ground you walk across may be rough, rocky or muddy.

- **Often you're outside, where rain, snow and ice can make the footing dangerous, especially when you have to climb onto or off of equipment, scaffolding or other structures.**
  - In conditions like these, you should give your feet a solid grip with a pair of tough work boots with nonslip soles.
  - The traction they provide can help you avoid slipping or falling.
  
- **Your work also naturally creates different types of debris, and just about anything that comes between the soles of your boots and the ground can cause a slip. This includes:**
  - Simple litter like cardboard or discarded packing material.
  - Dry substances such as sawdust, metal shavings and dirt, and liquids like water, oil and grease.
  - All of them can make any surface more slippery.
  
- **Trips are caused by things that get in front of your foot unexpectedly, such as:**
  - Scrap lumber or masonry.
  - Empty pallets.
  - Power cords that are stretched across a walkway.
  
- **But these hazards can be avoided by keeping walking and working surfaces as clean and dry as possible, and free of obstructions... also known as "good housekeeping".**
  
- **You need to watch out for wood and other debris with nails or staples sticking out.**
  - They can punch right through your boots, unless they have steel sole inserts to deflect punctures.
  - Steel toes can help protect your feet as well.
  
- **Some hazards like ditches or open pits you can't just clean up or put away.**
  - Falling into one of these could ruin your day.
  - In unfinished structures, holes in floors and walls can be dangerous too.
  - To be safe, these hazards need to be covered, or surrounded by a railing.

- **This process of using physical barriers to reduce the risk of a slip, trip, or fall is called "guarding".**
  - It can be very effective.
- **With everything that's going on, getting safely from point A to point B on a busy construction site can be a real challenge.**
- **In addition to the folks who are "just passing through", you can have people working, equipment running, materials being moved.**
  - It can add up to a lot of hazards, so it's important for pathways to be clearly defined.
  - That way everyone knows where it's safe to walk.
  - Make sure to keep these areas free of clutter and obstructions as well.
- **It may be natural to assume that a floor will be where you expect it to be, but assumptions can be dangerous!**
- **Large holes such as openings for stairways or ladders are big enough for you to fall through.**
  - And they have an odd way of appearing underfoot at just the wrong time!
  - But you can prevent unpleasant surprises by guarding these types of openings with a "standard railing".
- **A standard railing consists of top rail 42 inches high, with a midrail half that height, and vertical uprights to support them.**
  - Installing them around the perimeter of an opening effectively keeps people safe.
  - But tools and materials can fall through holes and other openings and injure the people working below.
  - Falling objects that land in machinery or on energized equipment may create secondary hazards.

- **That's why "toe boards" should be added to railings wherever falling objects could be a problem.**
  - These four inch tall barriers along the floor guard the edges of openings, so that tools and materials can't slip through.
  
- **Openings in walls can pose just as great a hazard as those in floors.**
  - Wall openings that are big enough for someone to fall through and drop six feet or more must have barriers installed across them.
  
- **"Catwalks" and other open-sided platforms are another potential fall hazard.**
  - If you lose your balance near the edge of one of these, there's nothing to keep you from falling off... unless railings have been put up.
  - Standard railings must be installed whenever these platforms and catwalks are six feet or more off the ground.
  - To protect people or equipment beneath the platform, toeboards are required too.
  
- **All platforms must be fully guarded, regardless of their height, when they are above or next to dangerous equipment.**
  
- **Slipping, tripping and falling down or off of stairs can be especially dangerous on a construction site, where you may be carrying tools or materials or where there might be equipment operating nearby.**
  - But if you do have a problem it's not usually the stairway's fault!
  - Studies have shown that 90% of stairway falls actually result from the unsafe behavior of the people who use them!
  
- **If you run on stairs, skip steps or carry things that are so big you can't see where you're putting your feet, you're pretty likely to take a tumble sooner or later.**

- **There are some requirements that stairs must meet that can minimize the risk of a slip, trip or fall as much as possible.**
  - For example, because accidents are more likely to occur on stairs with uneven steps or other irregularities, riser height and tread depth must be uniform.
- **All stairways with four or more vertical risers must also be guarded with:**
  - Hand rails fastened to a wall.
  - Or stairway rails supported by uprights.
  - These help people keep their balance and prevent themselves from falling.
- **To be effective, these railings must be 30 to 34 inches above the surface of the stair tread.**
  - The hand rails must have at least 3 inches of clearance around them, so you can get a good grip.
- **Stairs with broken or missing treads need to be fixed immediately.**
  - If you notice stairs that have been damaged, tell your supervisor so that repairs can be made before someone has an accident.
- **"Fixed ladders" have special safety requirements of their own.**
  - They are permanently attached to equipment, a building or other structure, and can often be very long.
  - So fixed ladders that are more than 20 feet in length must be guarded by "cages" or "wells".
- **While cages can cut down on potential hazards and provide a sense of security, to really be safe on fixed ladders a climber should also use a form of personal fall protection called a "ladder safety device".**
  - These typically consist of a body harness linked to a ladder-mounted braking mechanism or a self-retracting lifeline.

- **If your job requires you to climb fixed ladders, you need to know how to inspect and maintain your fall protection, as well as how to put it on correctly and use it safely.**
  - If you have questions, talk to your supervisor.
- **You won't always find a fixed ladder or stairway right where you need it.**
  - That's why there are lots of portable ladders on most construction sites.
  - You can carry them to the job and climb right up to get it done.
  - But this versatility comes at a price.
  - You have to inspect portable ladders and set them up correctly every time you use them, or you could be in for a nasty fall.
- **First, make sure the ladder is in good condition.**
  - Examine it carefully for defects.
  - Look for any sharp edges or splinters.
- **Make sure there are no broken, loose or missing steps, rungs, cleats or other components.**
  - Check that the feet are in good shape, so the ladder won't slip.
- **Be sure to clean off any grease, oil or other substance that may have accumulated on the rungs or rails.**
- **Any ladder that fails your inspection should be taken out of service and tagged "Dangerous, Do Not Use".**
- **When you're setting up a ladder, make sure both ends are firmly positioned.**
  - The feet should be level.
  - If the ground is uneven, use boards or ladder jacks to even it out.
- **Remember that nearby power lines or energized equipment can be very dangerous.**
  - If you must work near them, be sure to use a ladder made of fiberglass or wood, to reduce the risk of electric shock.
  - Never use a metal ladder around electricity.

- **Surrounding "traffic" can also be an issue.**
  - A ladder that's set up in a busy area is in danger of being run into and possibly knocked over by people or equipment that are passing by.
  - To guard against this, put up warning cones, caution tape or other barriers to keep traffic clear.
- **Never set up a ladder in front of a door that opens outward, unless that door is locked, blocked or guarded.**
- **The most stable angle for a ladder is 75.5 degrees, but such precise measurements aren't always practical on site.**
  - You can get into the right "ballpark" by using the "four-to-one ratio".
  - For every four feet of vertical height, place the bottom of the ladder one foot "out" from whatever it's leaning against.
- **If you're setting up your ladder to climb to a roof, make sure the top of the ladder extends at least 3 feet above the roof's edge.**
  - This gives you something to hold onto so you don't lose your balance as you get off.
- **Never use a ladder in a way that it wasn't intended for, such as a makeshift scaffold or work platform.**
- **A scaffold is a temporary raised platform that's designed to support you and the tools and materials you need when you're doing a job off the ground.**
  - You need to be very careful when you're working on them!
- **Although there are many types of scaffolds, they fall into two main categories:**
  - "Supported" scaffolds, which have the work platform supported from underneath.
  - And "suspended" scaffolds, which hang down from above.



- **Working up high is risky business, and that's why regardless of the type of scaffold you're on, you must use "fall protection".**
- **One type of fall protection that we've already talked about, "guarding", is also used on scaffold work platforms.**
  - Scaffolds more than 10 feet off the ground are required to have their open sides protected by railings with mid-rails and toeboards.
  - If people work or pass underneath the scaffold, wire mesh must be installed between the toeboard and guardrail as well, to provide added protection from falling objects.
- **Another form of fall protection that is used on scaffolds is "personal".**
  - Like the "ladder safety device" we discussed earlier, it's equipment that you wear.
- **On a scaffold, they usually consist of a full-body harness that is connected to a lanyard.**
  - In some situations the lanyard can be anchored to a structural member of the scaffold.
- **In other situations the harness can be connected to a lifeline or deceleration device.**
  - If a deceleration device is used it should be secured directly to an anchor point or to a vertical lifeline that is connected to the anchor point.
- **To safely support the weight of a falling worker, OSHA requires deceleration devices and vertical lifelines to be anchored to a substantial part of the structure that is being worked on, such as a girder or i-beam.**
- **In all cases, they must be able to support a minimum deadweight of 5000 pounds.**
- **If you do wear personal fall protection on a scaffold, make sure you know how to inspect it, put it on and work safely with it.**
  - See your supervisor if you have questions.

- **Sometimes scaffold safety means not working on the platform at all, such as in stormy weather.**
  - Rain increases your chances of slipping or falling, and a strong wind can easily knock you off balance, especially when you're carrying materials.
  - If there's ice or snow on a work platform, stay off until it has been cleared away and the planking sprinkled with sand or another material that will provide better footing.
- **Don't remain on the platform of a scaffold that is going to be moved or altered in any way.**
- **You should stay off a scaffold when it's being loaded or unloaded as well.**
  - Remember to replace any guardrails that have been removed during the process.
- **Never climb the frame or braces to get to the platform of a supported scaffold.**
  - These "shortcuts" can be dangerous!
  - Use the ladder or internal stairs.

**\* \* \* SUMMARY \* \* \***

- **The very nature of construction work requires you to pay extra attention to the surfaces that you walk and work on.**
- **Many slips, trips and falls can be prevented simply by good "housekeeping".**
- **Hazards such as holes in the floor, open- sided platforms and walkways can be guarded effectively with standard railings and toeboards.**
- **Inspect ladders every time you use them. Be sure you know how to set them up properly and use them safely.**
- **Know how to use personal fall protection equipment if you need it when you're working up high.**

- **Never work on a scaffold during stormy or windy weather, or remain on it if it's being moved or altered in any way.**
- **Whatever you're doing on a construction site, you need to pay attention to the "floor" beneath your feet.**
- **Working more safely and avoiding slips, trips and falls can begin when you stop taking walking and working surfaces for granted!**