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KSU Facilities Safety Bulletin

Machine Guarding

July Vivid Courses:

Operations: Machine Guarding
Slips, Trips, and Falls

Office: Slips, Trips, and Falls

Custodial: Slips, Trips, and Falls

What types of machine components are hazardous?

- **Point of operation**—the area of a machine where it performs work on material.
- **Power-transmission apparatuses**—flywheels, pulleys, belts, chains, couplings, spindles, cams, and gears in addition to connecting rods and other machine components that transmit energy.
- **Other moving parts**—machine components that move during machine operation such as reciprocating, rotating, and transverse moving parts as well as auxiliary machine parts.

What kinds of mechanical motion are hazardous?

All mechanical motion is potentially hazardous. In addition to in-running nip points ("pinch points")—which occur when two parts move together and at least one moves in a rotary or circular motion that gears, rollers, belt drives, and pulleys generate—the following are the most common types of hazardous mechanical motion:

- **Rotating**—circular movement of couplings, cams, clutches, flywheels, and spindles as well as shaft ends and rotating collars that may grip clothing or otherwise force a body part into a dangerous location.
- **Reciprocating**—back-and-forth or up-and down action that may strike or entrap a worker between a moving part and a fixed object.
- **Transverse**—movement in a straight, continuous line that may strike or catch a worker in a pinch or shear point created between the moving part and a fixed object.
- **Cutting**—action generated during sawing, boring, drilling, milling, slicing, and slitting.
- **Punching**—motion resulting when a machine moves a slide (ram) to stamp or blank metal or other material.
- **Shearing**—movement of a powered slide or knife during metal trimming or shearing.
- **Bending**—action occurring when power is applied to a slide to draw or form metal or other materials.

Work practices, employee training, and administrative controls can help prevent and control amputation hazards. Machine safeguarding with the following equipment is the best way to control amputations caused by stationary machinery:

- **Guards** provide physical barriers that prevent access to hazardous areas. They should be secure and strong, and workers should not be able to bypass, remove, or tamper with them. Guards should not obstruct the operator's view or prevent employees from working.
- **Devices** help prevent contact with points of operation and may replace or supplement guards. Devices can interrupt the normal cycle of the machine when the operator's hands are at the point of operation, prevent the operator from reaching into the point of operation, or withdraw the operator's hands if they approach the point of operation when the machine cycles. They must allow safe lubrication and maintenance and not create hazards or interfere with normal machine operation. In addition, they should be secure, tamper resistant, and durable.

Source: http://safetytoolboxtopics.com/General/hand-a-power-tools.html

Slips, Trips, and Falls

This type of injury has been the most common injury in the past couple of months at K-State. Here are six guidelines to help you create a safer working environment for you and your employees.

1. Create Good Housekeeping Practices

Good housekeeping is critical. If your facility's housekeeping habits are poor, the result may be a higher incidence of employee injuries. Proper housekeeping is an ongoing procedure that is simply done as a part of each worker's daily performance. To create an effective housekeeping program:

- Plan ahead — Know what needs to be done, who's going to do it and what the particular work area should look like when you are done.
- Assign responsibilities — It may be necessary to assign a specific person or group of workers to clean up, although personal responsibility for cleaning up after oneself is preferred.
- Implement a program — Establish housekeeping procedures as a part of the daily routine.

2. Reduce Wet or Slippery Surfaces

Walking surfaces account for a significant portion of injuries reported by state agencies. Traction on outdoor surfaces can change considerably when weather conditions change. Those conditions can then affect indoor surfaces as moisture is tracked in by pedestrian traffic.

- Keep parking lots and sidewalks clean and in good repair condition.
- When snow and ice are present, remove or treat these elements. In some extreme cases, it may be necessary to suspend use of the area.
- Use adhesive striping material or anti-skid paint whenever possible.

Indoor control measures can help reduce the incidence of slips and falls:

- Use moisture-absorbent mats with beveled edges in entrance areas. Make sure they have backing material that will not slide on the floor.
- Display "Wet Floor" signs as needed.
- Use anti-skid adhesive tape in troublesome areas. Use proper area rugs or mats for food preparation areas.
- Clean up spills immediately.

3. Avoid Creating Obstacles in Aisles and Walkways

Injuries can also result from trips caused by obstacles, clutter, materials and equipment in aisles, corridors, entranceways and stairwells. Proper housekeeping in work and traffic areas is still the most effective control measure in avoiding these types of hazards:

- Keep all work areas, passageways, storerooms and service areas clean and orderly.
- Avoid stringing cords, cables or air hoses across hallways or in any designated aisle.
- In office areas, avoid leaving boxes, files or briefcases in the aisles.
- Encourage safe work practices, such as closing file cabinet drawers after use and picking up loose items from the floor.
- Conduct periodic inspections for slip and trip hazards.

4. Create and Maintain Proper Lighting

Poor lighting in the workplace is associated with an increase in accidents.

- Use proper illumination in walkways, staircases, ramps, hallways, basements, construction areas and dock areas.
- Keep work areas well lit and clean.
- Upon entering a darkened room, always turn on the light first.
- Keep poorly lit walkways clear of clutter and obstructions.
- Keep areas around light switches clear and accessible.
- Repair fixtures, switches and cords immediately if they malfunction.

5. Wear Proper Shoes

The shoes we wear can play a big part in preventing falls and are a critical component of PPE. The slickness of the soles and the type of heels worn need to be evaluated to avoid slips, trips and falls. Shoelaces need to be tied correctly. Whenever a fall-related injury is investigated, the footwear needs to be evaluated to see if it contributed to the incident. Employees are expected to wear footwear appropriate for the duties of their work task.

6. Control Individual Behavior

This condition is the toughest to control. It's human nature to let our guard down temporarily and be distracted by random thoughts or doing multiple activities. Being in a hurry will result in walking too fast or running, which increases the chances of a slip, trip or fall. Taking shortcuts, not watching where one is going, using a cell phone, carrying materials which obstruct the vision, wearing sunglasses in low-light areas, not using designated walkways and speed are common factors in many on-the-job injuries.

It's ultimately up to each individual to plan, stay alert and pay attention.

Source: https://safety.grainger.com/people/6-tips-help-prevent-slips-trips-and-falls