

# Grinder Safety



# Grinder Safety

- Angle grinders, or side grinders, are handheld power tools that can be used for multiple purposes:
  - Cutting
  - Grinding
  - Polishing



# Grinder Safety

- Discs are available for diverse uses:
  - Diamond and metal discs for cutting materials
  - Abrasive discs and stone wheels for grinding surfaces
  - Wire brush wheels and polishing pads for polishing surfaces



# Safety Concerns

- There are an abundance of hazards to consider when operating angle grinders.
  - Kick-back
    - The angle grinder may jump off of the material it is being used on, possibly causing lacerations to the individual using it.
  - Disintegration
    - The disc may shatter while in use, resulting in a flying hazard.



# Safety Concerns (cont.)

- There are an abundance of hazards to consider when operating angle grinders.
  - Fire/Explosion
    - Sparks created by the grinder while in operation can create a fire or explosion if they come into contact with flammable materials. Hot Work Permit required.
  - Electrical
    - Grinding surfaces that are charged or coming into contact with power cords can result in electrocution of the individual using the grinder.



# Safety Concerns (cont.)

- There are an abundance of hazards to consider when operating angle grinders.

- Cuts & Abrasions

- The grinding disc itself can cause severe physical harm if it comes into contact with the body.



- Particulates

- Dust and shavings from the work surface can be cast into the air while working with angle grinders. These can cause problems ranging from breathing issues to explosions.



# OSHA Regulations



- Subpart I – Tools – Hand and Power
  - CFR 1926.303: Abrasive Wheels and Tools
    - B. Guarding
      - 1. Grinding machines shall be equipped with safety guards.
    - C. Use of Abrasive Wheels
      - 4. Portable abrasive wheels used for internal grinding shall be provided with safety flanges unless:
        - The wheels are 2 inches or less in diameter.
        - Wheels are entirely within the work being ground while in use.

# OSHA (cont.)



- Subpart I – Tools – Hand and Power
  - CFR 1926.303: Abrasive Wheels and Tools
    - C. Use of Abrasive Wheels
      - 7. All abrasive wheels shall be closely inspected and ring-tested to ensure that they are free from cracks or defects.
      - 8. Grinding wheels shall fit freely on the spindle and shall not be forced on. The spindle nut shall be tightened only enough to hold the wheel in place.
      - 9. All employees using abrasive wheels shall be protected by eye protection equipment.



# Best Practices

- Proper P.P.E. to wear when operating an angle grinder includes:
  - Hard Hat
  - Eye Protection
  - Face Shield
  - Gloves
  - Flame-resistant Clothing
    - Long-sleeve Shirt
    - Jeans
  - Boots
  - Hearing Protection
  - Knee Pads (if kneeling)



# Best Practices (cont.)



- Consider this short checklist before beginning work...
  - Is an angle grinder the proper tool?
  - Is the correct disc being used for the task at hand?
  - Is the disc the proper size for the angle grinder?
  - Is the disc designed to operate at the grinder's rotational speed?
  - Is the disc properly attached and secured?
  - Is the safety guard cover attached?
  - Is there a deadman switch on the grinder?
- If the answer to any of these is no, do not use the grinder.

# Best Practices (cont.)



- Other safe practices include:
  - Make sure other workers are a safe distance away.
  - **Be sure there are no flammable materials nearby.**
    - **This includes the work surface itself as well as any gases or fumes.**
  - Use two hands to operate the grinder.
  - Hold the grinder at a perpendicular angle to your body when using.
  - Check that the power cord and extension cord are properly sheathed and do not have exposed wires.
  - Make sure that the cord is routed so that the angle grinder cannot come into contact with it and so that it is not a hazard to other employees.

# Best Practices (cont.)



- Other safe practices include:
  - “Run up” the grinder before applying it to the work surface.
  - Do not allow the grinder to bounce around or bump other surfaces.
  - Never place the grinder down until the disc has stopped rotating.
  - Unplug the grinder before changing discs out.
  - Disconnect the power and place the grinder face up when done.

**Think Safety**

**Work Safely**

**QUESTIONS?**