



Working Safely with Portable Abrasive Equipment


Craig Johnson

Training Objective:


You should understand:

- The hazards associated with portable abrasive equipment
- General procedures for safe operation
- General requirements for inspection
- Personal Protective Equipment required when using portable abrasive equipment


Hazards of Portable Abrasive Equipment

- 
- Portable abrasive wheels have most of the same hazards as wheels mounted on fixed stands, but their portability makes the **MORE** hazardous in some ways.


Hazards of Portable Abrasive Equipment

- 
- The BIGGEST danger is the chance of the wheel EXPLODING.
 - Speeds of 2000 to 3000 RPM can send exploding pieces into exposed flesh, unprotected eyes, etc.
 - Protect the wheel from sharp blows, or from being dropped. If the wheel appears to have been abused in any way DON'T USE IT!

Hazards of Portable Abrasive Equipment

- 
- **OVERSPEED** can cause explosion of an abrasive wheel
 - Be sure that the wheel is the proper size to avoid overspeed
 - Be sure that the operating speed of the machine does not exceed the rated wheel speed


Hazards of Portable Abrasive Equipment

- 
- NEVER use a portable grinder without a guard.
 - The guard should cover at least half of the wheel
 - Always keep the guard between your face and the wheel.
 - The guard will also help protect you from dust and sparks


Inspecting the Equipment

- Visually inspect the wheel for defects.
- “Ring test” the wheel by gently tapping with a non-metallic object. If the wheel sounds “dead” then discard it immediately.
- Inspect the mounting flanges. Are they clean, flat and smooth and the correct size and diameter?
- Is the correct mounting blotter in place?


Inspecting the Equipment

- 
- Be sure the mounting nut is not over-tightened.
 - Is the guard on tight?
 - Is the cord in good condition?
 - Does the trigger work right?
 - Does the wheel run smoothly and without vibration?


Personal Protective Equipment

- 
- Goggles/face shields shall be worn during all operations involving abrasive wheels, including portable grinders.
 - Safety shoes must be worn in all shop areas
 - Additional PPE may be required based on the job at hand (long sleeves, long pants, anti-vibration gloves)

Electrical Hazards

- 
- Be sure tool is not sparking
 - Be sure the tool is properly grounded, especially when working in wet areas
 - Turn off and unplug the tool before attempting adjustments or cleaning.


Housekeeping

- 
- Extension cords should be run “out of the way” to prevent tripping hazards.
 - Be sure the work area is clear of any hazards which may contribute to injury
 - Care should be taken when working with any electrical equipment around flammable liquids or gasses.

Ergonomics

- Keep a firm, but steady hold on the grinder, applying the correct pressure - the “right touch”
- You can get tired without realizing it and lose control of the grinder so be sure to take periodic breaks.
- Hand and wrist exercises should be performed at regular intervals when grinding for lengthy periods of time.

Conclusion

- 
- Treat the grinder with respect! The wheel is brittle and doesn't like shocks.
 - Lay it down carefully **AFTER** it comes to a full stop.
 - Respect the grinder, its hazards and benefits.