

# Pneumatic or Powder-Actuated Tools: Flying Object Struck-by Hazards

Tools or equipment that eject an object using compressed air or a powder propellant charge automatically create flying object struck-by hazards. Powder-actuated fasteners are designed to go through concrete and steel, and can easily go through a person. Using compressed air to clear out a pipeline could eject something with enough force to injure or kill others in the surrounding area if it is not secured properly.

## Protect workers by:

- Requiring use of personal protective equipment, such as hard hats, safety glasses, steel-toe footwear, and hearing protection.
- Using full sequential trigger nail guns, which are the safest trigger option.
- Inspecting tools to ensure that all safety devices are enabled and working properly (based on the manufacturers' specifications).
- Providing training on how to properly operate pneumatic and powder-actuated tools and safe work practices.
- Never using powder-actuated tools in explosive or flammable atmospheres.
- Reducing compressed air used for cleaning to 30 psi.
- Installing whip checks on pressurized air hoses to prevent them from flying around if there is a hose or coupling failure.

## Planning Resources

- [CPWR's Nail Gun Safety Webpage](#)
- [Nail Gun Safety: A Guide for Construction Contractors](#)
- [CPWR's Head Protection Webpage](#)
- [Job Hazard Analysis](#)
- [Building Information Modeling \(BIM\) for Safety Planning](#)
- [Sequential Nail Guns](#)
- [OSHA Competent Person Resources](#)

## Training Resources

- Toolbox Talks:
  - Nail Gun Safety ([English](#), [Spanish](#))
  - Eye Protection ([English](#), [Spanish](#))
  - Head Protection ([English](#), [Spanish](#))
- Hazard Alert Cards:
  - Nail Guns ([English](#), [Spanish](#))
  - Eye Injuries ([English](#), [Spanish](#))
  - Preventing Head Injuries ([English](#), [Spanish](#))
- Posters/Infographics:
  - Nail Gun Safety #1 (English [JPEG](#) & [PDF](#) ; Spanish [JPEG](#) & [PDF](#))
  - Nail Gun Safety #2 (English [JPEG](#) & [PDF](#); Spanish [JPEG](#) & [PDF](#))
  - Nail Gun Safety #3 (English [JPEG](#) & [PDF](#) ; Spanish [JPEG](#) & [PDF](#))
  - Eye Protection (English [PDF](#); Spanish [PDF](#))
  - Head Protection (English [PDF](#) & [JPEG](#))

## Relevant Standards



**NAIL SAFETY!**  
AVOID NAIL GUN INJURIES  
Use a sequential trigger. A few minutes a day can prevent nail gun injuries.

**Use the Right Tool**

- Use a safe sequential trigger: a **single-shot (sequential) nail gun trigger is safest.**
- Contact triggers (bump nailers) allow for continuous nailing but are **twice as dangerous!**

Remember...nail guns can help get the job done, but nail gun injuries send **tens of thousands** to the hospital each year.

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- OSHA Standard 29 CFR - <https://www.osha.gov/laws-regs/regulations/standardnumber/1926>
  - [1926 Subpart C - General Safety and Health Provisions](#)
    - [1926.20 - General safety and health provisions.](#)
    - [1926.21 - Safety training and education.](#)
    - [1926.22 - Recording and reporting of injuries.](#)
    - [1926.23 - First aid and medical attention.](#)
    - [1926.25 - Housekeeping.](#)
    - [1926.28 - Personal protective equipment.](#)
    - [1926.29 - Acceptable certifications.](#)
  - [1926 Subpart E - Personal Protective and Life Saving Equipment](#)
    - [1926.95 - Criteria for personal protective equipment.](#)
    - [1926.96 - Occupational foot protection.](#)
    - [1926.100 - Head protection.](#)
    - [1926.101 - Hearing protection.](#)
    - [1926.102 - Eye and face protection.](#)
    - [1926.107 - Definitions applicable to this subpart.](#)
  - [1926 Subpart G - Signs, Signals, and Barricades](#)
    - [1926.200 - Accident prevention signs and tags.](#)
  - [1926 Subpart I - Tools-Hand and Power](#)
    - [1926.300 - General requirements.](#)
    - [1926.302 - Power-operated hand tools.](#)
    - [1926.303 - Abrasive wheels and tools.](#)
    - [1926.304 - Woodworking tools.](#)
    - [1926.306 - Air receivers.](#)
  - [1926 Subpart O - Motor Vehicles, Mechanized Equipment, and Marine Operations](#)
    - [1926.603 - Pile driving equipment.](#)
- American National Standards Institute (ANSI):
  - [ANSI/American Society of Safety Professionals \(ASSP\) A10.3-2020 – Safety Requirements for Powder-Actuated Fastening Systems](#)
  - [ANSI/International Safety Equipment Association \(ISEA\) Z89.1-2014 \(R2019\) – Head Protection](#)
  - [ANSI/International Safety Equipment Association \(ISEA\) Z89.1-2020 – Eye and Face Protection](#)

### Nudges to Improve Planning

- Job Site Posters: *see Training Resources above*
- Text Messages

Target Audience	Texts
Supervisors and Workers	<ul style="list-style-type: none"> <li>• Choosing a full sequential trigger nail gun prevents accidental nail firings, protecting you and your co-workers from serious injury caused by flying nails</li> </ul>

- Email Messages

#### Example:

Dear [     ],

As a supervisor, keeping your workers safe is a top priority. If workers on your job site are using pneumatic or powder-actuated tools, remember that they can seriously injure themselves and nearby coworkers if they are not used correctly. Create a plan before work begins using CPWR's Struck-by Planning Program and communicate it with your workers to prevent injuries caused by these tools. As part of your plan, you should:

- Require use of personal protective equipment, such as hard hats, safety glasses, steel-toe footwear, and hearing protection.
- Use full sequential trigger nail guns, which are the safest trigger option.
- Inspect tools to ensure that all safety devices are enabled and working properly (based on the manufacturers' specifications).
- Provide training on how to properly operate pneumatic and powder-actuated tools and safe work practices.
- Never using powder-actuated tools in explosive or flammable atmospheres.
- Reduce compressed air used for cleaning to 30 psi.
- Install whip checks on pressurized air hoses to prevent them from flying around if there is a hose or coupling failure.

Thanks for helping to instill a safety and health culture here at [company name]. Stay safe!

[Name]

- Stickers



CPWR has a simple "Sphere of Safety" hardhat sticker design that can be downloaded and printed. We also have limited supplies available for free, which can be ordered by contacting Grace Barlet at [gbarlet@cpwr.com](mailto:gbarlet@cpwr.com).

[Download Sphere of Safety sticker artwork](#)



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