

Worksite: _____ Instructor: _____ Date/Time: _____

Topic C108: Powder Actuated Tools

Introduction: Powder-actuated tools are used to propel fastening devices into hard surfaces, usually concrete, by means of an explosive power-load. These tools are often the most rapid time saving method to get the job done, but the hazards associated with these tools makes them potentially deadly weapons. Following are the general requirements for safe Powder-Actuated tool use:

Operators and assistants using tools must use eye, head, and face protection as required by working conditions.

High velocity tools, Low velocity piston tools, and hammer operated piston tools must have the characteristics outlined below:

- The muzzle end of the tool must have a guard at least 3 ½” in diameter to confine any flying fragments.
- The tool must be designed so that it cannot be fired unless it is equipped with one of the above devices.
- The firing mechanism must be designed so that it cannot fire during loading or preparation to fire, or if the tool is dropped.
- Firing of the tool must depend on two separate operations, with the final movement being separate from the first operation of bringing the tool into firing position.
- The tool must be designed so that it will not fire unless it is positioned against a work surface with a force of at least 5 pounds greater than the total weight of the tool.
- The tool must be designed so that it will not operate if the tool is tilted more than 8 degrees in relation to the work surface.
- The tool must be designed so that the power level is adjustable by the operator, so that it may be used without excessive force.
- The tool must be designed so that the breech will be reasonably visible to check for foreign matter or debris.

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Requirements for loads and fasteners:

- There must be a standard means of identifying the power level of loads being used in the powder actuated tools.
- No load may be used in excess of design specifications for a low velocity tool.
- Fasteners used in tools must be only those designed to be used in such tools.

Operating Requirements:

- Inspect the tool before use to ensure that it is clean, that all moving parts are free, and that the barrel is free of debris or obstructions.
- If a tool is defective, it must be taken out of use until it is properly repaired.
- Tools are to remain unloaded until they are to be used.
- In case of a misfire, the tool must be held in the operating position for at least 30 seconds, tried a second time, then wait another 30 seconds before unloading in strict accordance with manufacturer’s instructions.
- Never leave a tool unattended where it would be available to unauthorized personnel.
- Fasteners must not be driven into exceptionally hard materials such as cast iron, glazed tile, glass block, rock, etc.
- A backing must be used on soft materials to prevent fastener from passing completely through and becoming a hazard.
- Fasteners must not be driven through an existing hole unless means of positive alignment is available.
- Fasteners may not be driven into a cracked or fractured area caused by a previous fastener.
- Tools must not be used in an explosive or flammable atmosphere.

Conclusion: A Powder-Actuated tool has similar characteristics to a firearm and must be handled with caution in order to avoid serious injury. Many states now require a permit, license, training, or a combination of these requirements prior to operating one of these tools. Follow these guidelines for safe Powder-Actuated tool operations.

Employee Attendance: (Names or signatures of personnel who are attending this meeting)

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These guidelines do not supersede local, state, or federal regulations and must not be construed as a substitute for, or legal interpretation of, any OSHA regulations.