

Compressed air piping systems

OAR 437
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Compressed air piping systems

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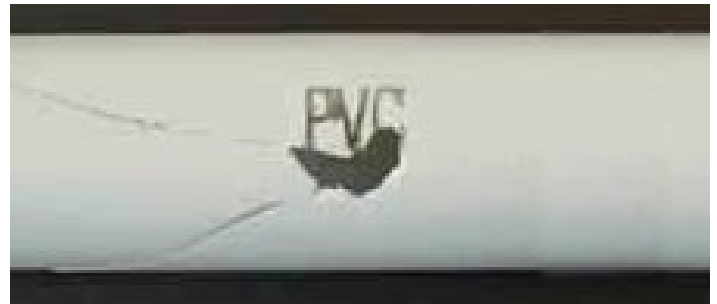
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Is your business using a piping system designed for compressed air? Is it safe? Learn more about Oregon OSHA's requirements for compressed air piping systems in this fact sheet.

Compressed air piping systems must be of adequate design and strength

Compressed air piping systems and their component parts must be able to withstand the pressure placed on them. The pressure must not exceed the allowable stress for the material used in their construction. Keep the design and operating specifications for the system as long as you use it.



PVC pipe can shatter or explode under pressure.

Plastic pipe used for compressed air service must be designed for such service by the manufacturer. Examples of such pipe include high-density polyethylene (HDPE) and Acrylonitrile Butadiene Styrene (ABS). Compressed air piping systems that use plastic pipe must also be "project specific" – i.e., suited for a particular application or project – and installed by a competent person.

Polyvinyl chloride (PVC) pipe must not be used in compressed air systems unless it is buried or encased.

PVC pipes are unsafe when they're used for compressed air service because they can shatter or explode under pressure or from an external force. Sunlight (the UV component) can also reduce the impact resistance of PVC pipe.

Oregon OSHA's [Rules for Compressed Air and Compressed Gas Equipment](#) prohibit you from using PVC pipe in above-ground compressed air systems unless the pipe is completely enclosed in a conduit or casing strong enough to provide protection from external damage and deterioration.



PVC pipe is prohibited in above-ground systems unless it is completely enclosed. *Photo credit: Owen Smith, Oregon OSHA*

Compressed air piping systems must be labeled

Identify the contents of compressed air piping systems with a label that says “compressed air.” The label can be taped, marked, or stenciled on the pipe. Ensure that the label is durable and visible.



Instead of a label, you can use signs, placards, process sheets, batch tickets, operating procedures, or other written materials. The piping system must be clearly identified and the written materials must be readily accessible to employees in their work areas during each shift.

Compressed air systems must not be used for cleaning unless the pressure is reduced to less than 30 psi

Compressed air must not be used for cleaning unless the pressure is reduced to less than 30 psi at the nozzle; chip guards and appropriate personal protective equipment are also required. The air at the nozzle must remain below 30 psi for all static conditions. This prevents a back-pressure buildup if the nozzle is obstructed or dead ended. “Dead ended” means the airflow is restricted at the discharge end of the pipe or nozzle.

Compressed air piping systems with internal pressures at 30 psi or greater may be used for cleaning provided there is a relief device or air ports within the system that will drop the pressure below 30 psi at the nozzle when the system is dead ended. Relief ports at the nozzle or at least two 1/16-inch holes anywhere near the nozzle will usually reduce the pressure below 30 psi.

Employees must not use compressed air to clean off their clothes while they are wearing them.



Applicable rules

- **Additional Oregon Rules for Compressed Air and Compressed Gas Equipment** – Division 2, Subdivision M, 437-002-0210
- **Hand and Portable Powered Tools and Equipment** – Division 2, Subdivision P, 1910.242
- **Oregon Rules for Pipe Labeling** – Division 2, Subdivision Z, 437-002-0378
- **Power Operated Hand Tools** – Division 3, Subdivision I, 1926.302
- **Air Receivers and Pressure Systems** – Division 4, Subdivision M, 437-004-1505
- **Pipe Labeling** – Division 4, Subdivision Z, 437-004-9850

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