



Automatic Leak Detection

Focus on: Requirements and best practices

Understanding Automatic Leak Detection

Automatic Leak Detection (ALD) is a system that continuously checks for refrigerant leaks and warns the operator when a leak is detected.

There are two types of systems:

- **Indirect systems** monitor things like temperature and pressure in a refrigeration system, and they detect changes that show a refrigerant leak.
- **Direct systems** detect refrigerants in the air that have leaked from a system.

ALD requirements

If you own or operate a refrigeration system with 1,500 pounds or more of a refrigerant with a global warming potential (GWP) of 150 or higher, you must follow requirements under [WAC 173-443-145](#):

- Install an ALD on all parts of the refrigerant circuit and its system inside a building or structure by Jan. 1, 2025.
- Ensure the ALD meets required detection levels:
 - **Direct ALD**
 - Detects 10 ppm of specific refrigerants used.
 - Alerts the operator if levels exceed 100 ppm.
 - **Indirect ALD**
 - Alerts the operator if the system loses 50 pounds of refrigerant or 10% of the full charge, whichever is less.

An exception

If the refrigeration system will be replaced or switched to a refrigerant with a GWP below 150 before Jan. 1, 2027:

- A facility representative must sign a document outlining the transition timeline.
- The document must be kept as required by [WAC 173-443-195](#).

Leak notice

If an ALD detects a leak, the owner or operator must inspect the system within 24 hours.

A certified technician must confirm and locate the source of the leak using a calibrated refrigerant leak detector, a bubble test, or another approved method.

A certified technician will have a current, valid, and applicable certification under [40 CFR § 82.40 or 82.161](#).

ALD vs. OSHA leak detection

Different leak detection systems serve different purposes:

- **Ecology's Refrigerant Management Program ALD:** Aim to reduce refrigerant emissions, protecting the environment and lowering costs for refrigeration and air-conditioning system owners or operators.
- **OSHA leak detection:** Focuses on worker safety by monitoring refrigerant leaks that pose health risks in the workplace.

OSHA systems detect leaks based on **Permissible Exposure Limits**, or PELs, which are generally higher than the detection levels required by the Refrigerant Management Program's ALD.

As a result, OSHA systems don't meet ALD compliance requirements.

For OSHA requirements, PELs, and air contaminant details, visit [OSHA's website](#).



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To request an ADA accommodation, contact Ecology by phone at 564-233-1616, email Heather.Curtis@ecy.wa.gov, or visit <https://ecology.wa.gov/accessibility>. For Relay Service or TTY call 711 or 877-833-6341.