

Backflow Prevention Course Outline

Course Description

This course is designed for contractors who install backflow prevention devices and hold either of the following licenses:

- S330 – Landscape and Recreation Contractors
- S410 – Boiler, Pipeline, Waste Water, and Water Conditioner Contractors

While credit applies to any license, these are the contractors required to take the course.

Common Contaminants and Hazards

- Creosote – A tar byproduct used in wood preservation; toxic effects include organ damage.
- Sewage – Contains bacteria and parasites like Cryptosporidium and E. Coli.
- Chemicals – Pesticides, herbicides, fertilizers, and cleaning products found in both residential and commercial settings.
- Industrial Waste – Includes heavy metals, solvents, and petroleum products.
- Case Study: Uintah Highlands (1991) – Herbicide spill contaminated water in 2,000 homes.

Legal Implications

- Safe Drinking Water Act
- Utah Code R309-105-12
- Penalties may include fines, license revocation, lawsuits, and criminal charges.

Fundamentals

- Cross-Connection – Point where non-potable water can contact potable supply.
- Backflow – Reversal of flow into the clean water supply.
- Causes – Backpressure (e.g., booster pumps, boilers) and Backsiphonage (e.g., water main breaks).

Applicable Codes and Standards

- Utah State Plumbing Code Section 608
- ASSE Standards (1013, 1015, 1020, etc.)
- Manufacturer Instructions
- Local Municipal Requirements

Types of Backflow Preventers

- Double Check Valve Assembly (DCVA) – Moderate hazard applications.
- Double Check Detector Assembly (DCDA) – Used for fire protection.
- Reduced Pressure Zone Assembly (RPZA) – High hazard environments.
- Reduced Pressure Detector Assembly (RPDA) – Monitors unauthorized use in high hazard fire lines.

- Pressure Vacuum Breaker (PVB) – Irrigation systems.
- Atmospheric Vacuum Breaker (AVB) – Non-testable, height-restricted use.

Installation Requirements

- Devices must follow clearance, orientation, and accessibility rules.
- RPZAs must not be installed below grade.
- PVBs and AVBs require minimum elevation above point of use.
- Refer to IPC 608.1.2 subsections for specific installations.

Special Installations

- Irrigation Systems – Require RPZA, PVB, or AVB (R608.17.5).
- Boilers – Require RPZA or air gap (R608.17.2).
- Preventer selection is often dictated by local authority beyond state code.

Testing & Certification

- All testable devices must be inspected at installation and annually by a certified technician.
- Reports include device details, installation, test results, and technician info.
- Certification process includes coursework, ABPA exam, and fee.

Repair Requirements

- Only certified technicians may perform repairs.
- Repairs require immediate post-repair testing per R309-305-1(1)(b).