

Cross Connection Control Surveyor

ASSE Professional Qualification Standard #5120

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Cross Connection Control Surveyor, ASSE Professional Qualification Standard #5120, was developed in the interest of consumer safety. ASSE Board of Directors approved development of the standard in April 1987 and it was first issued by the ASSE Board in 1990 and American National Standards Institute (ANSI) approved as an American National Standard on November 14, 1991. It is the first standard in the plumbing and water supply fields to set minimum requirements for qualified professionals engaged in cross connection control surveys. Individuals certified in accordance with the standard perform comprehensive inspection of new and existing facilities, investigating all potable water outlets, locating actual or potential connections between the potable water supply and sources of contamination or pollution.

Key Elements of the Standard

Key elements of the standard are that it is a voluntary consensus standard establishing minimum industry requirements for certification and general and product performance knowledge. The standard includes actions a surveyor takes when conducting a cross connection control survey inspection and requirements for basic working knowledge including study of vocabulary and definitions associated with backflow prevention.

Individuals, involved with backflow prevention, representing different regions and industry segments, including engineers, manufacturer representatives, plumbers, water purveyors, backflow prevention assembly testers, inspectors, trainers and

consumers, recognized a plumbing industry need and voluntarily dedicated themselves to the standard's development. All segments of the industry represented reached a consensus, providing minimum qualification criteria to certify individuals who perform cross connection control survey inspections.

Certification Requirements

Certification requirements entail that candidates for certification successfully complete a forty hour ASSE approved cross connection control survey course of instruction and pass a one hundred (100) question examination, with a score of 70% or higher. Candidates are required to successfully complete an actual field survey and provide verification of five years of experience in the plumbing or a related industry field. An alternate certification requirement is allowed for a candidate certified as a Backflow Prevention Assembly Tester. Course requirement is reduced to a minimum of twenty hours of approved cross-connection control survey instruction and completion of field survey and testing requirements.

Course Objectives

Approved ASSE courses reinforce the surveyor's general knowledge. The cross connection control surveyor is required to demonstrate knowledge of consensus standard writing organizations, listing agencies and Federal, State and local regulations and codes. A requirement is that the surveyor is skilled in reading plans and blueprints. Plan review allows the surveyor to be familiarized with the facility to be surveyed, identifies areas where cross connections may exist and alerts the surveyor with the types of hazards, associated with the use of potable water supply systems. For a thorough understanding of conditions that cause backflow the standard requires the surveyor to identify and describe the basic hydraulics pertaining to, absolute, atmospheric and gauge pressures, the venturi principle, backflow, backsiphonage, backpressure, differential pressure, thermal expansion, cavitation, turbulence, head pressure, and vacuum. Stated in the standard are requirements for the surveyor to be knowledgeable of safety precautions and potential hazards, during cross connection control surveys, including confined spaces, vehicle traffic, dangers that animals and insects pose, electrical hazards, and general safety. General knowledge includes the requirement for the surveyor to be familiar with common, potential, recurring, and protected cross connections found within funeral homes,

general industries, restaurants, medical facilities and offices.

The standard lists seventeen backflow prevention methods, devices and assemblies. The cross connection control surveyor is required to demonstrate product performance knowledge of each by describing proper application and limitations with respect to the type of backflow, backpressure or backsiphonage. Performance knowledge demonstrated by the surveyor includes application of each of the backflow prevention methods, devices and assemblies with respect to degree of hazard, assembly design working pressure and working temperature, pressure loss and whether suitable for continuous pressure installation. The requirement for the surveyor to demonstrate knowledge of local codes and installation limitations, including device orientation, direction of flow and elevation is also included in the standard.

The standard requires the surveyor to identify and describe the actions a surveyor shall take conducting a cross connection control survey inspection. Actions a surveyor takes prior to a cross connection control survey include notification to the proper authorities and notification to premise owners. The surveyor is

required to display proper identification when conducting a survey inspection. The surveyor often completes a checklist which includes, system identification, assembly and device locations, and areas to check for potential cross connections during the inspection. After completion of the survey inspection the owner is notified and proper documentation is completed. Documentation includes recording surveyor's signature, identification and date of the cross connection control survey. The surveyor records physical identification of backflow prevention assemblies and devices including type of device, manufacturer, serial number, size, location of assembly, type of shut off valves, building address and visual observations of physical condition.

A complete cross connection control program includes survey and inspection of all facilities to locate existing and potential cross connections. A successful survey program for cross connection control is dependant upon individuals certified according to ASSE Standard #5120, performing cross connection control survey inspections and meeting the goals of ASSE, aspired in its motto "Prevention Rather Than Cure". ●

Approved Backflow Prevention Assembly - Any approved assembly used to prevent backflow into a potable water system. The type of assembly or device used shall be based on the degree of hazard; existing or potential.

Containment - A method of backflow prevention which requires a backflow prevention assembly or device at the water service entrance. Sometimes called premise isolation.

Contaminant - Any material (solid, liquid or gas) which, if introduced into a potable water supply, would cause it to be unfit for human or animal consumption.

Critical Level - A designated operational limitation prescribing a safe height for the installed vacuum breaker above the flood level rim of the fixture or receptacle served. In absence of physical mark on the device, indicating a height measurement reference point, the extreme bottom of the device shall be considered this height reference point.

Degree of Hazard - Derived from the evaluation of conditions within a water system which can be classified as either a "health hazard" or "non-health hazard."

Health (High) Hazard - A connection made to the potable water system whereby the risk of backflow occurring would be from toxic or chemically charged sources.

Low Hazard - A connection made to the potable water system whereby the risk from backflow occurring would be limited to the contamination of the potable water with objectionable but non-toxic substances such as steam, air, food, beverage, etc.

Isolation - To confine a potential source of contamination to the non-potable system being served; to provide a backflow prevention mechanism at each actual or potential cross-connections (sometimes called internal isolation).

Non-Potable - Water not safe for drinking, personal or culinary use.

Pollutant - **1.** The addition to a natural body of water of any material which diminishes the optimal economical use of the water body by the population which it serves, and has an adverse effect on the surrounding environment. **2.** A substance that deteriorates the aesthetic quality of water or other materials but is not harmful to health. Pollutants are considered non-health hazards.

Potable - **1.** Water which is suitable for drinking, culinary and personal purposes. **2.** Water free from impurities present in amounts sufficient to cause disease or harmful physiological effects. Quality is normally controlled by public health regulations.