

Is It Really Necessary?

ASSE Standard 1060 - November 18, 1996

Performance Requirements for Outdoor Enclosures for Backflow Prevention Assemblies

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The answer is a resounding yes!

The long awaited ASSE Standard 1060 is now in place after more than three years of study, review, modification, objection, and rejection. The finished document reflects the detail and input from many experts in the field and provides a great base for the further development of Engineering specifications, Utility and Water Authority policies and ordinances. It is also a great tool for maintaining a defense against wrongly filed lawsuits and claims involving inadequate protection of the backflow preventer which is an integral part of the public water system.

The Enclosure Industry is about ten years old from the standpoint of commercially developed and marketed products that provide interior temperature control as well as protection against vandalism, theft, and other elements that endanger the safe operation of the valve.

From the humble beginning of a small fiberglass box that simply drops over the valve to a fully engineered enclosure that includes modern day foam insulation, automatic thermostat controlled heat, proper sized drains for the potential RPZ discharge, power outage alarms, low temperature alarms, four point door locking mechanisms, aesthetic considerations for high profile installations, custom design for combination equipment installations, easy field installation, nationwide distribution, established manufacturers and distribution, and sophisticated training programs that produce "Enclosure Specialists" as consultants in the field – the Enclosure Industry has matured.

In 1993 OSHA introduced the "Confined Spaces" compliance program that is involved in the protection of employees from death or injury as a result of entering a work area that limits entry and exit and may have a hazardous atmosphere or interior hazard of other type. The program involves expensive equipment, training, and administrative support to be in compliance. Violations can have fines of up to \$70,000.00 per infraction and the liabilities of all parties can be extensive if an OSHA violation is issued where a death or serious injury has occurred. In many cases, above ground enclosures have been excluded from confined spaces compliance and are being used extensively as an alternative to confined spaces installations.

We also know that an RPZ type backflow preventer can discharge large amounts of water when a check is fouled or a full backflow condition exists. Many valve manufacturers reflect discharge rates of 500 gallons per minute; that's correct – 500 gallons per minute in sensitive areas such as: basements, warehouses, ceilings, closets, equipment rooms with electric components and other systems sensitive to large amounts of water. Without adequate drainage, discharge water can accumulate rapidly in adjoining areas of the valve. For example, in ten minutes 5000 gallons of water can be discharged from the fouled RPZ. The 4" drain can handle about 100 gpm, leaving 4000 gallons of water in the area that weighs 32,000 pounds. Like an elephant, where does 32,000 pounds of water go – "Any place it wants to." An above ground outdoor enclosure totally eliminates this hazard to the building, equipment, inventory, files, and expensive floor coverings and furniture.

As the demand for enclosures increased and specifications for their use were more frequent, increased activity was evident from producers of related fiberglass products as well as the contractors themselves in an attempt to supply heated outdoor installations. With varied degree of success, and a wide range of aesthetics, enclosures began to appear without adequate access for testing. Either no drains or very small ones were in evidence and the insulation factor ranged from very little to overkill. In many cases the heat sources were unsafe and inadequate to meet the freeze protection requirements of the more severe northern markets. Sizing was a random selection and did not consider the many multiple and special applications required. The special design segment of the industry approached 50% of the production and many manufacturers that tried this segment, failed due to inadequate planning and design capability. Those who succeeded progressed to extensive AutoCad computer programming and close liaison with the valve manufacturers to insure proper clearances for testing and installation.

As the industry evolved, many Utility and Water Authority Departments realized the value of enclosures and local policies and ordinance were developed requiring above ground heated enclosures for many installations. The enclosure virtually became a recommended installation across the country in areas where freezing and vandalism prevailed.

The Industry continued to expand with national distribution and rep organizations that involved the reps for major backflow prevention valve manufacturers. In one case, a major valve manufacturer contracted for a private label supplier to provide enclosures for marketing by the valve manufacturer. Other valve manufacturers experienced growth and acceptance of special products when special design enclosures were designed on an exclusive basis for the special design valve.

Now you see why a recognized authority accepted the challenge of developing a national standard for outdoor enclosures. As a major player in the continued emphasis on backflow prevention and the inherent problem of where to put the valve, the utility segment as well as the Engineering Design group needed a base to work with to insure proper protection and reliability in the Enclosure Industry. ASSE 1060 has given the Industry a giant step in this endeavor.

For certification, the manufacturers must now provide evidence of testing to standards in the following areas:

1. Freeze protection capability
2. Structural design
3. Drainage performance
4. Air inlet volume
5. Testing and maintenance access
6. Hinged access panel restraints, includes removable panel weight restrictions
7. Materials specifications, i.e.: exterior, internal, fasteners and hardware

8. Elastomers exposed to ultra violet (sunlight)
9. Security and vandalism
10. Manufacturer identification and specifications
11. Installation instructions

The enclosures are tested for performance in several classes:

1. Freeze protection enclosures
2. Freeze retardant enclosures
3. Non-freeze protection enclosures

The testing process can be accomplished only at ASSE approved laboratories. The testing process involves about 60 days with costs ranging to \$25,000. The largest unit produced must be tested and approved for certification of the product line. Copies of the standard are available from: ASSE, 28901 Clemens Rd., Suite 100, Westlake, OH 44145. Phone: (440) 835-3040, Fax: (440) 835-3488.

As a conclusion: "Does the Industry Need a Standard for Above Ground Heated Enclosures" – The answer is a resounding "Yes," after all - the Backflow Prevention program supports the philosophy of protected clean water in our supply system. What could be more important than a well designed, quality built protective enclosure for this all important valve installation. Congratulations to Mr. Ken Kerr, Richard J. Prospal, Rand Ackroyd, Shannon M. Corcoran and other members of the Standards Committee and the Working Group that developed this timely and very complete standard. ●