



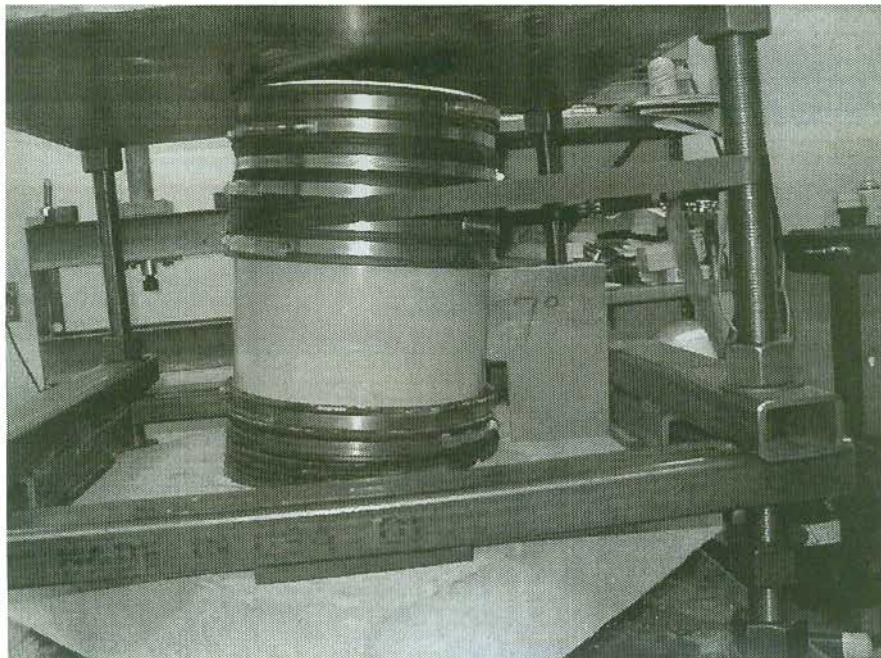
PRESS-SEAL GASKET CORPORATION

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Performance Evaluation 12-inch CAST-A-SEAL® Press-Seal Gasket Corporation Fort Wayne, Indiana

Laboratory performance tests were conducted on 13 April 2001 on the 12-inch CAST-A-SEAL® flexible connector product designed and produced by Press-Seal Gasket Corporation, 6932 Gettysburg Parkway, Fort Wayne, Indiana, 46804. This CAST-A-SEAL® product is intended to provide a watertight seal to accommodate any diameter pipe in either a straight or curved structure wall. The product is extruded and can, therefore, be customized for any size pipe in a precast or cast-in-place application.

The CAST-A-SEAL® testing was conducted at the Press-Seal Gasket Corporation facility to meet the 10-psi pressure and seven degree axial deflection alignment requirements specified in ASTM C923, "Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals."



CAST-A-SEAL® PVC Pipe Test at 7 Degree Deflection

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Two tests were conducted. Both test specimens were randomly selected. One was installed in a two-phase installation into a precast reinforced flat concrete headwall, and the second was cast monolithically. Both were placed in a 4-inch thick concrete headwall.

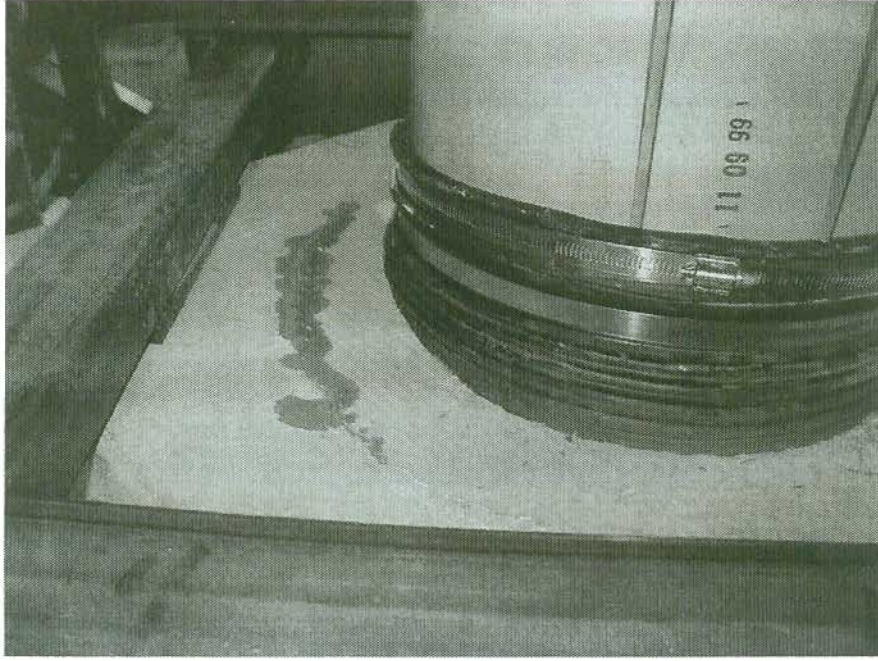
In condition one, the two-phase pour, the first pour incorporated a 18-inch diameter hole former into a 28-inch by 28-inch precast headwall. The second pour was the grouting of the 12-inch (I.D.) CAST-A-SEAL[®] folded boot into the hole with a 11.75-inch outside diameter steel band used as a hole former. A solid wall PVC pipe with the banded (two stainless steel clamps) attached the pipe to the CAST-A-SEAL[®]. To simulate actual field conditions, a quick setting-high strength grout was used to install the CAST-A-SEAL[®] in the smooth bore opening made by the hole former. The grout material was a high alumina cement based concrete repair material.

In condition two, the monolithically cast unit, the CAST-A-SEAL[®] was simply cast in as a folded boot on the 11.75-inch outside diameter steel band as indicated in condition one. All other set-up procedures and testing were identical.

The test specimens were isolated by placing the headwall unit into the Press-Seal Gasket pressure testing apparatus. A hydrostatic head was applied internally to the pipe and flexible connector and restrained by a pipe plug on the protruding end of pipe and the test frame plate at the inside face of the headwall.

The monolithically cast unit, condition two, was taken to a test pressure of 10-psi and held with no loss of pressure or leakage for 10-minutes in a straight alignment.

The two phase poured cast unit, condition one, was taken to a test pressure of 10-psi at a seven degree axial deflection angle and held with no leakage at the gasket-to-pipe or gasket-to-concrete interface for 10-minutes. Leakage did occur at the concrete-to-concrete interface, but the leakage was relatively minor. This leakage did not impact the testing of the gasket and pressure was able to be maintained at a 10-psi minimum for the entire test.



**Leakage at Concrete to Concrete Interface but No Leakage
at the Gasket to Pipe or Gasket to Concrete Interface**

The load deflection-testing component of ASTM C923 is not germane or pertinent to the plastic product being tested. When the required 1800 pound load for this diameter is applied to the pipe, an axial movement in excess of 1-inch would result, negating the test requirements per ASTM C923. Any subsequent load applied to the plastic pipe would result in localized deformation or buckling of the plastic pipe and little or no transfer of the applied load to the gasket sealing area.

The pressure gauge used was a calibrated Maarsh, Control #613, range 0 – 15 psig, hose mounted connection.

Submitted by:

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