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Investigative Chemistry Geotechnical Construction Materials  
Non Destructive Testing Failure Analysis Product Evaluation  
Metallurgical Analysis Materials Testing Welder Qualification

**BELOW FLOOD ELEVATION TESTING  
OF 6" DIA. PLASTIC DUCT JOINTS**

**Prepared for:**  
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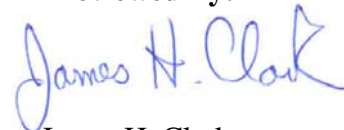
**Client Purchase Order Number: 1110**

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**The test results contained in this report pertain only to the samples submitted for testing and not necessarily to all similar products.**

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### INTRODUCTION:

This report presents the results of LC1014 below flood elevation (BFE) leak testing of 6" diameter plastic duct pipe joints. Samples of duct pipe, elbows, caps and joint clamps were submitted by CDC Enterprises on July 28, 2008.

The scope of work was limited to conduction water submergence leak testing on the AKDuct 6" diameter joint clamping system and providing a report of the results. The testing was completed on August 8, 2008.

### SAMPLE IDENTIFICATION:

The following items in multiple numbers were submitted for assembling a test mockup. AKDUCT, blue 6" diameter: Duct Pipe – Part# 06-2510, 90 Degree Elbow – Part# 06-2530, End Cap – Part# 06-2511 and 6" Clamp – Part# 06-1459.

The test mockup (see photograph on page 3 for configuration) consisted of four (4) elbows and one (1) end cap connected to pipe sections using the 6" clamps, yielding a total of eight (8) joints for testing.

### SUMMARY OF RESULTS:

The plastic duct pipe mockup with 8 joint connections following **24 hours** submergence under **4-1/2 feet** of water **showed NO leakage of water** into the interior passageway.

### TEST METHODS:

The testing was conducted by assembling a test mockup consisting of (3) 90° elbows on a horizontal plain with sections of pipe in-between and the joints secured using AKDUCT 6" clamps. An end cap was installed on one end of the mockup and on the other end, a 90° elbow with a 6 ft vertical stand pipe section as pictured in the photograph on page 3.

The test mockup was placed inside on the bottom of a 4 foot diameter by 5 foot high tank. Three 8" concrete half blocks were then placed in the inner circle area to support a reinforced piece of plywood shored in place to restrain the mockup under the water (see photographs on page 4).

The tank was then filled with water allowing the mockup to float-up a couple of inches and rest against the plywood restraint, to a height of 4-1/2 feet from the bottom of the pipe. The mockup was restrained under the water for 24 hours at which point a visual inspection down inside the stand pipe for the presence of water was made followed by be an additional internal inspection after removal from the water.

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View of the test mockup



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Submergence tank with mockup in place



Under water view of reinforced plywood shored in place to restrain the test mockup



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