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**Committee F17 on Plastic Piping Systems**
**Subcommittee F17.25 on Vinyl Based Pipe**

**Research Report: F17-1007**

# Interlaboratory Study to Establish Precision Statements for ASTM D2152, Standard Test Method for Adequacy of Fusion of Extruded Poly(Vinyl Chloride) (PVC) Pipe and Molded Fittings by Acetone Immersion

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# Research Report for Project #101

## Project Discription

Revise ASTM D-2152, "Standard Test Method for Quality of Extruded Poly(Vinyl Chloride)(PVC) Pipe by Acetone Immersion".

## Task Force Chairman and Report Writer

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## Introduction and Test Objective

The round robin testing came as a result of a Joe Richard negative questioning the allowance of 1% water by weight in the Acetone. It was Joe's feelings that 1% water would alter the results and we must specify a lower level.

The objective of the round robin testing was to test pipe that was known to fail ASTM D-2152 with acetone containing known levels of water and there by determine if 1% of water by weight in acetone would effect the results.

## Samples and Testing Labs

Three rings of PVC pipe known to fail test method ASTM D-2152 were supplied by:

Johns - Manville
Clow
Certain - Teed

To each of the following pipe producer labs for testing:

Johns - Manville
Clow
Carlon

## Test Method

Each testing lab dryed acetone to an acceptable 0% level. The acetone was then split into three quanities, holding one at 0% water and adding water to the other two so that they had 1% and 2% water by weight. Percentage water checked with a hydrometer.

Three sections of pipe from each of the three suppling companies was immersed into the prepared acetone and the test was conducted per ASTM D-2152. The testing laboritories were requested to carefully observe the specimens, trying to note when attack first occurred. It was also stressed that immediatly after 20 minutes immersion the percentage attack be carefully reported and on what surface(s) it occurred.

Results

Attached are reports from Carlon, Johns-Manville, and Clow.

Conclusions

This test showed that 1% water by weight in acetone had no observable effect on the samples tested. At 2% water by weight one sample, Johns-Manville, results were altered, infact one testing lab moved it from a "fail" to a "pass".

Based on the results of this test the project #101 task force agreed that 1% water by weight was acceptable and should stay in the standard. Also Joe Richard's negative was satisfied.

Jim Hawkins