



The Liner Company

SOLUTIONS

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Wolschon Accelerated Peel Testing

EPI began experimentation on an accelerated testing procedure for PVC chemical fusion welds in 1991. The motivation for this experiment was the ASTM requirement of forty hours of laboratory acclimation of all samples before uniform testing can proceed.

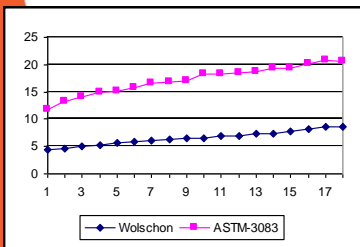
As with all fabrication processes, in order to control product quality the quality must be built in. This requires measurement and control during the production phase to correct any deviation from control limits. Also, test results must be reported immediately to the fabricating technician in order to continue production or take corrective action.

To assure that all test results are processed and reported utilizing the same techniques, this uniform ASTM 40 hour acclimation procedure is still being used at EPI for confirmation that seam strength exceeds industry standards. However, within this forty hour period the processes of fabrication continue. Also, packaging, shipping, and sometimes even installation could possibly continue without confirmation of specification conformance. By the time these results are reported, it may be difficult to take corrective action.

Most accelerated test methods involve elevated temperature or oven aging prior to testing. EPI eliminated from the accelerated test any oven aging or necessary cooling time. A sample is removed from the actual factory fabrication process and, after only five minutes, two specimens are tested for peel strength per ASTM-3083. EPI refers to this procedure as the Wolschon Test, after its developer Mark Wolschon, EPI Quality Control Manager. The simplicity of the test removed the uncontrolled variables in the oven aging test procedure.

The Wolschon Test data is then correlated with standard ASTM-3083 tests. A direct correlation resulted when the peel strength of the Wolschon Test specimens were compared to specimens from the same sample tested after forty hours. The graph illustrates typical results for a group of eighteen samples.

Corrective action procedures are now in place which can correct problems before production continues. All test results are analyzed in EPI's statistical process control program which has verified a continuous improvement in seam strength since implementation of Wolschon testing.



Preserving water resources for future generations