



Sent via email

TO ▶ **CPVC Summit Members**

DATE ▶ **September 12, 2008**

FROM ▶ **L.W. Thau**

SUBJECT ▶ **CPVC Compatibility Concerns**

A number of customers have recently asked Victaulic to provide its position on the press releases issued by Allied Tube & Conduit Corporation (a Division of Tyco), the Lubrizol Corporation, Wheatland Tube Company and Spears Manufacturing Company concerning the compatibility of Anti Microbial coatings (AMC) with CPVC materials supplied by multiple manufacturers. This information is provided in response to those requests:

- Unlike solvent cements, the combination of AMC and CPVC components has not been listed as compatible by a nationally recognized testing laboratory.
- Independent experts have concluded that Anti Microbial coatings are Environmental Stress Cracking (ESC) agents.
- The Anti Microbial coatings we have tested are ESC agents and are incompatible with CPVC materials supplied by multiple manufacturers. Incompatibility of AMC on CPVC components is not limited to CPVC materials produced by any one manufacturer.
- Present harmonized instructions and warnings prohibit any levels of exposure to other known ESC agents; however, the use of AMC coated pipe is partially rationalized on a historical basis. This is a key point of confusion for the contracting community.
- To date there have been a number of installations by different contractors using CPVC components from different manufacturers where ESC related to AMC has occurred. For reasons not yet understood, all have occurred in the past few years although the frequency of occurrences remains very low.
- The occurrence of leakage is a direct function of the presence of these agents along with adequate levels of applied stress (either hydraulic or mechanical) along with time and temperature. Installations without these issues may not suffer any impairment.
- One supplier of AMC coated pipe claims that formulation of their AMC is proprietary to a third party manufacturer. As such, the AMC formulation by that supplier may have been changed over time.

- The ESC agents' impact can be localized and influenced by filling and drainage practices. Typically, not all piping is affected.
- A single test has been advanced in support of AMC/CPVC compatibility. Although NSF performed the testing, it appears that the conclusions are Lubrizol's. Victaulic conducted a similar test with Allied ABF II pipe and TFP Lubrizol Blazemaster CPVC fire sprinkler pipe. The ABF II coating mixed with water caused a hydrostatic pressure failure rate four times faster than baselines using water alone. Our conclusion from this test is that the ABF II coating is incompatible with TFP Blazemaster pipe.
- Testing was also conducted using AMC exposed specimens from multiple manufacturers where CPVC samples were taken to failure against unexposed CPVC baseline samples. These tests showed that the AMC exposed CPVC samples failed significantly faster than the unexposed CPVC baseline samples. In these constant force tests, the AMC was directly applied to the stressed zone.
- For the above reasons, Victaulic presently recommends that AMC coated pipe should not be used in systems also containing CPVC components until such time as an appropriate listing/testing protocol is developed and the combination of AMC and CPVC components is listed by a nationally recognized testing laboratory.

We now offer the following recommendations to the members of the CPVC Summit, as the contracting community requests clarification:

- Revise our harmonized instructions and advisories to include AMC as an ESC agent.
- Through the existing NFSA organizational structure, contact UL & FM concerning development of an appropriate listing protocol.

LWT:gf