

HYDROSTATIC TEST REPORT

DATE: 10-4-06 DS

Couplings: Crimped Steam Ground Joint Couplings: 3/4" Campbell-Goodyear Only Viton Seal, female x male - Coupling/ferrule system rated to 250 psi. WP @ 406°F

Hose: Steam Hose: 3/4" Goodyear Flexsteel 250 rated to 250 psi.

Attachment: Crimped: staked-on plated steel ferrules

Goal: To exceed 2500 psi. @ 406°F (hose WP of 250 psi. @ 10 to 1 Safety Factor)

Results: Couplings and hose exceeded 23 times WP. The hose burst at 5925 psi.

This test was conducted to ASTM D380 standards except for the brief hold at 5000 psi. See engineering details below.

HOSE: 3/4" Goodyear Flexsteel 250 steam hose, 250 psi. WP; initial length of 23."

END CONNECTION #1: Assembled by Campbell, RGJS-3V, a 3/4" ground joint Viton stem with a low profile ground joint nut and staked on ferrule. Assembly was relatively easy and required no lubrication or pounding; only force. The ferrule was crimped to the recommended $\phi 1.350$ on a Uniflex S10i with 32 dies. This end was connected to our tester manifold using a Campbell GDS-3 double 3/4" spud through our usual 3/4" ground joint style connection. Both the tester and ground joint nuts were hand tight.

END CONNECTION #2: Assembled by Campbell, IMS-3V, a 3/4" interlocking male stem with a staked on ferrule as above crimped the same way. The IMS-3V was connected to a 3/4" female NPT valve adapter with valve attached. Teflon tape was used on the NPT threads.

TEST: The assembly was made up and crimped 2 days before the test. The assembly was filled with water and air was evacuated from the system by use of the valve at the free end of the assembly. The assembly test temperature was about 70° F. Pressure was raised rapidly, but slow enough to allow observation and note taking; within ASTM D380 parameters. See in tester photo.

Pressure was raised and at about 5000 psi. some noise was heard though the source could not be determined. There were no leaks or fitting movement detected. No hose elongation measurements were taken.

At a request of the observers, the test was temporarily halted for photos. See tester photo of the overall setup, the analog gauge indicates the outlet pressure at about 5000 psi. The pressure photo of the digital readout indicates the pressure at 5018 psi. The in tester photo taken through the cover Plexiglas was also taken toward the first end.

Pressure was then continued until the hose burst. The highest pressure recorded was 5925 psi. See burst photo.

There is no doubt of this assembly combination is safe and adequate for the retention of 250 psi. steam hose.

This test shows the crimped ferrule does not require the care after assembly that the clamps require: constant bolt re-tightening after every use.

prepared by Dave Street, Engineering Manager