HYDROSTATIC TEST REPORT **DATE: 7-16-04 DS**

Couplings: Aluminum pin-lug: 1-1/2" Campbell male x female
- Coupling/sleeve system rated to 85 psi. WP

Hose: Layflat hose: 1-1/2" Kuriyama Layflat hose rated to 75 psi.

Attachment: Crimped: plated steel sleeves

Goal: To exceed 225 psi. (hose WP of 75 psi. @ 3 to 1 Safety Factor for water service)

Results: Hose exceeded 3 times WP. Hose burst at 228 psi.

Although the test was not conducted to ASTM D380 standards due the steps in pressurization and slower than required pressurization, all other aspects were in conformance. See engineering details below.

HOSE: 1-1/2" Kuriyama lay flat hose, 75 psi WP, 1-1/2; initial length of 21-3/4," hose wall measured .052" average; rated at 75 psi.

END CONNECTION #1: Assembled by Campbell, FAB-150, an imported 1-1/2" female aluminum shank-coupling with brass nut and a SPS125148S plated steel sleeve. The assembly was easily made up without any lubrication since the hose was considerably larger than 1-1/2" on the inside. It was crimped to 1.713" using a Custom Crimp CC60 with 39 dies. This end was connected to a GDS-3, a 3/4" plated ground joint double spud through our usual 3/4" ground joint style connection. The double spud connection is not the typical connection for a shank coupling but it has the same threads and simplified the test setup. The brass shank-coupling nut was hand tight without any wrenches. The tester nut was hand tight. See first end photo.

END CONNECTION #2: Assembled by Campbell, MA-150, an imported 1-1/2" aluminum male shank coupling and a SPS125148S plated steel sleeve using the same technique described above. This end was crimped to 1.710 using the same dies and crimper as above. This end was capped by a blank piece inside of a shank-coupling nut. See second end photo.

TEST: The assembly was made only minutes before the test. The assembly was filled with water and air was evacuated from the system by loosening the capped end at the free end of the assembly. The approximate temperature of the test components was 72°F. Pressure was raised in steps and slowly to allow observation. See in tester photo.

Pressure was raised to 25 psi. No leaks or fitting separation was detected. The hose already looked stressed.

Pressure was raised to 60 psi. No leaks or fitting separation was detected. The hose elongated about 1/8." At this point the hose diameter had already expanded considerably, see 60 psi. photo.

Pressure was raised to 120 psi. No leaks or fitting separation was detected. No further hose elongation was observed. Again a photo was taken, see 120 psi. photo.

Pressure was now continually raised at a slow pace and the assembly observed for leaks or ejection. At 228 psi, the hose ruptured near mid point. See burst photo.

CONCLUSION: Raising the pressure in a slower manner allows observation that is not usually possible by rapid pressurization. Seeing any problems before failure is as important as noting the failure pressure.

The fitting and attachment outperformed the hose. As a fitting manufacturer, it is desirable to have a failure near mid length or away from the coupling so that the attachment had no adverse effects on the hose under test. This test certainly met that and therefore the attachment did not contribute to the hose failure. This test shows that the fitting and attachment are adequate for this hose when assembled as described.

prepared by Dave Street, Engineering Manager