



Corrosion Testing Laboratories, Inc.

December 4, 2009

CTL REF #26554-1

NIBCO INC.
1516 Middlebury Street
Elkhart, IN 46516-4750

Re: Testing of NIBCO Products for Stress Corrosion Cracking and Dezincification Corrosion

Laboratory testing was conducted at the request of NIBCO INC. on three (3) samples (two of ASTM B371 Copper Alloy C87850 and one of ASTM B584 Copper Alloy C69300) in accordance with ISO 6957:1988 (E) Copper Alloys – Ammonia test for stress corrosion resistance, and BS EN ISO 6509:1995 Corrosion of metals and alloys – Determination of dezincification resistance of brass. At NIBCO's request, ISO 6597 tests were performed at a test solution pH of 9.5 in accordance with the above-referenced testing methodology. The acceptance criterion for ISO 6509 was that of BS EN 13828:2003, Section 5.1.1.2 (dezincification depth of less than 200µm in any direction). Following testing, test specimens tested per ISO 6509 were prepared for examination according to ASTM E 3 and examined at 500X magnification using an inverted metallographic microscope with a calibrated eyepiece reticle. The results are summarized in Table 1.

Table 1
Test Results

Sample	Test Result	
	ISO 6957:1988 (E) (Test Solution pH = 9.5)	BS EN ISO 6509:1995
Copper Alloy C87850 Tee	No cracks	No dezincification (0 µm depth)
Copper Alloy C87850 Check Valve	No cracks	No dezincification in body and end piece (0 µm depth)
Copper Alloy C69300 Ball Valve	No cracks	No dezincification in body and end piece (0 µm depth)

CONCLUSION

All samples PASSED appropriate testing standards for both stress corrosion cracking and dezincification corrosion.

Fred M. Sherman
NACE Senior Corrosion Technologist
Certificate #4194

Approved:

Bradley D. Krantz
Corrosion Laboratory Supervisor
NACE Materials Selection/Design Specialist
Certificate #4195

60 Blue Hen Drive, Newark, DE 19713 USA
(302) 454-8200 • fax (302) 454-8204 • e-mail ctl@corrosionlab.com

a Subsidiary of

Corrosion Probe, Inc.

Corporate Headquarters:

12 INDUSTRIAL PARK ROAD • P.O. BOX 178 • CENTERBROOK, CT 06409-0178
PHONE: (860) 767-4402 • FAX: (860) 767-4407 www.cpiengineering.com