WRAS Approved Installation Method AIM-08-01: Type BA Device – Verifiable backflow preventer with Reduced Pressure Zone (RPZ Valve)

Supplementary Test on No 2 Check Valves with low pressure differential

(Devices with a differential < 0.07 bar)

INTRODUCTION

The WRAS Approved Installation Method AIM-08-01 (Issue 1 February 2008) refers (in paragraph 7.2.2c) to the need for testing of the differential pressure of the No. 2 check valve of a type BA device (RPZ Valve). Where this check valve is a Type EB device (non-verifiable single check valve) conforming to the relevant parts of BS EN 13959*, the minimum permitted differential pressure is 0.005 bar, rather than 0.07 bar for other check valves which do not meet this standard.

Standard test equipment may not be adequate to test a differential pressure as low as 0.005 bar and for a suitable alternative method, the AIM refers testers to the valves' manufacturers or to this website, where a suitable method is given below.

(*The relevant parts of BS EN 13959 for this purpose are clauses : 8.4.1, 10.1, 10.2, 11.1, 11.3, 11.4, 11.5, 11.6, 11.7, 11.9 and Annex A. Where information has been provided to WRAS, the WRAS website lists RPZ valves which have this type of check valve.)

FIELD TEST PROCEDURE

TEST To test the direction-of-flow differential of No 2 Check valve.

This test is for check valves in RPZ valves that have been identified as Type EB devices conforming to the relevant parts of BS EN 13959 which are permitted by the Water Fittings Regulations to have a minimum pressure differential of not less than 0.005 bar.

Requirement

The direction of flow differential must be not less than 0.005 bar (50mm head of water)

NOTE

The majority of test kits (digital or analogue) will not test a differential below 0.01 bar

In that case the tester will have to utilise a water gauge to attain a reading.

STEPS: (refer to Figure 1 below)

a Ensure Isolating Valve No 2 is closed.

b Remove any test kit previously used from Test cock No. 2

c Connect "water gauge" to Test cock No 2.

d Close Isolating Valve No 1

e Open Test cock No 3

f Open Test Cock No 2

g Gently ease open Isolating Valve No 1 until water flows from Test cock No 3

h Close Isolating Valve No 1

i Observe the water level in the "Water gauge" this should be visible and steady

(If the water level in the gauge falls below 50 mm above Test cock No 3 outlet, record Check valve No 2 as failed)

j Measure and record the static head of water in the "Water Gauge" above the outlet of No 3 test cock . This should be not less than 50 mm (0.005 bar) for the valve to pass.

k Close Test cocks 2 & 3 remove Water gauge, Open Isolating Valves 1 & 2 to restore supply. (Confirm supply restored).

[WRAS gratefully acknowledges assistance from Arrow Valves Ltd. and Terry Stephenson, formerly of Develop Solutions Ltd., in devising this procedure].

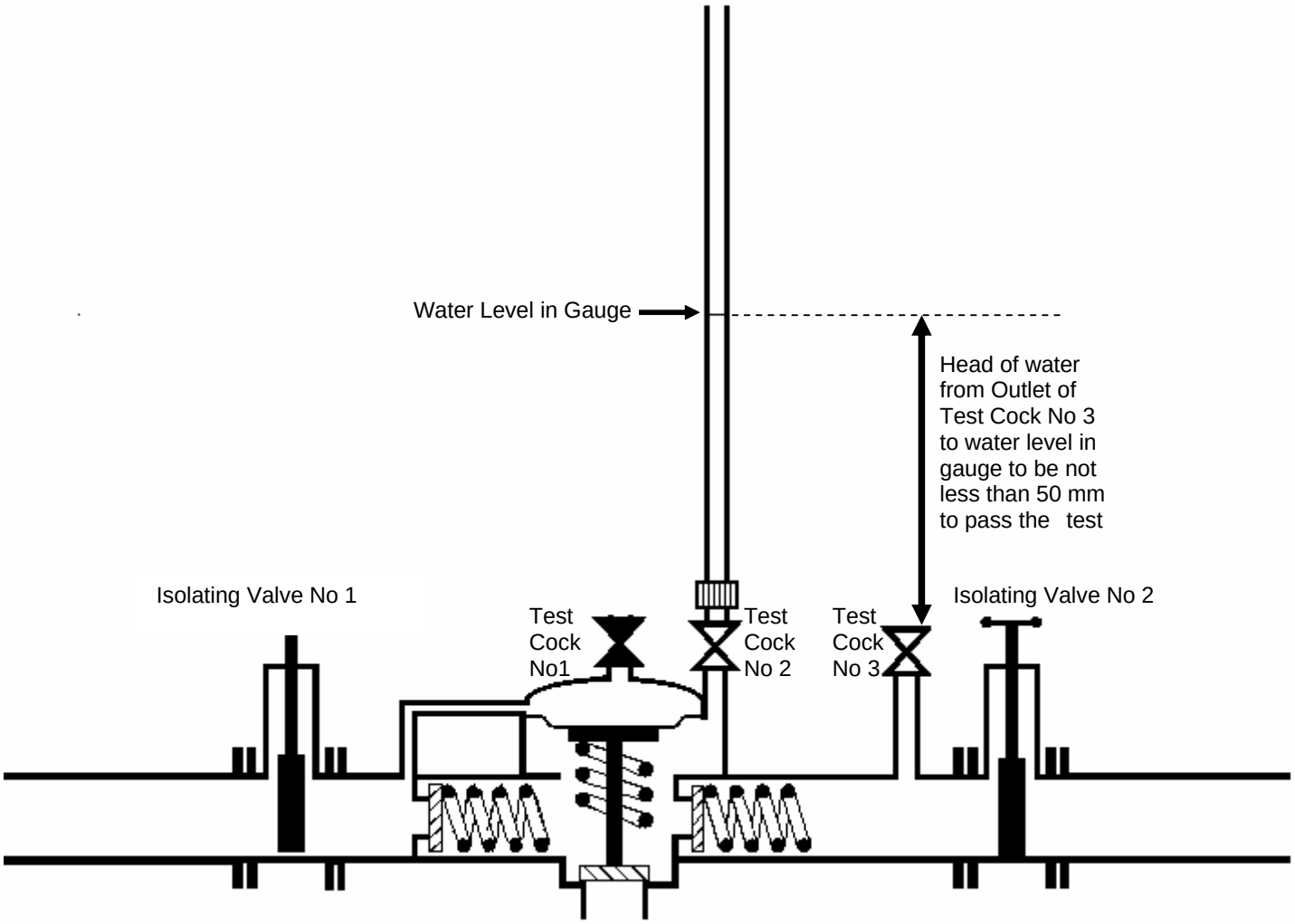

Figure 1: Illustrating the use of a manometer to test the differential pressure of No.2 check valve