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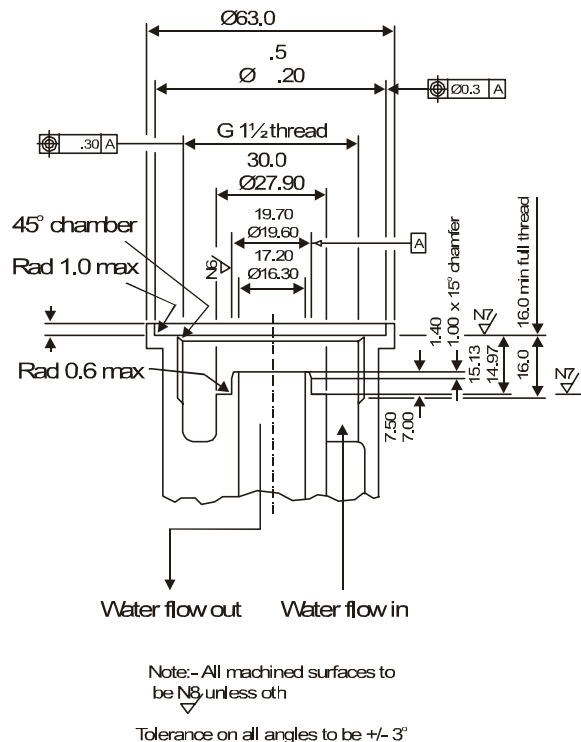
UK Water Industry

## SPECIFICATION FOR BOUNDARY BOXES FOR THE METERING AND CONTROL OF DOMESTIC AND SMALL INDUSTRIAL WATER SERVICES

These amendments form an integral part of the specification and replace elements of the original as indicated below.

### 6.10 MANIFOLD ENVIRONMENT

The manifold receptacle shall be manufactured to the following specification.



**Figure 3 – Manifold receptacle dimensions**

### APPENDIX B – FREEZING: TYPE TEST

This test can be used to simulate the ground conditions during a prolonged surface frost to provide assurance of the boundary boxes' resistance to freezing.

An insulated chamber having sufficient depth and base area in order to contain a boundary box installed in representative ground material (backfill), the depth of the ground material to be a minimum of 1500mm. The chamber will also enclose an air space above the level surface of boundary box cover and ground material. The chamber shall be designed to be capable of maintaining a temperature profile as specified in B.2.

A suitable freezer unit with its low temperature unit installed in the air space of the insulated chamber, shall be capable of reducing the temperature at ground level to a minimum of -15°C.

**Temperature measuring devices** capable of measuring the temperature of the surrounding backfill of the boundary box to an accuracy of  $\pm 0.25^\circ\text{C}$ .

#### B.2 PROCEDURE

An approved meter shall be installed inside the boundary box. The manifold, meter and service pipe tailwork should be filled with water and the service pipe tailwork or inlet/outlet terminations blanked off prior to installation.

The boundary box shall be installed in the insulated chamber such that the boundary box cover will be level with the backfill material when installed and such that the depth of backfill is a minimum of 1500mm. Insert temperature probes at 300mm and 1000mm below the ground level and at a distance of

50mm from the boundary box. Backfill the chamber and place the low temperature unit of the freezer in the air space above the boundary box.

Self-draining boundary boxes shall be tested empty and filled with water to a depth of:

- (a) half way up meter,
- (b) full boundary box height.

The temperature of the surrounding backfill shall be lowered by adjustment of the freezer unit and maintained until stable temperatures of  $0 \pm 1^\circ\text{C}$  and  $4 \pm 1^\circ\text{C}$  are obtained at 300 and 1000 mm depth respectively.

Maintain this temperature for 2 weeks.

Lower the ground level temperature to  $-13 \pm 1^\circ\text{C}$  and maintain for 3 days.

Remove the freezer unit and inspect the box for signs of freezing.

The box is required to show no signs of deterioration due to low temperatures. Water is to be passed through the boundary box and the meter at a minimum pressure of 1 bar. The meter is required to operate correctly and there should be no evidence of leakage.

### **B.3 TEST REPORT**

The test report shall include:

- (a) The full identification of the specimens,
- (b) Description of fitting assembly,
- (c) Test conditions,
- (d) Observations. The test shall be recorded as pass or fail,
- (e) The date of the test.