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WBS TEST & ACCEPTANCE CRITERIA PD.

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TEST CODE SHEET

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1. **TYPE OF TEST(S)**

For deleterious films in copper tube.

2. **BYELAW REQUIREMENT FOR FITTINGS**

Byelaw 52

Every water fitting shall be constructed of materials, the nature.....of which.....will prevent, so far as is reasonably practicable, damage from.....(e) corrosion.

3. **BRITISH STANDARDS OR WATER SPECIFICATION, DEEMED TO SATISFY BYELAW REQUIREMENTS**

BS 2871: Part 1: Clause 4

3.1 Fittings with 'kitemarks' which are deemed to satisfy the requirements of byelaws are listed in the directory.

4. **TEST PROCEDURE**

4.1 Tests applicable to the following fittings;

**COPPER TUBES**

- corrugated copper pliable plumbing connectors

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(A) **COPPER TUBES** (Derived from BS 2871: Part 1)

**TEST METHOD**

The following test is to be carried out by a NAMAS accredited Test Laboratory.

A half-section of tube about 2.5cm long, with the outside cleaned by filing, is placed in a 50ml beaker and covered with 25% nitric acid. The metal surface is viewed with a X 25 binocular microscope until gas evolution is taking place uniformly over the whole surface.

With a sample of unused tube containing a carbon film there is usually an induction period of about a minute before gas evolution begins and when the gas bubbles first form they can be seen to grow beneath a thin, greyish film which breaks away from the metal in fragments and arises to the surface of the acid with the bubbles. When gas evolution is occurring over the whole of the metal surface the fragments of film may be seen floating on the surface of the nitric acid. Remove the metal specimen at this stage to avoid disturbance due to gas bubbles. A microscope that will permit both transmitted and reflected natural light is then to be used to examine the fragments of film in order to distinguish between the greyish film fragments and any extraneous oily matter, or small particles of alumina from an abrasive cleaning process, that may be present.

5. **ACCEPTANCE CRITERIA**

Any sample which produces fragments of black or grey film on the surface of the acid is considered unsatisfactory.

The tubes shall be round, clean, smooth and free from harmful defects and from deleterious films in the bore.