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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)**

Deformation.

2. **BYELAW REQUIREMENT FOR FITTINGS**

Byelaw 52

Every water fitting shall be constructed of materials, the nature, the strength and thickness of which ..... will prevent, so far as is reasonably practicable, damage from - (a) any external load; (b) .....stress or settlement; (c) internal water pressure .....

Byelaw 53

Every water fitting which - (a) is installed below ground; or .....(e) is in any other position which is inaccessible, or to which access is difficult; shall be - (I) constructed to withstand without bursting, buckling, fracture or leaking hydraulic pressure twice that to which it would normally be subject .....

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

(See Water Supply Byelaw Guide)

BS 864 Part 3 Clauses 21 and 19.2

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

4. **TEST PROCEDURE**

Note unless stated otherwise the temperature of the test fluid shall be 20± 10°C.

4.1 Tests applicable to the following fittings;

**FITTINGS FOR USE WITH TUBE AND PIPE**

-Compression, metal

- for use with plastics tube (imperial dimensions - such as BS 4991 if coloured blue) for below ground use

- for use with plastics tube (imperial dimensions - such as BS 1972, BS 3284 or BS 4991 in black) for above ground use only

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**(A) NON-BS 864 FITTINGS**

**TEST METHOD**

Fittings shall be assembled with compatible pipe of adequate pressure rating and tested in accordance with BS 864 Clause 21, except that the pressure shall be twice the claimed maximum operating pressure rating.

**5. ACCEPTANCE CRITERIA**

There shall be no visible indication of leakage from the assembly during the test.

**(B) COMPRESSION TUBE FITTINGS OF COPPER AND COPPER ALLOY, FOR POLYETHYLENE PIPES**

(Derived from BS 864: Part 3)

**NOTE** The test methods are in accordance with the relevant extracts given below, in particular noting the comment regarding the substitution of lower test pressures where the pipe used in the assembly has a lower pressure rating (See TCS 1112.6.).

**TEST METHOD**

Clause 21-Internal pressure test of assembled joints between pipe and fittings subjected to bending

The apparatus for the test of internal pressure in assembled joints between pipe and fittings subjected to bending is illustrated in Figure 4 and the purpose of the test is to prove the capability of assembled joints when subjected to bending strains. The test shall be made with a bending average radius of 15 times the pipe nominal diameter if the pressure rating is class B or C, or 20 times for class D. After assembly, the pipe length between fittings shall be equal to 10 times its nominal diameter. The assembly after bending to the correct radius shall be leakproof for 60min  $\pm$  5min under internal hydraulic pressure of 36 bar. (See 19.2)

**NOTE**

Clause 19.2 - When testing assemblies to 36 bar it is essential that polyethylene pipe complying with the requirements of BS 3284 or BS 3796\* class D be used. For assemblies including B and C polyethylene pipe lower test pressures will be applicable. (as the appropriate pressure rating)

(\* WBS - BS 3796 now withdrawn)

**5. ACCEPTANCE CRITERIA**

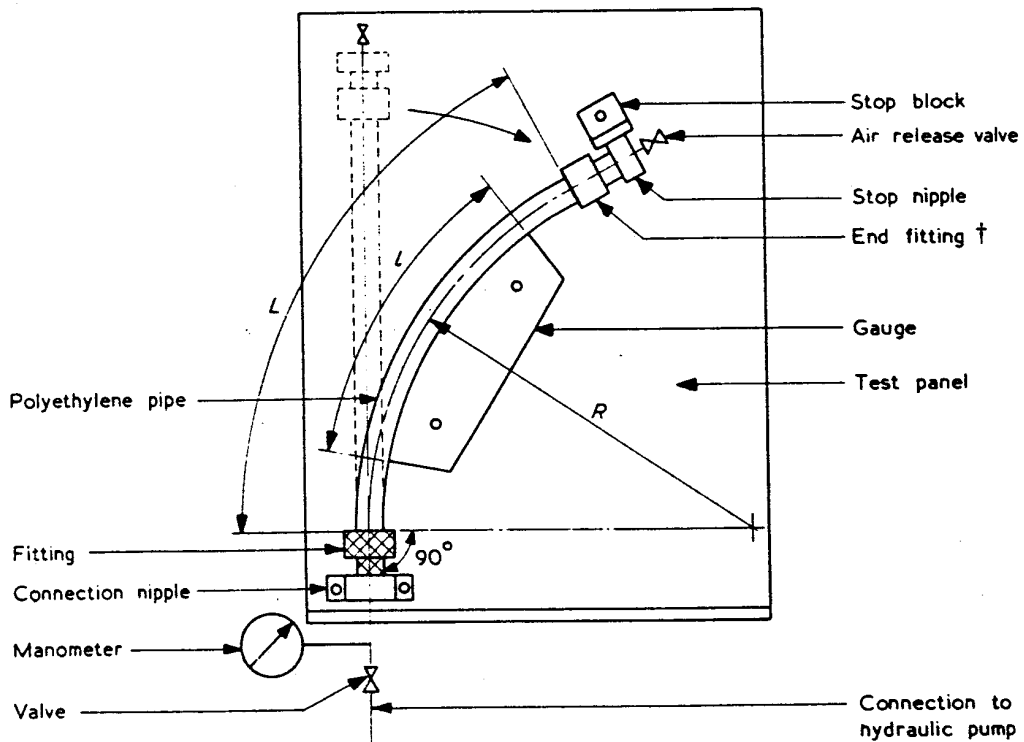
There shall be no visible indication of leakage from the assembly during the test.

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R is the bend radius  
L is the free length



$L = 10 \times$  nominal minimum diameter of tube under test

$R = 15 \times$  nominal for class B and C  
 $= 20 \times$  nominal diameter for class D

$l = \frac{3}{4} L$ , to be centrally located

† The end fitting is only used for closing the test specimen and is not meant to be tested

Figure 4. Internal pressure test of assemble joints between pipe and fittings when subjected to bending