TEST CODE SHEET

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1. TYPE OF TEST(S)

Joint Effectiveness

2. BYELAW REQUIREMENT FOR FITTINGS

Byelaw 52

Every water fitting shall be constructed of materials, the nature, the strength and thickness of which (including any internal lining or external coating) will prevent, so far as is reasonably practicable, damage from …..
(b) internal water pressure.

Byelaw 53

Every water fitting which:
(a) is installed below ground; or
(b) 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 an internal hydraulic pressure twice that to which it would normally be subject.

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

BS 864 Part 3 Clause 19
BS 864 Part 5 (see IGN 4-22-01 and BS 5114)
BS 4346 Part 2 Clause 5.1.1 and Appendix E.1
BS 5114 Clause 4.1 and Appendix A

4. TEST PROCEDURE

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

4.1 Tests applicable to the following fittings:-

FERRULES - u/p tapping, outlet connections for plastics pipes (compression joints)
FITTINGS FOR USE WITH TUBE AND PIPE - compression fittings for connecting plastics pipes

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(A) FERRULES / FITTINGS FOR USE WITH TUBE AND PIPE

(NON - BS FITTINGS)

TEST METHOD

Assemble the fitting(s) in accordance with the manufacturer's instructions together with the appropriate pipe. Blank off one end of the assembly with a suitable bleed valve meeting the requirements of TCS 1111.1. Connect the assembly to a water supply that can be controlled in pressure and fill it with water at ambient temperature, purging all air from the system. For fittings intended for use below ground or in inaccessible positions, etc. apply a hydraulic pressure of twice the claimed maximum operating pressure rating. For fittings intended for use above ground and in accessible positions only, the hydraulic test pressure requirement can be reduced to 1.5 times the claimed maximum operating pressure rating (in either case ± 0.5 bar in the range 4 -30 bar). The pressure shall be maintained at the appropriate level for a period of 1 hour ± 5 minutes.

5. ACCEPTANCE CRITERIA

There shall be no visible indication of leakage from any joint forming part of the assembly under test.

(B) **BS 864 PART 3 - COMPRESSION FITTINGS FOR POLYETHYLENE PIPES**

TEST METHOD

Clause 19 Hydraulic (hydrostatic) test

19.1 Fittings when assembled in accordance with the manufacturer's instructions shall be capable of withstanding an internal hydraulic (hydrostatic) pressure of 36 bar.

19.3 The joint shall remain leakproof for a minimum of 1 hour.

(C) **BS 864 PART 5 - COMPRESSION FITTINGS FOR POLYETHYLENE PIPES WITH OUTSIDE DIAMETERS TO BS 5556**

TEST METHOD

See IGN 4-22-01 and BS 5114 at present (standard under preparation)

(D) **BS 4346 PART 2 - JOINTS FOR USE WITH UPVC PRESSURE PIPES , MECHANICAL JOINTS**

TEST METHOD

5.1.1 Short Term hydrostatic requirement

When tested by the method described in Appendix E.1, the joint shall withstand a pressure of 3.6 ± 0.1 times the working pressure for 1 hour without failure.

APPENDIX E.1 – SHORT TERM HYDROSTATIC TEST (BATCH TEST)

E.1.1 Apparatus

The apparatus shall consist of a temperature controlled bath or air space maintained at 20 ± 3°C and equipment that permits the joint or fitting to be subjected to an internal hydrostatic pressure to an accuracy of ± 2%.

E.1.2 Form and preparation of test specimen

The specimen shall be a complete joint or fitting. The open ends of the specimen shall be closed with suitable end caps, and these shall be provided with connections for the entry of water under controlled pressure…..

…… Joints and fittings designed to withstand the end thrust due to internal pressure.

The method of closure of the open ends and the mounting of these joints… in the apparatus, shall be arranged so that the full end thrust is carried by the test specimen.

To facilitate the carrying out of the short term hydrostatic test upon joints… incorporating an elastomeric sealing component it may be necessary to replace this component by a harder or differently shaped seal or to prevent it from blowing out by using a retaining device. If a retaining device is used it shall not reinforce or restrict the expansion of the body of the joint or fitting.

E.1.3 Procedure

Mount the specimen in the apparatus and condition for 1 hour ± 10 minutes at 20 ± 3°C. Apply the hydrostatic test pressure within 30 seconds of first admitting pressure and maintain with an accuracy of ± 2% for a period of 1 hour ± 1 minute.

(E) BS 5114 – PERFORMANCE REQUIREMENTS FOR JOINTS FOR USE WITH POLYETHYLENE PIPE

TEST METHOD

4.1 Hydrostatic (hydraulic) requirement

When tested by the method described in Appendix A the jointed assembly shall withstand for 1 hour without leakage a test pressure related to the maximum sustained working pressure specified for class of pipe used in the assembly by the factor given……

…Test made on…	Factor{test pressure, {max. sustained working pressure
Pipe system made from pipe complying with the requirements of BS 1972	2.5

APPENDIX A – HYDROSTATIC (HYDRAULIC) PRESSURE TEST

A.1 Form of test specimen

The test specimen shall consist of one or more joints assembled between one fitting and one or more pieces of polyethylene pipe, each 300mm in length. The open ends of the polyethylene pipe shall be sealed off in such a way that when the test pressure is applied, longitudinal stresses are exerted within the pipe wall due to the water pressure acting on the end fitting.

The joint or joints shall be assembled in accordance with the fittings manufacturer's instructions.

A.2 Apparatus

The apparatus shall consist of a suitable designed pressure source capable of being connected to the test specimen and holding the specified test pressure to an accuracy of ± 2%. A pressure gauge shall be fitted to the apparatus to enable the test pressure to be observed…..

Inspect the body of the fitting and the joint for any signs of leakage during the test.

Any leakage of the pipe remote from the joint does not constitute a test failure. If this happens a further test assembly shall be tested.

A.3 Procedure

Fill the test assembly with water at 20 ± 3°C and leave to condition for 1 hour ± 10 minutes. Attach the test specimen to the pressure source and ensure that the outside of the test specimen is completely dry. Apply the specified test pressure and maintain for 1 hour ± 1 minute.

Any leakage of the pipe remote from the joint does not constitute a test failure. If this happens a further test assembly shall be tested.

5. ACCEPTANCE CRITERIA (BS FITTINGS)

In accordance with the various requirements of the BS's there shall be no visible indication of leakage from any joint forming part of the assembly under test.