TEST CODE SHEET

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1. TYPE OF TEST(S)

Tension - (Resistance to pull-out of assembled joints - single pull).

2. BYELAW REQUIREMENT FOR FITTINGS (See application list below)

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 - (a0 any external load; (b).....stress.....

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

(See Water Supply Byelaw Guide)

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:-

FITTINGS FOR USE WITH POLYBUTYLENE PIPE - above ground
-associated fittings, metal or plastics for use with polybutylene pipes intended for conveying hot and cold water for domestic purposes, including heating.

(A) FITTINGS FOR USE WITH POLYBUTYLENE PIPE - ABOVE GROUND
(Derived from BS7291: Part 2: Section 3, 10.1, Appendix C).

TEST METHOD

The test specimen shall consist of the fitting or fittings to be tested, assembled with one or more pieces of pipe of polybutylene pipe the size and quality for which the fitting is designed. Each piece of pipe shall be at least 100mm in length. Assembly of the fittings shall be in accordance with the manufacturers assembly instructions.

Mount the test specimens securely to the tensile test apparatus in accordance with setting-up procedure IGN 1-50-72. Select from Table 3 or Table 4 the appropriate test force depending upon the polybutylene pipe size given in Table 1 and Table 2.

Table 1. Dimensions of PB pipe having nominal sizes and outside diameters consistent with those specified in BS 2871 [1)]

Nominal size	Mean outside diameter		Wall thickness	
	Minimum		Maximum	
mm	mm	mm	mm	mm
10†	9.9	10.1	1.5	1.8
12†	11.9	12.1	1.5	1.8
15	14.9	15.1	1.7	2.0
18	17.9	18.1	1.8	2.0
22	21.9	22.1	2.0	2.3
28	27.9	28.1	2.6	2.9
35	34.9	35.1	3.2	3.5

[1)] To suit sizes in accordance with X, Y and Z of BS2781: Part 1:1971.
† See item (d) of 3.1 concerning marking.

Table 2. Dimensions PB pipe in accordance with BS 5556

Nominal size [1)]	Mean outside diameter		Wall thickness	
	Minimum		Maximum	
mm	mm	mm	mm	mm
10	10.0	10.2	1.5	1.8
12	12.0	12.2	1.5	1.8
16	16.0	16.2	1.8	2.0
20	20.0	20.2	1.9	2.2
25	25.0	25.2	2.3	2.6
32	32.0	32.2	2.9	3.2

[1)] Corresponds to the nominal outside diameter (in mm).

Table 3. Pull-out test forces for joints of pipes in compliance with table 1 and/or associated fittings.

Nominal size [1)]	Force
mm	N
10	380
12	470
15	705
18	870
22	1190
28	1960
35	3020

[1)] these sizes are selected from BS 2871

Table 4. Pull-out test forces for joints of pipes in compliance with table 2 and/or associated fittings.

Nominal size [1)]	Force
mm	N
10	380
12	470
16	760
20	1020
25	1550
32	2500

[1)] Corresponds to the nominal outside diameter (in mm) of the size of pipe with which the fitting or socket is intended for use. These sizes are selected from BS 5556.

Apply the tensile force gradually over a period of 30 seconds. Hold the specimen in constant tension for a period of 60 mins + 30 secs, - 0 secs and at a temperature of 20 ± 3°C.

After removal, examine the specimen for pull-out from the compression ring and/or fracture/tearing of the pipe. If appropriate, the cap nut shall be removed to permit examination.

5. ACCEPTANCE CRITERIA

The pipe shall not fracture within the fitting or separate from the fitting during the period of the test.