Hydrostatic Pressure Testing

Pressure testing your pipework

Under the current Water Supply (Water Fittings) Regulations 1999, local requirements and associated guidance, you are required to hydrostatically pressure test your underground pipe work prior to being connected to United Utilities' mains network. Please read carefully and follow the requirements documented in the guidance publications listed below. Your new water supply pipe connection is subject to a successful hydrostatic pressure test and other conditions of supply being attained. Failure to follow procedure may result in a delayed connection and the retesting of your pipe(s) at your own expense.

What pipework needs pressure testing?

All underground incoming water supply pipes with an external diameter of 63mm and above need to be satisfactorily pressure tested to the standard documented in the guidance publications set out below.

Important: It is your responsibility to ensure that your designated pressure testing company are familiar with both national and local testing requirements. We also strongly recommend providing them with a copy of these guidance notes.

Why do you need to carry out a hydrostatic pressure test on pipework 63mm (including fire mains) and above?

A hydrostatic pressure test is required to evidence that the newly installed system is secure and there are no risks of leakage or defective pipework when we connect your new supply. It is a requirement on the larger size connections because of the increased risk element attributed to size and pressure. This is to protect your development in case anything isn't secured or connected as it should be.

When do you need to pressure test?

This needs to be completed before we carry out the connection and before you disinfect your pipework.

What is required?

Testing of the new incoming service up to the first internal stop tap. Prior to the commencement of any test, the pipework shall be charged with wholesome water and ideally, all air removed. All testing methods should be completed in a manner that will not permit the contamination of the public water main with pressurised water.

Who should carry out the test?

Pressure testing should be carried out by a competent person who is familiar with the requirements set out in BS EN 805, BS EN 806, IGN 4-01-03, UUCESWI and the Water Regulations Guide. Pressure testing operatives should be appropriately skilled, have undertaken Calm Network Training (refresher required) and hold a valid EUSR Water Hygiene Card.

Hydrostatic pressure tests

Type 2 Pressure Decay Test – IGN-4-01-03

The industry standard for hydrostatic pressure testing is set out in Water UK's IGN 4-01-03 Information & Guidance Note, 'Guide to pressure testing of pressure pipes and fittings for use by public water suppliers'.

A Type 2 hydraulic pressure test is specifically designed for PE pipe and commences by pressurising the pipe to system test pressure (STP), and then leaving for a minimum one hour + ramp time (time it takes to obtain STP). During this period the data logging system will record creep (pipe expansion) and pressure drop. This information will be fed into a mathematical equation and then analysed to determine leakage and a pass or fail result certificated.

Guidance publications:

Pressure testing of water supply pipes must only be carried out using the methodology set out in the publications listed below:

IGN-4-01-03 – Code of practice detailing the requirements for systems and components outside buildings (link: https://standards-board.water.org.uk/wp-content/uploads/2022/02/IGN-4-01-03-October-2015-Issue-2.pdf)

BS EN 805-4:2010 – Code of practice detailing the requirements for systems and components outside buildings

BS EN 806-5:2012 – Specifies requirements and gives recommendations for the operation and maintenance of potable water installations within buildings and for pipework outside buildings but within the premises in accordance with BS EN 806-1

UUCESWI – Issue 7: 2018 – United Utilities' standard specification for civil engineering

Water Supply (Water Fittings) Regulations 1999 (Schedule 2, Section 4 – G12.3 R12.3)

United Utilities

Water for the North West

System Test Pressure (STP)

Most domestic water-using fittings and appliances are designed for a maximum working pressure of 10 bar. Testing operatives can test to any of the system test pressures detailed in IGN-4-01-03, BS EN 805, BS EN 806 or the Water Supply (Water Fittings) Regulations 1999.

Water Supply (Water Fittings) Regulations 1999

12.—(1) The water system shall be capable of withstanding an internal water pressure not less than 1.5 times the maximum pressure to which the installation or relevant part is designed to be subjected in operation ("the test pressure").

If the maximum operating pressure is 6 bar, STP would be 1.5 x 6 bar = 9 bar, to achieve the statutory minimum requirements set out in Schedule 2 Section 4 - G12.3 R12.3 of the Water Supply (Water Fittings) Regulations 1999. A STP of 10 bar, which United Utilities recognise as the standard for good working practice, is therefore acceptable as long as the industry recognised procedure is followed that is relevant to the test being performed.

IGN-4-01-03

PE pipe to be tested 1.5 x the PN rating of the pipe to be tested e.g. A PE pipe with a PN rating of 10 should be pressure tested at 15 bar

The system test pressure (STP) for PE pipes can be found in the table below:

Material	SDR	PN (bar rating)	STP (bar)
PE80	26	5	7.5
PE80	17	8	12
PE80	11	12.5	17.50
PE100	26	6	9
PE100	21	8	12
PE100	17	10	15
PE100	11	16	20

Supplementary information

****IMPORTANT****

A 10 bar test for 1 hour or any other time period is not an acceptable test for pipes containing plastic. This is a Type 1 test specifically designed for testing pipes made from rigid materials (ductile iron, stainless steel etc) only.

Pressure testing operatives should follow the testing guidance for pipes containing plastic set out in the publications listed above.

Pneumatic testing (air test) is also not an acceptable form of pressure testing pipework.

Hydrostatic pressure tests that are not documented in any industry recognised publications will not be accepted by United Utilities.

Example certificate for a Type 2 hydrostatic pressure test

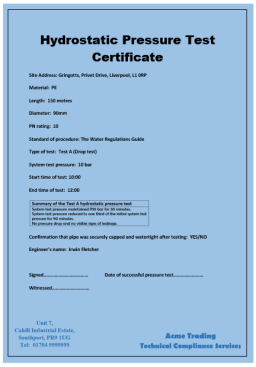
Information required on a Type 2 test certificate:


Hydrostatic Pressure Test Certificate

- The name, company and contact details of the person carrying out the test
- All details of the materials, dimensions, length and PN rating of the pipe
- The System Test Pressure (STP)
- Standard of procedure
- Details of the date and start / end time of the test and its location
- Differences in elevation
- A description of the type of pressure and flow meter, together with details of their maximum range, precision and calibration history
- The pump volume flow rate at rated speed, or the logged data from the flow meter
- All the recorded measurements of the pressure and water flow during the pressure rise phase
- The pressure decay data
- Details of any analysis carried out in accordance with the methods described in the IGN

Example certificate for Test A

Information required on Test A (drop test) certification:


Hydrostatic Pressure Test Certificate

- The name, company and contact details of the person carrying out the test
- Site location
- Pipe material, diameter, length and PN rating
- Standard of procedure
- Type of test
- System test pressure (STP)
- Start time / end time of the test
- Summary of testing procedure
- Signed & witnessed

Note: The certificate for Test B will be identical with the exception of the summary of the testing procedure which differs from Test A

Test A and Test B hydrostatic pressure testing procedures

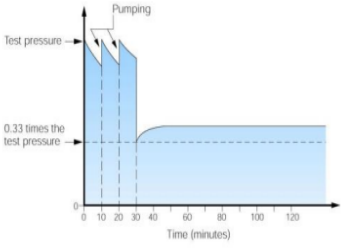
Schedule 2 – Section 4 – G12.3 R12.3 of the Water Supply (Water Fittings) Regulations 1999.

TEST A	TEST B
(a) the whole system is subject to the test pressure which is maintained by pumping for 30 minutes, after which the test continues without further pumping	*(a) the whole system is subject to the test pressure which is maintained by pumping for 30 minutes, after which the test continues without further pumping*
(b) the pressure in the system is carefully reduced to one third of the test pressure; and	*(b) the pressure drop is less than 0.6 bar after a further 30 minutes; and*
(c) the pressure does not drop over the following 90 minutes and there is no visible leakage	*(c) the pressure drop is less than 0.2 bar after the next 120 minutes and there is no visible leakage*

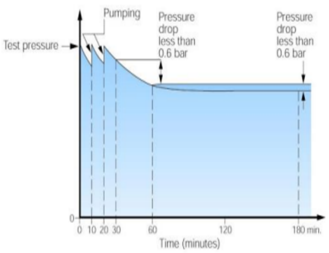
Link for pressure testing requirements:

https://www.waterregsuk.co.uk/guidance/installation/pipework/pipework-pressure-testing/

Graphs detailing Test A and Test B as shown in the Water Regulations Guide



Sect 4/R12.3a



Sect 4/R12.3b