

Plumbing Pressure Testing

It is important to properly pressure test an Uponor plumbing system in accordance with local code. While there are several ways to pressure test a system, Uponor recommends testing with water. If testing with air, it is important the system pressure does not exceed 120 psi.

The following procedure is acceptable for testing with air, water or a mixture of both for Uponor AquaPEX® pipe and ProPEX® fittings or hybrid systems combined with metallic piping.

Important! When pressure testing hybrid systems combining thermoplastic piping materials, such as CPVC or PP-R, with Uponor AquaPEX and ProPEX fittings, the Uponor system must be isolated from the other thermoplastic materials in the system before following the recommended procedure.

Also, consult the appropriate pipe manufacturer's installation recommendations when testing systems comprised of other thermoplastic materials.

The intent of pressure testing a domestic-water system is to meet local code requirements while ensuring the system is leak tight. Pressure testing is not a substitute for the correct installation of an Uponor AquaPEX and ProPEX plumbing system. It is essential the Uponor system has been accurately sized, supported and protected while also accounting for thermal movement during installation.

Consult Uponor's Plumbing Design Assistance Manual (PDAM) when specifying, designing and installing an Uponor AquaPEX and ProPEX plumbing system.

Maximum Temperature/ Pressure Ratings

The test pressure applied to the system must meet the pressure testing requirements of local code, but cannot be lower than the system operating pressure. The pressure with water cannot exceed the following pipe listings.

- 73.4°F (23°C) at 160 psi
- 180°F (82.2°C) at 100 psi
- 200°F (93.3°C) at 80 psi

Note: The pressure with air must not exceed 120 psi.

Importance of Conditioning PEX-a Pipe

Uponor recommends conditioning the system at 1.5 times the test pressure, or 120 psi. The following conditioning procedure is unique to PEX-a due to the high degree of crosslinking and associated thermal and elastic properties of the pipe.

When pressure is applied against the inner wall of PEX-a, the internal diameter (ID) of the pipe will slightly increase, causing the pressure to drop while the system equalizes. After a period of 30 minutes, the PEX-a piping will be sufficiently conditioned to start the pressure test.

Conditioning and Sustained Pressure Testing Procedure

1. Visually confirm all connections are properly made per Uponor's installation guidelines.
2. Ensure that all components, fixtures and equipment not rated for the test pressure are isolated from the test system.
3. Ensure that all other thermoplastic piping materials are isolated from the test system.

4. Fill the system with potable water, air or a mixture of both.
5. Condition the system at 1.5 times the required test pressure for 30 minutes. This will require constant pumping or cycling the valve and compressor to maintain a pressure of 1.5 times the test pressure. If cycling the valve and compressor, apply additional pressure once the psi has dropped 10 lbs.
6. After conditioning the system for 30 minutes, quickly relieve excess pressure by opening the valve. Close the valve when the system has reached the desired test pressure.

Note: Uponor recommends a test pressure of 80 psi (unless local code dictates higher pressures).
7. Once the valve is closed, confirm a slight rise in pressure (3 to 6 psi). This will occur since the pipe's internal diameter (ID) is shrinking from its conditioned state to equalize at the lower pressure.
8. Visually check for leakage and monitor the pressure for the duration specified by local code. (A typical pressure test can range from 2 to 24 hours.)
9. If there is no reduction in pressure, the system is regarded as leak tight.

Note: Slight fluctuations of pressure are normal due to ambient temperature changes, especially during long durations (e.g., 24 hours).
10. Flush the system as required by code.

Important! If using water to pressure test the system, purge all water from the system prior to the ambient air temperatures falling to 32°F (0°C). Failing to remove the water from the system can result in damage to the piping and associated equipment.

Pressure Testing Graph

