



Uponor PEX-based systems in hydronic piping applications Guidelines for water additives

The building industry widely uses Uponor PEX-based systems in hydronic piping applications, mostly for conveying water between water heating/cooling devices (e.g., boilers, chillers) and terminal units such as fan coils. Uponor PEX pipe offers advantages such as light weight, corrosion resistance, ease-of-assembly and cost-effectiveness. In addition to Uponor PEX pipe, these applications also use various configurations of Uponor ProPEX® fittings (e.g., tees, ells, couplings, etc.) made from brass or engineered polymers (EP) for connection purposes.

Most hydronic piping systems incorporate metallic components supplied by third parties which require corrosion protection. Consideration must also be given to external factors such as temperature and induced stresses in addition to water conditions such as pH, impurity control and buffering. Thus, various additives are typically added to the water being conveyed throughout hydronic piping systems. To avoid damage to Uponor PEX pipe and Uponor ProPEX fittings all of these variables must be considered, and only additives that are chemically compatible with the Uponor components should be employed.

As a means of providing guidance in selecting an additive that is chemically compatible with Uponor PEX pipe and ProPEX fittings, we recommend that the attributes of the treated water should be in the ranges indicated in the following table.

Attribute	Low	High
pH	7	9.1
Nitrite	0 ppm	≤2,000 ppm
Soluble metal — iron	0 ppm	≤ 2 ppm
Soluble metal — copper	0 ppm	≤ 1 ppm
Azole — TTA	0 ppm	≤ 100 ppm
Molybdate	0 ppm	≤ 500 ppm

It is also important to give consideration when selecting a cleaning agent. Cleaning the hydronic system is common upon initial startup. With Uponor PEX-based systems, the cleaning process should:

- Not exceed 72 hours
- Use non-petroleum-based cleaners
- Not exceed a pH of 11
- Have water temperatures less than 140°F (60°C)

Prior to cleaning the hydronic system, ensure the water management contractor is informed of the above guidelines.

Note that these guidelines are subject to change. Please contact Uponor Technical Services at 888.594.7726 (U.S.) or 888.994.7726 (Canada) to confirm the latest guidelines information.

These guidelines are set forth for informational purposes only, and it remains the responsibility of the additive supplier, water management contractor and the end-user to assure compatibility and effectiveness of the treated hydronic water with the entirety of the hydronic piping system.

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