

Aquatherm Technical Bulletin

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Aquatherm Temperature Spikes and Boiler Malfunctions

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The temperature/pressure ratings in the Aquatherm literature are based on averages over the life of the system. For example, the rating at 180°F would be applicable for a system with a set point of 180°F, with the expectation that the true temperature of the system would fluctuate around this set point. As such, normal deviations and temperature spikes are anticipated as part of the rating system.

The Aquatherm pressure ratings above 160°F (70°C) include “malfunction” conditions, in the event of a boiler malfunction resulting in over-temperature or over-pressure operation for short periods. Ratings at these higher temperatures for both blue and green pipe include up to 100 hours at 212°F (100°C)¹

Alternatively, the same is true of “malfunction” pressures for short periods, provided the pressure is below 150% of the rating for the given nominal temperature.

Additionally, Aquatherm piping is also required to pass a system malfunction test that is 8760 hours (~1 year) at 230°F. This does not mean the piping is intended to be operated at this condition, but rather that it can withstand temperatures above 200°F¹ were this to occur due to a boiler malfunction.

Aquatherm recommends that the piping be protected by the temperature/pressure relief valve on the boiler. It is also interesting to consider what happens in the event of a boiler malfunction when the TP relief valve does not operate properly. The water heater/boiler can essentially become a bomb waiting to explode when the pressure is high enough. This is a very serious and dangerous condition, and could cause significant damage, injury, and even death. On the other hand, if the boiler/water heater is connected to plastic piping, the pipe would rupture before the water tank explodes, which could significantly reduce property damage and relieve the dangerous pressure inside the tank.

Revisions:

1. 25 Feb 2022 – Wording modified to include higher temperature ratings for blue pipe MF RP (PP-RCT)