



# Aquatherm Technical Bulletin

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## Freeze Protection of Aquatherm Piping

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Aquatherm piping is considered to be freeze-tolerant, meaning that it should not rupture if accidentally allowed to freeze. The pipe will rupture and break if exposed to repeated freeze/thaw cycles.

However, it is also not intended that Aquatherm pipes will be installed in a location where they would be subjected to repeated freeze/thaw cycles while filled with water. The intent is that antifreeze measures must be taken if the pipe is expected to be subjected to freezing conditions repeatedly. Antifreeze measures would include maintaining a minimum flow, using heat tracing, draining the system when not in use, or using antifreeze such as glycol (propylene or ethylene), glycerin or methanol in the fluid. (It should be noted that any concentration of glycol (propylene or ethylene) is compatible with Aquatherm pipe, but that above certain limits the glycol/water mixture can become flammable and should not be used in above-ground plastic piping. The glycol supplier can provide these limits for their products.)

On a related subject, Aquatherm pipes are not intended for operational temperatures colder than  $-5^{\circ}\text{F}$ , as the pipes begin to lose their resistance to impact. This means that it is not intended that the temperature of the fluid being transported in the pipe be colder than  $-5^{\circ}\text{F}$ . Aquatherm pipes have been successfully installed in locations where the ambient temperature is as cold as  $-40^{\circ}\text{F}$ , but the fluid being transported in the pipe should not be colder than  $-5^{\circ}\text{F}$ . As indicated above, measures must be taken to protect the pipes and their contents in these colder temperatures.

Another frequently asked question is whether or not Aquatherm piping can be intentionally frozen in order to add a branch line or to perform some other type of service to the pipe system without having to drain the entire system. Aquatherm does not recommend or advise against this method of accessing the piping system. However, in third party testing one supplier of these freeze systems could not get the water in the pipe to freeze sufficiently to perform the required modifications to the pipe system. Therefore, this method of accessing the piping system may not be suitable.

Revision: