

Aquatherm Technical Bulletin

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Aquatherm UV Protection

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Prolonged exposure to UV radiation will discolor bare PP-R pipe and could weaken the polymer over time. In order to prevent this damage, suitable measures must be taken. As stated in the Aquatherm catalog, the ideal solution for installing PP-R in an exposed outdoor environment is to use the UV-protected versions of the Aquatherm pipes. However, due to changing circumstances or availability, some exterior installations are completed using standard Aquatherm pipe.

Once installed, there are several ways to protect the PP-R pipe. Physically, the pipe can simply be covered with insulation or a casing/housing of some sort. Care must be taken to ensure the pipe is not damaged by attachment of a casing/housing, and that the casing does not cause excessive temperatures on the pipe when exposed to sunlight. However, putting on a casing or housing is not ideal in many cases, due to piping layout and location. If the pipe is required to be insulated for energy conservation purposes, no further UV protection is necessary.

Another option is to paint the pipe, but due to the smooth surface, flexible nature of PP-R, and the normal expansion and contraction that can occur in an outdoor piping application, most forms of paint will not adhere well to the pipe. Therefore, it is important to select a primer which adheres well to the PP-R material and is able to withstand the thermal expansion/contraction of the pipe. The following primers and paints have been found to be satisfactory in these applications:

- Rust-Oleum Painters Touch 2x Ultra Cover Paint + Primer
- Rust-Oleum XIM Flash Bond 400¹
- Jamestown Primer Coat 94104A; Black Gloss Topcoat 11224A¹

These coatings are primers only (except the Jamestown product which is a primer/topcoat.)¹ and must be covered with an applicable UV protective, elastomeric paint. The paint should be re-coated as necessary to maintain UV protection.

In order for the coating to properly bond to the pipe, the exterior surface must be roughed up using medium-grade sandpaper and then have the fines brushed away with a dry cloth or removed by power washing. Be sure to follow all the manufacturer's instructions for preparation and application.¹

Coating the molded fittings is not required, as the heavy-walled fittings are designed to withstand more UV exposure than the pipe. However, if the area is exposed to long daylight hours with direct sunlight, the extra precaution of protecting the fittings is advisable. There is no negative effect to coating the fittings.

In addition to the paint products noted, the pipe may be covered with a UV wrap such as 3M 2080 Matte Black Metallic Vinyl Wrap | M212 min. thickness of 3.5 mil available from 3M or the Avery SW900 Supreme Wrapping Vinyl Film Matte Black | SW900-180-O, 3.2 mil thickness. Order online at <https://www.metrorestyling.com>. The wrap has an adhesive backing that sticks to the pipe. The wrap should overlap itself by at least ½” to ensure good adhesion.¹

References to products that are produced by other companies pertain only to the products evaluated at the time of the evaluation and are not intended to be a guarantee of future performance. Aquatherm does not control or regulate the production methods or quality assurances of third-party products. Consult the coating manufacturer for coating methods and applications for their particular products. The Aquatherm warranty does not apply to the performance of coatings applied to the Aquatherm piping.

Revisions:

1. Revision 13 April 2020 – Removed PPG paint and primer; Added Rust-Oleum and Jamestown paints
Added 3M and Avery Vinyl Wrap

Previous Revisions:

- Revision 27 January 2017 – Added new PPG paint and Primer.
- Revision 29 September 2017 – Added Rust-Oleum Primer and application requirements