

Is PVC and CPVC pipe UV resistant?

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Testing and past field experience studies have concluded that when conventional Type I, Grade I (Cell Class 12454) rigid PVC pipe is exposed to UV radiation from sunlight the following conditions have been noted.

- The effects of exposure to UV radiation results in a color change to the product, slight increase in tensile strength, slight increase in modulus of elasticity, and a slight decrease in impact strength.
- UV degradation occurs only in the plastic material directly exposed to UV radiation and to extremely shallow penetration depths (frequently less than 0.01").
- UV degradation does not continue when exposure to UV is terminated.
- UV radiation will not penetrate even thin shields such as paint coatings, clothing, or wrapping.

Based on these studies, Harvel Plastic, Inc. recommends that PVC and CPVC piping products (i.e. pipe, duct, & shapes) exposed to the direct effects of UV radiation be painted with a light colored acrylic or latex paint that is chemically compatible with the PVC/CPVC products. Compatibility information should be confirmed with the paint manufacturer. The use of oil based paints is not recommended.

When painting the effects of exposure to sunlight are significantly reduced, however, consideration should be given to the effects of expansion/contraction of the system caused by heat absorption in outdoor applications. The use of light colored, reflective paint coating will reduce this affect, however, the system must also be designed and installed in such a manner to reduce the effects of movement due to thermal expansion.

It should be noted that Harvel's standard formulation of PVC compound (H707) used in the manufacture of our rigid pipe contains 1-1/2% titanium dioxide (TiO₂), a natural UV inhibitor. Harvel's Corzan compounds used in the manufacture of rigid CPVC pipe contains at least 2% Titanium Dioxide (TiO₂). Harvel's Clear PVC piping products do not contain UV inhibitors and should not be exposed to UV radiation.

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