



June 29, 2011

Re: Discolored PVC Fittings,

To Whom It May Concern:

This letter is an initial contact relating to concerns with discoloration of fittings: PVC will become discolored when exposed to sunlight due to the UV radiation. This effect occurs only on the surface of the pipe, and discontinues when exposure to sunlight ends. Presence of an opaque layer prevents this discoloration, as does burial. The Uni-Bell PVC pipe association undertook extended research concerning this, and the results of their study are reported in "*The Effects of Ultraviolet Radiation on PVC Pipe*" (Uni-Bell publication UNI-TR-5). Their results show that while the surface of the pipe discolors, other characteristics such as tensile strength (i.e. pressure rating) and elasticity (i.e. pipe stiffness) are not affected. This shading of color is of a very shallow depth; measured usually at less than 0.001 inch.

The material used to heat the PVC for thermo-forming does not affect this process. This material is a food-grade glycol, and its use does not itself contribute to the discoloration of PVC. However, the raw material pipe used to form the pipe into fittings (and the integration of female bells) has a thin layer of a waxy inhibitor of UV caused discoloration. Any heating of the pipe, whether in glycol or with dry heat (such as sunlight), will degrade this outer coat, making the heat formed plastic more susceptible to such discoloration. Further, PVC pipe exposed to the glycol is washed by hand with soap and water which removes any residue of this glycol.

Any discoloration or browning in color is purely cosmetic and will not affect performance in any relevant way. The most common method used for prevention of UV-caused discoloration is with the application of a latex-based paint, the use of which is at the discretion of the user.

If you have any further questions or concerns, please contact us.

Sincerely,
Brad Sukolsky
Specified Fittings