NSF/ANSI Standard for Plastics —

Plastics piping system components and related materials

5 Physical and performance requirements

5.7 Chlorine resistance – Dependent transfer listing Oxidative Equivalency requirements

In order to qualify a pipe made from a material that already has a chlorine resistance classification, the following minimum requirements shall be met for each pipe which is comprised of a different color in the polymer matrix yet made from that classified material and shall be referred to as a Dependent Transfer Listing.

NOTE — This requirement does not apply to changes in color of an external, coextruded polymer layer which is separate and distinct from the pipe polymer matrix.

For a material that already has a chlorine resistance classification (denoted original material), oxidative equivalency is required on pipe or material comprised of a different color from the original material or when the production site differs from that of the original material. When the pipe or material production site differs from that of the original material, a minimum of one color shall be selected from the production site being assessed.

This requirement does not apply to changes in color of an external, coextruded polymer layer which is separate and distinct from the pipe polymer matrix.

Qualified pipe shall meet the minimum requirements of 5.7.1 and 5.7.2.

5.7.1 Solid wall pipe with optional inner or outer polymeric layer

— three data points at one hoop stress level at one of the temperature conditions as for the original data set;

— two data points at a second hoop stress level at least 80 psi lower than the first stress level and at the same temperature conditions as for the first stress level;

— the 95% lower prediction limit (LPL) shall be calculated for the original material data at these temperatures / stress conditions; and

— all five data points (failure times) shall meet or exceed the LPL for that condition.
5.7.2 Pipe with middle polymeric layer

— five data points at one hoop stress level at the highest temperature conditions as for the original data set;

— the 95% LPL shall be calculated for the original material data at these temperatures / stress conditions; and

— all five data points (failure times) shall meet or exceed the LPL for that condition.

**NOTE**— The hoop stress level shall be chosen so that there are no mixed mode failures. In the occurrence of such failures, the testing shall be repeated at a lower stress that would generate brittle failures.