

All plastic pipe intended for use in pressure applications is rated in its pressure carrying capacity according to a standard procedure. This procedure consists of lengthy controlled pressure tests which are actually conducted on pipe test samples. The rating given to plastic pipe to be used in pressure applications is called "Pressure Rating," which is officially defined as "the estimated maximum pressure that water in the pipe can exert continuously with a high degree of certainty that failure of the pipe will not occur."

The Pressure Rating of any plastic pipe is dependent on three things: the strength of the material from which the pipe is made, the thickness of the pipe, the temperature of the pipe in application.

Since the user is interested in the long term pressure carrying ability of the pipe, tests which determine the Pressure Rating take a reasonably long time to conduct. No effective "quick" tests have yet been devised for adequately predicting the long term characteristics of plastic pipe.

While the tests themselves are conducted on pipe, the results of the tests are actually used to rate the plastic material from which the pipe is made. The material is thus given a strength rating known as Hydrostatic Design Stress, which can be related to other pipe produced from the material. This raw material rating is then used to determine the Pressure Rating of any pipe made from the material by the use of accepted mathematical formulas. Obviously, the thicker the pipe made from a given material, the higher the Pressure Rating. Different raw materials do, however, have different strength ratings and thus all plastic pipe of the same wall thickness will not have the same Pressure Rating.

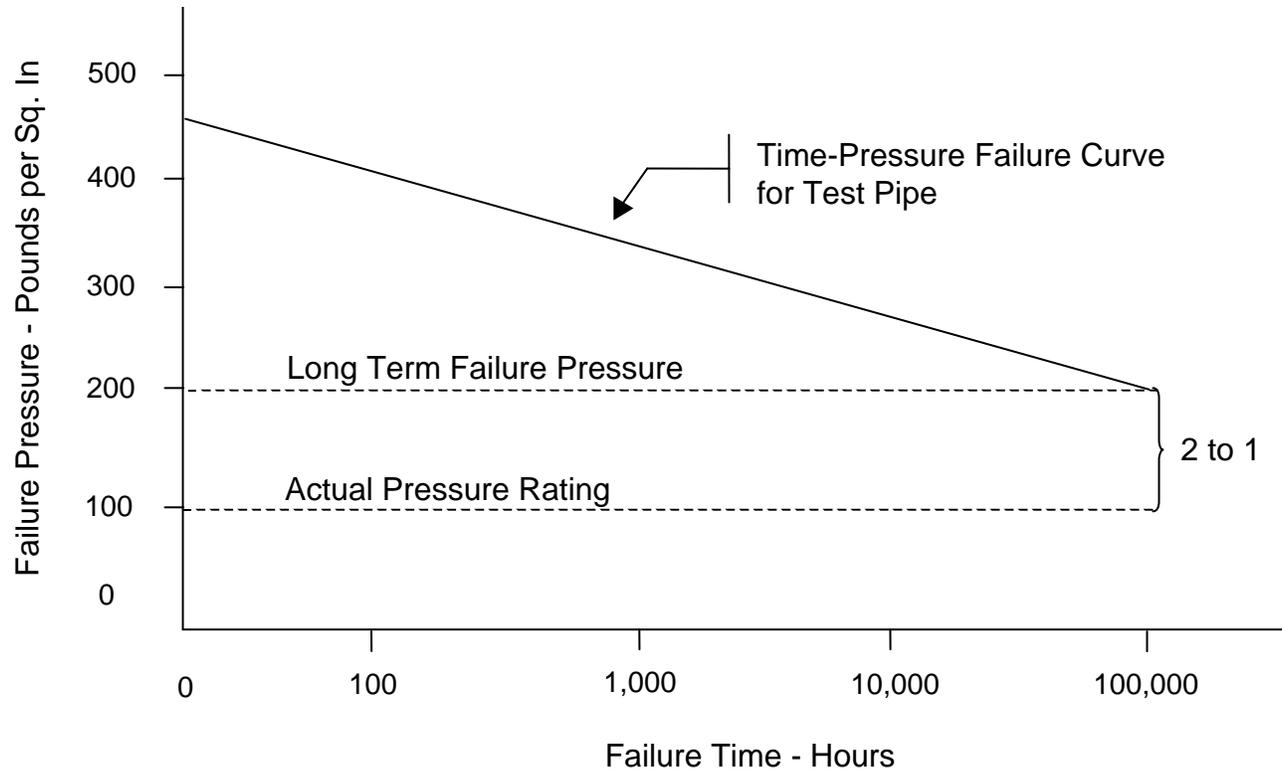
Basically the user should accept the Pressure Rating assigned to a plastic pipe as that pressure above which the pipe should not be operated. It is to be understood that the Pressure Rating of a pipe allows for certain built-in factors of safety to take into account conditions such as variations in raw material batches, production quality, shipping and handling, installation procedures, etc. Actually, the Pressure Rating assigned to plastic pipe is one half that pressure which has been determined would cause failure if maintained in the pipe continuously for 100,000 hours (11 1/2 years) under non-fluctuating conditions.

From the above we see that the built-in long term factor of safety for pressure rated plastic pipe will be somewhere near two to one if the pipe is operated at or near the assigned Pressure Rating and at or near the temperature which that rating has been made. Fluctuating conditions of pressure, such as surge, the installation of semi-damaged pipe, and variability of temperature all will contribute to the actual factor of safety allowed in the installation.

(OVER)

The requirement that all Standard plastic pipe intended for pressure applications be assigned a Pressure Rating which must be shown on the pipe is a valuable assist to the user. It allows him to buy a pipe which he knows is rated to handle the pressure of his application. It gives him confidence in the product.

Even with this plus value, however, the user could still have some doubt in his mind if his application is at other than standard temperature. The Pressure Rating assigned to, and printed on the pipe, is given at the standard temperature of 73°F. Many pipe manufacturers simply let it go at this. Another plus value for all Cresline Pressure Rated plastic pipe is that a Conversion Chart is shown on the reverse side of every specification sheet which is to be used to convert the standard Pressure Rating to the Pressure Rating at other temperatures. Cresline Plastics' broad research and testing program makes this valuable added feature possible. It adds up to double confidence in Cresline plastic pipe.



The figure above illustrates the basic method used in assigning Pressure Rating. Note that the assigned Pressure Rating is one half of the long term test failure pressure.

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