

Construction

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TECHNICAL BULLETIN TB239

MUNICIPEX® PRESSURE AND TEMPERATURE RATINGS

Product: MUNICIPEX Pipe

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MUNICIPEX pipe has been tested in accordance with the Plastic Pipe Institute (PPI) TR-3/2012 policy to determine the long-term hydrostatic strength of the pipe. The PPI policy is based on ASTM D2837 *Standard Test Method for Obtaining Hydrostatic Design Basis for Plastic Pipe Materials*. Accordingly, MUNICIPEX pipe has continuous ratings at the following pressures and temperatures based on a standard design factor of 0.5:

- 160 psi @ 73.4°F (1055 kPa @ 23°C)
- 100 psi @ 180°F (690 kPa @ 82.2°C)

The PPI TR-3 defines guidelines for polyethylene (PE) pipe which can use a higher design factor of 0.63 if the material meets the following requirements:

- 1) Long-term temperature/pressure substantiation to PPI TR-3 section F.5
- 2) Minimum slow crack growth performance by ASTM F1473 of 500 hours as required by ASTM D3350
- 3) Lower confidence level (LCL) / long-term hydrostatic stress (LTHS) ratio of at least 90% as per ASTM D2837

To demonstrate that MUNICIPEX PEXa pipe can satisfy the requirements of Section F.7 of PPI TR-3, REHAU has coordinated testing at a certified third-party laboratory with the following conclusions:

1. Using the stress-rupture test points for MUNICIPEX PEXa per ASTM D2837, the long term temperature/pressure ratings are substantiated.
2. When tested in accordance with ASTM F1473 at 176°F (80°C) and at a test stress of 2.4 MPa, MUNICIPEX pipe has a minimum slow crack growth performance greater than 500 hours.
3. The ratio of the LCL of the 73°F regression at 100,000 hours to LTHS for each data set is above the required minimum of 90% per ASTM D2837.

Since MUNICIPEX PEXa pipe has been demonstrated to satisfy the performance requirements of section F.7 of PPI TR-3 for PE materials, designers may apply the higher design factor of 0.63 resulting in the temperature/pressure rating of:

- 200 psi @ 73.4°F (1380 kPa @ 23°C)

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