Wisconsin
Department of Commerce

Approval # 20030005

Environmental & Regulatory Services Division
Bureau of Petroleum Products and Tanks
201 West Washington Avenue
P.O. Box 7837
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Wisconsin COMM 10 Material Approval

Equipment: Universal Petropipe (UPP) Extra Lined Nonmetallic Flexible Underground Piping and Fittings

Manufacturer: PetroTechnik Ltd.
PetroTechnik House, Olympus Close,
Whitehouse Industrial Estate
Ipswich, Suffolk, United Kingdom IP1 5LN

Expiration of Approval: December 31, 2008

SCOPE OF EVALUATION

The Universal Petropipe (UPP) Extra lined underground piping system as manufactured by PetroTechnik, Ltd., was evaluated for use as petroleum product piping for underground storage tank systems in accordance with **Comm 10.51 (2)**, of the Wisconsin Administrative Flammable and Combustible Liquids Code.

This evaluation summary is condensed to provide the specific installation, application and operation parameters necessary to maintain the subject systems in compliance with the Wisconsin Administrative Code – Comm 10.

DESCRIPTION AND USE

The UPP Extra lined primary flexible piping and fittings consist of a non-permeable nylon inner and polyethylene outer layer, and are available in 1.5-in., 2-in., 3-in., and 4-in. sizes. The 1.5-in. and 2-in. sizes are available in a coaxial arrangement with an integral secondary containment (double-wall). Secondary containment capability for the 3-in. and 4-in. sizes can be provided by installing the primary pipe within a UPP secondary containment sleeve. The secondary containment pipe has a smooth inside wall that is intended to improve leak detection capability and liquid recovery, and is available in 2 -in., 2 1/2-in., 4-in., and 6-in. sizes.

TESTS AND RESULTS

UPP Extra lined flexible piping and fittings were found to comply with the current Underwriters Laboratories' requirements for this class of piping and are suitable for use in the distribution of petroleum products, alcohol, and alcohol-gasoline mixtures.

LIMITATIONS / CONDITIONS OF APPROVAL

- UPP Extra lined primary flexible piping and fittings are approved as meeting the design and construction standards for underground piping as specified in **s. Comm 10.51 (2)** up to 90 psig and vacuum to 26.6 in. Hg.

- UPP Extra lined primary flexible piping and fittings can be used as carrier, vent, and vapor recovery piping.

- Critical performance parameters for the UPP Extra lined flexible piping and fittings:

Primary Pipe

UPP Pipe Size (in.)	Minimum Bend Radius (in.)	Terminating Fitting Bend radius (in.)[1]	Bulk Modulus (psi)[2]
1 ½	31.5	31.5	11,500
2	39.4	39.4	11,500
3	590.6	590.6	11,500
4	787.4	787.4	11,500

[1]: As measured in a horizontal plane into the tank or dispenser sump basin.
[2]: Bulk modulus values are based on testing by Veeder-Root for the 2-inch pipe. The other pipe sizes will have values very close to the 2-inch pipe.

Secondary Containment Piping

UPP Pipe Size (in.)	Minimum Bend Radius (in.)	Terminating Fitting Bend radius (in.)[1]	Bulk Modulus[2] (psi)
2	31.5	31.5	N/A
2 ½	39.4	39.4	N/A
4,6	787.4	787.4	N/A

[1]: As measured in a horizontal plane into the tank or dispenser sump basin.
[2]: For secondary containment only; a bulk modulus value is not necessary for this application.

- UPP flexible piping is approved for installation without the flex connectors specified in **s. Comm 10.51 (3)**.

- UPP flexible piping and fittings are approved for underground (buried) installations only. A maximum of 3 inches of low melting point materials may be exposed at the point where the piping enters a sump.

- The UPP secondary containment jacket and secondary containment piping and fittings are approved for use as a secondary barrier for interstitial monitoring systems in compliance with **s. Comm 10.61 (7).**

- Installation, use and maintenance of all products shall be in accordance with the manufacturer's recommendations and this approval. In the event of conflicts, the stricter requirement shall govern.

- Leak detection for the piping system shall be provided in accordance with **s. Comm 10.60 (2)**. The specific leak detection system must be shown on the plans that are submitted for review in accordance with **s. Comm 10.10**. Automatic line leak detectors and line tightness testing methods must be specifically approved for use with flexible piping in accordance with **s. Comm 10.125**. (Note: Evaluation of these leak detection methods with the standard EPA protocol does not demonstrate acceptability for use with flexible piping.)

This approval will be valid through December 31, 2008, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The Wisconsin Material Approval Number must be provided when plans that include this product are submitted for review.

DISCLAIMER

The Department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement unless specified in this document.

Reviewed by: _____

Greg Bareta, P. E.
Engineering Consultant
Bureau of Petroleum Products and Tanks

Approved by: _____ Date: _____