



Department of Commerce

Division of State Fire Marshal

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INTERNAL LINING PROCEDURES FOR UNDERGROUND TANK SYSTEMS

APPLICABILITY

This guidance applies to underground tank systems containing flammable and combustible liquids and does not apply to above ground storage tanks. Owners and operators wishing to perform internal lining work on underground tanks shall comply with the Ohio Fire Code and the referenced standards therein. The Ohio Fire Code applies to both metallic and non-metallic underground tanks as well as a wide range of petroleum products that are stored in underground tanks (including heating oil). In addition, the Ohio Fire Code allows underground tanks to be internal lined for a variety of reasons including, but not limited to, corrosion protection, repair and quality control purposes.

This guidance also applies to underground storage tanks (USTs) regulated by the Bureau of Underground Storage Tank Regulations (BUSTR). For the most part, USTs regulated by BUSTR are a subset of the underground tanks regulated by the Ohio Fire Code. The main distinction between the two is that BUSTR does not regulated underground tanks containing heating oil. In addition, the lining requirements found in the BUSTR regulations apply just to metallic USTs that have been internally lined to meet cathodic protection requirements.

PERFORMING INTERNAL LINING WORK PURSUANT TO THE OHIO FIRE CODE

Section 3404.2.7.11 of the Ohio Fire Code describes the procedures for performing internal lining work on underground tanks. The following is a summary of the procedures that apply:

- The local fire official has the authority to prohibit the use of internal lining within their jurisdiction,
- Manufacturers shall register the specifications for the internal coating system with the fire marshal,
- Manufacturers shall have the internal lining specifications and standard tests signed and sealed by a registered professional engineer,
- Manufacturers shall submit a list of the qualified applicators to the fire marshal,
- Manufacturers shall affirm that all internal lining procedures are in accordance with American Petroleum Institute (API) 1631 Interior Lining and Periodic Inspection of Underground Storage Tanks,
- Applicators shall give written notice to the fire marshal and the local fire department on a form prescribed by the fire marshal prior to performing any lining work (completing and submitting a BUSTR permit application fulfills this requirement),
- Applicators must file a current “certificate of insurance” with the fire marshal, and
- Applicators must submit a “certificate of performance” on a form prescribed by the fire marshal to the local fire department at the completion of work.

PERFORMING PERIODIC EVALUATIONS OF INTERNALLY LINED UST SYSTEMS

The requirement to perform periodic evaluations of internally lined UST systems applies to BUSTR regulated UST systems only. All other underground tank systems (such as those containing heating oil) are under no obligation to comply with BUSTR regulations. Throughout the 1990s, BUSTR regulations allowed metal UST systems to be internally lined in order to meet cathodic protection requirements associated with the December 22, 1998, upgrade deadline. As of March 1, 2005, the addition of internal lining to existing UST systems to meet cathodic protection requirements was prohibited unless owners and operators obtain written approval from the fire marshal prior to the application of the internal lining. As of May 16, 2012, the fire marshal ceased granting approval for the addition of internal lining to existing UST systems to meet cathodic protection requirements.

Owners and operators with USTs systems internally lined prior to May 16, 2011, may continue to use these systems provided that they are evaluated in accordance with paragraph (D)(2)(e) of rule 1301:7-9-06 of the Administrative Code. This rule requires that within ten years after lining (and every five years thereafter) USTs must be internally inspected and found to be structurally sound with the lining still performing in accordance with original design specifications. The periodic inspection of lined USTs shall be performed in accordance with the following:

- Inspections shall be performed pursuant to American Petroleum Institute (API) 1631-2001 *Interior Lining and Periodic Inspection of Underground Storage Tanks*,
- Inspections shall be performed by a person listed by the fire marshal to provide UST lining services,
- A modification permit shall be obtained prior to performing any work,
- Video camera inspections shall not be used to meet the evaluation process, and
- USTs undergoing a periodic inspection must pass a precision test in accordance with paragraph (F)(1) of rule 1301:7-9-07 of the Administrative Code prior to going back into service.

EVALUATING THE INSPECTION RESULTS

UST owners must obtain a certificate of performance from the inspection provider attesting that the UST meets the performance requirements as defined in API 1631-2001 for the UST and lining material. Any UST failing to meet the performance requirements must be taken out-of-service or removed. In order for a BUSTR regulated UST system to receive a certificate of performance, the inspection provider must attest that the UST and internal lining material meet the following requirements:

- The metal thickness of the UST shall be no less than 75% of original metal thickness as determined by the procedures established in API 1631-2001, and
- The internal lining of the UST shall be evaluated to ensure that the lining meets all criteria in API 1631-2001 for thickness, hardness and uniformity.

MODIFICATIONS AND REPAIRS

Pursuant to paragraph (C)(1)(b) of rule 1301:7-9-06 of the Administrative Code, the patching of an existing lining for cathodic protection purposes is not allowed after May 16, 2012. Any lining failing to meet performance requirements shall be taken immediately out-of-service or removed.

Paragraph (D)(2)(e)(iii) of rule 1301:7-9-06 of the Administrative Code allows BUSTR regulated USTs to be upgraded by the addition of both internal lining and cathodic protection (e.g., sacrificial anodes or impressed current); The periodic inspection of lined USTs is not required if a cathodic protection system was properly installed and maintained on the UST system. Cathodic protection may be added to a lined UST after-the-fact, though the system must be designed and approved by a corrosion expert.

Please note, lined USTs located in BUSTR sensitive areas have until May 16, 2014, to install cathodic protection (e.g., sacrificial anodes or impressed current); otherwise the USTs shall be taken out-of-service.

CERTIFICATE OF PERFORMANCE

Copies of the certificate of performance and inspection field reports shall be submitted to BUSTR and the local fire department at the conclusion of the inspection process. BUSTR recognizes certificates of performance only from providers that have submitted their performance methodology to BUSTR for evaluation prior to using their methodology in the State of Ohio. Please contact BUSTR at (614) 752-7938 for a list of recognized providers and methodologies.

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<http://www.com.ohio.gov/fire/bustMain.aspx>