



Designation: E3225 – 24

Standard Practice for Performing Visual Examination of Containment Sumps¹

This standard is issued under the fixed designation E3225; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice describes a *visual examination* to determine if a containment sump has been *compromised* and to identify any *compromised* components.

1.2 United States of America federal regulations found in 40 CFR 280 address inspection and testing of *spill prevention equipment* and *containment sumps* used for piping interstitial monitoring. The testing and inspection requirements include the following:

1.2.1 Spill prevention equipment and containment sumps used for piping interstitial monitoring must be tested at least once every three years to ensure the equipment is *liquid tight* by using vacuum, pressure, or *liquid* testing.

1.2.2 *Containment sumps* must be inspected annually.

1.2.3 *Spill prevention equipment* must be inspected every 30 days.

1.2.4 The authority having jurisdiction may have different or more frequent inspection and testing requirements.

1.3 The *visual examination* described in this practice addresses the inspection requirements of:

1.3.1 the annual inspection of *containment sumps*;

1.3.2 the 30 day walk through inspection for *spill prevention equipment*; and

1.3.3 the *visual examination* performed prior to conducting a test of the *spill prevention equipment* or *containment sumps* used for interstitial monitoring.

1.4 This practice is not a recognized test to determine if *spill prevention equipment* or *containment sumps* used for *interstitial monitoring* are *liquid tight*.

1.5 The user is expected to have knowledge of *UST* installation procedures and *UST* operational, maintenance and testing requirements of related to the tasks performed.

1.6 Section 6 provides the recommended minimum qualifications and educational requirements of a the *inspector*. The authority having jurisdiction may have additional certification requirements.

¹ This practice is under the jurisdiction of ASTM Committee E50 on Environmental Assessment, Risk Management and Corrective Action and is the direct responsibility of Subcommittee E50.01 on Storage Tanks.

Current edition approved Feb. 1, 2024. Published March 2024. Originally approved in 2020. Last previous edition approved in 2020 as E3225-20. DOI: 10.1520/E3225-24

1.7 This practice offers a set of instructions for performing one or more specific operations. This document cannot replace education or experience and should be used in conjunction with professional judgment. Not all aspects of this practice may be applicable in all circumstances. This ASTM standard is not intended to represent or replace the standard of care by which the adequacy of a given professional service must be judged, nor should this document be applied without consideration of a project's many unique aspects. The word "Standard" in the title means only that the document has been approved through the ASTM consensus process.

1.8 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system are not necessarily exact equivalents; therefore, to ensure conformance with the standard, each system shall be used independently of the other, and values from the two systems shall not be combined.

1.9 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.* Hazards known to this practice are identified in Section 8.

1.10 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *United States of America Environmental Protection Agency (EPA):*²

40 CFR part 280 Technical standards and corrective action requirements for owners and operators of underground storage tanks (UST)

40 CFR §280.20 Performance standards for new UST systems.

² Available from United States Environmental Protection Agency (EPA), William Jefferson Clinton Bldg., 1200 Pennsylvania Ave., NW, Washington, DC 20460, <http://www.epa.gov>.

40 CFR §280.35 Periodic testing of spill prevention equipment and containment sumps used for interstitial monitoring of piping and periodic inspection of overfill prevention equipment.

40 CFR §280.36 Periodic operation and maintenance walk-through inspections

2.2 *United States of America Occupational Safety and Health Administration (OSHA)*:³

29 CFR §1910.120 Hazardous waste operations and emergency response

29 CFR §1910.146 Permit-required confined spaces

29 CFR §1910.399 Class I locations

2.3 *CERCLA*:²

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980. §101(14)

3. Terminology

3.1 Definitions:

3.1.1 *compromised*, *adj*—a loss of structural integrity or diminished ability to perform as designed.

3.1.2 *containment sump*, *n*—a subsurface *sump* designed to be *liquid tight*.

3.1.2.1 *Discussion*—Includes components commonly known as *spill containment equipment*, transition *sumps*, submersible turbine pump (STP) *sumps*, under dispenser containment (UDC) *sumps* and piping *sumps*.

3.1.3 *liquid*, *n*—a state of matter characterized by the material flowing freely, with a definite volume but indefinite shape which is determined by its container, and which is difficult to compress.

3.1.3.1 *Discussion*—*liquid* does not include powders or other materials that are composed entirely of solid particles.

3.1.4 *liquid test*, *n*—the procedure to determine that a *containment sump* is *liquid tight*.

3.1.5 *liquid tight*, *adj*—the ability to contain a *regulated substance* leaked from the *primary fuel path* of a UST system until the *regulated substance* is detected and removed.

3.1.6 *naked eye*, *n*—visual perception unaided by a magnifying or light-collecting optical instrument, such as a telescope or microscope and includes vision corrected to normal acuity using corrective lenses.

3.1.7 *primary fuel path*, *n*—that portion of the UST system that routinely contains a *regulated substance*, including the tank, piping, dispensers, pumps and related components.

3.1.8 *regulated substance*, *n*—(1) Any substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 (but not including any substance regulated as a hazardous waste under subtitle C); and (2) Petroleum, including crude oil or any fraction thereof that is liquid at standard conditions of temperature and pressure (60 °F and 14.7 lb/in.² absolute). The term regulated substance includes but is not limited to petroleum and petroleum-based substances comprised of a complex

blend of hydrocarbons, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

3.1.9 *spill prevention equipment*, *n*—containment *sump* around the fill pipe of a UST, including components commonly referred to as a catch basin, spill bucket or spill containment.

3.1.10 *sump*, *n*—a pit or hollow designed to create working space around, or containment of below ground tank system components.

3.1.11 *underground storage tank, UST*, *n*—a tank or combination of tanks and any underground piping connected to the tank or tanks that has at least 10 % of its combined volume underground.

3.1.12 *visual examination*, *n*—the critical *naked eye* observation of a *containment sump* to determine if the *containment sump* is capable of performing as designed or if the *containment sump* has been *compromised*.

4. Summary of Practice

4.1 Perform a *visual examination* according to procedures in Section 7.

4.2 Make a pass or fail determination according to the procedures in 7.5.

4.3 Report the results as in Section 9.

5. Significance and Use

5.1 All *liquid* and debris in a *containment sump* should be removed and managed properly.

5.2 *Liquids* introduced into a *containment sump* for testing purposes may come in contact with *regulated substances* that have leaked from the primary UST system.

5.2.1 Test *liquids* in contact with *regulated substances* may require response and corrective action if leaked from a *containment sump* during testing. 40 CFR §280.12 defines release as “any spilling, leaking, emitting, discharging, escaping, leaching or disposing from an UST into groundwater, surface water or subsurface soils.”

5.2.2 For handling and disposal consideration for *liquids* removed from containment sumps, see **Appendix X1**.

5.3 *Visual examinations* may identify *compromised* conditions that warrant repair or response to reduce the probability of a release of *regulated substance* to the environment.

5.3.1 *Visual examinations* should be performed prior to the introduction of liquids in to a *containment sump* to reduce the potential risk of a release of *regulated substance* to the environment during liquid testing methods.

5.3.2 Frequent *visual examination* of containment *sumps* between three-year test intervals is a proactive loss preventative measure that may identify *compromised* equipment before the equipment fails.

5.3.3 *Visual examinations* do not apply vacuum, or pressure, stress to containment *sump* components, nor do *visual examinations* introduce liquids into *containment sumps* which may come in contact with *regulated substances* that must be properly handled pursuant to regulations of the authority having jurisdiction.

³ Available from Occupational Safety and Health Administration (OSHA), 200 Constitution Ave., NW, Washington, DC 20210, <http://www.osha.gov>.