

SUMMARY OF TOPICS

The following changes in requirements to the Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids, UL 142, are being proposed:

1. Requirements for optional coverage for tanks storing liquids with a specific gravity (spg) greater than 1.0

1A. Requirements for optional coverage for tanks storing liquids with a specific gravity (spg) greater than 1.0

2. Requirements for tanks with bottoms other than flat

2A. Requirements for tanks with bottoms other than flat

3. Revisions to hydrostatic strength test

STP BALLOTS AND ALL COMMENTS DUE: December 17, 2018

For your convenience in review, proposed additions to existing requirements are shown underlined and proposed deletions are shown ~~lined-out~~.

1. Requirements for optional coverage for tanks storing liquids with a specific gravity (spg) greater than 1.0

DISCUSSION

Two separate proposals regarding the same topic (1 and 1A) have been submitted by different parties. Please review both proposals and vote and comment accordingly. If you are voting affirmative on the topic, please vote yes for only one proposal (1 or 1A). Your comments may indicate approval for parts of the proposal you voted negative on. All comments will be taken into consideration for the purpose of revising the final wording of any recirculated proposal and final publication of revisions.

RATIONALE

Proposal submitted by: Roland Riegel, UL LLC

There have been many requests from manufacturers and users of UL 142 to cover tank specially designed for the storage of flammable and combustible liquids, which currently exceeds the 1.0 specific gravity (spg) limitation in the scope. There has also been misrepresentation that UL 142 tanks can be listed for liquids with specific gravity greater than 1.0. Past resistance to its addition has primarily been due to disagreement of a) revisions to the construction based minimum thickness tables and allowable joints and/or calculation parameters for the added pressures and loads.

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Therefore, UL is proposing a simple solution to permit this option by requiring supports on these constructions, and adjusting the existing performance tests for structural integrity based on the maximum rated spg, which will be identified in a new marking if the test results are compliant.

PROPOSAL

1 Scope

1.1 These requirements cover steel primary, secondary and diked type atmospheric storage tanks intended for noncorrosive, stable flammable and combustible liquids that have a specific gravity (spg) not exceeding 1.0 in aboveground applications, except for tank constructions additionally evaluated to Section 11A.

11A Tanks Storing Liquids with Specific Gravity Greater Than 1.0

11A.1 Tanks optionally covered for storage of liquids > 1.0 spg shall meet the following construction and performance requirements based on the maximum specific gravity identified in the 48.1.1 f) marking.

11A.2 Integral supports for all horizontal cylindrical, vertical cylindrical, and rectangular tanks shall be provided, and evaluated to Part IV Tank Supports, except the support load test or evaluations shall be based on 2X the weight of the finished tank assembly filled to capacity with the maximum spg liquid it is rated for.

11A.3 The tank shall be evaluated to the Section 40 Hydrostatic Strength Test, except the test pressure shall be 2X the calculated tank bottom pressure based on the maximum spg liquid filled to it's maximum height. The maximum diameter or width, minimum thickness and weakest joint shall be evaluated as the worst case construction for a design series.

- a) For cylindrical tanks, the test pressure shall be at least 5 psi.
- b) For rectangular tanks, the test pressure shall be at least 25 psi.

48 Marking Elements

48.1 All tanks

48.1.1 Each tank shall be marked with:

- a) The manufacturer's name, trade name, or trademark or other descriptive marking which identifies the organization responsible for the product.
- b) One of the following statements, as applicable:
 - 1) "This Tank Requires Emergency Relief Venting. Capacity Not Less Than ____ CFH based on installation within one foot of the tank top," with the appropriate value derived from Table 8.1 inserted; or
 - 2) For tanks provided with a manhole of the long bolt type in accordance with the requirements in 8.10, the manhole cover shall be marked: "This Manhole Is Provided With Long Bolts To Permit Emergency Relief Venting. Do Not Replace With Shorter Bolts."
- c) The statement: " This Tank is Intended for Stationary Installation Only."

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d) If a manufacturer produces tanks at more than one factory, each tank shall have a distinctive marking by which it can be identified as the product of a particular factory.

e) Identification of the emergency vent openings.

f) The maximum specific gravity for tanks optionally evaluated for liquids > 1.0 spg. "Maximum Spg " per Section 11A.

1A. Requirements for optional coverage for tanks storing liquids with a specific gravity (spg) greater than 1.0

DISCUSSION

Two separate proposals regarding the same topic (1 and 1A) have been submitted by different parties. Please review both proposals and vote and comment accordingly. If you are voting affirmative on the topic, please vote yes for only one proposal (1 or 1A). Your comments may indicate approval for parts of the proposal you voted negative on. All comments will be taken into consideration for the purpose of revising the final wording of any recirculated proposal and final publication of revisions.

RATIONALE

Proposal submitted by: Dana Schmidt, STI/SPFA

Proposed language for the addition of tanks containing liquids with a specific gravity greater than 1.0 has been submitted by UL (Topic 1). This is a further refinement of that proposal.

Three methods for determining the steel thickness are provided. The first is finding an equivalent height for the increased head pressure. The second uses the Hydrostatic Test. The third allows engineering calculations subject to evaluation.

The text containing "worst-case" was deleted from UL's proposal for consistency with the current text in UL 142.

Supports must also be evaluated by calculations or Hydrostatic Test consistent with the current text in UL 142.

PROPOSAL

1 Scope

1.1 These requirements cover steel primary, secondary and diked type atmospheric storage tanks intended for the storage of noncorrosive, stable flammable and combustible liquids ~~that have~~ with a specific gravity (spg) not exceeding 1.0 in aboveground applications, except for tanks storing liquids with a specific gravity that exceeds 1.0, covered in Section 11A.

11A Tanks Storing Liquids with Specific Gravity Greater Than 1.0

11A.1 Tanks optionally covered for storage of liquids with a specific gravity greater than 1.0 shall meet the following construction and performance requirements based on the maximum specific gravity identified in the 48.1.1 f) marking.

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