Tank Systems for Refrigerated Liquefied Gas Storage

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Tank Systems for Refrigerated Liquefied Gas Storage

SECTION 1—SCOPE

1.1 General

1.1.1 This standard covers low pressure, aboveground, vertical, and cylindrical tank systems storing liquefied gases requiring refrigeration. This standard provides general requirements on responsibilities, selection of storage concept, performance criteria, accessories/appurtenances, quality assurance, insulation, and commissioning of tank systems.

1.1.2 Additional information and recommendations are given in annexes. These general requirements address issues common to all of these tank systems, issues involving coordination of the components of the tank system, and issues of the tank system acting in an integrated way. The detailed requirements applicable to the metallic and concrete containers respectively are contained in the standards named in 1.4 and 1.5.

1.1.3 The annexes of this standard provide additional information that may be used in the selection and design of refrigerated tank systems. See Table 1.1 for the status of each Annex.

Table 1.1—Status of Annexes to API Standard 625

Annex	Title	Status
A	Properties of Gases	Information (informative)
B	Recommendations on Foundation Settlement	Recommendations (informative)
C	Commentary on Storage Concepts	Information (informative)
D	Recommendations on Selection of Storage Concept based on Assessment of Risk	Recommendations (informative)
E	Inquiries and Suggestions for Change	Recommendations (informative)

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1.2 Coverage

1.2.1 This standard covers tank systems having a storage capacity of 800 cubic meters (5000 bbls) and larger.

1.2.2 Stored product shall be liquids which are in a gaseous state at ambient temperature and pressure and require refrigeration to less than 5 °C (40 °F) to maintain a liquid phase.

1.2.3 Tank systems with a minimum design temperature of –198 °C (–325 °F) (see note), a maximum design internal pressure of 50 kPa (7 psig), and a maximum design uniform external pressure of 1.75 kPa (0.25 psig) are covered.

NOTE Note for concrete containers, that ACI 376 states it “has been developed with the lowest operating temperature of –168 °C (–270 °F). However lower product temperatures could also be used, provided appropriate additional engineering analysis and justification is performed for each proposed application.”

1.3 Configuration

The tank system configurations covered are described in Section 5. These configurations consist of a primary liquid and vapor containment constructed of metal, concrete, or a metal/concrete combination and, when required, a secondary liquid containment.