Guidelines and Methods for Inspection of Existing Atmospheric and Low-pressure Storage Tanks

API RECOMMENDED PRACTICE 575
SECOND EDITION, MAY 2005

API American Petroleum Institute

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Downstream Segment

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FOREWORD

This recommended practice is based on the accumulated knowledge and experience of engineers and inspectors in the petroleum and chemical industries.

Some of the information contained in this publication was previously presented as Chapter XIII of the *API Guide for Inspection of Refinery Equipment*, which is being reorganized as an individual recommended practice. The information in this recommended practice does not constitute and should not be construed as a code of rules, regulations, or minimum safe practices. The practices described in this publication are not intended to supplant other practices that have proven satisfactory, nor is this publication intended to discourage innovation and originality in inspection. Users of this recommended practice are reminded that no book or manual is a substitute for the judgment of a responsible, qualified person.

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IMPORTANT INFORMATION CONCERNING USE OF ASBESTOS OR ALTERNATIVE MATERIALS

Asbestos is specified or referenced for certain components of the equipment described in some API standards. It has been of extreme usefulness in minimizing fire hazards associated with petroleum processing. It has also been a universal sealing material, compatible with most refining fluid services.

Certain serious adverse health effects are associated with asbestos, among them the serious and often fatal diseases of lung cancer, asbestosis, and mesothelioma (a cancer of the chest and abdominal linings). The degree of exposure to asbestos varies with the product and the work practices involved.

Consult the most recent edition of the Occupational Safety and Health Administration (OSHA), U.S. Department of Labor, Occupational Safety and Health Standard for Asbestos, Tremolite, Anthophyllite, and Actinolite, 29 *Code of Federal Regulations* Section 1910.1001; the U.S. Environmental Protection Agency, National Emission Standard for Asbestos, 40 *Code of Federal Regulations* Sections 61.140 through 61.156; and the U.S. Environmental Protection Agency (EPA) rule on labeling requirements and phased banning of asbestos products (Sections 763.160-179).

There are currently in use and under development a number of substitute materials to replace asbestos in certain applications. Manufacturers and users are encouraged to develop and use effective substitute materials that can meet the specifications for, and operating requirements of, the equipment to which they would apply.

SAFETY AND HEALTH INFORMATION WITH RESPECT TO PARTICULAR PRODUCTS OR MATERIALS CAN BE OBTAINED FROM THE EMPLOYER, THE MANUFACTURER OR SUPPLIER OF THAT PRODUCT OR MATERIAL, OR THE MATERIAL SAFETY DATA SHEET.

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1 Scope

This document provides useful information and recommended practices for the maintenance and inspection of atmospheric and low-pressure storage tanks. While some of these guidelines may apply to other types of tanks, these practices are intended primarily for existing tanks that were constructed to API Spec 12A or API Spec 12C, and API Std 620 or API Std 650. This recommended practice includes:

a. Descriptions of the various types of storage tanks.
b. Construction standards.
c. Maintenance practices.
d. Reasons for inspection.
e. Causes of deterioration.
f. Frequency of inspection.
g. Methods of inspection.
h. Inspection of repairs.
i. Preparation of records and reports.
j. Safe and efficient operations.
k. Leak prevention methods.

This recommended practice is intended to supplement API Std 653, which provides minimum requirements for maintaining the integrity of storage tanks after they have been placed in service.

2 References

2.1 CODES, STANDARDS, AND RELATED PUBLICATIONS

The following standards, codes, publications, and specifications are cited in this recommended practice. The latest edition or revision shall be used unless otherwise noted.

API

Spec 12A	*Specification for Oil Storage Tanks with Riveted Shells (out of print)*
Spec 12B	*Bolted Tanks for Storage of Production Liquids*
Spec 12C	*API Specification for Welded Oil Storage Tanks (out of print)*
Spec 12D	*Field Welded Tanks for Storage of Production Liquids*
Spec 12E	*Specification for Wooden Production Tanks (out of print)*
Spec 12F	*Shop Welded Tanks for Storage of Production Liquids*
RP 12R1	*Recommended Practice for Setting, Maintenance, Inspection, Operation and Repair of Tanks in Production Service*
Publ 306	*An Engineering Assessment of Volumetric Methods of Leak Detection In Aboveground Storage Tanks*
Publ 307	*An Engineering Assessment of Acoustic Methods of Leak Detection In Aboveground Storage Tanks*
Publ 315	*Assessment of Tankfield Dike Lining Materials and Methods*
Publ 322	*An Engineering Evaluation of Acoustic Methods of Leak Detection In Aboveground Storage Tanks*
Publ 323	*An Engineering Evaluation of Volumetric Methods of Leak Detection In Aboveground Storage Tanks*
Publ 325	*An Evaluation of a Methodology for the Detection of Leaks in Aboveground Storage Tanks*
Publ 334	*A Guide to Leak Detection for Aboveground Storage Tanks*
Publ 340	*Liquid Release Prevention and Detection Measures for Aboveground Storage Facilities*
Publ 341	*A Survey of Diked-Area Liner Use at Aboveground Storage Tank Facilities*
API 570	*Inspection, Repair, Alteration, and Rerating of In-Service Piping Systems*
RP 571	*Damage Mechanisms Affecting Fixed Equipment in the Refining Industry*
RP 572	*Inspection of Pressure Vessels*
RP 576	*Inspection of Pressure-Relieving Devices*
RP 579	*Fitness-for-Service*
RP 580	*Risk-Based Inspection*
Publ 581	*Risk-Based Inspection—Base Resource Document*
Std 620	*Design and Construction of Large, Welded, Low-Pressure Storage Tanks*
Std 650	*Welded Steel Tanks for Oil Storage*
RP 651	*Cathodic Protection of Aboveground Petroleum Storage Tanks*
RP 652	*Lining of Aboveground Petroleum Storage Tank Bottoms*
Std 653	*Tank Inspection, Repair, Alteration, and Reconstruction*