

# Piping Inspection Code

## Inspection, Repair, Alteration, and Rerating of In-service Piping Systems

API 570

SECOND EDITION, OCTOBER 1998

ADDENDUM 1, FEBRUARY 2000

ADDENDUM 2, DECEMBER 2001

ADDENDUM 3, AUGUST 2003

ADDENDUM 4, JUNE 2006





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## **Downstream Segment**

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## FOREWORD

It is the intent of API to keep this publication up to date. All piping system owners and operators are invited to report their experiences in the inspection and repair of piping systems whenever such experiences may suggest a need for revising or expanding the practices set forth in API 570.

This edition of API 570 supersedes all previous editions of API 570, *Piping Inspection Code: Inspection, Repair, Alteration, and Rerating of In-service Piping Systems*. Each edition, revision, or addenda to this API standard may be used beginning with the date of issuance shown on the cover page for that edition, revision, or addenda. Each edition, revision, or addenda, to this API standard becomes effective six months after the date of issuance for equipment that is rerated, reconstructed, relocated, repaired, modified (altered), inspected, and tested per this standard. During the six-month time between the date of issuance of the edition, revision, or addenda and the effective date, the user shall specify to which edition, revision, or addenda, the equipment is to be, rerated, reconstructed, relocated, repaired, modified (altered), inspected and tested.

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# Piping Inspection Code—Inspection, Repair, Alteration, and Rerating of In-service Piping Systems

## 1 Scope

### 1.1 GENERAL APPLICATION

#### 1.1.1 Coverage

API 570 covers inspection, repair, alteration, and rerating procedures for metallic piping systems that have been in-service.

#### 1.1.2 Intent

API 570 was developed for the petroleum refining and chemical process industries but may be used, where practical, for any piping system. It is intended for use by organizations that maintain or have access to an authorized inspection agency, a repair organization, and technically qualified piping engineers, inspectors, and examiners, all as defined in Section 3.

#### 1.1.3 Limitations

API 570 shall not be used as a substitute for the original construction requirements governing a piping system before it is placed in-service; nor shall it be used in conflict with any prevailing regulatory requirements.

### 1.2 SPECIFIC APPLICATIONS

#### 1.2.1 Included Fluid Services

Except as provided in 1.2.2, API 570 applies to piping systems for process fluids, hydrocarbons, and similar flammable or toxic fluid services, such as the following:

- a. Raw, intermediate, and finished petroleum products.
- b. Raw, intermediate, and finished chemical products.
- c. Catalyst lines.
- d. Hydrogen, natural gas, fuel gas, and flare systems.
- e. Sour water and hazardous waste streams above threshold limits, as defined by jurisdictional regulations.
- f. Hazardous chemicals above threshold limits, as defined by jurisdictional regulations.

#### 1.2.2 Excluded and Optional Piping Systems

The fluid services and classes of piping systems listed below are excluded from the specific requirements of API 570 but may be included at the owner's or user's (owner/user's) option.

- a. Fluid services that are excluded or optional include the following:
  1. Hazardous fluid services below threshold limits, as defined by jurisdictional regulations.
  2. Water (including fire protection systems), steam, steam-condensate, boiler feed water, and Category D fluid services, as defined in ASME B31.3.
- b. Classes of piping systems that are excluded or optional are as follows:
  1. Piping systems on movable structures covered by jurisdictional regulations, including piping systems on trucks, ships, barges, and other mobile equipment.
  2. Piping systems that are an integral part or component of rotating or reciprocating mechanical devices, such as pumps, compressors, turbines, generators, engines, and hydraulic or pneumatic cylinders where the primary design considerations and/or stresses are derived from the functional requirements of the device.
  3. Internal piping or tubing of fired heaters and boilers, including tubes, tube headers, return bends, external crossovers, and manifolds.
  4. Pressure vessels, heaters, furnaces, heat exchangers, and other fluid handling or processing equipment, including internal piping and connections for external piping.
  5. Plumbing, sanitary sewers, process waste sewers, and storm sewers.
  6. Piping or tubing with an outside diameter not exceeding that of NPS  $1/2$ .
  7. Nonmetallic piping and polymeric or glass-lined piping.

### 1.3 FITNESS-FOR-SERVICE

This inspection code recognizes fitness-for-service concepts for evaluating in-service degradation of pressure-containing components. API RP 579 provides general requirements and detailed assessment procedures for specific types of degradation that are referenced in this code.