

# Inspection Practices for Piping System Components

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# Contents

1	Scope.....	1
2	Normative References .....	1
3	Terms, Definitions, Acronyms, and Abbreviations .....	1
3.1	Terms and Definitions .....	1
3.2	Acronyms and Abbreviations .....	11
4	Introduction to Piping.....	12
4.1	Piping Components .....	12
4.2	Tubing .....	14
4.3	Valves .....	14
4.4	Fittings .....	22
4.5	Flanges.....	25
4.6	Expansion Joints .....	25
4.7	Piping Supports .....	26
4.8	Flexible Hoses .....	27
5	Piping Design and Construction .....	27
5.1	Design and Construction Standards.....	27
5.2	Methods of Construction.....	28
5.3	Materials of Construction.....	34
6	Reasons for Inspection .....	37
6.1	General .....	37
6.2	Process and Personnel Safety .....	37
6.3	Regulatory Requirements .....	37
6.4	Reliable Operation .....	37
7	Inspection and Monitoring Planning.....	38
7.1	Background .....	38
7.2	Developing an Inspection Plan .....	38
7.3	Monitoring Process Piping .....	44
7.4	Inspection Guidance for Location-specific Damage .....	49
7.5	Inspection Guidance for Specific Damage Mechanisms .....	67
7.6	Reviewing and Updating Inspection Plans (Future Content) .....	73
7.7	IOWs .....	73
7.8	Inspection of New Fabrication.....	73
7.9	Newly Commissioned Piping Inspection (Future Content) .....	74
8	Strategies for Establishing Frequency of Inspection.....	74
8.1	Fixed Interval .....	74
8.2	RBI .....	74
8.3	Opportunities for Inspection (Future Content) .....	75
8.4	On-stream Inspection .....	75
8.5	Offline Inspection .....	76
8.6	Inspection Scope .....	76
9	Safety Precautions and Preparatory Work.....	76
9.1	Safety Precautions.....	76
9.2	Communication .....	77
9.3	Preparatory Work .....	77
9.4	Cleaning and Surface Preparation for Inspection (Future Content).....	79
9.5	Investigation of Active Leaks .....	79
10	Inspection Types, Methods, and Limitations .....	79
10.1	External Visual Inspection .....	79
10.2	Internal Visual Inspection .....	86

10.3	Specific Areas or Components for Inspection.....	88
10.4	Thickness Measurements .....	93
10.5	Determination of Minimum Required Thickness .....	101
10.6	Other Inspection Methods/Techniques.....	105
10.7	Nonmetallic Piping.....	106
11	Inspection Results .....	107
11.1	Evaluation of Inspection Results .....	107
11.2	Determination of Follow-up Actions .....	109
11.3	Using Fitness-For-Service .....	109
12	Rerating and Repair.....	110
12.1	Rerating of Piping System .....	110
12.2	Repairing Pipe Damage .....	111
13	Pressure Tests .....	113
13.1	Purpose of Testing.....	113
13.2	Types of Pressure Tests (Future Content).....	113
13.3	Performing Pressure Tests .....	113
13.4	Pressure Testing Considerations (Future Content) .....	115
13.5	Pressure Test Safety Considerations .....	115
14	Records and Reports.....	115
14.1	General.....	115
14.2	Records.....	116
14.3	Reports (Future Content) .....	118
Annex A (informative) External Inspection Checklist for Process Piping.....		119
Annex B (informative) Tables of Pipe Schedules.....		120
Annex C (informative) Statistical Analysis of Circuit Thickness Data .....		127
Bibliography .....		130

**Figures**

1	Cross Section of a Typical Wedge Gate Valve.....	16
2	Cross Section of a Typical Globe Valve .....	17
3	Cross Sections of Typical Lubricated and Nonlubricated Plug Valves .....	18
4	Cross Section of a Typical Ball Valve .....	19
5	Cross Section of a Typical Diaphragm Valve.....	19
6	Typical Butterfly Valve.....	20
7	Cross Sections of Typical Check Valves.....	21
8	Cross Section of a Typical Slide Valve .....	23
9	Flanged-end Fittings and Wrought Steel Butt-welded Fittings .....	24
10	Forged Steel Threaded and Socket-welded Fittings .....	25
11	Cross Section of a Socket-welded Tee Connection .....	29
12	Flange Facings Commonly Used in Refinery and Chemical Plant Piping .....	30
13	Types of Flanges.....	31
14	Cross Section of a Typical Bell-and-Spigot Joint.....	31
15	Cross Sections of Typical Packed and Sleeve Joints.....	32
16	Cross Sections of Typical Tubing Joints .....	33
17	Erosion of Piping .....	40
18	Corrosion of Piping.....	41
19	Internal Corrosion of Piping .....	41
20	Severe Atmospheric Corrosion of Piping.....	42
21	Piping Circuit Example .....	48
22	SAI Corrosion .....	54
23	Underground Piping Corrosion beneath Poorly Applied Tape Wrap.....	58

24	Pipe-to-Soil Internal Potential Survey Use to Identify Active Corrosion.....	59
25	Example of Pipe-to-Soil Potential Survey Chart .....	60
26	Wenner Four-pin Soil Resistivity Test .....	62
27	Soil Bar Used for Soil Resistivity Measurements.....	63
28	Two Types of Soil Boxes Used for Soil Resistivity Measurements.....	64
29	Case of Doubling due to Mode Converted Shear Wave Echo Occurring between the Backwall Echoes.....	97
30	Example of Screen Display of UT Thickness Gauge with Automatic Temperature Compensation .....	98
31	Radiograph of a Catalytic Reformer Line .....	100
32	Radiograph of Corroded Pipe Whose Internal Surface Is Coated with Iron Sulfide Scale.....	100
33	Sketch and Radiograph of Dead-end (Deadleg) Corrosion .....	101
34	Typical Isometric Sketch.....	117
35	Typical Tabulation of Thickness Data.....	118

**Tables**

1	API and ASME Valve Design Standards and Codes.....	15
2	Mix Point Thermal Fatigue Screening Criteria .....	52
3	Damage Mechanisms Associated with Nonmetallic Piping .....	72
4	Table 2 of API 570 .....	86
5	Minimum Structural Thickness and Minimum Alert Thicknesses for Carbon and Low-alloy Steel Pipe .....	103
6	Comparison of Common Nonmetallic Piping NDE Techniques.....	108
B.1	Nominal Pipe Sizes, Schedules, Weight Classes, and Dimensions of Ferritic Steel Pipe.....	120
B.2	Nominal Pipe Sizes, Schedules, and Dimensions of Stainless Steel Pipe .....	124
B.3	Permissible Tolerances in Diameter and Thickness for Ferritic Pipe .....	126

# Inspection Practices for Piping System Components

## 1 Scope

This recommended practice supplements API 570 by providing piping inspectors with information that can improve their skills and increase their basic knowledge of inspection practices. This recommended practice describes inspection practices for piping, tubing, valves (other than control valves), and fittings used in petroleum refineries and chemical plants. Common piping components, valve types, pipe joining methods, inspection planning processes, inspection intervals and techniques, and types of records are described to aid the inspectors in fulfilling their role in implementing API 570. This publication does not cover the inspection of specialty items, including instrumentation, furnace tubulars, and control valves.

## 2 Normative References

The following documents are referred to in the text in such a way that some or all their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document, including any addenda, applies.

API 570, *Piping Inspection Code: In-service Inspection, Rating, Repair, and Alteration of Piping Systems*

API Recommended Practice 571, *Damage Mechanisms Affecting Fixed Equipment in the Refining Industry*

API Recommended Practice 578, *Material Verification Program for New and Existing Assets*

API 579-1/ASME FFS-1 <sup>1</sup>, *Fitness-For-Service*

API Recommended Practice 580, *Elements of a Risk-based Inspection Program*

ASME B16.20, *Metallic Gaskets for Pipe Flanges*

ASME B16.25, *Buttwelding Ends*

ASME B16.34, *Valves—Flanged, Threaded, and Welding End*

ASME B31.3, *Process Piping*

ASME *Boiler and Pressure Vessel Code (BPVC), Section V: Nondestructive Examination*

ASTM G57 <sup>2</sup>, *Standard Test Method for Measurement of Soil Resistivity Using the Wenner Four-Electrode Method*

## 3 Terms, Definitions, Acronyms, and Abbreviations

For the purposes of this document, the following terms and definitions apply.

NOTE Definitions for terms delineated with asterisks are maintained by API 574. If another document plans to reference, see API Bulletin 590 for reference.

### 3.1 Terms and Definitions

#### 3.1.1

##### **alloy material**

Any metallic material (including welding filler materials) that contains alloying elements, such as chromium, nickel, or molybdenum, which are intentionally added to enhance mechanical or physical properties and/or corrosion resistance.

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<sup>1</sup> American Society of Mechanical Engineers, Two Park Avenue, New York, New York 10016, [www.asme.org](http://www.asme.org).

<sup>2</sup> ASTM International, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428, [www.astm.org](http://www.astm.org).