Inspection Practices for Piping System Components

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Suggested revisions are invited and should be submitted to the Standards Department, API, 200 Massachusetts Avenue, NW, Suite 1100, Washington, DC 20001, standards@api.org.

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 38

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 73
7.7 IOWs 73
7.8 Inspection of New Fabrication 74
7.9 Newly Commissioned Piping Inspection 74

8 Strategies for Establishing Frequency of Inspection 76
8.1 Fixed Interval 76
8.2 RBI 77
8.3 Opportunities for Inspection 77
8.4 Inspection Scope 79

9 Safety Precautions and Preparatory Work 79
9.1 Safety Precautions 79
9.2 Communication 80
9.3 Preparatory Work 80
9.4 Cleaning and Surface Preparation for Inspection 82
9.5 Investigation of Active Leaks 82

10 Inspection Types, Methods, and Limitations 83
10.1 External Visual Inspection 83
10.2 Internal Visual Inspection 90
10.3 Specific Areas or Components for Inspection 92
10.4 Thickness Measurements 98

10.5 Determination of Minimum Required Thickness 106
10.6 Other Inspection Methods/Techniques 110
10.7 Nonmetallic Piping 113

11 Inspection Results 114
11.1 Evaluation of Inspection Results 114
11.2 Determination of Follow-up Actions 115
11.3 Using Fitness-For-Service 116

12 Rerating and Repair 116
12.1 Rerating of Piping System 116
12.2 Repairing Pipe Damage 118

13 Pressure Tests 119
13.1 Purpose of Testing 119
13.2 Types of Pressure Tests 120
13.3 Performing Pressure Tests 120
13.4 Pressure Testing Considerations 122
13.5 Pressure Test Safety Considerations 122

14 Records and Reports 123
14.1 General 123
14.2 Records 124
14.3 Reports 127

Annex A (informative) **External Inspection Checklist for Process Piping 128**

Annex B (informative) **Tables of Pipe Schedules 129**

Annex C (informative) **Statistical Analysis of Circuit Thickness Data 136**

Annex D (informative) **Example Minimum Structural Thicknesses Tables 139**

Bibliography 147

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 102
30 Example of Screen Display of UT Thickness Gauge with Automatic Temperature Compensation 103
31 Radiograph of a Catalytic Reformer Line 105
32 Radiograph of Corroded Pipe Whose Internal Surface Is Coated with Iron Sulfide Scale 105
33 Sketch and Radiograph of Dead-end (Deadleg) Corrosion 105
34 Typical Isometric Sketch 125
35 Typical Tabulation of Thickness Data 126

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 90
5 Comparison of Common Nonmetallic Piping NDE Techniques 114
B.1 Nominal Pipe Sizes, Schedules, Weight Classes, and Dimensions of Ferritic Steel Pipe 129
B.2 Nominal Pipe Sizes, Schedules, and Dimensions of Stainless Steel Pipe 133
B.3 Permissible Tolerances in Diameter and Thickness for Ferritic Pipe 135
D.1 Maximum Span Lengths 140
D.2a Carbon Steel Minimum Structural Thickness (in.) at 400 °F (205 °C) 141
D.2b Carbon Steel Minimum Structural Thickness (mm) at 400 °F (205 °C) 141
D.2c Carbon Steel Minimum Structural Thickness (in.) at 750 °F (400 °C) 142
D.2d Carbon Steel Minimum Structural Thickness (mm) at 750 °F (400 °C) 142
D.3a Austenitic Stainless Steel Minimum Structural Thickness (in.) at 400 °F (205 °C) 143
D.3b Austenitic Stainless Steel Minimum Structural Thickness (mm) at 400 °F (205 °C) 143
D.3c Austenitic Stainless Steel Minimum Structural Thickness (in.) at 1000 °F (540 °C) 144
D.3d Austenitic Stainless Steel Minimum Structural Thickness (mm) at 1000 °F (540 °C) 144
D.4a 1-1/4Cr-1/2Mo Minimum Structural Thickness (in.) at 750 °F (400 °C) 145
D.4b 1-1/4Cr-1/2Mo Minimum Structural Thickness (mm) at 750 °F (400 °C) 145
D.4c 1-1/4Cr-1/2Mo Minimum Structural Thickness (in.) at 1100 °F (595 °C) 146
D.4d 1-1/4Cr-1/2Mo Minimum Structural Thickness (mm) at 1100 °F (595 °C) 146

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 [1], *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 [2], *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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[1] American Society of Mechanical Engineers, Two Park Avenue, New York, New York 10016, www.asme.org.

[2] ASTM International, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428, www.astm.org.