Threading, Gauging, and Inspection of Casing, Tubing, and Line Pipe Threads

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Contents

Page

1 Scope 1
1.1 Coverage—Threading and Gauging 1
1.2 Coverage—Inspection 1
2 Normative References 1
3 Terms, Definitions, and Abbreviations 2
3.1 Terms and Definitions 2
3.2 Abbreviations 7
4 Thread Dimensions and Tolerances—Line Pipe, Round Thread Casing and Tubing, and Buttress Thread Casing 7
4.1 Thread Measurement 7
4.2 Visual Inspection 7
4.3 Thread Precision 8
4.4 Thread Design 8
4.5 Chamfer 9
4.6 Internal Thread 9
4.7 Thread Finish 9
4.8 Thread Control 10
4.9 Thread Elements 10
4.10 Misalignment 10
4.11 Misalignment Tests (Options) 10
4.12 Full Crested Thread Length 10
4.13 Rounded Nose 10
4.14 Alternative Thread Dimensional Measurement System Capability Validation 11
5 Thread Inspection 34
5.1 Line Pipe, Round Thread Casing and Tubing, and Buttress Thread Casing Precautions 34
5.2 Location of Measurements 34
5.3 Taper Measurement 38
5.4 Lead Measurement 44
5.5 Height and Addendum Measurement 48
5.6 Angle and Thread Form Measurement 59
5.7 Buttress Tooth Width Gauge 62
5.8 Coupling Thread Alignment 68
5.9 Calibration of Instruments and Dial Gauges 69
6 Diameter, Ovality, and Size Gauging Practice 70
6.1 Line Pipe, Round Thread Casing and Tubing, and Buttress Thread Casing 70
7 Gauge Specification 85
7.1 Line Pipe, Round Thread Casing and Tubing, and Buttress Thread Casing 85
8 API Gauge Certification 104
8.1 Line Pipe, Round Thread Casing and Tubing, and Buttress Thread Casing 104
9 Thread Marking 105
Annex A (informative) Instructions for Shipment of Master Gauges 107

Figures

1 Basic Dimensions of Buttress Threads Hand-tight Make-up 11
2 Buttress Casing Thread Form and Dimensions (Casing Sizes $4^1/_2$ through $13^3/_8$ in.) 12
3 Buttress Casing Thread Form and Dimensions (Casing Sizes 16 in. and Larger) 13

4 Basic Dimensions of Line Pipe Hand-tight Make-up 14
5 Basic Dimensions of Casing Round Threads Hand-tight Make-up 15
6 Casing Round Thread Dimensions 16
7 Casing Round Thread Form 16
8 Basic Dimensions of Tubing Round Threads Hand-tight Make-up 17
9 Round Nose Ends 17
10 Line Pipe Thread Form 18
11 Tubing Round Thread Form 18
12 8 Round Tubing Thread Dimensions 19
13 10 Round Tubing Thread Dimensions 19
14 Measuring Interval (8-round Tubing Pin) 35
15 Measuring Interval (8-round Coupling) 36
16 Measuring Interval (Buttress Pin) 37
17 Measuring Interval (Buttress Coupling) 38
18—Barrel Contact on Buttress Pin (Example) 39
19 External Thread Taper Measurements (Gauge Set near First Perfect Thread) 40
20 External Thread Taper Measurements (Measurement at Last Perfect Thread) 41
21 Buttress Thread Run-out Measurements 42
22 Internal Thread Taper Measurements 43
23 Internal Taper Measurements Using Plunger-style Gauge (Example) 44
24 Internal Lead Gauge on Standard Template 46
25 Lead Gauge on Pin Thread 47
26 Lead Gauge on Coupling Thread 47
27 Thread Height Contact Point (Round Thread Height Gauge) 49
28 Thread Height Contact Point (Buttress Thread Height) 49
29 External Addendum Contact Point (Round Thread Addendum Gauge) 49
30 External Thread Height Gauge on Setting Standards (8 Round and 10 Round Thread Height Gauge on Block) 52
31 Internal Thread Height Gauge on Setting Standards (8 Round and 10 Round Thread Height Gauge on Block) 52
32 External Addendum Gauge on Setting Standards (8 Round and 10 Round Addendum Gauge on Block) 53
33 Internal Addendum Gauge on Setting Standards (8 Round and 10 Round Addendum Gauge on Block) 53
34 External Thread Height Gauge on Setting Standards (Buttress Thread Height Gauge on Block) 54
35 External Thread Height Gauge on Setting Standards (8 Round and 10 Round Thread Height Gauge on Block) 54
36 Thread Addendum Gauge Setting Standard 55
37 Round Thread Height Gauge Setting Standard (Thread Height Standard) 55
38 Buttress Thread Height Gauge Setting Standard ($^3/_4$ in. TPF Buttress Thread Height Standard) 56
39 Buttress Height Gauge Setting Standard (1 in. TPF Buttress Thread Height Standard) 56
40 External Addendum Gauge on Pin Threads (Round Thread Addendum Gauge) 57
41 External Thread Height Gauge on Pin Threads (Round Thread Height Gauge) 57
42 External Thread Height Gauge on Pin Threads (Buttress Thread Height Gauge) 58
43 Internal Thread Height Gauge on Coupling Threads (Round Thread Height Gauge) 58
44 Internal Addendum Gauge on Coupling Threads (Round Thread Addendum Gauge) 59
45 Internal Thread Height Gauge on Coupling Threads (Buttress Thread Height Gauge) 59
46 External Thread Form Overlays for 8 Round Threads 61
47 External Thread Form Overlays for Buttress Threads 62
48 Buttress Tooth Width Gauge (Measured from Thread Root) 63
49 Buttress Tooth Width Gauge (Measured from Thread Crest) 64
50 Tooth Width Standard 65
51 Buttress Go/No-Go Groove Width Gauge 66
52 Go/No Go Groove Width Symbols 68

53 Coupling Alignment Gauge 69
54 Coupling Alignment Inspection 69
55 Coupling Alignment Inspection (Detail) 69
56 External Thread Crest Diameter Gauge Location 71
57 Crest Diameter Gauge with Direct Read Arm on Pin Product 72
58 Internal Thread Crest Diameter Gauge Location 72
59 Crest Diameter Gauge with Internal Pivot Arm on Box Product 73
60 Average Crest Diameter 73
61 Ovality 74
62 8 Round Casing Thread Ring Standoff 80
63 8 Round Casing Thread Plug Standoff 81
64 Gauging Practice for Line Pipe Threads, Casing, and Tubing Round Thread Hand-tight Assembly 82
65 Gauging Practice for Buttress Casing Threads Hand-tight Assembly 83
66 Thread Gauge for Line Pipe and Round Thread Casing and Tubing 100
67 Thread Gauge for Buttress Casing 101
68 Gauge Thread Form for Line Pipe and Round Thread Casing and Tubing 101
69 Gauge Thread Form and Dimensions for Buttress Casing (taper sizes $4^{1}/_{2}$ in. through $13^{3}/_{8}$ in.) 102
70 Gauge Thread Form and Dimensions for Buttress Casing (taper sizes 16 in. and larger) 103
71 Bolt Circles and Back-up Plate Dimensions for Line Pipe, Buttress Casing and Short or Long Round Casing Master Plug Gauges 103

Tables

1 Casing Short-thread Dimensions 20
2 Tolerances on Buttress Casing Thread Dimensions 22
3 Line Pipe Thread Dimensions 24
4 Casing Long-thread Dimensions 25
5 Buttress Casing Thread Dimensions 26
6 Non-upset Tubing Thread Dimensions 27
7 External-upset Tubing Thread Dimensions 28
8 Integral-joint Tubing Thread Dimensions 29
9 Round Nosed Ends 29
10 Casing Round Thread Height Dimensions 29
11 Tolerances on Casing Round Thread Dimensions c 30
12 Line Pipe Thread Height Dimensions 31
13 Tolerances on Line Pipe Dimensions c 31
14 Tubing Round Thread Height Dimensions 32
15 Tolerances on Tubing Round Thread Dimensions c 32
16 Contact Point Dimensions for Taper and Run-out Gauges 39
17 Contact Point Dimensions for Lead Gauge 45
18 Compensated Thread Lengths for Measurements Parallel to the Taper Cone 46
19 Contact Point Dimensions for Addendum Gauge 50
20 Thread Height Groove Check Blocks 50
21 Buttress Thread Height Groove Check Blocks 51
22 Thread Addendum Groove Check Blocks 51
23 Tooth Width Standard 65
24 Go/No Go Groove Width 67
25 Dial Gauge Error Check 70
26 Thread Ovality Maximum for Standoff 75
27 Max Allowable Standoff for Given Values of Thread Ovality ($^{3}/_{4}$ in. TPF) 76

28 Max Allowable Standoff for Given Values of Thread Ovality (1 in. TPF) 78
29 Standoff Tolerances 84
30 Gauge Standoff Tolerance for Acceptance 85
31 Line Pipe Thread Gauge Dimensions 88
32 Short and Long Round Casing Thread Gauge Dimensions 89
33 Short and Long Round Casing Thread Gauge Dimensions 90
34 Non-upset Tubing Thread Gauge Dimensions 91
35 External-upset Tubing Thread Gauge Dimensions 92
36 Integral-joint Tubing Thread Gauge Dimensions 93
37 Gauge Thread Height Dimensions for Line Pipe 94
38 Gauge Thread Height Dimensions for Round Thread Casing and Tubing 94
39 Tolerances on Gauge Dimensions for Line Pipe 95
40 Tolerances on Gauge Dimensions for Round Thread Casing and Tubing 96
41 Tolerances on Gauge Dimensions for Buttress Casing 97

Threading, Gauging, and Inspection of Casing, Tubing, and Line Pipe Threads

1 Scope

1.1 Coverage—Threading and Gauging

This specification covers dimensions, tolerances, and marking requirements for API threads and the gauges that control the acceptance criteria for the threads. Thread element gauges, instruments, and requirements for the inspection of threads for line pipe, round thread casing, round thread tubing, and buttress casing connections are included. Thread dimensions shown without specifications (or shown as "NA") are not subject to inspection of diameter, ovality, and addendum. Thread dimensions shown without tolerances are related to the basis for connection design and are not subject to measurement to determine acceptance of product.

1.2 Coverage—Inspection

Thread inspection applies at the point of manufacture prior to shipment; to inspection at some intermediate point; to inspection subsequent to delivery at destination; and to inspection by inspectors representing the purchaser or the manufacturer. The manufacturer may, at its option, use other instruments or methods to control manufacturing operations; but acceptance and rejection of the product is determined by the results of inspection made in accordance with the requirements of Section 4, Section 5, and Section 6 of this specification.

Alternative instruments or methods may include but are not limited to threads that are measured with a laser measurement or optical measurement system with demonstrated accuracy. Alternative instruments or methods are validated as described in 4.14. In case of dispute, traditional gauging as described in Sections 5 and 6 govern. Records for validation and verification of such alternative methods or instruments are maintained in accordance with 4.14.

Thread inspection is performed using instruments designed to measure either the functional relationship of multiple thread elements or to measure an individual thread element. The inspection requirements include measurements of standoff, diameter, ovality, addendum, taper, lead, height, form, and angle of thread that are applicable to threads having $11\frac{1}{2}$ or fewer turns per inch (0.45 or fewer turns per mm). Ring and plug gauges are designed to measure the functional size of an internal or external thread. Individual thread elements listed are measured with one or more specific instruments.

See API 5B1 for additional inspection procedures.

Information on the shipping of master gauges can be found in Annex A.

2 Normative References

The following documents are referred to in the text in such a way that some or all of 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 Recommended Practice 5A3, *Thread Compounds for Casing, Tubing, Line Pipe, and Drill Stem Elements*