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ADDENDUM 1

*Replace **Annex O** in its entirety with the following pages.*

Annex O (normative)

API Regional Annex

O.1 Technical Modifications to ISO 10423:2009

API Committee on Standardization of Oilfield Equipment and Material/Subcommittee 6 has balloted and approved the following technical revisions for the National Adoption of ISO 01423.

<u>Clause/Subclause</u>	<u>Modification</u>
2	Replace “For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.” with: “For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies, except that new editions may be used on issue and shall become mandatory 6 months from the date of the revision.”
2	Replace the normative reference “ASTM A703/A703M-08a” with: “ASTM A703/A703M, <i>Standard Specification for Steel Castings, General Requirements, for Pressure-Containing Parts</i>”
2	Add the following normative references: “ASTM A609, <i>Specification for Ultrasonic Examination for Carbon and Low-Alloy Steel Castings</i> ASTM E186, <i>Standard Reference Radiographs for Heavy-Walled (2 to 4½ in.) Steel Castings</i> ASTM E280, <i>Standard Reference Radiographs for Heavy-Walled (4½ to 12 in.) Steel Castings</i> ASTM E446, <i>Standard Reference Radiographs for Steel Castings Up to 2 in. in Thickness</i>”
4.3.1.1	Add the following note at the end of the clause: “NOTE Information on design analysis and load capacities of flanges specified in this International Standard can be found in API Technical Reports 6AF, 6AF1, and 6AF2.”
4.3.4	Replace “Bolting stresses, based on the root area of the thread, shall not exceed the limit given in Equation (9):” with: “Bolting stresses, based on the minimum cross-sectional area of the bolting, shall not exceed the limit given in Equation (9):”

- 5.4.3.1 b) Replace with:
“b) PSL 2 and PSL 3 requirements:
The requirements for PSL 2 and PSL 3 are identical to the requirements for PSL 1. In addition the manufacturer shall document foundry practices which establish limits for sand control, core-making, rigging, melting and heat treatment and NDE, to ensure repeatability in producing castings which meet the requirements of this International Standard.”
- 5.4.3.1 c) Replace with:
“c) PSL 4 requirements:
Wrought products shall be used.”
- 5.6.2 c) Replace the second bullet with:
“— casting: size not required to exceed size shown in ASTM A703/A703M.”
- 5.6.4.1 Replace fifth paragraph with:
Standard size 12,5 mm (0,500 in) diameter tensile specimens shall be used to qualify carbon, low-alloy and stainless steels, unless the physical configuration of the TC prevents their use. In this case, the standard sub-size specimens referenced in ASTM A370 may be used. Either standard 12,5 mm (0,500 in) or standard sub-size specimens (see ASTM A370) may be used to qualify CRA materials.
- 5.7.4.1 Replace sixth paragraph with:
Standard size 12,5 mm (0,500 in) diameter tensile specimens shall be used, unless the physical configuration of the QTC prevents their use. In this case, the standard sub-size specimens referenced in ASTM A370 may be used.
- 7.4.2.1.4 c) Replace the first sentence with:
“The end and outlet connection threads shall be in accordance with Tables 61 and B.61, API Spec 5B or ASME B1.1, ASME B1.2, and ASME B1.3, as applicable.”
- 7.4.2.3.15 b) 1) Add the following after the first bullet:
“— castings: Ultrasonic examinations of castings shall be performed in accordance with the flat bottom hole procedures specified in ASTM A609 (except immersion method may be used) and ASTM E428.”
- 7.4.2.3.15 c) 1) Replace the sentence in the subclause with:
“Radiographic examination of hot-worked parts or castings shall be performed in accordance with methods specified in 7.4.2.2.14.”

7.4.2.3.15 c) 2)

Add the following at the end of the subclause:

“— The following acceptance criteria apply to cast parts:

ASTM E186, *Standard Reference Radiographs for Heavy-Walled (2 to 4½ in.) Steel Castings*.

ASTM E280, *Standard Reference Radiographs for Heavy-Walled (4½ to 12 in.) Steel Castings*.

ASTM E446, *Standard Reference Radiographs for Steel Castings Up to 2 in. in Thickness*.

Maximum defect classification as follows:

Type Defect	Maximum Defect Class
A	2
B	2
C	2 (all types)
D	none acceptable
E	none acceptable
F	none acceptable
G	none acceptable

Table 39

First row, replace

“ISO 10423”

with

“ISO 10423 and/or API 6A”

8.1.1

Add the following at the end of the section:

Manufacturers shall mark their equipment with ‘API 6A’ in addition to or in place of ‘ISO 10423’ in the location specified in this clause. As a minimum, equipment should be marked with US Customary Units.

8.1.5

replace the first sentence with:

The thread type marking, in accordance with API 5CT/ISO 11960, shall be as follows:

8.1.9 b)

replace with:

Clamp hub end connectors shall be marked ‘API 16A’ in addition to or in place of ‘ISO 13533’ following the size and pressure rating.

8.2

replace the second paragraph with:

Wellhead outlets with valve removal preparations shall be marked near the outlet with ‘API 6A’ in addition to or in place of ‘ISO 10423’ followed by the nominal size and “VR” for 69,0 MPa (10 000 psi) working pressure or “HP VR” for 138,0 MPa (20 000 psi) working pressure.

8.5 e)

replace with:

Mark the letter “V” after “API 6A” in addition to or in place of “ISO 10423”.

8.5 f)

replace the first sentence with:

Safety valves meeting the requirements of 10.20 shall be marked with the letters “SSV” or “USV” following “API 6A” in addition to or in place of “ISO 10423”.

8.10 replace with:
Valve-removal plugs shall be marked with "API 6A" in addition to or in place of "ISO 10423" followed by the nominal size and "VR" for 69,0 MPa (10 000 psi) working pressure or "HPVR" for 138,0 MPa (20 000 psi) working pressure, material class and manufacturer's name or mark, as a minimum.

8.11 replace first sentence with:
Bullplugs shall be marked with "API 6A" in addition to or in place of "ISO 10423" followed by the nominal size, material class and manufacturer's name or mark, as a minimum.

8.12 replace with:
Back-pressure valves shall be marked with "API 6A" in addition to or in place of "ISO 10423" followed by the nominal size, working pressure, material class and manufacturer's name or mark, as a minimum.

10.3.3.5 a) Replace with:
"a) for ASTM A194 grades 2HM and 7M:
ASTM A194/A194M grades 2HM and 7M are acceptable for all flange sizes and rated working pressures."

Table 62 Replace the last section of the table with:

Nuts							
ASTM spec. and grades, heavy	A194/A194M 2H, 2HM, 4, 7 or 7M	A194/A194M 2H, 2HM, 4, 7 or 7M	A194/A194M 2H, 2HM, 4, 7 or 7M	A194/A194M 2H, 2HM, 4, 7 or 7M	A194/A194M GR 2HM or 7M	A194/A194M GR 2HM or 7M	A194/A194M GR 2HM or 7M
Hardness as per ISO 15156 (all parts) (NACE MR0175; see Clause 2)	No	No	No	No	Yes	Yes	Yes
Charpy testing required	No	No	No	No	No	No	No

10.7.3.7 replace with:
Slip-type hangers and sealing systems to seal on casing or tubing shall be designed to accommodate the OD pipe tolerance as specified in API 5CT/ISO 11960.

10.8.3.2 b) replace first sentence with:
The upper connector of an independent adapter shall be flanged or studded, in accordance with 10.1, or threaded, in accordance with 10.2, or have an other-end connector in accordance with 10.18 or clamp hubend connectors in accordance with API 16A/ISO 13533 or swivel flanges in accordance with API 17D/ISO 13628-4.

10.14.3.4 replace second sentence with:
Restricted-area pack-offs to seal on casing or tubing shall be designed to accommodate the OD pipe tolerances as specified in API 5CT/ISO 11960.

10.20.2.3

replace first and second bullets with:

- USV valves may use end connections as specified in API 17D/ISO 13628-4.
- USVs may be of non-standard bores and/or face-to-face lengths. End connections shall meet all other requirements of this International Standard. Reduced-opening USV flow ports should be sized after consideration of through-flowline (TFL) operations, as specified in API 17C/ISO 13628-3.

Figure A.9

Replace

“SSV/USV Valve

Performance test agency
(PR2 SSV/USV Valves)_____”

with:

“SSV/USV Valve

Performance test agency
(Class II SSV/USV valves)_____”

Table G.4

Replace the header row with:

Material	Derating factor Y_r			Comment
	149 °C (300 °F)	177 °C (350 °F)	232 °C (450 °F)	

H.5

replace with:

All tools should be marked “API 6A” in addition to or in place of “ISO 10423” and also as indicated in API 7-1/ISO 10424-1:2004, 5.6, below the tool joint tong space, as a minimum. Wear bushings shall be marked “API 6A” and/or “ISO 10423” followed by the drift internal diameter, expressed in millimetres and inches. A unique serial number shall be die-fixed to each tool assembly, preferably in a milled recess.

I.1.4

Replace the third sentence in the subclause with:

“The successful completion of the test shall qualify all sizes and all pressure ratings of that manufacturer's SSV/USV of the same basic design and materials of construction for the intended class of service.”

NOTE <deleted>

I.2.3.1

Replace the entire subclause with:

“I.2.3.1 Freshwater tank, with a minimum capacity of 0,8 m³ (5 bbl) and equipped with a low level pump shutdown control.”

I.2.3.2

Replace the first paragraph with:

“I.2.3.2 Sand slurry tank and associated accessories, consisting of a cylindrical, cone-bottom sand slurry tank with a minimum capacity of 0,8 m³ (5 bbl), equipped with an agitation device as required to obtain proper slurry consistency.”

L.6.1

Add the following sentence to the beginning of the subclause:

“VR plugs and plug preparations shall be dimensionally inspected.”

L.6.2

Replace the sentence with:

“HP VR plugs and plug preparations shall be dimensionally inspected. Inspection methods shall be in accordance with the manufacturer's documented procedures.”

L.7

replace with:

Valve-removal plugs shall be marked with “API 6A” in addition to or in place of “ISO 10423” followed by the nominal size and “VR” for 69,0 MPa (10 000 psi) working pressure or “HP VR” for 138,0 MPa (20 000 psi) working pressure and material class, as a minimum.