

AWS Errata Sheet

The following Errata have been identified and will be incorporated into the next reprinting of AWS
D1.1/D1.1M:2020, *Structural Welding Code-Steel*

Page 9, term ***dihedral angle**: a return is missing between “See local dihedral angle” and “discontinuity”

***dihedral angle.** See **local dihedral angle**.

discontinuity. An interruption of the typical structure of a material, such as a lack of homogeneity in its mechanical or metallurgical, or physical characteristics. A discontinuity is not necessarily a defect.

Page 42, Table 4.5 entitled “Fatigue Stress Design Parameters (see 4.14.1)”

- Description 5.6 replace “Formula 4” with “Formula 5”
- Description 5.7 replace “Formula 4” with “Formula 5”
- Description 8.2 replace “Formula 3” with “Formula 4”
- Description 8.4 replace “Formula 3” with “Formula 4”

Page 79, Table 5.8 entitled “Prequalified Minimum Preheat and Interpass Temperature (see 5.7)”

-Category B on page 79 lists the Category C Minimum Preheat and Interpass Temperatures instead of the Category B Minimum Preheat and Interpass Temperatures. See corrected Table.

Table 5.8 (Continued)					
Prequalified Minimum Preheat and Interpass Temperature (see 5.7)					
C A T E G O R Y	Steel Specification	Welding Process	Thickness of Thickest Part at Point of Welding		Minimum Preheat and Interpass Temperature
			in	mm	°F °C
B (cont'd)	ASTM A710 Grade A, Class 2 >2 in [50 mm]	SMAW with low-hydrogen electrodes, SAW, GMAW, FCAW	1/8 to 3/4 incl. Over 3/4 thru 1-1/2 incl. Over 1-1/2 thru 2-1/2 incl. Over 2-1/2	3 to 20 incl. Over 20 thru 38 incl. Over 38 thru 65 incl. Over 65	32 ^a 0 ^a 50 10 150 65 225 110
	ASTM A847				
	ASTM A913 Grade 50				
	ASTM A992				
	ASTM A1008 HSLAS Grade 45 Class 1 Grade 45 Class 2 Grade 50 Class 1 Grade 50 Class 2 Grade 55 Class 1 Grade 55 Class 2				
	ASTM A1008 HSLAS-F Grade 50				
	ASTM A1011 SS Grades 50, 55				
	ASTM A1011 HSLAS Grade 45 Class 1 Grade 45 Class 2 Grade 50 Class 1 Grade 50 Class 2 Grade 55 Class 1 Grade 55 Class 2				
	ASTM A1011 HSLAS-F Grade 50				
	ASTM A1018 HSLAS Grade 45 Class 1 Grade 45 Class 2 Grade 50 Class 1 Grade 50 Class 2 Grade 55 Class 1 Grade 55 Class 2				
	ASTM A1018 HSLAS-F Grade 50				
	ASTM A1018 SS Grades 30, 33, 36, 40				
	ASTM A1066 Grade 50				
	ASTM A1085				
	API 5L Grades B, X42				
	API Spec. 2H Grades 42, 50				
	API 2MT1 Grade 50				
	API 2W Grades 42, 50, 50T				
	API 2Y Grades 42, 50, 50T				
	ABS Grades A, B, D, E AH 32, 36 DH 32, 36 EH 32, 36				

(Continued)

Page 88, Figure 5.1 (Continued)—Prequalified CJP Groove Welded Joint Details (See 5.4.1)
(Dimensions in Inches), Joint Detail Single-bevel-groove weld (4), T-joint (T), Corner joint (C)

-delete “ALL DIMENSIONS IN mm”

Pages 142 and 143, Table 6.5 entitled “PQR Essential Variable Changes Requiring WPS
Requalification for SMAW, SAW, GMAW, FCAW, and GTAW (see 6.8.1)”

-Several of the columns had no X and no shading. Shading has been added. See the portion of the
Table that has been corrected.

Essential Variable Changes to PQR Requiring Requalification	Process				
	SMAW	SAW	GMAW	FCAW	GTAW
Process Parameters					
(12) A change in the amperage for each diameter used by:	To a value not recommended by manufacturer	> 10% increase or decrease	> 10% increase or decrease	> 10% increase or decrease	> 25% increase or decrease
(13) A change in type of current (ac or dc) or polarity (electrode positive or negative for dc current)	X	X	X	X	X
(14) A change in the mode of transfer			X		
(15) A change from CV to CC output			X	X	
(16) A change in the voltage for each diameter used by:		> 7% increase or decrease	> 7% increase or decrease	> 7% increase or decrease	
(17) An increase or decrease in the wire feed speed for each electrode diameter (if not amperage controlled) by:		> 10%	> 10%	> 10%	

-Several of the columns had an X and shading. Shading has been removed. See the portion of the
Table that has been corrected.

Essential Variable Changes to PQR Requiring Requalification	Process				
	SMAW	SAW	GMAW	FCAW	GTAW
SAW Parameters					
(22) A change of > 10%, or 1/8 in [3 mm], whichever is greater, in the longitudinal spacing of the arcs		X			
(23) A change of > 10%, or 1/8 in [3 mm], whichever is greater, in the lateral spacing of the arcs		X			
(24) An increase or decrease of more than 10° in the angular orientation of any parallel electrode		X			
(25) For mechanized or automatic SAW; an increase or decrease of more than 3° in the angle of the electrode		X			
(26) For mechanized or automatic SAW, an increase or decrease of more than 5° normal to the direction of travel		X			



Page 147, Table 6.7 entitled “PQR Supplementary Essential Variable Changes for CVN Testing Applications Requiring WPS Requalification for SMAW, SAW, GMAW, FCAW, GTAW (see 6.8.1), and ESW/EGW (see 6.8.2)”

-One of the columns had no X and no shading. Shading has been added. See the portion of the Table that has been corrected.

Table 6.7
PQR Supplementary Essential Variable Changes for CVN Testing Applications Requiring WPS Requalification for SMAW, SAW, GMAW, FCAW, GTAW (see 6.8.1), and ESW/EGW (see 6.8.2)

Variable	SMAW	SAW	GMAW	FCAW	GTAW	ESW/EGW
Filler Metal						
(3) A change in the AWS A5.X Classification, or to a weld metal or filler metal classification not covered by A5.X specifications. Carbon and low-alloy steel FCAW and GMAW-Metal Cored electrodes previously classified under A5.18, A5.20, A5.28, or A5.29 and reclassified under A5.36 without change of manufacturer or brand name, and meeting all of the previous classification requirements used in PQR/WPS CVN qualification shall be acceptable without requalification.	X	X	X	X	X	X
(4) A change in the Flux/Wire classification		X				X ^b
(5) A change in either the electrode or flux trade name when not classified by an AWS specification		X				X
(6) A change from virgin flux to crushed slag flux		X				X ^b
(7) A change in the manufacturer or the manufacturer's brand name or type of electrode			X ^a	X		

The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

(Errata Notice: 05/27/2020)

Page 309, Table 10.12 entitled “Welder and Welding Operator Qualification— Production Welding Positions Qualified by Pipe and Box Tube Tests (see 10.16.1)

-A missing return for “Test Positions” has 2G^f and 5G^f incorrectly on the same line.

-Footnote f references the incorrect Figures. The referenced Figures should be Figure 10.17(A), Figure 10.17(A), Figure 10.17(B), respectively. See corrected Table and Footnote f.

Table 10.12
Welder and Welding Operator Qualification—Production Welding Positions Qualified by Pipe and Box Tube Tests (see 10.16.1)

Qualification Test		Production Plate Welding Qualified			Production Pipe Welding Qualified					Production Box Tube Welding Qualified				
Weld Type	Test Positions ^a	Groove CJP	Groove PJP	Fillet ^b	Butt Joint		T-, Y-, K-Connections		Fillet ^b	Butt Joint		T-, Y-, K-Connections		Fillet ^b
					CJPC	PJPC	CJPC,d	PJPC,d		CJP	PJP	CJP	PJPD	
TUBULAR	Groove ^e (Pipe or Box)	1G Rotated ^f	F	F, H	F	F		F	F, H	F	F		F	F, H
		2G ^f	F, H	F, H	F, H	F, H		F, H	F, H	F, H	F, H		F, H	F, H
		5G ^f	F, V, OH	F, V, OH	F, V, OH	F, V, OH		F, V, OH	F, V, OH	F, V, OH	F, V, OH		F, V, OH	F, V, H
		6G ^f	All	All	All	All		All	All	All	All		All	All
		(2G + 5G) ^f	All	All	All	All		All	All	All	All		All	All
		6GR (Fig. 10.20)	All	All	All	All ^g	All	All	All	All ^g	All		All	All
		6GR (Figs. 10.20 & 10.22)	All	All	All	All ^g	All	All	All	All ^g	All	All ^{dh}	All	All
R	Pipe Fillet	1F Rotated		F					F					F
		2F		F, H					F, H					F, H
		2F Rotated		F, H					F, H					F, H
		4F		F, H, OH					F, H, OH					F, H, OH
		5F		All					All					All

CJP—Complete Joint Penetration

PJP—Partial Joint Penetration

^a See Figures 10.12 and 10.13.

^b See 10.14 for dihedral angle restrictions for tubular T-, Y-, K-connections.

^c Qualification using box tubing (Figure 10.20) also qualifies welding pipe equal to or greater than 24 in [600 mm] in diameter.

^d Not qualified for welds having groove angles less than 30° (see 10.14.4.2).

^e Groove weld qualification shall also qualify plug and slot welds for the test positions indicated.

^f Qualification for welding production joints without backing or backgouging shall require using the Figure 10.17(A) joint detail. For welding production joints with backing or backgouging, either Figure 10.17(A) or Figure 10.17(B) joint detail may be used for qualification.

^g Not qualified for joints welded from one side without backing, or welded from two sides without backgouging.

^h Pipe or box tubing is required for the 6GR qualification (Figure 10.20). If box tubing is used per Figure 10.20, the macroetch test may be performed on the corners of the test specimen (similar to Figure 10.22).

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(Errata Notice: 05/27/2020)



Page 408, Blank Form J-1 (Back) entitled “Blank Sample PQR Form (Test Results – page 2) PROCEDURE QUALIFICATION RECORD (PQR) TEST RESULTS”

-Removed the checkmarks under “Tests”

-Removed the information contained in “Result” and “Remarks”

See the corrected portion of the Blank Sample Form.

TESTS

✓	Type of Tests	Clause/Figure(s) Reference	Acceptance Criteria	Result	Remarks
	Visual Inspection	6.10.1	6.10.1		
	Radiographic Examination	6.10.2.1	6.10.2.2		
	Ultrasonic Testing	6.10.2.1	6.10.2.2		
	2 Transverse Root Bends	6.10.3.1/Fig. 6.8	6.10.3.3		
	2 Transverse Face Bends	6.10.3.1/Fig. 6.8	6.10.3.3		
	2 Longitudinal Root Bends	6.10.3.1/Fig. 6.8	6.10.3.3		
	2 Longitudinal Face Bends	6.10.3.1/Fig. 6.8	6.10.3.3		
	2 Side Bends	6.10.3.1/Fig. 6.9	6.10.3.3		
	4 Side Bends	6.10.3.1/Fig. 6.9	6.10.3.3		
	2 Tensile Tests	6.10.3.1/Fig. 6.10	6.10.3.5		
	All-Weld-Metal Tensions	6.10.3.1/Figs. 6.14 and 6.18	6.15.1.3(2)		
	3 Macroetch	6.10.4	6.10.4.1		
	4 Macroetch	6.10.4	6.10.4.1		
	CVN Tests	6 Part D/Fig. 6.28	6.30 and Table 6.15		

Page 537, C-6.8 Essential Variables.

-Replace the second sentence with “However, departure from variables which affect the mechanical or chemical composition of material properties, or soundness of the weldment shall not be allowed without requalification.”