COMPANY NAME	**QW-484A Welder's Performance Qualification Record (WPQ)** QW-484A Registro de Calificación de la Habilidad del Soldador

Welder's Name 1 **Identification No.** 2
Nombre del Soldador Identificación del Soldador

Identification of WPS followed 3 4 ☐ **Test coupon** 5 ☐ **Production Weld**
Identificación del EPS usado Cupón de prueba Soldadura en producción

Specification and type/grade or UNS number of base metal(s) 6 **To** 7 **Thickness** 8
Especificación y tipo/grado o numero UNS del metal base a Espesor

Testing Variables and Qualifications Limits
Variables de Prueba y Limites de Calificación

Welding Variables (QW-350) Variables de Soldadura	**Process No. 1** Proceso No. 1		**Process No. 2** Proceso No. 2	
	Actual Values Valores Actuales	**Range Qualified** Rango Calificado	**Actual Values** Valores Actuales	**Range Qualified** Rango Calificado
Welding Process(es) Proceso(s) de soldadura	9	10		
Type (i.e.; manual, semi-automatic) used Tipo (eje.; manual, semiautomática) usada	11	12		
Backing (with/without) Respaldo (con/sin)	13	14		
15 ☐ **Plate** 16 ☐ **Pipe (enter diameter)** Placa Tubo (diámetro si es tubo)	17	18		
Base Metal P- No. to P-No. Metal Base P-No a P-No.	19 to 20	21		
Filler metal or electrode specification(s) SFA (info only) Especificación del electrodo SFA (solo información)	22	23		
Filler metal or electrode classification(s) (info only) Clasificación del electrodo (solo información)	24	25		
Filler metal F-Number(s). Metal de aporte F-Numero	26	27		
Consumable insert (GTAW or PAW) Inserto consumible (GTAW o PAW)	28	29		
Filler metal product form (solid/metal or flux cored/powder) GTAW or PAW Aporte tipo (sólido/metal o núcleo de flux/polvo) GTAW o PAW	30	31		
Deposit thickness & 3 layers minimum? Y or N Espesor depositado & 3 capas mínimo? SI o NO	32 ☐ Y 33 ☐ N	34	☐ Y ☐ N	
Position qualified (2G, 6G, 3F, etc.) Posición calificada (2G, 6G, 3F, etc.)	35	36		
Vertical progression (uphill or downhill) Progresión Vertical (ascendente o descendente)	37	38		
Type of fuel gas (OFW) Tipo de gas consumible (OFW)	39	40		
Inert gas backing (GTAW, PAW, GMAW) Gas inerte de respaldo (GTAW, PAW, GMAW)	41	42		
Transfer mode (spray/globular to short circuit GMAW) Modo de transferencia (GMAW)	43	44		
GTAW current type/polarity (AC, DCEP, DCEN) GTAW tipo corriente/polaridad (AC, DCEP, DCEN)	45	46		

COMPANY NAME	**QW-484A Welder's Performance Qualification Record (WPQ)** QW-484A Registro de Calificación de la Habilidad del Soldador

Results
Resultados

Visual Examination (QW-302.4) 47 ☐ **NO** 48 ☐ **Satisfactory** 49 ☐ **Unsatisfactory**
Examinacion Visual Satisfactorio No Satisfactorio

50 ☐ **Transverse root & face [QW-462.3(a)]** 51☐ **Longitudinal root & face [QW-462.3(b)]** 52☐ **Side [QW-462.2]**
Raíz & cara transversal Raíz & cara longitudinal Lateral

53☐ **Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)]**
Doblez del espécimen de tubo, revestimiento para la resistencia a la corrosión

54☐ **Plate bend specimen, corrosion resistant weld metal overlay (QW-462.5(d))**
Doblez del espécimen de placa, revestimiento para la resistencia a la corrosión

55☐ **Pipe specimen, macro test for fusion [QW-462.5(b)]** 56☐ **Plate specimen, macro test for fusion [QW-462.5(e)]**
Prueba de macro por fusión en espécimen de tubo Prueba de macro por fusión en espécimen de placa

Type Tipo	**Result** Resultado	**Type** Tipo	**Result** Resultado	**Type** Tipo	**Result** Resultado
57	58				

Alternative Volumetric Examination Results (QW-191) 59 60**RT** ☐ **or** 61**UT** ☐ (check one)
Resultados de la examinacion radiográfica alternativa

Film or specimens evaluated by 62 **Company** 63
Espécimen o película evaluada por Compañía

64☐ **Fillet welds in plate [QW-462.4(b)]** 65☐ **Fillet welds in pipe [QW-462.4(c)]**
Soldadura de filete en placa Soldadura de filete en placa

Fillet weld –fracture test (QW-181.2) 66 **Length and percent of defects** 67
Prueba de fractura –soldadura de filete Largo y porcentaje de defectos

Macro examination (QW-184) 68 **Fillet size (in)** 69 **X** 70 **Concavity/convexity (in)** 71
Examinacion Macro Tamaño de filete Concavidad / convexidad

Other tests 72

Mechanical Tests conducted by 73 **Laboratory Test No.** 74
Pruebas mecánicas conducida por No. de prueba de laboratorio

Welding supervising by 75
Soldadura supervisada por

We certify that the statements in this record are correct and that the test coupons were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME BOILER AND PRESSURE VESSEL CODE.
Nosotros certificamos que lo contenido en este registro es correcto y que los cupones de prueba fueron preparados , soldados y probados de acuerdo con los requerimientos de la Sección IX del Código ASME.

Manufacturer 76
Fabricante

Date 78 **Certified by** 77
Fecha Certificado por

Instructions for Completion of Welder's Performance Qualification Record Form QW-484-A

The paragraph numbers correspond to the numbers on the lines on Form QW-484A. These instructions are applicable to SMAW, GTAW, PAW, GMAW (including FCAW), OFW and semi-automatic (hand-held) SAW. *Sentences in Italics are the references to the applicable paragraphs in Section IX that address the item.*

1. Enter the Name of the Welder who has been tested. *See QW-306.*
2. Enter the Number(s), Letter(s) or Symbol(s) which the Welder has been assigned to identify his or her work. *See QW-301.3.*
3. Enter the number(s) and/or letters which identify the WPS which the Welder followed during welding of the test coupon. Include the Revision Number and/or date of issue. *See QW-304, second paragraph.*
4. Mark this box if the test was given on a test coupon. *See QW-304.*
5. Mark this box if the test was given using a production weld. Use of production welds is not permitted when the welding process is GMAW-S (i.e., in the short-circuiting transfer mode) since welders who use GMAW-S must be qualified by bend test. *See QW-304.*

6-7. Enter the Specification type and grade of the base metal(s) which made up the test coupon. *See QW-310.1 and QW-423.2.*

8. Enter the nominal thickness of the base metal(s) which made up the test coupon.
9. Enter the Welding Process or Process that the Welder used to weld the test coupon. When more than one process is used, separate these by a Process 1 and Process 2. *See QW-306.* Continue this practice for other variables that might be different for different processes used in the same test coupon.
10. Enter the same process in this space as was entered in space 9. *See QW-306.*
11. Enter the Welding Process Type. Types are: Manual, Semi-Automatic, Machine and Automatic. A person who qualifies using manual or semi-automatic welding is a Welder. *See QW-304*. A person who qualifies using machine or automatic welding is an operator, and Form QW-484B should be completed instead of this form. *See QW-305*. Separate qualifications (i.e., two tests) are required for the same person using a process as both a welder and as an operator. *See QW-300.1*, *second paragraph*.
12. Enter the same type of welding in this space as was entered in space 11. *See QW-300.1, second paragraph*.
13. Enter the type of backing used. Backing can be a backing strip, nonfusing metal backing (e.g. copper), flux, tape, and weld metal deposited by another process. A weld made from two sides of a groove is considered welding on backing, as is a fillet weld test. Potential entries are "None", "Used", "With backing", "Weld metal", "weld both sides". *See QW-310.2 and QW-310.3*. If more than one process or variation of process is used (*See QW-306*), it must be recorded that backing was "used" for the subsequent processes or variations of process.
14. If backing was "used" or "with backing" in space 13 enter "Required" or "with backing". If backing was not used, enter "Optional" or "Without backing". *See QW-402.4*. If the welding process was OFW, it is the opposite. *See QW-402.7*.
15. Mark this box if the test coupon is plate. *See QW-310.1.*
16. Mark this box if the test coupon is pipe, tube or other hollow product form. *See QW-310.1.*
17. When using pipe, enter the pipe size (NPS). When using tube or other hollow shape, enter the outside diameter (OD) of the component. *See QW-403.16*.

18. Enter the minimum outside diameter qualified based on QW-452.3 if the test coupon was a pipe or tube groove weld qualification. Use QW-452.4 if the coupon was a pipe fillet qualification. Enter “over 24 in. OD” if the coupon was plate. Note that a welder qualified on plate may weld on pipe down to 2 7/8 in. OD if welding is done in the flat or horizontal position. This not customarily entered on the qualification record except if the qualification is limited to the flat or horizontal position. *See QW-403.16 which leads one to QW-452.3 and QW-452.4 for pipe test coupons*. Also see QW-405.1 which leads to QW-461.9 for plate test coupons. If OFW, enter the thickness of the test coupon. *See QW-403.2*.

19. Enter the P-Number of the one material making up the test coupon. *See QW-403.18*. P-Number assignments are listed by specification, type and grade in QW / QB-422. If either material does not have P-Number, see QW-420 and QW-423.1 and QW-423.2. If there is no way to assign the base metal P-Number under the provisions of these paragraphs, write down the specification and grade of the test coupon material.

20. Enter the P-Number of the other material making up the test coupon. *See # 19*.

21. Enter the P-Number (or the range of P-Numbers) of the materials that are qualified by the test coupon per *QW-403.18 which leads to QW-423.1*. If unclassified materials are to be welded, examine the right-hand column of QW-423.1 carefully and also QW-423.2 to see if unclassified materials can be assigned a P-Number. If there is no way to assign the base metal a P-Number, write down the specification and grade of the test coupon material shown in steps 19 and 20.

22. Enter the specification (e.g. SFA-5.4) of the electrode or filler metal that was used. If the weld was made without the addition of filler metal, enter “None”. *See QW-404.4 and QW-404.14.*

23. Enter the same specification in this space as was entered in space 22. *See QW-404.4 and QW-404.14.*

24. Enter the classification (e.g. E309-16) of the electrode or filler metal that was used. If the weld was made without the addition of filler metal, enter “None”. *See QW-404.4 and QW-404.14.*

25. Enter the same classification in this space as was entered in space 24. *See QW-404.4 and QW-404.14.*

26. Enter the F-Number of the filler metal. See QW-432 of Section IX. The F-Number depends on the welding process and electrode or filler metal that was used. *See QW-404.15 which leads to QW-433*. If the weld was made using GTAW, PAW or OFW without the addition of filler metal, enter “None”. *See QW-404.14*.

27. Enter the F-Number or range of F-Number filler metals that the welder is qualified to use. *See QW-404.15 which leads to QW-433*. If the weld was made without the addition of filler metal, enter “None”. *See QW-404.14*.

28. If a consumable insert was used in the root pass, enter “Used”; if an insert was not used, enter “None”. Leave blank or enter “NA” if the process is not GTAW or PAW. *See QW-404.22*.

29. Leave blank or enter “NA” if the process is not GTAW or PAW. If an insert was used during the qualification test, enter “Required”. If no insert was used, enter “Not Permitted” or None. *See QW-404.22*.

30. For GTAW or PAW, record whether solid, metal cored or flux cored wire was used. Leave blank (or enter “NA”) if the welding process is not GTAW or PAW. *See QW-404.23*.

31. Leave blank or enter “NA” if the process is not GTAW or PAW. If solid or metal cored was recorded in space 30, enter “solid, metal cored” in this space. If flux cored was recorded in space 30, enter “flux cored” in this space. *See QW-404.23*.

32. Enter the approximate deposit thickness for each welding process, each F-Number and for each set of essential variables. That is, if more than one process or variation on a process is used (e.g. E6010 root / E7018 balance, downhill root/ uphill fill, etc.), enter a separate deposit thickness for each variation. *See QW-306 and QW-351, third paragraph*.

33. Mark the box **Y** (yes), if actual deposit thickness indicates that there were at least 3 layers of weld metal for that process, electrode type, etc., and mark the box **N** (no), if not there at least 3 layers of weld metal. *See QW-306*.

34. Enter the maximum thickness of weld metal that the welder is qualified to deposit for each process, electrode type or set of essential variables. *See QW-404.30 which leads to QW-452.1(b). For GMAW-S, see QW-404.32. For OFW, see QW-404.31.*

35. Enter the position in which the test coupon was welded. These are 1G, 3G, 6F, 3F, etc. *See QW-405.1, QW-303.1, QW-303.2 and QW-303.3 for requirements. See QW-120, QW-130 for definitions of testing positions. These paragraphs lead to QW-461.3 though QW-461.6 sketches.*

36. Enter the welding positions in which the welder may weld. These are Flat (F), Vertical (V), Horizontal (H), Overhead (OH) and "ALL". *See QW-405.1 which leads to Table QW-461.9. Use QW-461.9 to determine the positions qualified based on the type of test coupon and position(s) of the test coupon. See QW-110 which leads to figures QW-461.1 and QW-461.2 that define weld orientations for production groove and fillet welds respectively*.

37. Enter the progression ("Uphill" or "Downhill") that the welder used if the test coupon was welded in the 3G, 5G, 6G, 3F or 5F positions. Enter nothing (or enter "NA") if welding was done in any other position. *See QW-405.3*.

38. Enter the same data ("Uphill" or "Downhill" or nothing [or enter "NA"]) as in space #37. Welders are generally limited to welding in the progression in which they test. *See QW-405.3*. Although QW-405.3 permits welders to make root welds that will be removed by back gouging and the cover or wash pass to be made either uphill or downhill, this is not customarily mentioned on the qualification record.

39. If OFW, enter the type of fuel gas used by the welder (e.g. "acetylene"). *See QW-408.7.* If OFW is not used leave blank (or enter "NA").

40. Enter the same information in this space as in space # 39. *See QW-408.7*.

41. Enter "Used" or "Whit" if backing gas was used. Enter "None" if no gas backing was used. Leave blank (or enter "NA") if the process is not GMAW, GTAW or PAW. *See QW-408.8*.

42. If gas backing was used, enter the "With". If gas backing was not used, enter "with and without". If space #41 is blank (or "NA"), enter nothing (or "NA"), as appropriated. *See QW-408.8*. If OFW, enter the fuel gas entered in space 39. *See QW-408.7*. It should be noted that, if qualification was done "on backing" and no backing gas was used, "Optional" or "with and without" are correct entries in this space since the welder is qualified to weld with and without backing gas. This is somewhat strange since backing gas is not normally used when welding "on backing" except for P-101, P-51 though P-53 and P-61 metals; however, recording the fact that backing gas is "optional" documents the record properly.

43. Enter Spray, Globular, Pulsed or Short Circuiting if the process used is GMAW. Leave blank (or enter "NA") if the process is not GMAW. *See QW-409.2*. (Note: GMAW includes FCAW [*See the header of QW-355*]). FCAW transfer mode is either Spray or Globular when using flux cored wire except for EXXXT-13 which is intended for open root welding on piping; its transfer mode is short circuiting.

44. Enter Spray, Globular or Pulsed if any of these were entered in space #43. Enter Short Circuiting if short circuiting was entered in space #43. Leave blank (or enter "NA") if the process is not GMAW (FCAW). *See QW-409.2*.

45. Enter the current type (AC or DC), and if DC, enter the polarity (Straight [EN] or Reverse [EP]). Leave blank (or enter "NA") if the process is not GTAW. *See 409.4.*

46. Enter the same information in this space as is in space #45. *See QW-409.4*.

Examination and Testing

47. Mark the box “N/A” when the visual examination of the completed test coupon is not performed. Visual examination of the coupon is required for coupons that will be mechanically tested. *See QW-304 and QW-452.1(a)*.

48-49. Mark the box “Satisfactory” or “Unsatisfactory” for the results of visual examination of the completed test coupon. Visual examination of the coupon is required for coupons that will be mechanically tested. *See QW-304 and QW-452.1(a)*.

50. *See QW-160 for preparation of bend test specimens*. If bend test were performed and the bend test specimens were transverse root and face bends, check this box. Face and root bends are required for test coupons up to 3/8” inches thick. Between 3/8 and 3/4 inch thick, root and face bends are optional. *See QW-452.1(a), note 3*.

51. If bend tests were performed and the bend test specimens were longitudinal root and face bends, check this box. Longitudinal bend specimens may be used in lieu of transverse specimens when the bending properties of the weld metal and/or the base metal vary markedly. *See QW- 161.5*. Face and root bends are required for all test coupon thicknesses. *See QW-452.1(a) and QW-463.2*. Hopefully, you will never have to use this test.

52. If bend tests were performed and the bend test specimens were side bends, check this box See QW-161.1. Side bend specimens may be used for test coupon thicknesses between 3/8 and 3/4 inch. Thick, and side bends are required for coupons over 3/4 inch thick. *See QW-452.1(a)*.

53. Mark this box, if Pipe bend specimen, corrosion-resistant weld metal overlay were performed. *See QW-453*.

54. Mark this box, if Plate bend specimen, corrosion-resistant weld metal overlay were performed. *See QW-453*.

55. Mark this box, if Pipe specimen, macro test for hard facing weld metal overlay were performed. *See QW-453.*

56. Mark this box, if Plate specimen, macro test for hard facing weld metal overlay were performed. *See QW-453.*

57. Enter the type of test specimen performed (i.e., Face, Root, Side, etc.,)

58. Enter the results of each test specimen. All results must indicate that each specimen was or was not acceptable. The results may describe in detail the extent of discontinuities found (For Bend Test e.g., 9 openings < 1/8” long, 14 pinholes < 1/8” long, no open discontinuities, etc.). “Acceptable”, “OK” or similar word indicating conformance to QW-163 should also be entered when discontinuities are described. *See QW-163*.

59. If the test coupon was radiographed or ultrasound instead of mechanically tested, enter the test results. All results must indicate that each coupon was or was not acceptable. It is good practice to attach the radiographic reader sheet or test laboratory’s report to the qualification record. It is not smart to keep radiographs since they are always subject to deterioration and to reinterpretation by others. *See QW-302.2 and QW-305.1. Note that at least 6 inches of weld length are required to be radiographed when a test coupon is welded and at least 3 feet of weld length are required when a production weld is radiographed*.

60. Mark this box, if radiographic testing was performed.

61. Mark this box, if ultrasonic testing was performed.

62. Enter the name and title of the individual who evaluated the volumetric NDE. Personnel qualifications and certifications for those who performed volumetric NDE shall be as required by Section IX, QW-191 (ASNT-SNT-TC-1A). *See QW-191*.

63. Enter the employing company of the individual who evaluated the volumetric NDE.

64. Mark this box, if fillet weld test in plate was performed.

65. Mark this box, if fillet weld test in pipe was performed.

66. Enter the results of the fillet weld fracture test, if fillet weld tests are conducted. *See QW-452.5, QW-181.2 and QW-182*.

67. Enter the length and percent of defects found during the fracture test, if fillet weld tests are conducted. *See QW-452.5 and QW-182*.

68. Enter the results of the fillet weld macro fusion test, if fillet weld tests are conducted. *See QW-452.5 and QW-184*.

69. Enter the size of the fillet weld leg of one side from the fillet weld macro fusion test, if fillet weld tests are conducted. *See QW-184*.

70. Enter the size of the fillet weld leg of the other side from the fillet weld macro fusion test, if fillet weld tests are conducted. *See QW-184*.

71. Enter the measured concavity or convexity from the fillet weld macro fusion test, if fillet weld tests are conducted. *See QW-184*.

72. Enter the description and results of any other testing that was done (e.g. PT Examination if Hard –facing Overlay test are conducted. *See QW-453 and QW-195.2*).

73. Enter the name and title of the individual who evaluated the mechanical tests and his employing company. Person who evaluates bend test coupons shall determine that the bend test specimens have been prepared in accordance with *QW-161* and that they were bent around the correct radius per *QW-162*, and that each specimen meets the acceptance criteria of *QW-163*.

74. Enter the identification number assigned by the testing lab if a lab was used.

75. Enter the name and title of the individual who supervised the actual welding of the test coupon and his employing company (should be the same as is shown in space below #76. *See QW-300.2*.). This person does not have to witness welding of the entire test coupon, but he should see enough to verify that the data that will be recorded on the qualification record form is an accurate record of what welder actually did. *See QW-300.2*.

76. Enter the name of the company that is qualifying the welder. *See QW-103.2*.

77. Signature and title of the individual certifying the qualification record of the welder for the qualifying organization. *See QW-103.2*.

78. Date of certification. This date will usually be sometime after the date of the mechanical test or volumetric NDE. If qualification records are ever reformatted, the test date should remain unchanged and the certification date should be the actual date of certification.