

## The Difference Between NCPWB WPSs and AWS Standard Welding Procedures

### NCPWB Welding Procedure Specifications (WPSs)

NCPWB members work regularly with WPSs that are published by the NCPWB. When you get a new one, it is obvious that you need to fill in your company name and sign in various places on the WPS and PQRs to adopt the WPS as yours. What is not obvious is that, to adopt it correctly, you need to qualify one welder following that WPS. B31.1 (typical of all the B31 code sections) says the following:

#### 127.5.3 Qualification Responsibility

(a) Procedures. Each employer shall be responsible for qualifying any WPS that he/she intends to have used by personnel of his/her organization. However, to avoid duplication of effort, and subject to approval of the owner, a **WPS qualified by a technically competent group or agency** (*that would be the NCPWB!*) may be used

(1) if the group or agency qualifying the WPS meets all of the procedure qualification requirements of this Code (*i.e., the WPS has to be qualified by a contractor and otherwise meet the requirements of ASME Section IX*)

(2) if the fabricator accepts the WPS thus qualified (*i.e., you get a copy*)

(3) **if the user of the WPS has qualified at least one welder using the WPS**

(4) if the user of the WPS assumes specific responsibility for the procedure qualification work done for him/her by **signing the records** required by para. 127.6. All the conditions in (1) through (4) shall be met before a WPS thus qualified may be used.

There is no special form to fill out for the welder who follows an NCPWB WPS -- just a standard QW-484 (see below) for whatever the coupon is that the welder welded showing the WPS number as the WPS that the welder followed when he or she welded the test coupon.

This is a one-time event - once you have adopted an NCPWB WPS, all you welders who are qualified to use the process(es) that the WPS covers are permitted to follow that WPS.

### AWS Standard Welding Procedure Specifications (SWPSs)

ASME Section IX allows one to use the Standard Welding Procedures (SWPSs) that are listed in Section IX, Appendix E, whenever Section IX is required to be followed. SWPSs cover welding of steels 1/8 to 1-1/2 inches in thickness using GTAW, SMAW, GMAW, and FCAW. They cover P-1 (carbon steels) in the as-welded and heat treated. P-8 (stainless steels) in the as-welded condition and P-1 to P-8 in the as-welded condition.

SWPSs may be followed anywhere where compliance with Section IX is specified, including manufacturing and erecting piping, boilers and pressure vessels and for repairing or altering any boiler or pressure vessel that has an ASME Code stamp on its nameplate. SWPSs may also be followed when welding structural steel since they are recognized by AWS D1.1.

SWPSs are similar NCPWB WPSs in that you do not have to qualify them, but you have to demonstrate that you know enough about welding to ensure that your welders follow the SPWS. To do that, you have to qualify one welder following each SWPS that you buy and record the additional

information that is specified in QW-500. There is a form QW-485 in Section IX, Appendix B, that you can fill in when you adopt an SWPS.

This is a one-time event - once you have adopted an SWPS, all you welders who are qualified to use the process(es) that the SWPS covers are permitted to follow that SWPS.

You can buy SWPSs from the American Welding Society. They cost a little less if you are an AWS member. See <https://pubs.aws.org/t/procedures>.

**UNLIKE SWPSs, NCPWB WPSs ARE NOT PERMITTED TO BE USED ON ANYTHING EXCEPT B31 CODE PIPING.** They are not permitted for building boiler or boiler proper piping, pressure vessels or for repairs or alterations to any of those items - anything that will be or is already code stamped. For boilers and pressure vessels you either have to have your own WPSs that your organization qualified, or you can use SWPSs. The only exception is for piping that comes off a boiler until and reaches the first shut-off valve or, in the case of a multi-boiler installation where the boilers are interconnected, up to the second shut-off valve. This is commonly called "Boiler external piping" and it is designed and installed in accordance with B31.1, but the contractor who does the work has to have an ASME code stamp to do it.

**Beware: If you have or are getting an ASME Code Stamp or a National Board R-stamp, you are not allowed to use NCPWB WPSs.** More than one contractor has been discovered using NCPWB WPSs for code work. **NCPWB WPSs are only permitted to be used on B31 piping.**

**Contributed by  
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# Welder Qualification Test Record

Welder's Name: \_\_\_\_\_ UA/NCPWB ID No. \_\_\_\_\_ Stamp No: \_\_\_\_\_  
Test Location: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_

## Testing Conditions and Ranges Qualified

Identification of WPS followed during welding of test coupon: \_\_\_\_\_  
Specification of Test Coupon Base Metal \_\_\_\_\_ Thickness(in.): \_\_\_\_\_

<u>Welding Variables</u>	<u>Actual Values</u>	<u>Range Qualified</u>
Welding Process(es) used: _____	_____	_____
Type of welding (manual, semi-automatic): _____	_____	_____
Base Metal P-Number <u>P1</u> to P-Number: _____	_____	_____
<input type="checkbox"/> Plate <input type="checkbox"/> Pipe (enter diameter if pipe or tube): _____	_____	_____
Backing (metal, weld metal, backwelded, etc): _____	_____	_____
Filler Metal (SFA) Specification(s) (info. only): _____	_____	_____
Filler Metal or Electrode Classification(s) (info. only): _____	_____	_____
Filler Metal or Electrode F-Number: _____	_____	_____
Solid, Metal Cored or Flux Cored wire for GTAW: _____	_____	_____
Consumable Insert for GTAW or PAW: _____	_____	_____
Deposit Thickness for each process and variation (in.): _____	_____	_____
Position (2G, 6G, 3F, etc.): _____	_____	_____
Progression (uphill, downhill): _____	_____	_____
Backing Gas for GTAW, PAW, GMAW: _____	_____	_____
GMAW Transfer Mode (short circuiting, spray, etc.): _____	_____	_____
GTAW Current Type/Polarity (AC, DCEP, DCEN): _____	_____	_____

\* Indicates that at least 3 layers of weld metal were deposited

## Testing and Results

Visual Examination of Completed Weld: \_\_\_\_\_ Date of Test: \_\_\_\_\_

Bend Test  Transverse Root and Face (QW-462.3(a))  Side (QW-462.2)

Type	Result	Type	Result	Type	Result

Radiographic /  Ultrasonic Examination Results: N/A Lab Test No.: \_\_\_\_\_

Film or Specimens Evaluated By: \_\_\_\_\_ Title: \_\_\_\_\_ Company: \_\_\_\_\_

Contractor/Fabricator's Supervisor: \_\_\_\_\_ Title: \_\_\_\_\_ Company: \_\_\_\_\_

Welding Witnessed by: \_\_\_\_\_ Title: \_\_\_\_\_ Company: \_\_\_\_\_

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 Code.

**National Certified Pipe**

**Welding Bureau**

Chapter Number: \_\_\_\_\_

Secretary: \_\_\_\_\_

Date: \_\_\_\_\_

Contractor/Fabricator Name \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_