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Welder Performance Qualification Tests (WPQTs) were developed to standardize welder qualification practices and to ensure that NCPWB welder qualification records were correct and accurate. While the current collection of WPQTs is technically correct and accurate, initial thinking was that NCPWB would have a half-dozen or so standard tests, but demands of contractors and owners has resulted in dozens of WPQTs. This article will assist contractors and NCPWB Chapter Secretaries in selection of appropriate WPQTs.

## Are you Getting the Most Out of your Welder Qualification tests?

When I started working for the National Certified Pipe Welding Bureau (NCPWB) in 1986, one of my responsibilities was to audit welder qualification records that were developed by contractors and maintained by NCPWB chapters. While there were certified records, most had significant errors.

To address this issue, NCPWB decided to standardize welder qualifications as much as possible by developing standard Welder Performance Qualification Tests (WPQTs). The test consists of a detailed description of the test coupon and how it was to be welded and tested together with a welder qualification record (i.e., QW-484 form) that was already completed, except for the welder's identification and contractor signature.

This plan hit the streets in late 1987, when NCPWB published "Instruction Manual for QW-484s and WPQTs" consisting of 29 standard WPQTs. With these documents, contractors would only have to give the welder the test described on the first page and, if the welder passed, enter his name and the independent witness's name on the QW-484 form and sign it. Contractors no longer had to decode Section IX to be sure the records were correctly completed.

Under the joint UA/NCPWB testing program, we have also published Joint Performance Qualification Records (JPQTs) that exactly parallel WPQTs. The number of tests, however, has grown to over 80, so picking the appropriate test can be a challenge. To simplify, Chapter Secretaries have a hot-linked document "Selecting WPQTs- JPQTs-BPQTs and UA Tests Part Two" that carries one through the variables applicable to welder qualification, reducing the number of WPQTs from which to choose. To use that document, one needs to know the following relative to what the welder will be required to do in production: the base metal P-number; the process(es); the filler metal(s); if he intends to make groove welds less than 2 and 7/8 inches OD; whether or not he will use backing or backing gas; and, a few other variables. In most cases, the selection chart will reduce the number of WPQTs to

examine to 3 or 4. At that point, you'll need to review the Index of WPQTs for the final selection.

To keep testing costs down and to be sure welders are qualified for the work to be done at minimal cost, determine if the welder will be making groove welds on materials that are over ½ inch thick. If so, pick the WPQT that uses the heavier test coupon; if not, pick the thinner test coupon. Any test coupon for which the welder deposits ½ inch of weld metal or more with a process qualifies the welder for unlimited thickness with that process and filler metal type, so you don't have to be concerned whether or not he's qualified on thick materials. As a general rule, welders should test on the smallest diameter and heaviest wall thickness that they can weld successfully. When the welder will need to use more than one process in production, qualify him with more than one process.

If you cannot match your criteria against the available WPQTs, then you need to complete a blank qualification record. In that case, you can open Section IX and attempt to decode it, or you can go to "Instructions for completing 484 forms, Part One" for step-by-step instructions. Enter data in the "Actual Values" column reflecting the test coupon material and size that the welder welded, the welding process used, the position, the progression, use of backing, etc. Once the data is entered, refer to the Instructions, complete the "Range Qualified" column as best you can and submit the proposed record to the Chapter Secretary. The Chapter Secretary will enter the record into the NCPWB database where it will be forwarded to me for review, editing (where necessary) and approval of a new nonstandard record (NSTD). Keep in mind that when a contractor qualifies a welder on his own, an independent witness is required to allow the welder's record to be placed in the database. That witness may be a Code Inspector, a customer's inspector, your inspector if you have a Code Stamp, a representative of an independent test lab or a NCPWB Board-approved consultant. When welders test under the Joint Program, the hall, the UA's Authorized Testing Representative, is the independent witness.

Contractors are encouraged to use the WPQT since those are already completed, thereby ensuring compliance with the Code, and they generally specify thicker, more cost-effective test coupons.

I am available to NCPWB contractors and chapters to answer questions about welding and Code; preferred method is by e-mail: [Sperko@asme.org](mailto:Sperko@asme.org).