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ANSWERED BY  
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**Q: Recent structural steel and welding projects have required that we provide welder qualification test records that are within a select time period such as the last 24 to 36 months. This is not an AWS D1.1 requirement, so how can welding contractors be required to do this?**

**A:** Although project specifications and contracts contain a vast array of “blanket statements,” each contains some unique verbiage and requirements that could be reflective of the end user, architects, engineers, or local, state, or federal entities. It is the responsibility of each company that is bidding and performing selective services to understand the entire scope and all requirements set forth and detailed within each project document. Providing welder qualification records for within a selected time period is being mandated more than it was years ago.

One option a welding contractor may choose to explore is to keep an accurate, up-to-date log listing the qualifications of each of the company’s welders. This log should contain, at minimum, welder’s name, form of identification, date welding was performed, welding process, and applicable welding procedures. Have a Certified Welding Inspector sign, date, and stamp the log for each welder for whom he or she verified this information and who had acceptable results in accordance with each project standard that applies and for which the welder is qualified.

The welding contractor can then present this log on each project and assure the responsible parties that all welders have been active since qualification as documented and verified through a Certified Welding Inspector. The majority of times this log will suffice and no further qualification testing will be required.

**Q: Will manual phased array ultrasonic technology overtake conventional ultrasonic inspection with regard to structural weldments?**

**A:** Before that happens, the price of phased array technology and instruments will have to drop considerably. During the past year, we have researched this technology and attended a training class on this new equipment. We have been considerably impressed by the phased array technology and the huge resource of information that phased array offers the ultrasonic technician over conventional technology.

The equipment is both easy to use and offers a vast menu of options to further explore, analyze, and record potential defects. The cost still has to justify the means, however, and until the cost of this equipment can be reduced to a comparable level, conventional ultrasonic will not be replaced anytime soon.

**Q: Are standards such as AWS D1.1 utilized overseas as much as they are in the United States?**

**A:** AWS D1.1 and other AWS standards are often used in other parts of the world just as they are in the United States. In our experience, a majority of American companies utilize AWS standards on projects throughout the world regardless of the location of the project. In addition, many companies worldwide reference AWS standards in regard to welder qualifications and inspection criteria coupled with other standards pertaining to design and fabrication.

**Q: We are a testing lab that does a lot of work with structural steel fabricators. One provision of AWS D1.1 that we find onerous is the use of edge blocks for the radiography of flange splices. It is time consuming**

**to fix them to the structure, they are heavy to carry around, etc. Why can’t we do without the edge blocks or do the radiography before the weld tabs are removed?**

**A:** The requirement for edge blocks first appeared in the 1994 edition of the Code. The 1996 edition included some Commentary regarding the need for edge blocks. The requirement was added due to radiographic undercut making it difficult to detect defects near the flange edge, an area of the weld that has stricter acceptance criteria than the rest of the weld (i.e., defects in proximity to the edge).

I agree that edge blocks are not easy to use. You may want to speak to your clients about this. For instance, paragraph 6.17.3.1 allows the weld tabs to remain in place until after radiography, if approved by the Engineer. In fact, if it is a statically loaded structure, the weld tabs are not required to be removed at all (paragraph 5.31.2) unless the project specification dictates otherwise.

The Engineer may be more willing to entertain a request to perform RT before weld tab removal if, for instance, the thickness and bevel configuration of the weld tabs are the same as for the production weld, magnetic particle testing is performed after weld tab removal, and/or if there were some sort of reassurance that the true edge of the flange would still be considered when using the acceptance criteria.

**Q: We have been debating about the thickness range qualified for welder performance qualification for groove welding to ASME Section IX. Table QW-452.1 lists the “thickness of weld metal” as the controlling variable for determining the thickness qualified to weld in production. Some in our group think the total**

Inspection Trends encourages question and answer submissions. Please mail to the editor (mjohansen@aws.org).

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weld thickness should be counted when determining the thickness range qualified. Others think this is incorrect, as you could increase the qualified range simply by adding a little reinforcement. What is your take on this?

**A:** You must be looking at an older version of the Code. This was actually clarified in one of the year 2003 addenda. In addition to some other changes to the table, the general note was changed to specifically exclude weld reinforcement. It may seem then that the “thickness of weld metal” heading is misleading, and “base material thickness” or something similar could be substituted. Remember though that combinations of welding processes (or welders) can also be qualified in the same coupon, in which case the actual thickness deposited for each process (or welder) is used in determining the thickness range qualified.❖

## **An Important Event on Its Way?**

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