Summary of Changes in

ASME Section IX, 1999 Addenda

Prepared by

Walter J. Sperko, P.E.
Sperko Engineering Services, Inc
4803 Archwood Drive
Greensboro, NC 27406 USA
Voice: 336-674-0600
FAX: 336-674-0600
e-mail:sperko@asme.org

The following is a summary of the changes that will appear in the 1999 Addenda of ASME Section IX. These changes and related discussion are reported by Walter J. Sperko, P.E., Vice-chairman of Subcommittee IX; readers are advised that the opinions expressed in this article are those of Mr. Sperko and not the official opinion of Subcommittee IX.

Supervision and Control During Welding Procedure Qualification

It is a requirement of Section IX that the manufacturer who does code construction that he provide supervision and control over the welder who welds the test coupon used for procedure qualification. QW-201 has also required that the welder work for the manufacturer. This later requirements has been changed to allow the manufacturer to use either direct employees or by individuals engaged by contract for their services provided the manufacturer provides direct supervision and control over the welder. Subcontracting of welding of the test coupon to another organization is still prohibited.

Procedure Qualification Tests vs. Procedure Qualification Records

Subcommittee IX has not been careful over the years to distinguish between the procedure qualification test itself and the qualification record (i.e., the record of the test). For example, QW-407.1 requires a "separate PQR" for the various conditions of heat treatment that that are listed. The intended requirement in QW-407.1 is that there be a separate test coupon tested for the applicable conditions, but the words require separate documents for each test. All locations in Section IX where procedure qualification is discussed or "PQR" has been used have been reviewed to be sure that the appropriate distinction is made in the words in the Code, resulting in small changes in many locations.

Welder Qualification Form QW-484

This form has been revised to add the variables for automatic welding. This form has become very crowded and the next addenda will have separate forms for welders and welding operators. Readers should be reminded that there is no need to transfer data from old forms to new forms provided the essential variables, the ranges qualified and the test results are recorded.

P-2X, P-4X, P-5X, etc.

Section IX has used the abbreviations such as "P-2X," P-4X," "P-5X" to mean P-21 through P-25, P-41 through P-47 and P-51 through P-53 respectively. When P-5 was divided into P-5A, P-5B and P-5C, the abbreviations became confusing. In this addenda, all the abbreviations have been expanded to spell out the full range of P-numbers, i.e., P-2X has been changed to "P-21 through P-25,"P-4X has been changed to "P-41 through P-47," etc.

Equivalence of ASTM and ASME Specifications

Only materials that have been adopted by ASME for Code construction are permitted to be assigned P-numbers. Other materials that have been adopted by either B31 or as code cases may be assigned S-numbers. Interestingly, most ASME materials specifications originated as ASTM specifications, but just because a material happens to be made to an ASTM material specification for which there is a corresponding ASME specification, the ASTM-manufactured material is not necessarily assigned a P-number. This addenda adds a paragraph to QW-420.2. that allows any ASTM material specification type and grade to be considered as having the same P-number and Group number as the corresponding ASME specification type and grade.

Mock-ups

Figure QW-451.3, which deals with qualification of WPSs using fillet welds permits use of mock-ups in lieu of the fillet weld assembly in Section IX. This has been expanded upon in this addenda, and the rules on fillet welds have been enhanced by the note to the table. This note requires that the minimum and maximum weld sizes be qualified and that the minimum and maximum base metal thicknesses to be used in production have to be qualified. Qualification, of course, consists of sectioning mock-up welds, polishing the sections and examining the sections.

Definitions

There have been definitions in both the welding and brazing sections since the brazing section was introduced into the Code in 1953. In this addenda, QW-492 and QB-492 have been consolidated into an new QW/QB-492. This section, like QW/QB-422, will be printed in the welding section..

Brazing P-numbers

P-numbers or S-numbers, as appropriate, have been assigned to all the materials in QW/QB-422 for all materials under the column "Brazing."

Brazing Thickness

In the welding section, there has been a practice to use "T" to represent base metal thickness and "t" to represent weld metal thickness. The brazing section has never made this distinction since it was unnecessary; however, the brazing section has used "t" for all charts and table to represent base metal thickness. Since the practice of using "T" to represent base metal thickness, all the brazing tables have been changed from "t" to "T".

Brazing Overlap during Brazer Qualfiication

There has been some confusion in what was the basis upon which the maximum overlap that a brazer was qualified to use as specified in QB-408.1. Because QB-408.1 previously covered procedure qualification as well as performance qualification, it referred to the PQR overlap. In the last addenda, this variable was changed to address only brazer qualification, but the reference to the PQR was not changed. This has been corrected in this addenda.

Coming Changes

As is apparent, Subcommittee IX did not make many changes to the Code since the last addenda; however, the Subcommittee has not been idle. Adoption of Standard Welding Procedure Specifications, as mentioned in my las update, is proceeding. The writer's estimated time of inclusion in the Code is the 2001 edition. Another change that is in the works is to reduce the thickness of weld metal that a welder has to deposit to be qualified for unlimited from 3/4 inch to 1/2 inch provided there are at least 3 layers of weld metal in the deposit.

Mr. Sperko is President of Sperko Engineering, a company which provides consulting services in welding, metallurgy, corrosion and ASME Code issues. He also teaches publicly offered seminars sponsored by ASME on how to efficiently use Section IX. He can be reached at 336-674-0600, FAX at 336-674-0202 and e-mail at sperko@asme.org.