

QG-103 PERFORMANCE QUALIFICATION

The purpose of qualifying the person who will use a joining process is to demonstrate that person's ability to produce a sound joint when using a procedure specification.

(21) QG-104 PERFORMANCE QUALIFICATION RECORD

The performance qualification record documents what occurred during the production of a test coupon by a person using one or more joining processes following an organization's procedure specification. As a minimum, the record shall document

(a) the essential variables for each process used to produce the test coupon

(b) the ranges of variables qualified as required by the applicable part (see QW-301.4, QB-301.4, and QF-301.4)

(c) the results of the required testing and nondestructive examinations

(d) the identification of the procedure specification(s) followed during the test

The organization shall state on the record that the performance qualification test was conducted in accordance with the requirements of this Section, and certify the record by a signature or other means as described in the organization's quality program. Performance qualification records shall be available for review.

QG-105 VARIABLES

QG-105.1 Essential Variables (Procedure). Essential variables are conditions in which a change, as described in the specific variables, is considered to affect the mechanical properties (other than toughness) of the joint. Before using a procedure specification whose essential variables have been revised and fall outside their qualified range, the procedure specification must be requalified. Procedure qualification records may be changed when a procedure qualification test supporting the change has been completed, or when an editorial revision is necessary to correct an error, as permitted by the rules of the Part applicable to the material-joining process.

QG-105.2 Essential Variables (Performance). Essential variables are conditions in which a change, as described in the specific variable list, will affect the ability of the person to produce a sound joint.

- (21) QG-105.3 Supplementary Essential Variables.** Supplementary essential variables are conditions in which a change will affect the toughness properties of the joint, heat-affected zone, or base material. Supplementary essential variables become additional essential variables in situations where the referencing code, standard, or specification requires toughness testing for procedure qualification. When procedure qualification does not require the addition of toughness testing, supplementary essential variables are not applicable. See QW-401.1.

QG-105.4 Nonessential Variables. Nonessential variables are conditions in which a change, as described in the specific variables, is not considered to affect the mechanical properties of the joint. These variables shall be addressed in the procedure specification, as required by QG-101.

A procedure specification may be editorially revised to change a nonessential variable to fall outside of its previously listed range, but does not require requalification of the procedure specification.

QG-105.5 Special Process Variables. Special process variables are conditions that apply only to special processes that are described in the Part that addresses those processes. When these special processes are used, only the applicable special process variables shall apply.

QG-105.6 Applicability. The applicable essential, supplementary essential, nonessential, and special process variables for a specific joining process are given in the Part addressing that joining process.

QG-106 ORGANIZATIONAL RESPONSIBILITY (21)

Personnel performing supervisory activities specified in this Section shall

(a) be designated by the organization with responsibility for supervision, control, evaluation, and acceptance of qualification testing.

(b) have a satisfactory level of competence in accordance with the organization's quality program. As a minimum, they shall be qualified by education, experience, or training in the following areas:

(1) knowledge of the requirements of this Section for the qualification of procedures and/or joining personnel

(2) knowledge of the organization's quality program

(3) the scope, complexity, or special nature of the activities to which oversight is to be provided

(c) have a record, maintained by the organization, containing objective evidence of the qualifications, training, or experience.

QG-106.1 Procedure Qualifications. Each organization is responsible for conducting the tests required by this Section to qualify the procedures that are used in the construction of components under the rules of the Codes, standards, and specifications that reference this Section. (21)

(a) The personnel who produce test joints for procedure qualification shall be under the full supervision and control of the qualifying organization during the production of these test joints. ~~The persons producing test joints for the qualification of procedures shall be either direct employees or shall be personally engaged by contract for material joining services, except as permitted in QG-106.4.~~

(b) Production of qualification test joints under the supervision and control of another organization is not permitted, except as permitted in QG-106.4. However, it is permitted to subcontract any or all of the work

This was deleted by item 18-2861, which was Board approved for the 2021 edition.

(-b) When the test coupon(s) is examined by volumetric examination, the examining organization's report may be used as the basis for acceptance of the test methods, qualification and certification of the examiner, and the results of the examination.

(5) prepare and certify a performance qualification record for each person qualified

(d) When the qualified person changes employers between participating organizations, the employing organization shall verify the continuity of the person's qualifications has been maintained by previous employers since his qualification date, as required by the applicable Part for the joining method. Evidence of activities supporting performance qualification continuity may be obtained from any member of the association, even if the member was not a participant in the simultaneous welder qualifications.

(e) If a person has had their performance qualification revoked for specific reasons, the employing organization shall notify all other participating organizations that the person's qualification(s) has been revoked. The remaining participating organizations shall determine whether they will uphold or revoke the performance qualifications for that person in accordance with this Section.

(f) When a person's performance qualifications are collectively renewed in accordance with the applicable Part for the joining method, the testing procedures shall follow the rules of this paragraph.

(21) **QG-106.4 Simultaneous Procedure Qualifications.**

When expressly permitted by the referencing code, welding procedures may be simultaneously qualified by more than one organization, provided that each organization accepts full responsibility for any such qualifications and the following requirements are met:

(a) Each participating organization shall be represented by an individual with responsibility for qualification of joining procedures, as detailed in [QG-106](#).

(b) A preliminary joining procedure specification acceptable to the representatives of each participating organization shall be prepared addressing the essential and nonessential variables and, when applicable, the supplementary essential variables and other requirements that are to be observed for each process to be used for joining the test coupon(s). If any variables are revised during the joining of a test coupon, the revised variables shall be agreed upon by the representatives of each participating organization.

(c) Joining of the test coupon(s) shall be conducted under the simultaneous supervision of the representatives of each participating organization.

(d) The PQR shall document that the qualification was conducted under the provisions of [QG-106.4](#).

QG-107 OWNERSHIP TRANSFERS

(21)

Organizations may maintain effective operational control of PQRs, procedure specifications, and performance qualification records under different ownership than existed during the original procedure qualification. Multiple organizations under a common ownership may use PQRs, procedure specifications, and performance qualification records under that owner's name. The quality program of each organization shall describe the effective operational control and authority for technical direction of welding.

When an organization or some part thereof is acquired by a new owner(s), the PQRs, procedure specifications, and performance qualification records may remain valid for use by the new owner(s) without requalification; and the new owner(s) PQRs, procedure specifications, and performance qualification records become valid for use by the acquired organization, provided all of the following requirements have been met:

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(a) The new owner(s) takes responsibility for the procedure specifications and performance qualification records.

(b) The procedure specifications identify the name of the new owner(s) prior to use.

(c) The quality program documents the original source of the PQRs, procedure specifications, and performance qualification records as being from the original qualifying organization.

QG-108 QUALIFICATIONS MADE TO PREVIOUS EDITIONS

(21)

Joining procedures, procedure qualifications, and performance qualifications that were made in accordance with Editions and Addenda of this Section as far back as the 1962 Edition may be used in any construction for which the current Edition has been specified.

Joining procedures, procedure qualifications, and performance qualifications that were made in accordance with Editions and Addenda of this Section prior to the 1962 Edition may be used in any construction for which the current Edition has been specified provided the requirements of the 1962 Edition or any later edition have been met.

Procedure specifications, PQRs, and performance qualification records meeting the above requirements do not require amendment to include any variables required by later Editions of Section IX, except as specified in [QW-421.4](#). However, as required by [QG-100\(b\)](#), the qualification requirements of the referencing code, standard, or specification shall be met. Qualification of new procedure specifications for joining processes, and performance qualifications for persons applying them, shall be in accordance with the current Edition of Section IX.