

(4) The Owner accepting the WPQ or BPQ shall require each welder or brazer to demonstrate proficiency by completing a renewal qualification test in accordance with Section IX, QW-322.2(a) or QB-322(b).

(-a) If WPQ or BPQ transfer involves prior groove tests, the renewal test shall use a groove configuration.

(-b) When WPQ or BPQ transfer involves prior fillet tests, the renewal tests may use either a groove or a fillet configuration.

(5) The Owner accepting the WPQ or BPQ shall accept responsibility for the Performance Qualification Test and shall document acceptance on the WPQ or BPQ for the renewal test. This WPQ or BPQ shall reference the WPQ or BPQ supplied by the Owner that performed the qualification.

(6) The Owner accepting the WPQ or BPQ shall accept responsibility for compliance with Section IX, QW-322.

(7) The Owner may accept and use a WPQ or BPQ only if it is received directly from the Owner that performed the qualification.

(8) The Owner accepting the WPQ or BPQ shall comply with the Quality Assurance requirements of IWA-4142(a).

(d) Welders and brazers¹⁰ need not be employed directly by the Repair/Replacement Organization, provided the use of such welders is controlled by the Quality Assurance Program of the Repair/Replacement Organization. This Program shall include the following:

(1) requirements for complete and exclusive administration and technical supervision of all welders and brazers by the Repair/Replacement Organization;

(2) requirements for contractual control that provides the necessary authority to assign and remove welders and brazers at the discretion of the Repair/Replacement Organization;

(3) evidence that the Quality Assurance Program is acceptable to the Owner's Authorized Nuclear Inservice Inspector.

IWA-4460 METAL REMOVAL PROCESSES

IWA-4461 Thermal Removal Processes

Thermal removal processes include oxyacetylene cutting, carbon arc gouging, plasma cutting, metal disintegration machining (MDM), and electrodischarge machining (EDM).

IWA-4461.1 P-No. 1. When thermal removal processes are used on P-No. 1 materials, surface oxides shall be removed by mechanical processing prior to welding on cut surfaces.

IWA-4461.2 P-Nos. 3, 4, 5A, 5B, 5C, 6, 7, 9A, 9B, 9C, 10A, 10B, 10C, 10E Through 10K, and 11A Materials.

(a) When preheat is less than that specified in Table IWA-4461.1-1, material shall be removed by a mechanical method from all thermally processed areas, in accordance with the following:

(1) When welding is to be performed, at least $\frac{1}{32}$ in. (1 mm) of material shall be removed from the cavity to be welded.

(2) When welding is not to be performed, at least $\frac{1}{16}$ in. (1.5 mm) of material shall be removed and the area shall be faired into the surrounding area.

(3) Resulting irregularities shall be removed to a smooth surface by a mechanical method. This surface shall show no visual evidence of irregularities. The depth of material to be removed as required by (1) or (2) shall be measured from the smooth surface.

(b) When preheat is applied in accordance with Table IWA-4461.1-1, material shall be removed to bright metal by a mechanical method.

IWA-4461.3 All Other Materials. If thermal removal processes are used on materials other than those listed in IWA-4461.1 and IWA-4461.2, at least $\frac{1}{16}$ in. (1.5 mm) of material shall be mechanically removed from the thermally processed area. (17)

IWA-4461.4 Alternatives to Mechanical Processing. Mechanical processing of thermally cut surfaces is not required if the thermal metal removal process is qualified as follows: (17)

(a) The qualification test assembly for all ferrous materials, other than austenitic stainless steel or nickel base materials, shall consist of two coupons comparable to those to be cut in production as follows:

(1) The test coupon material shall be of the same P-No. and Group Number as the material to be cut in production.

(2) Alternatively, when the work piece does not have an associated P-No., the test coupon material shall have a carbon equivalence (CE) equal to or greater than the material to be cut in production. The CE shall be determined using Figure IWA-4663.1-1.

(b) The qualification test assembly for austenitic stainless steel or nickel base materials shall consist of two coupons comparable to those to be cut in production as follows:

(1) The test coupon material shall be of the same P-No. and grade as the material to be cut in production.

(2) Alternatively, when the work piece does not have an associated P-No., the test coupon material shall be the same material type or grade as the material to be cut in production.

(c) The qualification coupons shall be cut using the maximum heat input to be used in production.