

CALIFORNIA COUNCIL OF TESTING & INSPECTION AGENCIES

FAQ_{10.045}

ARE CERAMIC BACK-UPS PREQUALIFIED?

Q Upon partial completion of a project the project manager rejected one of the WPS's used. The contractor had used an AWS prequalified TC-U4a-GF joint configuration that by code requires metal backing. But, the contractor used ceramic backing. He removed the ceramic backing, back-gouged and welded the root. Is there any way that this might be considered acceptable?

Submitted by S.E. in Oakland, California

Response Submitted by Dave Palfini

A Answer: Possibly.

AWS D1.1 - 2.17 Prohibited Joints and Welds

2.17.1 One-Sided Groove Welds. Groove welds, made from one side only without backing or made with backing, other than steel, that has not been qualified in conformance with Section 4 shall be prohibited...

We aren't taking about "One-Sided Groove Welds", so this restriction does not apply.

In an attempt to mitigate this situation, from an administrative point of view, we designate the prequalified joint configuration to be TCU4b-GF, similar to the TC-U4a-GF joint configuration.

Next, we look at "D1.1 - Fabrication". We cannot prohibit the contractor from using his own "methods and means" to produce welds, as long as they are within the limitations of the code.

The contractor uses the TC-U4b-GF joint configuration, elects to use the widest "As Fit-Up" root opening allowed, uses ceramic backing, and cites the following:

AWS D1.1 - 5.10 Backing

Roots of groove or fillet welds may be backed by copper, flux, glass tape, ceramic, iron powder, or similar materials to prevent melting through.

Since the weld is to be back-gouged and welded, as an inspector, I would have to allow this, verifying that the groove angle was within the tolerances of the 45° bevel preparation and not the 30° that may be used in the case of the TC-U4a-GF joint configuration.

(After back-gouging, the other side of partially welded joints should resemble a prequalified U- or J-joint configuration at the joint root, and, for administrative purposes, would require an additional WPS.)

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Got a question?

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