



## AWS D1.1 Interpretation

**Subject:** Essential Variables  
**Code Edition:** D1.1-94  
**Code Provision:** Table 4.5  
**AWS Log:** D1.2.50

**Inquiry:** There is an inconsistency in Table 4.5, under the heading “Essential Variable Changes to PQR Requiring Requalification” Item 32 and Item 33. In Item 32 the Code states, “A change in groove type (e.g., single-V to double-V) qualification of any CJP groove weld qualifies for any groove detail complying with the requirements of 3.12 or 3.13.” Subsection 3.12 permits the use of several square-groove welding joint designs: B-P1a, B-P1b, and B-P1c. Subsection 3.13 permits the use of several square-groove welding joint designs: B-L1b, B-L1b-GF, B-L1-S, B-L1a-S, TC-L1b, TC-L1-GF, and TC-L1-S.

In Item 33 the Code states: “A change in the type of groove to a square groove and vice versa.” I would understand that statement to mean that, for example, a process such as GMAW-S, qualified using B-U6-GF under the provisions of Item 32 would not be allowed application to ANY of the prequalified square-groove welding joint designs that are permitted by Item 32.

These items conflict with each other.

**Response:** No, essential variables 32 and 33 are not in conflict. What may be allowed in 32 regarding the use of non-square-groove weld details to qualify a square-groove joint is further restricted by 33. The Code is correct as written.

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AWS D1.1, Structural Welding Code—Steel, is prepared by the AWS Structural Welding Committee. Because the Code is written in the form of a specification, it cannot present background material or discuss the committee’s intent.

Since the publication of the first edition of the Code, the nature of inquiries directed to the American Welding Society and the Structural Welding Committee has indicated that there are some requirements in the Code that are either difficult to understand or not sufficiently specific, and other that appear to be overly conservative.

It should be recognized that the fundamental premise of the Code is to provide general stipulations applicable to any situation and to leave sufficient latitude for the exercise of engineering judgment. Another point to be recognized is that the Code represents the collective experience of the committee; and, while some provisions may seem overly conservative, they have been based on sound engineering practice.