

**Who is responsible for performing NDT of complete-joint-penetration (CJP) groove welds made in an AISC-Certified fabrication shop?**

This is a contractual issue and can vary between projects. ANSI/AISC 360 Chapter N, for example, allows that an approved fabricator can provide NDT in lieu of having it done by a third-party inspector when approved by the authority having jurisdiction. Certified fabricators provide evidence during their audit that they either have qualified NDE personnel on staff or that the service is available by subcontracting to an outside firm. This provides assurance to the auditor that the fabricator is knowledgeable and capable if NDT is included in their contract.

It is very common for specifications to require NDT services to be provided by an independent agency contracted by the owner, and for fabricators to exclude this service in their proposal. The fact that a fabricator is Certified does not imply that they are responsible for performing NDT.

*Keith Landwehr*

**I am having difficulty understanding how to properly analyze anchor rods subject to cyclic loading for fatigue. I am using AISC 360 Appendix 3 Section 3.4 Equation A-3-6 and Equation A-3-1. If I understand properly, my maximum stress is limited to a threshold stress of 7 ksi, per Table A3.1 Case 8.5. This seems extremely low. Can I use a higher stress range if I use a material with a higher yield strength?**

There are two triggers that require you to address the fatigue resistance of structural components. These are identified in ANSI/AISC 360 Appendix 3 Section 3.1. Evaluation for fatigue is required if (1) the number of cycles is greater than or equal to 20,000 and (2) the live load stress range is greater than or equal to the threshold stress range,  $F_{TH}$ . Both must be true for fatigue evaluation to be required.

**I have a project where the existing concrete deck is being removed and shear studs are being added to an existing beam, after which the concrete deck is being reinstalled. The contractor is proposing to weld the shear studs to the beam with a traditional arc welding process rather than the stud welder commonly used on new projects. Is this an acceptable practice? If so, what requirements apply to the stud welding?**

It is an acceptable practice to manually weld shear studs. Shear stud requirements are covered in AWS D1.1 Clause 7. See Section 7.5.5, "FCAW, GMAW, SMAW Fillet Weld Option," which states:

"At the option of the Contractor, studs may be welded using prequalified FCAW, GMAW, or SMAW processes, provided the following requirements are met..." Following this are seven different subsections, including requirements for determining the minimum fillet weld size and for making the welds.

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