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When I was a practicing engineer, I didn't know much about AISC Certification or how it affected my projects. I would use the firm's typical standard specification for each project and omit the material sections that didn't apply. At the time, I was uneducated as to what AISC Certification meant, and I certainly didn't realize what impact it had on our Quality Assurance section of the project specification (1.6 in section 5120—Structural Steel). Looking back, there are a number of things that I wish I had known, and the most important is that structural engineers play one of the most significant roles in overall project quality.

**What's in an audit?**

If you have been following Quality Corner in > `UVc\_ DeWJ 4 ` dcf TëZ\_ these last few months, then you probably have a fair understanding of what AISC Certification is all about. It involves a rigorous audit to evaluate a company's quality management system. But, what exactly does being audited mean, and why would that be important for a structural engineer to know?

Recently, I had the opportunity to observe audits for both steel fabricators and steel erectors. I realized afterward that I had learned more about steel fabrication and erection on those two trips than I did working for years as a practicing engineer.

What I found amazing was the simplicity in the questions pertaining to such an important audit:

- How does something get done?
- Who is responsible for checking that it gets done correctly?
- How does one go about checking it?
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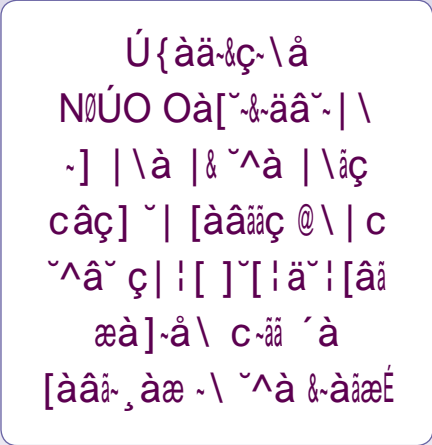
ect? Can you describe and show me an example of what your bolt tightening procedures are?"

Many times the auditor will actually set up a

7 THERE ARE THESE BOLT SEQUENCING SHEETS TO SET UP A YOU KNOW WHICH MATERIAL AND WHAT SIZE BOLTS ARE REQUIRED FOR THIS PARTICULAR PROJ

Skidmo o the bolt compresses fluid in a hydraulic cylinder; a pressure gauge connected to the cylinder is then calibrated to read in terms of force rather than pressure."

The auditor asks these and many other questions to ensure that all of the required information for a particular pro



cedure is on site, available, and that the procedural information has been documented and conveyed appropriately to the staff.

**Welding looks so easy...**

Another important audit topic was welding. QMC auditors not only spoke to the individual welders about how they perform their work—and how they check t —Q r allu e u nnn ae tst r

pinholes. Auditors also wanted to know the amperage settings on their welding machines, how the welders knew which settings to use, and if those settings conformed to the procedures written down in the company's quality manual.

The auditors asked questions that, as an engineer, I just took for granted or never even thought to ask. I would specify a specific grade of material, certain weld sizes, or perhaps even a certain bolt type. But I never thought about how I could be sure all of these requirements were met, and what documented steps were being taken to avoid mistakes.

To me, specifying certification is really one of the only ways to really know that your structural design will be realized in the field without any deviation from the drawings and specifications you have provided.

### **It's your responsibility!**

One misconception about the certification specification requirement is that it can just be removed from the specification without any consequences. When one is asked to waive the certification requirements for a project, essentially, they

are being asked to lower the quality on their project and take a chance.

Because I wasn't aware of the intricacies of AISC Certification when I was a practicing engineer, I was unprepared to defend my projects against the pressures of waiving these certification requirements. Ultimately, it is the owner's decision to keep these requirements, and it is up to the specifier, as well as other members of the project team, to educate the owner on the potential pitfalls of waiving the certification requirement. One other thing I was not aware of was that there are people at AISC who are there to help when it comes to defending your certification requirements. Visit [www.aisc.org/NoMoreWaivers](http://www.aisc.org/NoMoreWaivers) for more information.

### **How do you know?**

When you visit your physician, you expect to receive professional health care services. But how do you know when you walk into your doctor's office that the person wielding the stethoscope is a qualified professional? You probably never really gave it much thought, but that license issued by the American Medical Association on the wall in their office

is the only way to communicate to you that they have the knowledge, training, and skills to provide you the professional service that you expect.

Certification is the root of communication for almost every known profession. How does an owner know what you

are doing?