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Serious Soft Tissue Injuries Cripple TPI Engineers — MSDs Threaten to Wreak Havoc with Truss Industry by Stan Sias

The Uniform Computer Information Transactions Act of 1999 has opened the door for electronic seals and signatures to be widely accepted in the engineering of structural building components. How can you become involved in the process to promote this technology for the benefit of the industry?

Now that I have your full-fledged attention, let's discuss a very important issue brewing in our industry. No, the TPI engineers haven't all come down with carpal tunnel syndrome from embossing their seals or writing their names on the thousands of designs they produce each month. Let's take a moment and think about the time and money involved (not to mention the convenience, or lack thereof) and what we may be able to do to prevent this type of medical occurrence from ever happening to them.

The continued existence of state and local requirements for embossed and wet seals is having serious effects on the way we conduct business in the truss industry. Further, they do not allow us to focus as much time as we otherwise could on the very important design work that is taking place.

Steve Cabler, Vice President of Engineering for MiTek Industries, wrote in the June/July 2001 issue of SBC Magazine:

"Imagine a time when truss engineering drawings are transmitted via the Internet and arrive on an engineer's computer within seconds. The P.E. produces and reviews the requested designs on the computer, seals and digitally signs the designs, and sends them back to you electronically. No paper changes hands. Instead, communication occurs at the speed of light.

"Sounds pretty high tech doesn't it? It's reality in the truss industry today. TPI plate companies can do all of these things right now! In addition to developments in this area, TPI is finalizing a new design standard/code, and member companies are expanding the breadth of their software services to help component manufacturers grow.

"The systemic constraints we face in delivering these types of advancements need to be, and will be, overcome. It is just a matter of time. Laws governing the practice of engineering are slow to change and, in many cases, are based on practices and technologies that are more than fifty years old."

E-COMMERCE IS HERE TO STAY

When it comes to daily business interaction, it seems as though we are on a fast track to “e-everything.” With the advent of electronic commerce, many of the challenges posed by conducting business over time and distance have been solved. Face-to-face business transactions are increasingly rare in today's industry.

Let's look at some recent developments in electronic commerce:

- Today most company records—including payroll, personnel, accounting and taxes, not to mention marketing, research and development, sales and archival information—are kept on computer. Most industry segments have developed customized software to satisfy transmittal, recording and reporting needs.
- Consumers access banking services from ATM machines, home computers and Internet access points around the world.
- The newest shortcut to paying for highway tolls or gasoline at the pump is based in e-commerce. A scanner “reads” your signature on an agreement somewhere then records the transaction. It then sends the invoice amount to your credit card account automatically.
- Email is the medium of choice for communications in office-to-office or around the world.

Historically, signatures have been as evolutionary as the business practices themselves. Bartering and wax seals fell to the wayside as signed documents and contracts came to be. Today, we still require a transaction to be acknowledged in some way with a signature. Do you remember promising to pay when you applied for your ATM/credit card? Electronic commerce was on its way into your life. Your PIN serves as the authenticator and your transaction is complete.

PARTNERING FOR THE BENEFIT OF THE INDUSTRY

TPI and WTCA are working together with State Governments and Professional Engineer Boards to write rules that change the requirements for the use of embossed seals and wet seals. Work is now underway to create a template to implement the use of electronic seals and signatures. WTCA Staff (Anna, Stan and Kirk) and Kelly Gutting, TPI's Technical Director, along with members of WTCA's Engineering and Technology Committee, TPI's Technical Advisory Committee (TAC), industry suppliers and WTCA Chapter members are researching the laws, rules and requirements from every state to determine those laws and administrative rules that have been written that will help our industry engineers and component manufacturers become more efficient and effective in the task of reviewing and sealing truss design drawings. According to Don Scott of Truswal Systems, “We have a clear challenge to help component manufacturers eliminate the very tedious process of tracking the great paper trail.”

ELECTRONIC SEALS & SIGNATURES IN THE STRUCTURAL COMPONENT INDUSTRY

As technology advances into our industry, the use of electronic seals and signatures, particularly with regards to the engineering side, must follow closely behind. Electronic and digital signature software has been developed to serve as the authentication function. A signature, after all, is merely an “executable symbol,” commonly accepted by both parties to authenticate the record. In the past, many states required that the signature be preformed in person for it to be legitimate and accepted. State engineering laws were no different. This is all changing due to

federal legislation that was passed in the fall of 1999 and now being implemented through Uniform Computer Information Transactions Act (UCITA) drafted by the National Conference of Commissioners on Uniform State Laws.

The preamble to UCITA, in part, states the following:

"Up to this point, a complex mix of common law and Article 2 has governed computer information transactions. The common law is frequently difficult to ascertain, and it varies widely among states…

"The need for a coherent, uniform body of law has never been greater. Revolutions in telecommunications and computer technology have made geography increasingly irrelevant to modern commerce. The Internet enables small firms as well as large ones to provide products and services throughout the country and around the world…

"The liberating promise of technology cannot be fully realized unless there is predictability in the legal rules that govern such transactions. This is the need that UCITA addresses. It clarifies and sets forth uniform legal principles applicable to computer information transactions. UCITA is a statute for our time."

This has begun to show up in Professional Engineering laws, where the move toward electronic commerce has been challenging. States like California, Kentucky, Maine and Florida are involved in moving toward the electronic age.

We have proposed the following in California as just one example:

> A single cover sheet shall have the following statement on it that shall be signed and sealed by the truss design engineer in accordance with California professional engineering laws: The bound truss design drawings having an electronic seal and signature printed on each page have been reviewed and approved by the truss designer (truss design engineer) as indicated by the engineer's wet seal and signature on this cover page. This review and approval applies solely to the attached truss design drawing pages that are bound together.

The reason for our requesting this policy is that electronic seals and signatures are approved for use in California through the Rule 411(e) of the California Board for Professional Engineers and Land Surveyors, the Uniform Commercial Code Section 2B-113, and the Uniform Computer Information Transactions Act as follows:

> **Rules of the Board for Professional Engineers and Land Surveyors**
> **California Code of Regulations**
> Title 16, Division 5 §§ 400-474.5
> 411. Seal and Signature.
> (e) The seal shall be capable of leaving a permanent ink

representation, an opaque and permanent impression, or an electronically-generated representation on the documents. The signature may be applied to the documents electronically.

UCC SECTION 2B-113. LEGAL RECOGNITION OF ELECTRONIC RECORDS AND AUTHENTICATIONS.
A record or authentication may not be denied legal effect, validity, or enforceability solely on the ground that it is in electronic form.

SUPPORT FROM OUR ASSOCIATION PARTNERS

In a broad-based approach, we have asked the plate suppliers and connector manufacturers to engage their sales and technical representatives in certain localities to build a larger support base within the local engineering and specifying community. Identifying key contacts on the state engineering review boards is critical to our success. We know that "putting a human face on the truss industry" is extremely successful in other work we have done and we are banking on our industry's contacts to come through again to help us seize this opportunity.

HOW CAN YOU HELP IN THIS EFFORT?

WTCA and TPI would like to enlist assistance from all aspects of our businesses in this current industry effort. We are in the midst of coordinating efforts to go before the Board of Professional Engineers (BPE) in several states to help us implement electronic seals and signatures. The promotion of this technology has become a priority for TPI and WTCA and a success with any board on this issue could result in a model of effectiveness for other states to follow.

What you can do for this effort is to help us establish beneficial contacts in your jurisdiction. In particular, we would like to identify as many licensed and practicing engineers in your state that are affected by this, and we are also interested in determining whether anyone has any personal connections to their state's BPE. Your sales representatives in the area could be particularly useful in this effort. If you are willing, please pass on the following questions to your sales representatives or other appropriate company contacts:

- Do you know or have a personal relationship with any of the members of the State Board of Professional Engineers?
- Are any of your P.E. contacts willing to lend their support to our attempt to get the State Boards of Professional Engineering to accept something other than wet seals/embossed seals?

Any assistance is greatly appreciated. If you have any questions or would like additional background information on this issue, please feel free to contact WTCA at wtca@woodtruss.com. The industry, your industry, thanks you for your continued support as we tackle the loads, codes, laws and rules issues around the country. Watch future issues of SBC Magazine for updates on this and other cooperative industry initiatives.

SBC HOME PAGE

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