

## Low-Hydrogen Electrodes

There is an error in the response to question seven in last month's Steel Quiz (May 2005, pp. 15-16). The question was: **True/False:** All SMAW electrodes are low-hydrogen.

SMAW electrodes with the classification of Exx15, Exx16, Exx18 and Exx28 are all required to have low hydrogen coatings (e.g., are "low-hydrogen" electrodes). These electrodes are listed in AWS A5.1 "Specification for Carbon Steel Electrodes for Shielded Metal Arc Welding." Other SMAW electrode classifications in A5.1 have no requirement for moisture control in the coatings, and accordingly, no control of the diffusible hydrogen levels in the deposited weld metal. These would include electrodes with the classifications of E6010, E6012, and E7024. Therefore the answer should have been **False**.

—Duane Miller  
The Lincoln Electric Co.

## Tension Field Action

In a useful and interesting article, "Steel Plate Shear Walls: Practical Design and Construction," in the April, 2005 issue of *Modern Steel Construction*, authors Ignasius Seilie and John Hooper comment on the "Construction Sequence." Their view is that the construction sequence needs to be controlled in order "to avoid excessive compression in the panel." This is contained within the section "Disadvantages of SPSW." The idea that "axial precompression in the steel plate wall may delay the development of the tension-field action" is reinforced later under "Construction Considerations."

Those contemplating use of SPSWs should not be concerned that compressive forces in the system will "delay" the development of tension-field action. By the time the infill panel is installed, it is inevitably out-of-plane. In the classical sense, the plate has already buckled. Neither theoretical considerations nor experimental testing of the system indicate that tension field action will be delayed. As shown in large-size physical testing, existing "buckles" simply increase or decrease in amplitude as lateral forces are applied. The capacity of the system is reliably predicted by a model that ignores the effects of axial

precompression. In other words, compression forces do not delay the development of the tension field.

Interested readers can review material on this topic by Tromposch. E-mail me at geoff.kulak@ualberta.ca and a copy of the material will be sent to you.

—Geoff Kulak, Professor Emeritus  
University of Alberta

## EDI: From Vision to Practice

During the NASCC in Montreal, I was one of the panelists on the session where we introduced the Appendix A to the *Code of Standard Practice* (where we lay out the guidelines on how to do a project if the contract is based on sharing a model instead of paper drawings).

The panel consisted of myself, D. Kirk Harman (Cagley Harman & Associates), David Ratterman (AISC's legal counsel), Don Engler (BDS Steel Detailers), and my old friend Pete Carrato (Bechtel Corporation). The discussion during the session consisted of the usual questions to David where we all tried to get as much free legal advice as possible. But then the audience turned their questions to the whole idea of actually using the concept of a model instead of a set of design drawings.

During previous similar sessions, one person in the audience would make the usual negative comment about how it will never work, and then another. Then Pete and I would spend the session trying to make the audience believe in this future. But this time something strange happened. One audience member presented the usual negative comment—but someone else in the audience answered him. And then another, and another, chimed in with solutions. I turned to Pete and said: "Our work here is done. They are explaining it better than we did." Pete, always looking further ahead than I do, said: "No, we still have paper shop drawings on the shop floor."

Later when I was walking the exhibit floor, I would walk up to booths where software vendors were selling applications that can do everything from design to detailing to material management. Having a face that is easily forgotten, when I asked the vendor to explain their product to me they would launch into an explanation of how the future is

BIM (Building Information Models) and if I did not get on the bus I would be left behind! The explanation was better than the ones I had been giving for the last several years—and it was obvious that the technology had reached the mainstream.

I guess the point is that now, after years of pushing the industry, the vision that the likes of Steve Hamburg, Pete Carrato, Brad Vaughn, and myself have been trying to share is no longer just a vision but a clear path forward to a better way of doing business.

—Mark V. Holland, P.E., Chief Engineer  
Paxton & Vierling Steel Co.