Editorial | Structural Standards Coordination Council

Rising to the Challenge of Coordination

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Today's building codes and the consensus standards they adopt – including ASCE-7, ACI-318, AISC-360, and others – are a complex web of inter-related documents. Each refers to, and in some cases, modifies or takes exceptions to materials contained in the others. Coordination of structural design standards among each other and with the building code takes proactive efforts from many groups. The recently founded Structural Standards Coordination Council (SSCC), whose membership includes the major structural standards development organizations, is off to a successful start as it endeavors to fulfil its mission.

How Did We Get Here?

Most building departments in the United States currently adopt the 2012 edition of the *International Building Code* (IBC). For structural design criteria and loadings, the 2012 IBC in turn references *ASCE/SEI 7-10 Minimum Design Loadings for Buildings and Other Structures* for most loading requirements. In addition to ASCE/SEI 7, the IBC adopts many other standards including: the American Concrete Institute (ACI) standard *Building Code Requirements for Structural Concrete and Commentary* (ACI 318-2011); American Iron and Steel Institute (AISC) standards *Specifications Structural Steel Buildings* (AISC 360-2010) and *Seismic Specifications for Structural Steel Buildings* (AISC 341-2010); American Wood Council (AWC) standards *National Design Specifications for Wood Construction Including Supplements* (AWC NDS-2012) and *Special Design Provisions for Wind and Seismic* (AWC SDPWS-2008); and *The Masonry Society (TMS) standard Building Code Requirements and Specification for Masonry Structures* (TMS 402-2012). Each of these design material standards were developed by large dedicated volunteer groups of experts representing the structural engineering profession, regulatory bodies, researchers, and material interests.

In addition to direct adoption into the IBC, the material standards are also adopted in ASCE/SEI 7, with the adopted standards listed in Chapter 23. The building code and ASCE/SEI 7 adopt the material standards for somewhat different reasons. The building code broadly adopts these standards for regulating many aspects of design, construction and inspection of structures for all loadings. ASCE/SEI 7 primarily adopts these standards to reference their seismic detailing criteria. The materials standards in turn reference ASCE/SEI 7 for loading criteria and load combinations. Because of these interdependencies, and in order to avoid conflicts in the way these requirements are referenced and to insure that appropriate reference of requirements are made, it is very important – especially for seismic requirements – that the developers of ASCE/SEI 7 and the developers of primary structural material standards work closely together.

Major changes have occurred in structural design standards over the past 25 years. The pace of change in these standards has resulted in requests by the structural engineering profession to slow down the change process to allow the profession to understand and implement the changes. To address this concern, the ASCE/SEI 7 committee decided after publication of ASCE/SEI 7-05 to publish major new editions of the standard every six years to coincide with publications of alternate editions of the IBC, which is revised every three years. Therefore, after completing the 2005 edition, it was expected that the next version ASCE/SEI 7 would be published in 2011 and would be coordinated with the publication of the associated material standards as had been done in 2005. However, in an unexpected, unilateral decision, the ICC modified its process, which resulted in shortening the adoption schedule for the 2012 IBC by 18 months for some standards (such as for ASCE/SEI 7), and lengthening the adoption process for other standards. This created a disaster for the coordination effort. While the ASCE/SEI 7 committee, in a highly-focused effort, met the new IBC schedule and produced ASCE 7-10, several of the structural material standards could not meet the highly accelerated ASCE/SEI 7 development schedule and some material standards became out of sync with ASCE/SEI 7 and the IBC. Furthermore, some of the material standards adopted late in the 2012 IBC development process included uncoordinated exceptions in the IBC, resulting in incorrect references. The upshot was an uncoordinated suite of structural design standards adopted into an uncoordinated building code.

Where Do We Go Now?

As this was unfolding, the SEI Board of Governors recognized that the resulting lack of coordination among the structural material standards, ASCE/SEI 7, and the IBC needed to be addressed for the good of the design profession and the construction industry in the U.S. It therefore approved a strategic initiative in 2012 to improve coordination between structural standards organizations. Working informally with the primary standards organizations for a year, the Structural Standards Coordination Council (SSCC) was formed in 2013 with key members (staff and volunteers) from each of the primary structural standards organizations, as well as NCSEA, represented. The stated mission of the SSCC is *to provide an organized mechanism for planning and coordinating the development schedules of structural standards developed and maintained by U.S. standards development organizations (SDO) for the benefit of public safety, health, and welfare, as well as for the benefit of structural engineering practice*. One of the first issues that the SSCC addressed was the ICC adoption schedule, which had changed to create an impossible environment for coordination. Working together, the SSCC communicated directly with the ICC to persuade it to reconsider the adoption schedule. This unified effort has been successful; the ICC schedule has been adjusted, which will enable coordination among and between the standards and the code via purposeful efforts of the SSCC. As the SSCC continues its work, the next version of ASCE/SEI 7 will be published in 2016 (actually it will be ASCE/SEI 7-16 with Supplement 1, in order to be coordinated) and it will be fully coordinated with structural material standards and is intended to be adopted by the 2018 IBC. Along with coordination of schedules and adoption intentions, the SSCC continues its work with twice yearly meetings and will take on other issues as appropriate.

The coordination and harmonization of structural design standards is obviously necessary, but does not happen without considerable effort. It is the intent that the new SSCC will cause this coordination to occur so that it appears seamless and organized to end users, and so that the volunteer development groups have a clear understanding of their coordinated development schedules.▪

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