

Critical Issues in the Development and Implementation of Construction and Demolition Standards

**Richard F. King, CSP
Chairman, A10 (ASC)**

Introduction

The ANSI Accredited A10 Committee (ASC) is one of the longest existing voluntary national consensus standards committee in the United States. Founded originally in 1944, the A10 ASC writes and interprets voluntary national consensus standards relating to the protection of employees and the public from hazards arising out of, or associated with, construction and demolition operations.

SH&E professionals working in the construction industry have significant interest in these standards due to the fact that they are recognized in both the public and private sectors. Specifically, the A10 Standards have extensive recognition in the standards of the U.S. Department of Labor Occupational Safety and Health Administration and by a series of other national and state government agencies. At the private sector level A10 Standards are widely cited and required in different contracts and work agreements

The full A10 ASC is made-up of seventy-four national organizations from the private and public sector. In addition, there are forty-eight (48) accredited standards and projects under the A10 banner. A subgroup is created and approved by the committee, which is responsible for putting together draft documents for review by the A10 ASC. The subgroups are not responsible for the definitive content of the standard and instead serve to assist the committee in putting the documents together and serving as a technical resource.

ANSI Background

The history reprinted below from the Laborer's Union Newsletter, Life Lines, presents a short and concise history and background of ANSI, which is:

Founded in 1918 and based in Washington, DC and New York City, ANSI is a private, non-profit organization that administers and coordinates the ongoing development of standards to guide all aspects of American production. In 2002, it had more than 10,000 standards, 40 of which address safety issues in the construction and demolition industry.

ANSI standards seek to standardize both the process and the output of American production. Further, through its participation in the International Organization for Standardization, ANSI is able to ensure that imported products meet American standards and, often, that standards developed in the United States are adopted as national standards by other countries. Its mission

[www.ansi.org] is "to enhance both the global competitiveness of US business and the US quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems and safeguarding their integrity."

Despite an \$18 million annual budget and more than 75 employees, ANSI's standards are developed through the volunteer efforts of its member organizations. These include more than a thousand commercial, governmental, union, institutional, organizational and international members.

The members participate in committees, which develop the standards for the areas of their own concern. All standards are voluntary; no one is forced to follow them. They are adopted by two-thirds majorities of the committee participants.

Secretariat Issues

The secretariat of the A10 ASC is the American Society of Safety Engineers (ASSE), and both the committee and the secretariat jointly hold the accreditation. ASSE's Administrative oversight of the committee has been assigned to the Society's Standards Development Committee. The A10 ASC has the following objectives/functions:

1. Developing proposed American National Standards within the scope of the Committee.
2. Voting on approval of proposed American National Standards within its scope.
3. Maintaining the standards developed by the Committee up-to-date. The Committee must review each standard within its scope at least every five years and determine the appropriate recommendation for reaffirmation, revision, or withdrawal.
4. Adopting Committee policy and procedures for interpretations of the standard(s) developed by the Committee.
5. Coordinating and responding to requests for interpretations of the standard(s) developed by the Committee.
6. Adopting committee procedures and revisions thereof.
7. Considering and acting on proposals for termination of the Committee.
8. Other matters requiring Committee action

Value of ANSI Standards

The purpose of these voluntary national consensus standards is to provide guidance and technical information to different industries. In the case of the A10 ASC it is to provide guidance to the construction and demolition industry. The recently approved A10.32 Standard for Fall Arrest/Protection on Construction and Demolition Sites is a good example of how such standards can be used. The A10.32 Standard is intended to fill gaps in the regulatory structure. Of additional importance is that it can take literally decades to write federal or state regulations. In many cases, voluntary national consensus standards are "ahead of the curve" when it comes to

addressing good science and technology. On occasion ANSI standards can also find their way into legislation.

However, it is at the private sector level that widespread recognition of the A10 Standards is prevalent. An example is the ANSI/ASSE A10.12 Standard addressing "Safety Requirements in Excavation". The standard was recently reaffirmed and is commonly referenced and cited as a guidance document in contracts and work agreements. The ANSI/ASSE A10.34 Standard Protection of the Public on or Adjacent to Construction Sites is also an excellent example of a standard being widely used in the private sector. Several hundred copies of the standard have been ordered and we are aware of the standard being referenced in at least two-dozen contracts.

It should be noted that perhaps the primary reason why ANSI standards are so broadly recognized and accepted is the process by which they are developed. It is required that the standards be written via a consensus process. The process must be "the fair and open ANSI process ensures that all interested and affected parties have an opportunity to participate in a standard's development. It also serves and protects the public interest since standards developers accredited by ANSI must meet the Institute's requirements for openness, balance, consensus and other due process safeguards." Of interest to SH&E professionals is that by ANSI procedures, accredited standards must be revised, reaffirmed or withdrawn every five years to ensure that they remain relevant and up-to-date. The purpose is for the standards to move forward and the improvement process is incremental by design.

How Standards are Used by National Governmental Agencies

There is the possibility that voluntary national consensus standards can be used in regulation at the Federal, State, and Local levels. The national level generally draws the most comments due to the impact of OSHA on SH&E professionals. With the Morella Amendment to the Technology Transfer Act of 1995 (Section 12D of Public Law 104-113) and the Office Management and Budget Circular A-119, there is a greater attention being paid to voluntary national consensus standards, (e.g.: ANSI, ASTM, NFPA, ASME, etc...). These laws/guidelines do not require the use of a voluntary national consensus standard, however, they do require that an agency review them during proposed rulemaking. In such a situation, the standard(s) could be entered into the record with a request to the agency that it review and cite the draft standard(s).

- There is an official memorandum of understanding between OSHA and ANSI. The link to the read the memorandum is at:

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=MOU&p_id=323

- The link below is to the Office of Management and Budget Circular OMA-A119, which explains how governmental agencies such as OSHA use voluntary national consensus standards:

http://www.dsp.dla.mil/documents/omb_a119.pdf

- There have been a number of questions asking us how voluntary national consensus standards relate to agencies such as OSHA. We have also already contacted OSHA in regards to the standard and intend to increase our advocacy with state/federal agencies and the private sector. An example letter for Z117.1 can be viewed at:

<http://www.asse.org/Z117corrs8.doc>.

Raising Awareness of A10

ASSE as the Secretariat is continuing to dedicate time and effort to improving the A10 website. Each subcommittee will have its own site to report on the status of the standard and how/where it is recognized in the private and public sector. The website for the A10 ASC, with links to all of the subgroups, is at:

<http://www.asse.org/A10.htm>

Standards and Projects – Status and Update

A10.1-200X (Planning For Construction and Demolition Operations Safety and Health). This is still a proposed standard at this time and no draft is yet currently available.

A10.2-20XX (Safety, Health and Environmental Training). This standard addresses processes to provide effective safety, health, and environmental training on construction and demolition sites. The scope has been filed with ANSI and a draft standard is currently being prepared and can hopefully be reviewed by the committee by the next meeting in July 2007.

A10.3-2006 (Powder Actuated Fastening Systems). This standard provides safety requirements for a powder-actuated fastening system (tool or machine) that propels a stud, pin, fastener, or other object for the purpose of affixing it, by penetration, to hard structural material. The standard revised was published during 2006.

A10.4-2004 (Personnel Hoists). This standard applies to the design, construction, installation, operation, inspection, testing, maintenance, alterations and repair of hoists and elevators that (1) are not an integral part of buildings, (2) are installed inside or outside buildings or structures during construction, alteration, demolition operations and (3) are used to raise and lower workers and other personnel connected with or related to the structure. These personnel hoists and employee elevators may also be used for transporting materials under specific circumstances defined in this standard. The standard was approved by ANSI, published, and is current. There is a new revision pending, and should hopefully be released sometime in 2007.

A10.5-2005 (Material Hoists). This standard applies to materials hoists used to raise or lower materials. The subgroup is currently working on committee comments. The standard was published during the Fall of 2005.

A10.6-2006 (Demolition Operations). The standard applies to the demolition of buildings and other structures. This standard is intended to be complete in itself, except that any device, equipment and activity incidental to demolition operations shall be conducted, installed, inspected, maintained, and operated in accordance with requirements in American National Standards for Safety in Construction and Demolition Operations A10 Series, other American National Standards listed in Section 2 of this standard, and other appropriate standards. The standard has completed committee ballot and public review. The revised standard was published during 2006.

A10.7-1998 (R2005) (Blasting). The standard provides the construction industry with reasonable minimum recommendations for establishing and maintaining a level of health and safety with regard to the transportation, storage, handling, and use of commercial explosives and blasting agents. The standard was recently approved for reaffirmation. The standard has undergone public review and committee review and was reaffirmed during the fall of 2005. The committee has reached consensus that the document is now in need of revision and there is a subgroup looking at the standard and a draft will hopefully be available during the later part of 2007.

A10.8-2001 (Scaffolding). The scope of the standard addresses the establishment of safety requirements for the construction, operation, maintenance, and use of scaffolds used in the construction, alteration, demolition, and maintenance of buildings and structures. The standard does not cover permanently installed suspended scaffold systems or aerial platforms. The purpose of the standard is to provide reasonable safety for life and limb of those engaged in occupations requiring the use of scaffolding. There is one significant exception to the standard. In cases of practical difficulties, unnecessary hardships, or new developments, exceptions to the literal requirements may permit the use of other devices or methods, but only when it is clearly indicated by a qualified person that the equivalent protection is thereby secured. The standard is current with no action pending. The standard is generating some interest due to a series of recent articles released by ASSE. Scaffolding continues to be the mostly commonly cited standard by OSHA in the construction industry. This standard continues to play a significant role and the A10 ASC is committed to raising more awareness about it. The committee has reached consensus that the document is now in need of revision and there is a subgroup looking at the standard and a draft will hopefully be available during the later part of 2007.

A10.9-2004 (Concrete & Masonry Construction). The standard establishes safety requirements pertaining to concrete construction and masonry work in construction. Covers all on-site concrete construction and masonry work including design, erection, operation, and maintenance of aggregate processing plants, concrete mixing plants, and conveyances. Also contains safety requirements pertinent to the specialty concrete operations of prestressing by pretensioning or post tensioning, lift-slab construction, tilt-up construction, and slip forms. The standard was published during August of 2004.

A10.10-2004 (Space Heating Devices). The standard provides minimum safety requirements for the selection, installation, operation and maintenance of space heating devices and equipment of temporary and portable design. The standard was published during August of 2004.

A10.11-1989 (R1998) (Safety Nets). The standard establishes safety requirements for the selection, installation, and use of personnel and debris nets during construction, repair, and demolition operations. The standard is past its five year cycle period so action is pending. The A10 ASC has still not reached consensus of whether the standard should be reaffirmed or revised.

A10.12-1998 (R2005) (Excavation). This standard applies to all open excavations made in the earth's surface that require worker and/or property protection. Excavations are defined to include trenches. The standard was approved by ANSI on 1/21/2005. ASSE held a technical audio conference call about the standard on 3/24/2005 with hundreds of SH&E professionals in attendance.

A10.13-2001 (Steel Erection). This standard establishes safety requirements for the erecting, handling, fitting, fastening, reinforcing and dismantling of structural steel, plate steel, steel joist, and metal deck at a final in-place field site during construction, maintenance and dismantling operations. The standard is current and printed. The secretariat was made aware of the fact that the interpretation, amendment, and typographical correction was approved by the committee (January 2001 in Florida), and it has now been incorporated as an errata sheet to go with the standard. There is significant information about the standard on the website. The committee has reached consensus that the document is now in need of revision and there is a subgroup looking at the standard and a draft will hopefully be available during the later part of 2007.

ANSI/ASSE A10.14-Withdrawn (Fall Protection Systems for Construction and Demolitions). This standard establishes safety requirements for the erecting, handling, fitting, fastening, reinforcing and dismantling of structural steel, plate steel, steel joist, and metal deck at a final in-place field site during construction, maintenance and dismantling operations. ***Special note – this standard was administratively withdrawn by ANSI in 2002.

A10.15-1995 (R2005) (Marine Dredging). This standard applies to the operation, inspection, and maintenance of any vessel fitted with machinery for the purpose of removing or relocating of material from or in a body of water. The standard was recently approved for reaffirmation. The standard has undergone public review and committee review and was reaffirmed during the Fall of 2005.

A10.16-1995 (R2001) (Tunnels, Shafts and Caissons). This standard establishes safety requirements pertaining to the construction of tunnels, shafts, and caissons. The requirements set forth in this standard cover environmental control; related facilities; fire prevention; hoisting; haulage; and electrical drilling and blasting, and compressed-air work. This standard is not intended for application to mining or quarrying operations. The standard was reaffirmed in 2001. The committee has reached consensus that the document is now in need of revision and there is a subgroup looking at the standard and a draft will hopefully be available during the later part of 2007.

A10.17-2006 (Asphalt/Pavement Construction). Applies to hot mix asphalt operations for construction and resurfacing. This standard was administratively withdrawn, and is being resubmitted as a new standard. The standard recently completed committee ballot and public review. The standard was approved at the end of 2005 and is now available.

A10.18-200X (Temporary Floor and Wall Openings, Railings, and Toeboards). This standard prescribes rules and establishes safety requirements for the protection of employees and the public from hazards arising out of or associate with temporary floor holes and wall openings, stairs and other unprotected edges including low slope roofs during, construction and demolition activities. The standard went past its ten-year time period allowed by ANSI and was administratively withdrawn in 2006. However, the committee did finish the revision process and a new standard will be published in 2007.

A10.19-200X (Pile Installation & Extraction Operations). This standard establishes safety requirements for the installation and extraction of piles during construction and demolition operations. This is an accredited project, and there is not yet a draft for public review. There will be a committee ballot sometime during 2007.

A10.20-2005 (Ceramic tile, Terrazzo and Marble Work). This standard establishes safety requirements for construction operations and equipment used in the handling and installation of ceramic tile, terrazzo, and marble. The standard has completed committee ballot and public review and was approved at the end of 2005.

A10.21-200X (Proper Cleanup and Disposal of Contaminated Work Clothing). This project was withdrawn.

A10.22-1990 (R1998) (Rope Guided and Nonguided Hoists). It establishes minimum safety requirements for temporary personnel hoisting systems used for the transportation of persons to and from working elevations during normal construction and demolition operations, including maintenance, and is restricted to use in special situations. The newly revised standard was approved in 2007 by ANSI and will be available during the spring of 2007.

A10.23-200X (Back Injury Prevention Programs). This project was withdrawn.

A10.24-2005 (Roofing). This Standard establishes safe operating practices for the installation and removal of hot bitumen low-sloped roofs. The standard has completed committee ballot and public review and was approved at the end of 2005.

A10.25-200X (Sanitation in Construction). This standard establishes practices for sanitation construction and demolition operations. The standard is on schedule. A draft of the standard was distributed at the 1.05 committee meeting. ASSE staff has filed the scope with ANSI via the PINS process. A committee ballot and public review was announced during February of 2005 and again in 2006. The hope is to have a published standard sometime during the Fall of 2007.

A10.26-200X (Emergency Medical and Rescue Procedures for Construction Sites). This standard addresses the need for emergency procedures on construction sites. The subgroup is currently working on definitions and outline. ASSE staff has filed the scope with ANSI via the PINS process. The goal is to have a draft out for ballot and public review during 2007.

A10.27-1998 (R2005) (Asphalt Mixing Plants). It provides recommendations concerning the design, manufacture, operating processes, and equipment associated with the production of hot asphalt mixing (HMA) facilities. A committee ballot and public review was announced during February of 2005 and was published during the fall of 2005.

A10.28-1998 (R2004) (Crane or Derrick Suspended Work-Platform Platforms). The standard applies to platforms suspended from the load lines of cranes or derricks in order to (1) perform work at elevations that cannot normally be reached by other types of scaffolds or aerial work platforms or (2) transport personnel to elevations where other means of access are unsafe or impractical because of design or worksite conditions. The standard was reaffirmed as an American National Standard in 2004.

A10.29-200X (Safe Use of Aerial Lifts in Construction). This standard covers the purchase, rental, maintenance, use, and training in use, of aerial lifts used for lifting personnel. The subgroup is currently working on definitions and outline. ASSE staff has filed the scope with ANSI via the PINS process. A ballot and public review should take place during 2007.

A10.30-200X (Construction Workplace Security). This project was withdrawn.

A10.31-2006 (Digger-Derricks). This standard applies to special multipurpose vehicle-mounted machines, commonly known as digger-derricks. These machines are primarily designed to accommodate components, which did holes, set poles, and position materials and apparatus. Excluded from this standard are general-purpose cranes designed only for lifting service and machines primarily designed on for digging holes. This standard establishes requirements for specifications and dimensions. It defines the respective responsibilities of the manufacturer, distributor, installer, owner, user, and operator of the digger-derrick. The newly revised standard was published during 2006.

A10.32 (Fall Protection System for Construction Industry Users). This standard establishes performance criteria for personal fall protection equipment and systems in construction and demolition and provides guidelines, recommendations for their use and inspection. It includes, but is not limited to; fall arrest, restraint, positioning, climbing, descending, rescue, escape and training activities. Exceptions: This standard does not include lineman's body belts, pole straps, window washers' belts, chest/waist harnesses, and sports equipment. The standard has been approved and member interest is very high. Jack O'Donovan recently resigned as subgroup chair. Dan Paine has been confirmed as subgroup chair. Of specific interest is that SH&E professionals should be aware that the previous fall arrest standard A10.14 was administratively withdrawn by ANSI in June of 2002. The committee has reached consensus that the document is now in need of revision and there is a subgroup looking at the standard and a draft will hopefully be available during the later part of 2007.

A10.33-1998 (R2004) (Safety and Health Program). It sets forth the minimum elements and activities of a program that defines the duties and responsibilities of construction project where a single Project Constructor supervises and controls the project. The standard was approved and published during August of 2004.

A10.34-2001 (R2005) (Public Protection). This standard provides the recommended elements and activities on construction projects to provide protection for the Public. The standard was approved in 2001 and is current. Barry Cole, subgroup chair, has authored a letter to the Editor at ASSE Professional Safety Journal on the standard and interest appears to be very high.

The standard is aimed at increasing the safety of the public around construction sites, and appears to be the only construction standard to specifically address public safety during construction operations. The standard *Protection of the Public on or Adjacent to Construction Sites* establishes comprehensive safety guidelines for employers, contractors, building owners, and rescue personnel to protect the public from construction hazards in the air, on land, or at sea.

A10.35-200X (High Pressure Hydro Blasting). This project was withdrawn.

A10.36-200X (Railroad Safety). This document provides the minimum safety requirement for the application of techniques to be used in the performance of potential failure modes and affect analysis (FMEA) for railroad construction, inspection, analysis, and demolition machinery, equipment, and tools. The subgroup completed the first draft and it was balloted. This balloting took place during February/March 2004, and the committee did not approve it. It also underwent

public review without any comments. A second draft was distributed in February 2005, and the subgroup chair is trying to resolve negative ballots and comments.

A10.37-1996 (Debris Nets). This standard establishes safety requirements for the design, selection, installation and use of debris net systems during construction, demolition operations, and for the temporary containment of debris from deteriorating structures. The subgroup is working on a revised standard. The standard is approximately nine years old so action is pending to keep it current. The hope is that there will be a draft to review during the summer of 2007. The standard was administratively withdrawn during 1996 as a current American National Standard.

A10.38-2000 (Safety Program Elements). This Standard Establishes the Minimum Elements of a program for protecting the safety and health of employees involved in construction and demolition activities. The standard is current, but was reaffirmed by the committee during its January 2007 meeting. Public review is currently taking place and the standard should be reaffirmed and published during 2007.

A10.39-1996 (R2005) (Safety Audits). This standard identifies the minimum performance elements that when properly utilized will allow for a competent evaluation of a construction safety and health program. Further, it will identify those areas where systems, records, and performance elements are required in order to produce a quality audit. The standard was reviewed and reaffirmed by the committee during February of 2005. The committee reaffirmed after a recommendation by the subgroup. The subgroup recommended reaffirmation since its view is that the standard is still solid and is widely used in the construction industry.

A10.40-200X (Ergonomics in Construction). This standard establishes action triggers for recognized ergonomic hazards. The standard addresses, excessive force, repetition, awkward postures, vibration and contact stress. This is perhaps the most active subgroup currently working on standard. The subgroup completed the first draft and it was balloted. This balloting took place during February/March 2004, and the committee did not approve it. It also underwent public review without any comments. The second draft has also been balloted and underwent public review, but was not approved. The standard underwent another round of public review, which will end in April of 2006.

Final recirculation and notice of appeal took place at the end of 2006. A series of appeals have been filed alleging that the A10 ASC did not adequately and fairly addressing the outstanding negative comments and objections. There will be an appeals hearing on May 1, 2007 to hear the complaints. At this point in time the standard will not move forward until the appeals decision is reached.

A10.41-200X (Equipment Operator and Supervisor Qualifications and Responsibilities). This standard establishes the qualifications and responsibilities of individuals whose duties include ensuring the safety and health of construction equipment operations and qualifications of construction equipment operators. If possible, the A10 ASC would like to see a final draft for ballot during the summer of 2007.

A10.42-2000 (Rigging Supervisor, Riggers Signalmen Qualifications and Responsibilities). This standard establishes minimum criteria of knowledge and performance requirements for a

qualified rigger in the construction industry. It is designed to assist in achieving reasonable safety of all persons and materials during the process of or as the result of rigging, lifting, or movement of loads. The standard is current and published, no action required.

A10.43-200X (Confined Spaces in Construction). This standard addresses confined space procedures for entry on construction and demolition sites. The scope has been filed with ANSI. Some work on the standard has been done over the last 6 months via mail with a few members contributing changes to the latest draft. A new draft will be submitted for further comments. If possible, the A10 ASC would like to see a draft for ballot during the summer of 2007.

A10.44-2006 (Lock/Out Tag/Out in Construction). This standard addresses lockout/tagout on construction and demolition sites. The final standard was approved during 2006.

A10.45-200X (Disaster Response Preparedness for Construction Workers). This project has been withdrawn.

A10.46-200X (Hearing Loss Prevention). It establishes criteria for hearing loss prevention programs to be used for construction and demolition operations. The scope has been filed with ANSI. The standard has undergone public review and committee ballot. An appeal was filed but was then informally resolved. The standard is currently at ANSI awaiting approval and hopefully should be published during 2007.

A10.47-200X (Highway Construction Safety). ASSE staff has filed the scope with ANSI via the PINS process. There is not yet a draft to be reviewed by the committee. This standard establishes the criteria to be used for highway construction safety practices.

A10.48-200X (Tower Erection). Defines the minimum safety and health standards to construction, demolition, and maintenance operations of telecommunications towers. A subgroup roster is currently being put together for review by the full committee. An outline is being put together and a draft is not yet available. ASSE staff has filed the scope with ANSI via the PINS process. There is not yet a draft to be reviewed by the committee.

Next Meeting

The next meeting will take place in Washington, DC at the offices of IBEW during July 2007. Questions about the A10 ASC should be directed to the Secretariat at the following address:

A10 Committee
ANSI Accredited Standards Committee
Construction and Demolition
1800 E. Oakton Street
Des Plaines, IL 60018
847/699-2929 - Phone
847/296-9221 - Fax