

# THE POWER OF STANDARDIZATION

## Using Consensus Standards and Conformance to Solve Real-World Challenges

No matter the challenge, solutions cannot be developed in a vacuum. The robust U.S. standards and conformance system is a powerful example of how a consensus-based public-private partnership can work to develop concrete solutions to real-world problems.

### Why are standards important?

Behind the scenes, standards make everyday life work. They establish the size, shape, or capacity of a product or system. They specify performance of products, processes, or personnel. They also define terms so that there is no misunderstanding among those using the standard. Standards ensure that a phone call can be interconnected anywhere in the world, that batteries for electrical appliances are safe, and that a plane that takes off from London can be refueled in Los Angeles. With standards in place, our homes, workplaces, and daily lives are safer and more convenient.

In the U.S. alone, there are more than 100,000 standards at work across all industry sectors. These include:

- Product-Based Standards (examples: car airbags, washing machines, banking cards)
- Performance-Based Standards (examples: toy safety, greenhouse gas emissions, food safety)
- Management System Standards (examples: ISO 9000 Quality and ISO 14000 Environmental Management Systems)
- Personnel Certification Standards (examples: cyber-risk technicians, food handlers, crane operators)
- Construction Standards for buildings and systems in the built environment (examples: building, electrical, and plumbing codes)

### How are standards created?

Standards are developed by technical experts that work together to meet a common marketplace need. The term “voluntary consensus standard” describes a document developed through a process where all views and objections are considered and where affected parties (including government, consumers, and business) have reached consensus on its contents.

### Who develops standards?

Hundreds of standards developing organizations (SDOs) and consortia are engaged in the creation and maintenance of standards used in virtually every industry sector. These SDOs — and the experts who populate their committees — work to enhance quality of life and improve the competitiveness of U.S. businesses operating in the global marketplace.

### How is compliance with standards verified?

Conformity assessment is a vital link between standards that define product characteristics and the products themselves. It can verify whether a particular product meets a given level of quality or safety. And it can provide information about the product’s characteristics, the consistency of those characteristics, and the performance of the product.

Product problems (such as the 2007 toy recalls) are frequently not due to inadequacy of the standard, but rather conformance to the standard. Testing, inspection, and auditing of products and management systems is as important as the standard in ensuring that products and systems are safe and perform as expected.

The task of assessing compliance to a standard may rest with the manufacturer, necessitate an independent third party like an auditor or testing lab, or be specified by an official like a building code inspector.



## What does ANSI do?

The American National Standards Institute (ANSI) is a private, non-profit organization that administers and coordinates the U.S. voluntary standards and conformity assessment system. In this role, the Institute works in close collaboration with stakeholders from both industry and government to identify standards-based solutions to national and global priorities.

Since its formation, ANSI has held the unique responsibility of coordinating the standardization efforts of diverse interests and SDOs. In its role as a neutral forum, the Institute has helped to forge and continues to facilitate our nation's robust public-private partnership. This neutrality is especially key where significant cross-sectoral collaboration is required – the infrastructure provided by the Institute provides the facilitation and mediation required to bring stakeholders together on issues such as smart grid, healthcare, cybersecurity, and more. The composition of ANSI's Board of Directors reflects this commitment to openness and cross-sector communication, with representation from U.S. government agencies, businesses, professional societies and trade associations, SDOs, conformity assessment bodies, and consumer and labor organizations.

ANSI does not develop standards, but rather oversees the creation, promulgation, and use of thousands of standards, guidelines, and conformity assessment activities directly impacting businesses and consumers in nearly every industry and product line. In addition to the Institute's role in the domestic standardization infrastructure, ANSI promotes the use of U.S. standards internationally, advocates U.S. policy and technical positions in international and regional standards organizations, and encourages the adoption of international standards as national standards where they meet user needs.

The Institute is the U.S. representative and dues-paying member of the two major non-treaty international standards organizations: the International Organization for Standardization (ISO), and, via the U.S. National Committee (USNC), the International Electrotechnical Commission (IEC). As a founding member, ANSI plays a strong leadership role in ISO's governing body, and the USNC is equally well-positioned in the IEC. Through ANSI, the U.S. has immediate access to the ISO and IEC standards development processes. ANSI participates in almost the entire technical program of both ISO and the IEC, and administers many key committees and subgroups.

ANSI's role in the conformity assessment arena includes a complete portfolio of third-party programs. These include assessing the competence of organizations that certify products and personnel; validation/verification bodies engaged in the reduction and removal of greenhouse gases; and organizations that issue education and training certificates to U.S. workers. The affiliate ANSI-ASQ National Accreditation Board also provides accreditation services under the ACLASS and ANAB brands. ACLASS accredits testing and calibration laboratories, inspection bodies, and reference material producers. ANAB serves as the U.S. accreditation body for management systems and certification bodies.

## The American National Standard process

ANSI fosters the U.S. standardization system by accrediting the procedures of SDOs and approving documents as American National Standards (ANS). Accreditation as a standards developer represents compliance with an open and equitable consensus development process that protects the rights and interests of every participant through a set of "cardinal principles":

- **Openness** – Any materially affected and interested party shall have the ability to participate.
- **Balance** – Participants should represent diverse interests and categories, and no single group or individual should have dominance in standards development.
- **Due Process** – All objections shall have an attempt made toward their resolution. Interests who believe they have been treated unfairly have a right to appeal.
- **Consensus** – Agreements are reached when more than a simple majority of the participants concur on a proposed solution.

ANSI's impartial audits oversee the integrity of this process, regularly assuring adherence to the Institute's procedures and safeguarding the value of the ANS designation.

To learn more about the power of standardization, contact:

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