

STANDARDS 101

What every student and future engineer should know about voluntary standards

What is a standard?

Simply put, a standard is an agreed-upon way of doing something. In practice, it is a document that sets specific **guidelines for the design, operation, manufacture, and use of nearly everything produced by mankind**. There are standards to protect human health, safety, and the environment, and others to ensure that different products work compatibly together.



Two-wheeled examples

Think about, for example, your own bicycle. How is it that you can replace worn parts – a tire, brakes, the chain or seat – and the new pieces will fit and work with your old frame? The answer

is standards! **Standards define the required size and functioning of products and parts** to ensure they meet the needs of millions of consumers. Manufacturers use standards to show them how to develop products that will work for the market (you!).

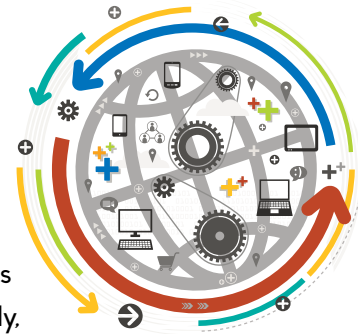
Here's another example: your bicycle helmet. How can you be sure that it will protect your head in the event of a fall or crash? Again, standards to the rescue. They set down product requirements that have been established and tested **for effective safety protection**.

Who creates standards?

Developed by groups of engineers and other experts, **voluntary standards are the result of cooperation** between technical professionals, companies, industry groups, and government and consumer representatives. They represent the combined expertise of those who have a stake in the technology, working to agree upon requirements and best practices.

Why are standards important?

From bicycle parts to electric cars to computer software, standards cover a huge range of subjects and activities. They drive innovation, strengthen businesses, and fuel our nation's economy. And most importantly, they **make people's everyday lives easier, safer, healthier, and more enjoyable**.



What is ANSI?

The American National Standards Institute (ANSI) is a non-profit organization that **coordinates the U.S. voluntary standards system** and helps to assure the safety and health of consumers and the protection of the environment. ANSI works to initiate standards-based solutions to national and global priorities, and serves as a neutral forum to promote partnerships between the

private and public sectors. ANSI is the U.S. member of the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) via the U.S. National Committee (USNC).



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