Standards: 2. The role of consensus standards

By WILLIAM J. COAD

Last month's column addressed monetary standards and national governmental standards of weights and measures from the point of view of their fundamental role in the structure of commerce. Another type of standard, to which John Q. Public relates much less than to the first two, is the consensus standard. Although there is this lack of recognition on the part of the public, consensus standards have done more to help and protect the consumer than all the consumer advocates, consumer-oriented federal laws, and consumer protection bureaus combined.

Consensus standards are one of the best available examples of voluntary efforts working for the common good. These standards are adopted by organized groups such as trade associations and technical societies for the purpose of standardizing dimensions, testing methods, safety regulations, etc.

At first glance, it might appear that if a trade association adopts a consensus standard, it follows that that standard would be to the benefit of the members of the trade group but not in the best interest of the consumer. Upon further consideration, however, it becomes evident that the "good guys and bad guys" syndrome of the typical consumer advocate movement is not valid where consensus standards are concerned. Consider some typical classes of consensus standards.

- **Dimensional standards:** If the lumber industry hadn't adopted dimensional standards, the dimensions of lumber would vary. For example, a two-by-four might range in dimension from 1 1/2 in. by 3 1/2 in. to 2 1/2 in. by 4 1/2 in., with ill-defined tolerances. If this situation existed, each lumber dealer would have to try to effectively market his size two-by-four. We might have "Brand X is bigger..." or "Brand Y two-by-four takes up less room and is lighter..." All of which would simply add to the cost of the two-by-four regardless of the dimensions! This situation would render the lumber industry unstable, to say the least.

  From the consumer's standpoint, the increased cost from the lumber mill would be only the beginning of the problem. The retailer would have to stock several different sizes of two-by-four, further increasing the cost. The lack of standard dimensions would make construction extremely difficult, whether it be for new projects, remodeling, or repairing. Anyone who has ever done any retrofit on an old frame structure can identify with this problem.

  The two-by-four is an overly simplistic example. Dimensional standards extend to all classes of materials used in machinery and construction, such as pipe dimensions, metal thicknesses, wire dimensions, bolt threads, and structural steel sections. They enable us to design and construct machinery, systems, and buildings at the least possible cost to the consumer, and most repairs can be done by the consumer with standard parts purchased from a hardware store.

- **Safety standards:** Safety standards apply in such diverse areas as manufacturing processes, materials (composition and fabrication methods), devices, and buildings. From the standpoint of the manufacturing interests, these standards assist in the design development of safe products and protect the reputable manufacturer from unfair competition from less scrupulous manufacturers who would market a less safe product at a lower price. It is self-evident that such safety standards serve to protect the consumer from unsafe products.

  - *Standards for testing and rating:* In a bit more subtle manner, these consensus standards are among the most effective consumer protection devices in existence. Before the advent of the standards for testing and rating, the capacity of a machine or device was simply that claimed by the maker of that device. The purchaser had no assurance, other than the reputation of the manufacturer, that it would produce the capacity claimed. Although this may not seem like a significant protection to many consumers, except in the case of a few consumer products like residential air conditioners and furnaces, all of the components parts that go to make up such things as central air conditioning systems can only achieve the results intended if they each produce the capacity intended by the systems designer. Where standards are not available, the designer inevitably relies upon safety factors for insurance, which results in higher investment costs to the consumer and higher operating costs.

  In the process of adopting consensus standards, the consumer and others affected by the proposed standard have more effective input than they have in any other process, including the democratic lawmaking process. Most organizations that draft and adopt consensus standards function under the rigorous guidelines developed and monitored by the American National Standards Institute. To adopt a consensus standard requires a consensus, not a simple majority as in the...
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democratic process of lawmaking; the text of the proposed standard must be made available to anyone who wishes to review it, and all such reviewers are eligible to submit comments. All constructive comments must be considered by the adopting agency, which must either incorporate them into the final document or show technical cause for their exclusion. The "write your Congressman" approach of simply being for or against with no substantial reason is not part of this procedure. Perhaps this is a singular reason why consensus standards have historically proved more beneficial to the consumer than so-called consumer protection laws! In the adoption of consensus standards, there are no lobbyist activities or voting blocs to cloud the true issues.

In a few cases, there has been evidence of misuse of the consensus process. Some reaction to this abuse has been activity on Capitol Hill, and more recently in the executive branch, to essentially destroy the voluntary consensus standards process through such diverse approaches as weakening it through withdrawing the participation of government employees or by replacing the entire process with standards mandated by law and drafted by federal bureaus. In either situation, the voluntary consensus process would collapse, to be replaced by either the purely political process or the uncontrollable bureaucratic process. Or both!

If, indeed, there is or has been misuse of the voluntary consensus process of adopting standards, these abuses can and should be eliminated by the adopting agencies themselves, if these standards are to survive and provide the service to both the manufacturer and consumer that they have in the past. Ω

On this page each month, the author shares his engineering philosophy by exploring a wide variety of topics, ranging from fundamentals to new frontiers, as they relate to building environmental systems. Mr. Coad is vice-president of Charles J. R. McClure & Associates and affiliate professor of mechanical engineering at Washington University, St. Louis, Mo.