CSA INTERNATIONAL

WHITE PAPER

Understanding Product Certification Marks and the Product Testing and Certification Process

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Every day, retail buyers, merchandising managers, quality assurance managers and others in retail operations make important decisions about which products will appear on their stores' shelves. While factors such as style or fashion trends, new technology, brand popularity, promotional support, and others can play important roles in the selection process, the presence of a certification mark from a qualified testing laboratory can be a key prerequisite of product acceptance for certain product categories.

Product certification marks—such as the CSA mark, the CSA Blue Star, or the UL mark—are found on a wide range of products, including electrical and gas appliances, consumer electronics, plumbing products, water purification units, heating and ventilating equipment, and lighting. Although many retailers today require that certification marks appear on the products they sell, confusion remains about what certification marks mean, who is qualified to perform product testing and certification and issue the marks, and how testing and certification organizations can assist retailers in protecting their customers and their businesses from products that don't meet accepted standards for safety or performance.

If retail buying and quality assurance managers do not have a clear understanding of the marks and the companies who issue them, it can prevent them from better assuring that the products in their stores meet applicable standards for safety or performance. And it may unnecessarily limit the products they make available to their customers, placing their stores at a competitive disadvantage.

Independent Third-Party Testing Protects Retailer and Consumer Interests

Product certification marks are the result of an independent, third-party testing and certification process. As such, they provide credible evidence that products bearing them comply with applicable standards for safety or performance.

Product certification marks must appear on products and may be included on product packaging. They differ from other product and packaging markings such as brand name or logo identification, marketing endorsements, promotional approval seals, and similar markings that are directly controlled by the product manufacturer.

Product certification marks provide clear evidence that a product has undergone independent, third-party testing and certification performed by an accredited testing and certification organization (also known as a testing laboratory). Display of certification marks is not at the discretion of the product manufacturer. These marks may only be used on qualified products under license from the laboratory that tested the product and confirmed that it conforms to applicable national or other standards for safety or performance.

To qualify for certification marks, manufacturers submit samples of their products to a testing organization. The organization tests these products under rigorous, controlled conditions, to determine if they meet applicable standards. Only product designs that successfully pass all required tests are entitled to bear the testing laboratory's certification mark. These marks are a visible and credible indicator to retail buyers, quality managers, and consumers that the products meet the requirements of the applicable standards.

To ensure that the product continues to comply with the applicable standards over time, the testing and certification organization conducts a series of unannounced, on-site

inspections each year as mandated by the Occupational Safety and Health Administration (OSHA) for products sold in the U.S. If the testing laboratory finds that a product no longer meets the requirements of the standards during these follow-up inspections, the approval mark is withdrawn. The mark will also be withdrawn if misused by the manufacturer.

Product Testing and Certification—The Stakeholders

Three stakeholder groups participate in the product testing and certification process (Figure 1): product manufacturers, standards developers, and product testing and certification laboratories.

Product manufacturers are the companies that make the drills, refrigerators, grills, decorative lighting, heating and cooling systems, electrical and electronic equipment, as well as plumbing and other products sold by retailers, distributors, and manufacturers. They must be aware of the applicable U.S., Canadian, and international standards when designing their products, selecting components used in their products, and when manufacturing the products.

Standards developers are the organizations responsible for creating the standards. Often, they are organized as technical committees that include representatives from government, industry, retailers, consumer groups, and end-users affected by the standards. These organizations develop the standards for a particular class of product and work in cooperation with standards publishers. In the U.S., standards developers commonly delegate the responsibility for publishing, maintaining, and distributing standards to organizations such as the American National Standards Institute (ANSI), the American Society for Testing and Materials (ASTM), CSA America, the National Sanitation Foundation (NSF), and Underwriters Laboratories (UL).

Product testing and certification laboratories are independent organizations accredited by various governmental or national accrediting agencies to provide testing to National Standards (e.g. OSHA, ANSI, and Standards Council of Canada in Canada). These laboratories are hired by manufacturers to test their products and certify that they meet the applicable standards. When a product is certified, the manufacturer is licensed to use the appropriate approval mark issued by the testing agency. The services offered by testing and certification organizations include testing and certification of the original product design ("prototype") and regular follow-up inspections conducted at the plant site where the product is manufactured to ensure that the products continue to conform to the standards. Failure to comply with the applicable standards over the course of the production run will result in withdrawal of the product certification.

Figure 1. The Product Testing and Certification Process

In addition to operating offices and laboratories in the U.S. and Canada to serve manufacturers with North American design and production operations, organizations such as CSA International have opened offices and established partnerships outside of North America to support the needs of manufacturers with global design and manufacturing centers, or outsourcing arrangements. These same global partnerships often support retailers who require local inspection services to support direct sourcing of house or captive brands from offshore regions.

Understanding the distinct roles of standards developers and testing laboratories

It is important to understand the difference between testing laboratories and standards developers. In some instances, separate divisions of the same organization are involved in testing products and in publishing the standards that the products are tested against.

When an organization is involved in both standards publishing and product certification, these activities are performed independently and separately to avoid conflicts of interest. Within CSA Group, for example, CSA America is responsible for publishing U.S. standards, the Canadian Standards Association publishes standards for Canada, and CSA International is a North American product testing and certification agency.

Sometimes the name (or a portion of the name) of an organization well known for its testing ands certification activities appears in the name of standards published by that organization's standards division (for example, UL standard 507 for electric fans, or CSA standard Z21.47/2.3 for gas-fired central furnaces).

This does not mean that a product must be tested and certified by the company whose name appears on the standard. So-called "CSA standards," "NSF standards," "UL standards," and others, are available to all qualified and accredited testing laboratories for use in testing and certifying products.

Accreditation Means Choices

A testing and certification laboratory must be accredited to test a particular product. Accreditation means that the laboratory has proven that it possesses the necessary competence, capabilities, calibration and control programs, independence, and reporting and complaint handling procedures. In the U.S., OSHA accredits product testing and certification laboratories as qualified to test and certify that electrical, gas, and other products meet U.S. standards. OSHA-accredited facilities are known as Nationally Recognized Testing Laboratories (NRTLs).

To receive U.S. accreditation, a laboratory must submit application materials to OSHA. OSHA then performs an application review and an assessment review of the laboratory's organization, programs, and test facilities. The preliminary findings are published in the Federal Register to allow public comment. Following a waiting period, OSHA publishes a second notification and responds to any comments. If the application is successful, this second notice signifies that the laboratory has been approved as an NRTL. CSA International and Underwriters Laboratories are examples of OSHA NRTLs. Both of these organizations are considered by OSHA to be qualified to perform testing of products covered by their OSHA accreditations.

All NRTLs test products against the same sets of standards, regardless of who wrote or published them. For example, since CSA International and UL are both NRTLs for electrical products, a floor lamp certified by one laboratory has successfully met the same criteria as a floor lamp certified by the other.

All NRTLs also conduct surprise follow-up inspections each year to ensure that the products they certify remain in compliance with applicable standards. The frequency of these inspections is set by OSHA guidelines; some NRTLs conduct more frequent inspections based on production volume, product liability risk, or manufacturer compliance history. Retailers may also require or request additional inspections. Costs of additional inspections are generally the responsibility of the manufacturer.

In addition to OSHA, other bodies accredit laboratories as qualified to test electrical, gas, and other classes of products for the U.S. market. These include ANSI, the International Accreditation Services (IAS)/International Code Council (ICC), the National Voluntary Laboratory Accreditation Program (NVLAP), the American Society of Safety Engineers (ASSE), and the National Evaluation Services (NES).

The Product Testing and Certification Process

To begin the product testing and certification process, a product manufacturer requests a project estimate from one or more testing and certification laboratories. Once the manufacturer receives the estimates, they choose a laboratory based on competency, cost, delivery time required, or other relevant criteria such as customer service.

The manufacturer then provides the testing and certification laboratory with product samples and data such as a list of materials used, schematic diagrams, and information about the components used in the product.

If all the applicable requirements are met, the manufacturer will receive written confirmation in a certification report, which includes a summary in the Certificate of Compliance. The product is then considered certified, and the manufacturer can use the certification mark on the product once a licensing agreement is contracted with the testing laboratory. The product is then listed in the certification organization's directory listing. The National Electrical Code provides the following description of what it means for a product to be listed:

> **Listed.** Equipment, materials, or services included in a list published by an organization acceptable to the authority having jurisdiction and concerned with evaluation of product or services, that maintains periodic inspection of production of listed equipment or materials, or periodic evaluation of services, and whose listing states that the equipment, material or services, either meets appropriate designated standards or has been tested and found suitable for use in a specific purpose.

Most testing and certification organizations post directory listings on their websites, where any interested party can verify whether or not a particular product has been tested and certified.

What the Marks Mean

Product certification marks are a visible indicator that a product or component meets applicable standards for safety and/or performance. Some of the marks issued by accredited testing labs and commonly found on products certified to applicable U.S. National Standards are CSA, UL, NSF, ETL, and TUV. While some marks may appear on a range of products, others are issued for specific classes of products or products designed for a particular geographic region. Here are some example marks from CSA International and explanations of when they are used.

The CSA US mark indicates that a product meets applicable U.S. standards, including those from ANSI, ASME, ASSE, ASTM, NSF, CSA America, and UL.

The CSA C/US mark signifies that the product meets applicable U.S. and Canadian standards, including those from CSA, ANSI, ASME, ASSE, ASTM, NSF, and UL.

The CSA Blue Star, found on gas-fired products, demonstrates that they meet U.S. standards for gas-fired products published by ANSI and CSA.

The Benefits of Competition

Because multiple laboratories have attained accreditation to test and certify various types of products, product manufacturers have the freedom and flexibility to select an accredited laboratory for a particular certification project based on delivery time, cost, convenience, or other considerations such as customer service.

Since different laboratories test similar products against the same standards, retail buyers can select products for their stores based on brand, price, and quality, rather than who did the testing.

A competitive, open testing and certification marketplace helps manufacturers bring their products to market as quickly and economically as possible while also ensuring that they are subjected to the rigorous testing called for by the applicable standards. This can help assure availability of qualified products to retailers at competitive costs and without shortages or backorder delays.

Retailers can only take advantage of this openness and competition, and ensure that they have access to the broadest possible selection of products, by ensuring that their product selection practices are not unduly restrictive. For example, a purchasing policy requiring products certified by a particular laboratory unnecessarily limits the range of options available to retail buyers. In contrast, a policy or practice that accepts products tested and certified

by any properly accredited testing and certification organization protects retailers and consumers against nonconforming products without placing unnecessary limits on product selection.

By becoming more familiar with the product certification process, and taking advantage of the benefits a competitive system of testing and certification offers, retailers can ensure that their customers have continued access to new and innovative products that will not only meet their expectations for performance and safety, but also provide manufacturers with options for cost, service, and delivery.

To learn more, contact:

CSA International
Client Services Center
Tel: 1-866-797-4272 (toll-free) or (416) 747-2661
certinfo@csa-international.org

The Unique Role of Consumer Product Evaluation Laboratories

Organizations that test and certify products against accepted standards for performance or safety are not the same as laboratories such as OnSpeX Consumer Product Evaluation, which retailers employ to perform specialized consumer product testing and inspections.

Consumer product evaluation is normally conducted using a retailer's own test protocols, or test methods developed by the testing organization at the request of the retailer, to ensure that products deliver the performance expected by consumers. For example, a power drill might be evaluated for weight, power, ease of use, and how quickly it can drill a hole or drive a screw. Or the packaging container for the drill may be evaluated for the damage protection it provides under typical shipping conditions.

Some consumer product testing and inspection organizations are affiliated with organizations that also perform standards-based testing and certification. For example, OnSpeX Consumer Product Evaluation is a division of CSA International. However, OnSpeX operates independently of CSA International to meet the unique product testing and inspection requirements of retailers.