

Standardization Squared

Standards Form the Foundation of a Testing Equipment Manufacturer's Business

BY SEAN FOWLER

If you were walking around Q-Lab's headquarters or any of our global locations, it wouldn't take long to hear someone – sales professionals, product engineers, help desk technicians, marketing application specialists, upper management, etc. – mention ASTM. This is because standards are essential to what we do. Q-Lab is a global leader in weathering and corrosion test chambers and exposure test services. Our brands, QUV, Q-SUN, Q-FOG, and Q-PANEL, are intricately connected to ASTM International standards.¹ They are part of our DNA.

Weathering and corrosion testing helps product developers and materials scientists design for better durability in the outdoor environment. The combined forces of sunlight, moisture and heat are the enemy. Q-Lab's test chambers simulate these conditions so that our customers can test, reformulate and test again in a repeatable way that accelerates the effects of these environmental stressors. Our customers rely on ASTM standards for product development, quality control, and in many cases, compliance with regulations. Our customers' customers often demand adherence to ASTM standards to ensure they get quality products. We help them meet those standards.

Q-Lab founder George Grossman began participating in ASTM International early in the company's history, which began in 1956. By the early 1960s, Q-Lab was an active member of Committee D01 on Paint and Related Coatings, Materials and Applications in support of the Q-PANEL line of standardized test substrates.

Of the nine ASTM technical committees whose meetings we regularly attend and the dozen or more we closely follow, Committee G03 on Weathering and Durability is one of the most important to us. It is no coincidence that our first test chamber, the QCT condensation tester, was introduced in 1965 (the same year G03 was formed). It is also no coincidence that our QUV accelerated weathering tester became the world's most widely used weathering tester after publication of ASTM G53 (now G154, Practice for Operat-

ing Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials) in 1976.

Q-Lab's current president, Douglas Grossman, is chairman of Subcommittee D01.27 on Accelerated Testing and has been an ASTM member since 1975. He cites the existence of Committee G03 as an advantage that sets ASTM apart from other standards organizations. Calling G03 "standardization squared" because it was formed to standardize the process of creating standards on weathering testing, Grossman says, "The beauty of G03 is that it provides a single forum for hashing out unified standards that codify the basic principles of weathering tests. Then the materials committees can write brief weathering standards that reference G03's standards and directly address only the peculiarities of their own application – without the necessity of reinventing the wheel every time." This is a point we'll return to later.

Q-Lab's products are sold in more than 50 countries, and our customer base represents a diverse array of industries: building materials, paints, plastics, automotive, textiles, adhesives and sealants, pharmaceuticals, photovoltaics, cosmetics, food and beverages, and others that sometimes surprise us. Our weathering and standardization experts participate in numerous ASTM International technical committees, attending hundreds of hours of meetings and conference calls each year. This is a significant investment for us, but there is no doubt that the effort pays off. The global reach we have achieved in so many industries would not have been possible without standardization and specifically ASTM.

The benefits that Q-Lab derives from ASTM standards can be boiled down to two key areas. First, ASTM standards are recognized and respected by customers in most of our market segments. Because we design our products to comply with ASTM standards and actively participate in standards development, Q-Lab gains respect and recognition by association. Second, when we participate in ASTM committees, we have the opportunity to

collaborate with many of our customers, learn from technical leaders in many industries and disciplines, and advance the state of the art.

A fresh example is the recent development of ASTM standard D7869, Practice for Xenon Arc Exposure Test with Enhanced Light and Water Exposure for Transportation Coatings, by Committee D01.27. This new standard represents the global state of the art in accelerated weathering testing. Q-Lab worked with a coalition of customers and competitors to create a new test protocol that accurately replicates the effects of south Florida weathering of automotive, aerospace and other related coatings in a xenon arc test chamber. Ford, Honda, Boeing, Bayer, BASF and Atlas were active participants in the decade-long research studies that formed the new standard.

For the first time, a single test was shown to accurately reproduce several material degradation modes seen in the outdoor environment. The prospect of this breakthrough is that development time for new coatings may be cut significantly while manufacturers work to improve durability, reduce costs and develop more environmentally friendly products. Previous methods were capable of reproducing only one or two degradation mechanisms. The result was that the best performing products in laboratory tests weren't reliably the best performers in actual use. The new method significantly improves correlation between the laboratory and real service for many coatings, and it may achieve comparable results for other materials and industries. However, the fruit of the research was in standardizing the protocol. Q-Lab felt strongly that ASTM International was the logical choice in which to propose a new standard.

The process of proposing, writing and approving new standards within ASTM is robust and efficient. As mentioned earlier, the existence of Committee G03 streamlined the process because G155, Practice for Operating Xenon Arc Light Apparatus for Exposure of Nonmetallic Materials, already standardizes weathering tests in xenon arc weathering chambers. Subcommittee D01.27 served as the perfect forum for interested parties to hash out most of the specifics before Q-Lab even submitted the first draft in D01.

The ASTM International balloting process is beyond democratic – every negative vote must be addressed by the technical subcommittee before progressing to the next step. If the subcommittee

decides not to make a change based on a negative vote, it must write a technical justification that is reviewed by the ASTM Committee on Standards. In many cases, however, negative votes or comments prove invaluable because they uncover an error or omission that no one else noticed.

For Q-Lab, the ASTM International process empowers us to improve our industry, which exists to help other industries improve their products. Our involvement with ASTM contributes real business results for Q-Lab, and has become ingrained in our corporate culture.

REFERENCE

1. Q-Lab, the Q-Lab logo, QUV, Q-SUN, Q-FOG and Q-PANEL are registered trademarks of Q-Lab Corp.

SEAN FOWLER joined Q-Lab in 1999 and has been in service and sales roles; he currently is technical marketing specialist, spending much of his time working in standards organizations. He is a member of ASTM Committees D01 on Paint, and Related Coatings, Materials and Applications, D08 on Roofing and Waterproofing, and D20 on Plastics, and he is active in ASTM Committee E44 on Solar, Geothermal and Alternative Energy Sources.

COMPANY SNAPSHOT

- ▶ Westlake, Ohio
- ▶ www.q-lab.com
- ▶ Manufacturer of weathering and corrosion test equipment; provider of exposure testing services

- ▶ Market: Global
- ▶ Number of staff: ~200
- ▶ Number of staff who are ASTM members: 11
- ▶ Number of ASTM Technical Committees with Q-Lab Representation: 9



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