AATCC’s test method development effort is a key part of what AATCC is about. Through interviews with committee chairs and other key persons, this column will feature various AATCC technical committees to find out what is new and exciting, what challenges they face, and how their work is vital to the textile industry.

Committee RA38—Colorfastness to Crocking

Scope of the committee: to develop test methods for measuring resistance of colors in textiles to transfer by rubbing, to modify and improve the crockmeter to enlarge its adaptability.

The Importance of Colorfastness to Crocking

An important aspect of all textiles used in apparel, upholstery, and car lighting is that color should remain on the textile and should not transfer through rubbing against a white material. AATCC's crocking test is essential to the textile industry because it provides a standard procedure for this aspect of colorfastness. This method helps suppliers meet their customers' documentation requirements, helps maintain quality assurance, and is an integral part of continued business.

The committee's work is also an essential part of international trade. International standards are very important because it gives everyone a common language to use. “I don't have to know Japanese to read a crocking report issued in Japan,” notes Stephen Lane of Textile Innovators, and former acting chair of RA38.

Challenges Faced by the Committee

Since the results of the crocking report can vary depending on what method is used, AATCC's Colorfastness to Crocking Test Methods Committee decided to standardize the test conditions. For instance, Canadian and European wet crocking uses 100% wet out on the test piece. The U.S. method does not. The results you read on a crocking test report done in Canada and the U.S. may be very different. Committee RA38 worked with the methods for the AATCC, ISO, and SAE to make them "reasonably the same," according to Lane. "The new ISO standard now contains all the elements of the 'American Standard' as well as the 'European Standard,' so that everyone is at least aware that there are different standards in use out there." Lane feels that the committee has been less successful with the SAE standard, because some automobile companies have their own testing methods that they prefer to use.

Committee RA38 has been facing other challenges as well. Over the last three to four years, the committee has been trying to reproduce in the laboratory a problem that has been reported anecdotally in the marketplace—there have been cases of a fabric that passed the crocking test but will still have color rub off in regular use. A subcommittee of RA38 has been evaluating a new crockmeter made in Japan to investigate if it will be suitable for use. They have also been looking into changing the protocol for the manufacturing of crockmeter cloth, and investigating if color measurement instrumental readings can be used to evaluate the crock squares once crocking has taken place.

"Hot issues" for the committee change with time, notes Lane. "It used to be denim, now it's the new printing and washing technologies." The committee's work is vitally important to the textile-printing portion of the industry because the print technology is changing dramatically.

Committee RA50—Colorfastness to Light

Scope of the committee: to develop test methods for measuring color changes in textiles under the influence of light, such as carbon-arc, sunlight, and daylight; to establish criteria to tell whether influences other than light have caused significant changes in color.

The Importance of Colorfastness to Light

AATCC test method 16 is one of our most well-known methods—everything from U.S. currency to home furnishings is tested using this method. The textile industry depends on consumers' acceptance of appearance and durability. Colorfastness to light is one of the first test methods used to assess appearance and durability. If a material is going to make it in the marketplace, it needs to pass this test. This test method has international reach because colorfastness to light is the primary test for apparel worldwide, according to former RA50 chair, Robert Lattie. "These test methods drive the world textile market because the definition of acceptable quality to the U.S. is written in terms of the AATCC test methods." He notes that retailers reference this test method and use it as a general requirement in apparel that they will buy. The equivalent international method would be ISO 105-B02, but Lattie feels the AATCC method is more precise and complete.

Colorfastness to light is important to every sector of the textile industry, from fiber manufacturers to retailers. Fiber and textile manufacturers want to know that their fibers and fabrics are durable to light. Dye manufacturers want to know how sunlight affects their color index ratings. Finishing manufacturers want to know how their products enhance or degrade colorfastness to light. Therefore committee members include dyestuff manufacturers, retailers, U.S. government officials, testing instrument manufacturers, and academics, among others.

Challenges Faced by the Committee

The committee is currently working on developing a new test method that will investigate the combination of the effects of perspiration and light on colorfastness. Although AATCC has tests for colorfastness to light and colorfastness to perspiration, anecdotal evidence suggests that the combination of perspiration and light...
will produce failures in colorfastness that would not be predicted by either of those two tests alone.

According to Lattie, the technical challenge is to make sure the test is repeatable, relevant, and reproducible. The quandary with any laboratory test is with relevance—real life conditions will vary so much that it is difficult to predict how the subject will behave from the results of a lab test. Nevertheless, says Lattie, “Our job is to provide the industry with reliable tests in order to predict and measure behavior.”

Committee RA43—Professional Textile Care

Committee RA43 was previously called Drycleaning Test Methods. The name and scope have just changed because of new professional textile cleaning technologies. According to Charles Riggs, committee chair, “Our new name and scope reflect new issues, new needs.”

Scope of the committee: to develop test methods for measuring the effect of professional textile care (including drycleaning, wet cleaning, finishing, and spot removal) upon the properties of textiles.

The Importance of Professional Textile Care

Information from AATCC test method 132 is used in garment care labeling, which gives consumers an idea of the useful life of the product. According to Riggs, the ability to be cleaned is what makes textile products “reusables, not disposables,” and everyone along the line in the textile chain who is interested in the product being reusable would be interested and affected by the committee’s test methods.

Riggs notes that RA43 test methods are undergoing a tremendous amount of change right now, since the professional cleaning technologies are changing more now than they have in the past 30 years.

Challenges Faced by the Committee

The committee members are currently developing test methods that address the new professional wet cleaning technologies. The committee has also begun development of a test method to address the new carbon dioxide cleaning technology. The European Union (EU) Aquacarb Team has developed test methods addressing wet cleaning and hydrocarbon cleaning. Although ISO has already approved a wet-cleaning care symbol for garment labels, the labels have not yet been put into effect because there is no official ISO test method to date. There is no labeling for professional wet-cleaning in the United States either, because the AATCC has yet to finish developing the test method. The committee is coordinating their efforts directly with ISO.

The challenge the committee faces, according to Riggs, is the need to decide, “what are the limits of this technology?” The committee must also decide whether the AATCC needs to develop a test method for each new professional textile care technology, or whether to develop two basic categories of test methods based on “wet” or “dry” cleaning technologies.

Right now, according to Riggs, with the EPA financially supporting research into new professional textile care technologies, and the national and international commitment behind it, “Our timing is right. We’re in the mainstream of what needs to be done.”

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