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AATCC NEWS



Association of Textile, Apparel & Materials Professionals



January 20, 2015



International Conference

Savannah, GA, USA

March 24-26, 2015



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What is brown—and where is it?

For a long time, people believed the world was flat. Now everyone knows that it's round. Did you know that, although color information is often presented with a flat image, color has three dimensions as well?

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Selecting a Textile Testing Lab, Part IV

The Importance of Calibration

Choosing a textile testing lab is like choosing a doctor. You want to know that the instruments are up to date and in working order. Even a world-famous surgeon isn't much use with a dull scalpel.

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International Conference

Don't miss this opportunity to promote your company by [exhibiting](#) or sponsoring at AATCC's [2015 International Conference](#) to be held March 24-26 in Savannah, GA

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Textile Trivia

Test your wits against other AATCC members in our Textile Trivia game. Answer correctly by Jan 31 to be entered for a drawing for an Amazon Gift Card.

[More info...](#)



STRC 2015

The Southern Textile Research Conference Committee conference will be held in Greenville, SC, May 17-19. The theme is Advanced Automotive Materials, Textiles and Fibers. [More info...](#)



UPCOMING EVENTS

[For complete list and updates, visit the AATCC Events page](#)

February 11-12, 2015

Early Bird Discount: Register by Jan 27

Wet Processing of Textiles with Spandex: Best Practices
Textile Technology Center
Belmont, NC
[more info..](#)

March 24-26, 2015

2015 International Conference
Hilton DeSoto, Savannah, GA
[more info..](#)

May 5-7, 2015

May Committee Meetings
Research Triangle Park, NC
[more info](#)

May 17-19, 2015

STRC 2015 Conference
Greenville, SC
Mark your Calendar

June 10-14, 2015

The 13th International Wool Research Conference & AATCC Sustainability Symposium
Zhejiang Sci-Tech University
Hangzhou, Zhejiang, China
[more info..](#)

Student Competition Deadlines

Jan 31, 2015

Student Chapter Awards and Outstanding Graduate of the Year
Entries Due
[more info](#)

April 9, 2015

C2C® Student Design Competition
Entries Due
[more info...](#)

April 29, 2015

C2C® Student Merchandising Competition
Entries Due
[more info..](#)

Open Enrollment

Textile Fundamentals Web-Based Training
[more info...](#)

Online AATCC Test Method Training
[more info...](#)

AATCC Recorded Webinars
[more info...](#)

Getting White Right
[more info...](#)

Proficiency Testing Registration

Feb 6, 2015
Appearance and Physical Properties
[more info...](#)

March 2, 2015
Antibacterial
[more info...](#)

**If you would like to register for an event please contact our [Education Department](#)

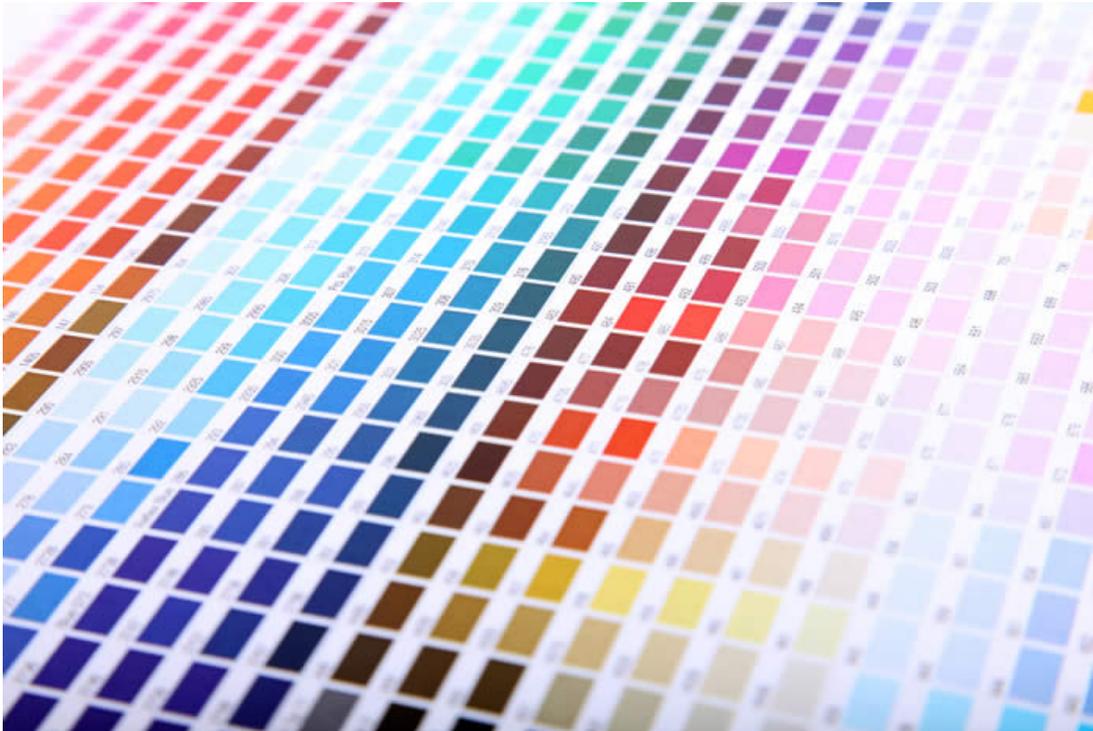
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January 20, 2015

What is brown— and where is it?

By [Nicoline Kinch](#), [Kolormondo](#)



For many industries, including fashion apparel, textiles, and interior design, color is a major buying signal. Technology advances have allowed brands to offer extensive color ranges, resulting in color making-decisions in every aspect of modern life.

In business, getting the color right is so important that color trends, specifications, and design have become a growing international multimillion dollar industry. [Akzo Nobel](#), (a global paint innovator and producer) [recently announced](#) Copper Orange as their [color of the year](#). The Pantone Color of the Year is [Marsala](#).

However, understanding the world of color is tricky. Customers do not know basic color theory. For instance, how many can explain "brown," and the difference between various shades of brown, like, for instance Copper Orange and Marsala? In our experience: very few.

Most people can *perceive* the difference between two swatches, but are unable to *analyze* it. They are "color illiterate." An illiterate person can see the difference between two words: "door" is shorter than "window." The first has two circles in the middle, while the latter starts and ends with the same sign. But, how are they related? What makes them different? Similarly, the color illiterate is limited to perceiving that two given colors differ, without understanding *why*.

Part of "reading" color is being able to analyze two swatches and say: "*this* brown has lots of red with a little black, while *that* brown is a grey close to black with a touch of orange." In other words, to be able to find, mix, and match—actively and intelligently.



As children, we all had to work hard to learn how to read. For most, it started with building blocks of the alphabet shown in a fun visual way. Slowly, we moved to increasing complexity.

Many color professionals however, may have begun their career because of natural talent. "Reading" color seemed easy to them. They "read" color by intuition—just like some people have a natural talent for music. This sparked their interest and they were able to quickly advance to higher levels, no longer needing to think about what "brown" is or what "chroma" or "saturation" is. They just knew it—or at least think they know. However, can they explain a basic color term like *saturation* to an average person—to their neighbors?

During my personal exploration of color, I have been lucky to meet with hundreds of designers and related professionals. I have often asked if they are able to explain saturation so that everybody can understand. This seemingly simple question is hard to answer! The experts come up with vague and imprecise answers like "it is more intense," or "it has lots of color," or "it is pure."

Are Copper Orange and Marsala intense? Pure? Do they have lots of color? The average person next door is likely to be at loss with these kinds of explanations. It seems to me that this is the basic building block missing in the knowledge of the general public: understanding saturation.

For a long time, it was believed that our world is flat, 2D. Now we know that it is round and 3D. But with color, how many people know that color has three dimensions (hue, value, and saturation), and can therefore be represented as a 3D sphere? Ordinary people today are still struggling with 2D color tools that have not really changed for decades.

Flat, 2D presentations, offer no connection between the color at the left and the color at the right. And by the way, where are the browns? How can the average user understand how the browns relate?

To work with color using those kinds of tools, is like planning a trip from San Francisco to Tokyo with a 2D map. You would go eastbound and cross the US, the Atlantic, Europe and Asia—how could you, from this map, do anything else? You have to KNOW it to understand that the world is round and that you can go westbound from California and reach Tokyo.



My question is: have we (on a macro, public scale) somehow missed the important, basic, ABC first building blocks of understanding color? Why is color not presented more often with its three dimensions? And does it matter that the customer—and possibly, even the professional— does not understand, and/or cannot explain, the basics?

On the web, [CIELAB](#), [NCS](#), and [Kolormondo](#) are examples of 3D models with physical 3D spheres made available by the [Munsell color tree](#) and the [Kolormondo 3D color globe](#). The advantage is that you build them and can take them apart, touch, move and turn them. The first dimension, hue, forms an equator. Value/lightness is shown from down to up. Particularly exciting is the third dimension, saturation, which is now easy to perceive as in and out; at the grey core there is no saturation. The further out you go towards the surface, the more saturated it gets.



Teaching everybody across the supply chain—including the designer and the customer—to use color intelligently is likely to reduce production costs, minimize mistakes, and speed up processes. Empowering customers to make better buying decisions will increase satisfaction and reduce product going to landfills. And all of this will lead to increased sustainability.

Fun, easy to use, basic physical and web 3D color tools already exist and are becoming more widely available. So maybe it is time for a global color literacy campaign!

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Selecting a Textile Testing Lab, Part IV The Importance of Calibration

By Diana Wyman, AATCC Technical Director

(This series addresses some of the important factors to consider in selecting a textile testing lab. Previous installments looked at [Lab Affiliations](#), [Proficiency](#), and [Specialized Services](#).)

Choosing a textile testing lab is like choosing a doctor. You want to be sure the lab is well trained in the areas that matter to you. You want to have clear and open lines of communication. And you want to know that the instruments are up to date and in working order. Even a world-famous surgeon isn't much use with a dull scalpel.



Calibration

Calibration is one way of verifying that a lab instrument is working properly. Calibration is a check of certain instrument parameters—velocity, weight, distance, etc.—at a specific point in time. Keep in mind that calibration is just a *check*. If the check finds everything to be within tolerance, the instrument is considered “calibrated.” If the check turns up a problem, further action is needed. An instrument is considered “out of calibration” or “uncalibrated” if some parameter is not within the specified tolerance, or if the check has not been performed within the specified interval.

A calibrated instrument doesn't guarantee that tests performed by the instrument will yield accurate results. It doesn't even guarantee that the calibrated parameters will be the same the next time a test is performed. Maintaining a good calibration procedure and schedule *does* greatly improve the probability that the instrument will produce accurate results with each use.

In-house Calibration

Some calibrations can be performed by laboratory staff without sophisticated tools or training. In fact, some instruments need to be calibrated so frequently (daily, or before each use) that it would be impractical to calibrate them any other way.

Certain calibrations are performed as part of the associated test method. For example, the first step in the procedure for AATCC Test Method (TM) 22, Water Repellency: Spray Test is to “Calibrate the apparatus.” This simply requires pouring 250 mL of water into the apparatus funnel and measuring the time for it to pass through.

A lab may do other calibrations on a routine basis. AATCC Monograph (M) 6, Standardization of Home Laundry Test Conditions, provides “simple procedures...to calibrate the top loading washing machines.” It is recommended that these be performed “at a minimum once a year.”

Some calibrations are not explicitly described in a test method. They may be prescribed by the manufacturer or they may be developed by the lab. Placing check weights on a scale is one example of this type of calibration. This can be done on a regular basis—weekly, monthly, or annually—or before each use.



Professional Calibration

For calibrations that are too complicated, or just too time consuming, to be performed by lab staff, a specialist may do the job. These calibrations may require sophisticated tools or traceable standards.

Some manufacturers will calibrate their own instruments, either by sending a representative to the lab or by having the instrument shipped to the manufacturer’s facility. There are also companies that calibrate a range of instruments.

Replacement

For instruments that fail a calibration check, adjustment or repair may solve the problem. Only in extreme cases will they need to be completely replaced. There are some tools, however, that should be replaced regularly rather than calibrated. AATCC Gray Scales fit into this category. Each scale comes with a certificate of conformity based on measurement of the individual gray chips. The scale is difficult to measure accurately once it is assembled. Instead of in-house calibration with a spectrophotometer, AATCC committee RA36 recommends replacing scales at least annually. Other items, such as multifiber strips, are suitable only for a single use. For items that will not be calibrated regularly, it is important to store them as recommended and verify the shelf life.

Calibration Schedules

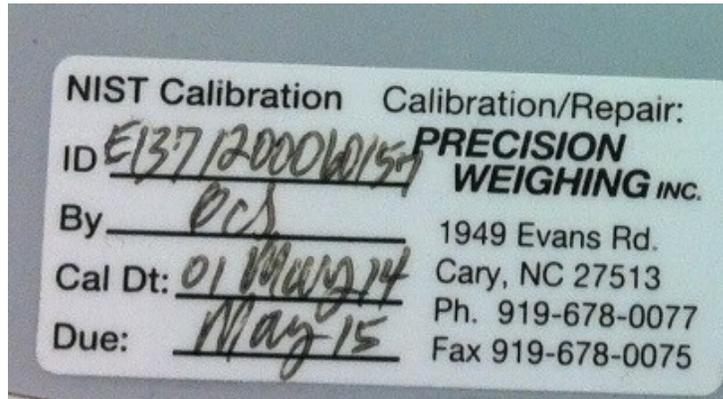
Calibration is necessarily an ongoing process. How often it needs to be done depends on a number of factors, including how often an instrument is used, the required accuracy, and the instrument’s tendency

to drift. Test methods and manufacturer's instructions often include recommended calibration schedules, but individual labs may have valid reasons for modifying these schedules.

Documentation

So, how do you know if and when a lab calibrates its apparatus?

If you visit the lab, you will probably see calibration stickers on some instruments. Make sure the due date has not expired. For stickers with space to list multiple calibration dates, the dates should be at regular intervals.



Not all calibrations are documented with a sticker. There may be a log, certificate, or other record. If these aren't posted near the instrument, don't hesitate to ask. They may be filed elsewhere for safekeeping. Some instruments may also store calibration data electronically.

Digging Deeper

Generally, a current calibration sticker is a good sign that the lab maintains its instruments in good working order. If you want to be particularly diligent, check the frequency of calibration. You can also ask what the calibration entails. Was every bulb/filter combination in the lightbox checked, or just the one most frequently used? Was the tensile tester calibrated for load AND speed? In what range, and to what accuracy, was the scale calibrated?

There is a lot that goes into a calibration program that cannot be covered here, but knowing what to look for and what to ask is a good first step.

Calibration is just one piece of the puzzle. Read previous articles in the series for more on [Lab Affiliation](#), [Proficiency](#), and [Specialized Services](#). Future topics will include Test Method Development, Continuing Education, Customer Service, and Certification.

Next...Test Method Development

Look for more articles in the "Selecting a Textile Lab" series. Read Part I on [Lab Affiliation](#), Part II on [Proficiency](#), or Part III on [Specialized Services](#).

The next article will appear in the February 17 newsletter. If you have questions or comments about this series, please contact AATCC Technical Director, [Diana Wyman](#).