



Joint Shade IPT

Spectrophotometer Measurement Sub-Committee

November 21, 2013

Spectrophotometer Measurement

Members

Names removed to protect PII.

-
-
-
-
-
-
-

Spectrophotometer Measurement

Objective

To develop a process to establish and use shade standards with instrumental spectrophotometer data attributes ($L^*a^*b^*$) in lieu of physical shade standard samples for future procurement of military fabrics/items.

Scope

The scope for the initial phase will be limited to solid shades.

Spectrophotometer Measurement

Plan

1. Benchmark current programs and establish instrumental spectrophotometer shade data values for existing standard samples
2. Work with the 'Shade Tolerance Ranges for Solid Colors' sub-committee to establish associated instrumental tolerances for the instrumental standard
3. Define process for pilot study
4. Select 12 pilot programs for 3 month evaluation
5. Review pilot study performance/success and make changes as necessary
6. Apply process to other suitable programs
7. Apply lessons learned from solids and initiate plan for printed patterns

Spectrophotometer Measurement

Deliverables

1. Defined process for electronic instrumental shade standards

Spectrophotometer Measurement

Activities to Date

1. Benchmarked programs using objective shade readings
 - a. Wool dress uniforms
 - b. Coast Guard ODU
 - c. Running shorts

Spectrophotometer Measurement

Protocol for Measurement of Shade Samples

1. AATCC Evaluation Procedure 6 - Instrumental Color Measurement, Section 2 - Measurement of Color by Reflectance Methods, should be used as a guideline in conjunction with AATCC Test Method 173 CMC: Calculation of Small Color Differences for Acceptability.
2. The samples should be clean and free of lint.
3. The spectrophotometer should be properly calibrated to manufacturers' specifications prior to taking measurements, using the green tile.
4. The following parameters should be used for measuring the samples:
Illuminant: D65
Area View: Large
Observer: 10°
Mode: Specular Included - Reflectance
UV Filter - OUT UV Lamp OFF
Scale: CIELAB
Samples should be backed with three layers, should be measured three times and averaged.
5. The samples should be identified as follows:
Standard (color name)
Tolerance (descriptor)
Samples 1-10 The absolute L^* a^* b^* values for the standard should be recorded and printed. The absolute L^* a^* b^* and the DE cmc 2:1 DL^* Da^* and Db^* for all tolerances and all samples compared to the standard should be recorded and printed.

Spectrophotometer Measurement

Activities to Date

2. Surveyed industry for volunteers to participate in pilot programs
 - Brookwood Companies
 - Galey & Lord, LLC
 - ITG (Burlington)
 - Kenyon Industries
 - Springfield LLC
 - W.L. Gore & Associates, Inc.

Spectrophotometer Measurement

Activities Going Forward

1. Match industry volunteers with Government Programs
2. Run pilot activities Jan 1 - Mar 31, 2014
3. Take lessons learned and replicate to other programs

Spectrophotometer Measurement

Questions, Comments?

Spectrophotometer Measurement

Thank You