



# USIFI Specifications Committee

## Committee Meeting

**JOCOTAS**  
**Wyndham Bay Point Resort**  
**Panama City, FL**  
**November 3, 2011**



### USIFI Specifications Committee Meeting Orlando Convention Center, Orlando, FL

#### AGENDA

Thursday, November 3, 2011  
(times subject to change)

- |                   |  |
|-------------------|--|
| 1:00 – 1: 15 p.m. | <b>Introductions and meeting opening:</b><br><i>USIFI MilSpecs Facilitator: Lorne Hamilton</i>   |
| 1:15 – 1:30 p.m.  | <b>Status of Specifications under Development</b><br><i>Lorne Hamilton</i>   |
| 1:30 – 1:45 p.m.  | <b>Color Subcommittee Update</b><br><i>Chairman; Terry Slivinski, Ferro Corporation</i><br>•Color Change from Green 483 to Green 383/808 |
| 1:45 – 2:00 p.m.  | <b>Weathering Subcommittee Update</b><br><i>Oscar Cordo, Atlas Weathering Systems</i><br>•Design and funding of outdoor weathering test  |
| 2:00 – 2:15 p.m.  | <b>Wet Slip Testing for Tent Floors</b><br><i>All</i><br>•Relevance of current test  |
| 2:15 – 2:30 p.m.  | <b>Abrasion Update</b><br><i>Dennis Snyder, Snyder Manufacturing</i>   |
| 2:30 – 2: 40 p.m. | <b>Other Business</b><br><i>Lorne Hamilton</i><br>•Solar Shades<br>•Broadwovens  |
| 2:40 – 3:00 p.m.  | <b>Future Direction of Specification Committee</b><br><i>All</i>   |
| 3:00 p.m.         | <b>Adjournment</b>   |



## Specification Status

<b>USIFI-PRF-002</b>	Approved by USIFI Membership. Published.
<b>USIFI-PRF-20696</b>	Approved by USIFI Membership. Published.
<b>USIFI-PRF-44103</b>	Approved by USIFI Membership. Published. Revision A under review.
<b>USIFI-PRF-44423</b>	Approved by USIFI Membership. Published. Revision A under review.
<b>USIFI-DTL-55308 A</b>	Approved by USIFI Membership. Published.



## USIFI-PRF-44103A & USIFI-PRF-44423A

- Change from Tan 459 to Tan 686A, FED-STD-595C color chip #33446 to achieve closer match to vehicle colors and gain some energy savings
  - Color and Spectral Reflectance requirements for Tan 686A adopted from MIL-DTL-53039D
    - Test methods and reference to MIL-DTL-53039D not included in specification as MIL-DTL-53039D is for different coating (aliphatic polyurethane) than vinyl.



## USIFI-PRF-44103A & USIFI-PRF-44423A

- **Comment:**
  - “Section 2.2.1 – MIL-DTL-53039 needs to be added back. Latest active revision is January 24, 2011”
  
- **Discussion:**
  - Decision to remove reference to MIL-DTL-53039 was based on this specification being for a specific coating (aliphatic polyurethane). Our interest was in matching the color of the coating, not the coating itself. Color and spectral reflectance values were extracted from MIL-DTL-53039 for use in USIFI-PRF-44103A and USIFI-PRF-44423A without attribution to MIL-DTL-53039
  
  - Should it be added as footnote or explanatory note in the specifications?



## USIFI-PRF-44103A

- **Comment:**
  - “To address color in 44103, see 44423, paragraph 3.6.1. I do not see this for the 44103 spec OR the color in section 3 should reference 4.6.15 and that paragraph should reference where to obtain a sample for 483.”



## USIFI-PRF-44103A

- Discussion:
  - **USIFI-PRF-44103A:**

“3.6. Color. The color of the face side of the cloth shall be Camouflage Green 483 for class 1 and Tan 686A Chip Number 33446 of Fed-STD-595 for class 2. For both classes, the face side of the finished cloth shall be easily distinguished from the back. The color of the back side shall be off-white, gray, black or any suitable color. When the color of the face and back sides of the cloth are the same, the face side shall be identified by applying a stamping on that side of the cloth with the word “Face” on each end of the individual piece. The color of the face side of the cloth shall be Pale Green Chip Number 34554 of FED-STD-595 for class 3 and Gray Chip Number 36231 of FED-STD-595 for Class 4. For Class 3 and 4 cloth, the back side of the cloth shall be black.”
  - **USIFI-PRF-44423A:**

“3.6.1. Camouflage Green 483 and White. The finished cloth shall match the approved color standard for the color specified (see 6.6).

3.6.2. Tan 686A. Tan 686A shall match Chip Number 33446 of FED-STD-595”



## USIFI-PRF-44103A

- Proposal:
  - **USIFI-PRF-44103A:**

“3.6. Color.

3.6.1. Classes 1 and 2. For class 1 the color of the face side of the cloth shall match the approved color standard for Camouflage Green 483 (see 6.4). For class 2 the color (Tan 686A) of the face side of the cloth shall match Chip Number 33446 of Fed-STD-595. For both classes, the face side of the finished cloth shall be easily distinguished from the back. The color of the back side shall be off-white, gray, black or any suitable color. When the color of the face and back sides of the cloth are the same, the face side shall be identified by applying a stamping on that side of the cloth with the word “Face” on each end of the individual piece.

3.6.2. Classes 3 and 4. For class 3 the color (Pale Green) of the face side of the cloth shall match Chip Number 34554 of FED-STD-595. For Class 4 the color (Gray) of the face side shall match Chip Number 36231 of FED-STD-595. For Class 3 and 4 cloth, the back side of the cloth shall be black.”



## USIFI-PRF-44103A

- **Comment:**

- “In 44103, paragraph 3.7 is the spectral reflectance and belongs in 4.6.16.1 such as the Tan 686A is in 4.6.17.”
- 3.7.1 Spectral reflectance for Class 2. The color of the face side of Class 2 shall fall within 2.0 National Bureau of Standards (NBS) units of the values listed in Table III using tristimulus color coordinates. Obtain brightness (Y) and chromaticity (x,y) values under standard illuminant C and the 2-degree standard observer angle in accordance with paragraph 4.6.17.

Color	Brightness(Y)	Chromaticity		Average Near Infrared <sup>1/</sup>	
		x	y	Min.	Max.
Tan 686A, 33446	3.360 – 0.400	0.368	0.364	62.0	72.0

<sup>1/</sup> see Table VI.



## USIFI-PRF-44103A

- **Discussion:**

- Paragraph 3.7.1 in USIFI-PRF-44103A, as in USIFI-PRF-44423A, deals with instrumented measure of both color and spectral reflectance of Tan 686A with values extracted from MIL-DTL-53039D.
- Should title of section 3.7.1. be changed from “Spectral reflectance for class 2” to “Color and spectral reflectance for class 2”
  - Would also apply to USIFI-PRF-44423A



## Color Subcommittee Update



## Weathering Committee Update



## Abrasion Testing Update



## Wet Slip Testing for Tent Floors

- The current verification test specified is ASTM F 609 “Standard Test Method for Using a Horizontal Slipmeter (HPS)”.
  - Test method is intended for measuring static slip resistance under dry conditions
  - Under USIFI-PRF-44103A an exception is included for testing under wet conditions.
- Is static slip resistance under wet conditions considered a necessary measurement in the development and verification of materials purchased under USIFI-PRF-44103A for their intended use by the services?



## Wet Slip Testing for Tent Floors

- If Wet Slip Testing is necessary, do the conditions noted in the exception to ASTM F 609 provide the results needed:
  - Do the test results accurately predict field experience? Do they rank various materials in the same order as experienced in the field?
  - Do the test results provide a reasonable degree of accuracy, with results falling within a reasonable range of variation?
  - Are the test results reproducible, giving the same results between and within industry and services labs involved in the testing?
- If the exception to ASTM F 609 does not provide the reliability, accuracy and reproducibility needed to measure static slip resistance under wet conditions, what tests should we be considering for this measurement?
  - Can it be done with equipment currently in place in industry and service labs, or at a minimal investment in new equipment?

## USIFI –PRF-44103 SLIP TEST

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## ASTM F609 Standard Test Method for Using a Horizontal Pull Slipmeter (HPS)

- \* Current standard
- \* Not applicable to wet surfaces
- \* Instrument not recognized by industry
- \* Commercially not available
- \* Sticktion phenomena
  - \* arising from dragsled meters and others having residence time before the slip dynamics are applied.
- \* Slip index number preferred
- \* Does not take in static and dynamic friction
- \* Substrate effects result

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## ALTERNATE METHODS

- \* ASTM F1677
- \* Brungraber Mark II / III
- \* 3 x3 inch neolight used for foot
- \* Angled foot
- \* Test does not correlate to foot traffic
- \* Substrate effects result
- \* Cost - \$ ???



Figure 2. The NIST-Brungraber Mark II Tester for Slip Resistance

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## ALTERNATE METHODS conti.

- \* ASTM F1679
- \* English XL VIT
- \* 1.25 inch diameter foot
- \* Angled foot
- \* Study correlates to foot traffic
  - \* USC, Penn State
- \* Substrate effects result
- \* Cost ~\$4000



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## WHAT WE KNOW

- \* F609 does not support wet surface
- \* There is no supported ASTM method
- \* No industry agreement
  - \* On common method
  - \* Slip index vs coefficient of friction
  - \* Wet vs dry guidelines
- \* ANSI 1264.2 and 1264.3
- \* NFPA 1901 base requirements on test used

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## WHAT WE KNOW conti.

- \* Include static and dynamic friction
- \* Outside labs will run F1677 or F1679
  - \* Certified users
- \* Foot correlates to a 15 degree angle
- \* No tests take contamination into consideration
- \* ASTM F13 offering support
- \* Natick, aka initials D.S., will not support withdraw of method

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## Other Business

- Proposals were distributed to USIFI membership for subcommittees of the Specification Committee to deal with:
  - Solar shade fabrics
  - Broadwoven fabrics
- To-date the response has been underwhelming and no further action will be taken.



## Future Direction of the Specification Committee

- Specification Committee formed in 2004 at meeting in Greensboro NC
  - Five (5) specifications were identified as of interest to the industry and the military:

<b>Military Specification</b>	<b>USIFI Result</b>
MIL-PRF-20696F	USIFI-PRF-20696
MIL-C-43808A (GL)	Item dropped
MIL-PRF-44103D	USIFI-PRF-44103
MIL-PRF-44423A	USIFI-PRF-44423
Commercial Item Description A-A-55308	USIFI-PRF-55308A



## Future Direction of the Specification Committee

- In addition, two new specifications were developed:
  - USIFI-DOC-001: Test Method Recommendations Coated and Laminated Fabrics
  - USIFI-PRF-002: Performance Specification Visual Examination of Coated and Laminated Fabrics
- No additional specifications have been proposed for review and/or modification
- Consideration given to broad based development:
  - Testing to predict outdoor weathering testing and performance
  - Abrasion tests to reflect performance of coated & laminated fabrics
  - Wet slip testing



## Future Direction of the Specification Committee

- Proposals to broaden the areas of development have generated minimum response
  - Solar shade
  - Broadwoven fabric
- Interest and effort on the part of both industry and military appears to have declined
- Where do we go from here?