

9900200 TEMPORARY TRAFFIC CONTROL DEVICE MATERIALS  
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

Awilda Merced  
(352) 955-6654  
awilda.merced@dot.state.fl.us

Comments: (11-27-19, Internal)

**990-2.1 Bands for Tubular Markers, Vertical Panels, Barricades, Vehicular Longitudinal Channelizing Devices, and other Devices:** Bands for tubular markers, vertical panels, barricades, vehicular longitudinal channelizing devices, and other devices shall meet the requirements of ASTM D4956 for Type III or higher retroreflective sheeting materials identified in Section 994.

**990-2.2 Collars for Traffic Cones:** Collars for traffic cones shall meet the requirements of ASTM D4956 Type III or higher retroreflective prismatic sheeting materials identified in Section 994 including supplementary requirements for reboundable sheeting. The outdoor weathering shall be for 12 months for all sheeting types.

**990-2.3 Drums:** Drums shall meet the requirements of ASTM D4956 for Type III or higher retroreflective sheeting materials identified in Section 994 including supplementary requirements for reboundable sheeting.

**990-2.4 Sign Panels:** Meet the requirements of 990-8.

ARTICLE 990-4 is expanded by the following new Subarticle:

**990-4.12 Retroreflectivity:** Ensure white and yellow pavement markings will attain an initial retroreflectivity of not less than 300 mcd/lx·m<sup>2</sup> for white and contrast markings and not less than 250 mcd/lx·m<sup>2</sup> for yellow markings. Black portions of contrast tapes and black masking tapes must be non-reflective and have a reflectance of less than 5 mcd/lx m<sup>2</sup>. At the end of the six-month service life, the retroreflectivity of white and yellow removable tape shall not be less than 150 mcd/lx·m<sup>2</sup>.

Response: These requirements are for Specification 102 items and are outside of the intended scope of this change. The retroreflectivity values for 990-4.12 are pre-existing language from 102-10.3.3. No changes made.

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Robert Hughes  
(800)348-9839  
ROBERT@FLEXSTAKE.COM

Comments: (1-7-20, Industry)

This comment applies to Temporary Glare Screen 990-6.7: I do not think this is even necessary. If the Glare Screen product passes the impact specifications, and stays down, I do not see how this is relevant. Also, you might consider changing that the glare screen paddles should be within the width of the top of the jersey barrier. Thus, not protruding out into traffic with less impacts. We have been in the market place for 30 years, and have never had a problem with the fasteners that our currently being used on our glare screen.

Response: The anchorage requirement for glare screen is pre-existing language that was relocated from 102-9.8. No change made.

Commented [MA1]: FDOT APL has Type IV or higher. There is no Type III in APL.

Commented [MA2]: FDOT APL has Type IV or higher.

Commented [MA3]: Consider to add more specific statement for reboundable requirements. For example: "...including supplementary requirements for reboundable sheeting as per ASTM D4956 S2.

Commented [MA4]: FDOT APL has Type IV or higher.

Commented [MA5]: See comment above

Commented [MA6]: Are these values coming from Standard paint requirements, section 971-3? ASTM D4592 requires 500 for White and 300 for Yellow.

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Al Wright  
(770) 329-1293  
awrightjr@mmm.com

Comments: (1-9-20, Industry)

FDOT Public Comments: Scope of Comments These public comments are being made by Al Wright of 3M Company in response to the Florida Department of Transportation (FDOT) Memorandum dated December 12, 2019. Specifically, to comment on Article 990-16.2 High-Visibility Safety Apparel regarding the statement “Provide high-visibility safety apparel in accordance with the 2009 MUTCD.” These comments seek to provide additional context and background and to request that FDOT consider adding additional wording below the current wording in section 990-16.2 High-Visibility Safety Apparel to read as follows: “High Visibility Safety Apparel shall also be compliant to ANSI/ISEA 107-2015. High Visibility Safety Apparel shall be labeled as compliant to ANSI/ISEA 107-2015 and shall also have Certificates of Compliance for the background and retro-reflective material.” This change is beneficial as the current statement seems incomplete without guidance and/or instructions as to which edition of the ANSI/ISEA 107 standard that the high visibility safety apparel needs to meet to comply with the 2009 Manual on Uniform Traffic Control Devices (MUTCD). These public comments are intended to add background and consideration for change. Worker Visibility and the Manual on Uniform Traffic Control Devices Background The Manual on Uniform Traffic Control Devices referred to as the MUTCD has been the primary document to advocate the Federal Highway Administration (FHWA) position on worker visibility safety. Worker visibility first appears in the 2000 Edition of the MUTCD under heading Section 6E.02 High-Visibility Clothing Standard: For daytime work, the flagger's vest, shirt, or jacket shall be either orange, yellow, yellow-green, or a fluorescent version of these colors. For nighttime work, similar outside garments shall be retroreflective. The retroreflective material shall be either orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors, and shall be visible at a minimum distance of 300 m (1,000 ft). The retroreflective clothing shall be designed to clearly identify the wearer as a person. This language provided important direction regarding high-visibility clothing, but also left open a number of questions. For example, how can a motorist, worker, or workplace supervisor measure 300m or 1000 feet? And how does the motorist clearly identify the worker as a person wearing high visibility clothing from that distance? The statements in the 2000 Edition of the MUTCD reflected the then-accepted norms and experience regarding worker visibility but did not provide certain needed details nor describe how worker visibility is and should be informed by the science of visibility. ANSI/ISEA 107-1999 American National Standard for High Visibility Safety Apparel and Headwear was the first US standard to establish performance criteria guidelines for high-visibility apparel. That standard defines three garment categories (also known as conspicuity classes 1, 2, and 3), which are based on worker hazards and tasks such as complexity of the work environment or background and vehicular traffic and speed. ANSI/ISEA 107-1999 describes a voluntary standard for high-visibility apparel and discusses how to select the proper garment. ANSI/ISEA 107-1999 was adopted more than fifteen (15) years ago but not until the Federal Highway Administration went a step further and stressed the importance of safe practices for workers when it developed the Worker Visibility Final Rule in November 2006. The FHWA Regulation 23 CFR Part 634 – Worker Visibility went into effect on November 24, 2008 and applies to all personnel within the right of way of a Federal-aid highway (i.e., highway/street construction and maintenance crews - including flaggers, inspectors, engineering personnel, survey crews, utility crews, emergency responders,

etc.). This regulation applies to all projects, including private utilities and developments, which are located within the right of way of a Federal-aid highway or are funded in whole or in part by Federal dollars regardless of location. This 23 CFR Part 634 regulation was later incorporated into the 2009 Edition of the MUTCD, at which time the MUTCD was also updated to include the FHWA requirement for garments meeting the ANSI/ISEA 107-2004 standard (which was the first revision of the previously issued ANSI/ISEA 107-1999 standard, and the current edition at the time the 2009 MUTCD published). As additional editions of the ANSI/ISEA 107 standard have published since 2009, FHWA has issued letters of interpretation incorporating the subsequent ANSI/ISEA 107-2010 and -2015 editions of the standard, verifying continued compliance to the 2009 MUTCD. The 2009 MUTCD requires all workers on or near the roadway right-of-way to wear high-visibility safety apparel that meets and is compliant to performance Class 2 or 3 of ANSI/ISEA 107-2004 or equivalent revisions. The most recent FHWA letter of interpretation verifies ANSI/ISEA 107-2015 is an "equivalent revision". FHWA incorporated the following language into Paragraph 4 of MUTCD Section 6D.03 so that high-visibility safety apparel that meets the requirements of ANSI/ISEA publications that are issued subsequent to the 2009 MUTCD would be acceptable: "All workers ... shall wear high-visibility safety apparel that meets the Performance Class 2 or 3 requirements of the ANSI/ISEA 107-2004 publication entitled "American National Standard for High-Visibility Safety Apparel and Headwear" see Section 1A.11), or equivalent revisions, and labeled as meeting the ANSI 107-2004 standard performance for Class 2 or 3 risk exposure" Though the baseline requirements for all four editions of the ANSI/ISEA 107 standard (-1999, -2004, -2010, and -2015) have remained constant, there have been changes to each that help clarify and define what makes a person visible. The next section highlights some examples of these differences. Differences in the Various Editions of the ANSI/ISEA 107 Standard

- ANSI/ISEA 107-1999 allowed use of high visibility safety apparel labeled as class 1, class 2 and class 3 to be worn while working on a federal-aid right of way. It also allowed a safety vest without sleeves being labeled as class 3 to be worn by incorporation of a compliant combined performance retro-reflective material.
- ANSI/ISEA 107-2004 continued to allow garments labeled as class 1, class 2 and class 3 to be worn while working on a federal-aid right of way. It also allowed a safety vest without sleeves being labeled as class 3 to be worn by incorporation of a compliant combined performance retro-reflective material.
- ANSI/ISEA 107-2010 also allowed the incorporation of combined performance retro-reflective material, however, the apparel is required to have sleeves to meet Class 3. This edition also introduced the requirement to have shoulder area reflective if no reflective is incorporated on the sleeves.
- ANSI/ISEA 107-2015 advanced the standard further to require balanced designs, so designs must have more balanced amounts of compliant background and retroreflective front and back. It also defines a way to size smaller workers in compliant garments and allows some logos into the design without having to remeasure and/or recertify the garment.

Summary and Key Points The need to size smaller workers was a significant addition to ANSI/ISEA 107-2015 and is a primary reason for these comments today to specifically ask for garments meeting ANSI/ISEA 107-2015. Only garments labeled as ANSI/ISEA 107-2015 compliant can allow the smallest size in the size range to have slightly less compliant background than the usual requirement (amounts allowed listed on Table 1 of the standard). This allows smaller workers to wear properly sized, compliant garments. Improperly sized garments can become a hazard if working around equipment with moving parts. Technically when a new edition of an ANSI/ISEA standard is issued, it replaces the older edition(s). Upon issuance of a new edition of the ANSI/ISEA 107 Standard, manufacturers, distributors and wearers typically start converting over to the newest edition requirements as they reissue bids, specifications or purchase additional stock. Review of Recommended/Suggested

Changes Article 990-16.2 High-Visibility Safety Apparel states: "Provide high-visibility safety apparel in accordance with the 2009 MUTCD." This statement should change to include the following in the same paragraph or as a new paragraph following the current wording: "High Visibility Safety Apparel shall also be compliant to ANSI/ISEA 107-2015. High Visibility Safety Apparel shall be labeled as compliant to ANSI/ISEA 107-2015 and shall also have Certificates of Compliance for the background and retro-reflective material."

**Response:**

As mentioned in your comment, the 2009 MUTCD requires all workers on or near the roadway right-of-way to wear high-visibility safety apparel that meets and is compliant to performance Class 2 or 3 of ANSI/ISEA 107-2004 or equivalent revisions. This means that there is no prohibition on using high-visibility safety apparel that meets the newer version of ANSI/ISEA 107 in FDOT specifications. No change made.

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Donald Pyde  
(312) 909 -0528  
don.pyde@trin.net

**Comments: (1-9-20, Industry)**

Mr. Strickland, I would like to comment and/or ask for clarification on the proposed change in 9900200, section 990-15.1 Items 1 and 3. For item 1, are you suggesting a label or marking to indicate the type of ballast required or something like a fill indicator on a water-filled product? If the latter, many of the commercially-available water-filled barricades (Trinity's included) meeting the ADA and FDOT's Pedestrian LCD criteria are not currently manufactured with fill indicator. Adding one to an already MASH-tested product would constitute a physical change and would most likely require re-testing in order to get a new FHWA eligibility letter issued. This change would come at great expense to industry manufacturers and I fear would result in decreasing the availability of high-quality, safe products to FDOT. For Item 3, I don't quite understand the reasoning behind requiring an LCD to exceed 42" in height if the footprint is less than 24". This seems counter-intuitive with regard to stability. If you have an LCD that is taller, reducing the footprint makes it easier to overturn. We have designed a product, with FDOT's Pedestrian LCD specification in mind, that meets MASH TL-3 criteria with a height of 33" and a footprint width of only 18". We created this stable product with the narrower profile in order to more efficiently fit in pedestrian applications where space ( particularly walkway width) might be limited. Your new proposal would eliminate the use of not only our new product, but any company's product that has a height under 42" and a footprint width less than 24". Thanks you for your consideration. I would appreciate the opportunity to discuss these issues with you further. Sincerely, Don Pyde - Trinity Highway Products

**Response:**

1. The internal ballast level indicator language is a pre-existing requirement for LCDs that was relocated from Specification 102. No change made.
2. The language concerning the height and footprint requirements was modified to require a minimum of 32 inches in height and to be capable of ballasting to prevent overturning. Change made.

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