

**KANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION TO THE
STANDARD SPECIFICATIONS, 2015 EDITION**

Delete the entire SECTION 2202 and replace with the following:

SECTION 2202

IMAGE SYSTEMS FOR RETROREFLECTIVE SHEETING

2202.1 DESCRIPTION

This specification covers Silkscreen Process Inks, Overlay Films, and Digital Print Systems for use on retroreflective sheeting.

2202.2 REQUIREMENTS

a. General. Provide durable traffic and work zone signs and devices using a combination of retroreflective sheeting, silkscreen process inks, acrylic overlay films, and/or eco-solvent spot inks. Provide transparent or opaque process inks with reducers and thinners as required for proper application. Provide durable, acrylic, transparent or opaque, colored overlay films with a pressure sensitive adhesive and a removable liner. With digital print systems, provide durable transparent or opaque eco-solvent spot inks with a transparent acrylic overlay applied to the face as required for proper application. Provide materials that are suitable for processing legends, borders, and background colors on retroreflective sheeting.

b. Color. Provide transparent silkscreen process inks, overlay films, and eco-solvent spot inks in standard traffic colors of yellow, red, orange, green, blue, or brown. CMYK inks will only be permitted for graphic logos, non-regulated colors and imagery; mixing various colors to achieve the appropriate performance is not permitted. Opaque silkscreen process ink, opaque overlay film, or opaque eco-solvent spot ink is black. Each color, when applied to retroreflective sheeting, must be distinctly manufactured and supplied to comply with the chromaticity limits in ASTM D 4956.

c. Performance. Provide silkscreen process inks, acrylic overlay films, and eco-solvent spot inks that, when applied according to the sheeting manufacturer's recommendations, comply with the following:

- (1) They are compatible with the retroreflective sheeting.
- (2) They have good adhesion to the sheeting and do not cause blistering, puckering, shrinkage, expansion or other deterioration of the sheeting.
- (3) After artificial weathering, stay within the ASTM D4956 chromaticity limits, and show no evidence of cracking, edge lifting, curling or other surface deterioration.
- (4) Silkscreen process inks should be dry to the touch within 2 hours, and ready for shipment within 24 hours.

2202.3 TEST METHODS

All tests will be conducted in accordance with ASTM D4956 with the exception of artificial weathering. Artificial weathering will be conducted according to ASTM G 155, Cycle 1, with the following additions and exceptions:

- At the end of each 20-hour cycle, place the panels in a cold cabinet at approximately 0°F for 1 hour. After removal from the cold cabinet, return the panels to the weatherometer to await the start of the next cycle.

2202.4 PREQUALIFICATION

Manufacturers desiring to provide material under this specification are to submit prequalification samples of each type and color covered by this specification that they wish to prequalify. Each sample of silkscreen process

ink consists of 1 quart of transparent and opaque inks and any necessary reducer or thinner required for proper application. Each sample of acrylic overlay film consists of 2 pieces 24 inches square. Each sample of digital print consists of 2 pieces 24 inches square retroreflective sheeting pre-printed with eco-solvent spot ink and an overlay applied.

Supply a sufficient quantity of the correct type of retroreflective sheeting for ink or film applications. Directions for proper application to retroreflective sheeting must accompany all samples of ink or film.

Forward the prequalification samples to the Engineer of Tests. Samples will be tested for compliance with all requirements of this specification. Each manufacturer will be notified of the test results.

If the prequalification samples of silk screen process ink, acrylic overlay film, or digitally printed sheeting comply with this specification, the product will be placed on a list of prequalified products maintained by the Bureau of Construction and Materials. No ink, film, or digital print system will be used on KDOT projects unless it has been prequalified. Manufacturers will be required to requalify at intervals determined by the Engineer of Tests.

Testing and evaluation by KDOT may be waived if complete testing has been performed on the identical product by AASHTO National Transportation Product Evaluation Program (NTPEP) within the last five years. Forward an official copy of the test report along with evidence that the product referenced is identical to that submitted for prequalification, to the Engineer of Tests for evaluation.

2202.5 BASIS OF ACCEPTANCE

Prequalification as required by **subsection 2202.3**.

Receipt and approval of a Type C certification as specified in **DIVISION 2600**.

Visual observation of performance.

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