

**ENGINEERING SPECIFICATION
STATE OF INDIANA
DEPARTMENT OF CORRECTION
PEN INDUSTRIES**

I. OBJECTIVE:

To provide the minimum requirements for Twill Woven Fabric used for the manufacturing of garments.

II. REQUIREMENTS:**CHARACTERISTICS****PHYSICAL SPECIFICATIONS****TEST METHOD/
STANDARD**A. Fiber Content
($\pm 5\%$)100% Cotton
First Quality Only

B. Color

Light Grey

C. Construction

2 X 1 Left Hand Twill

D. Weight
(oz. /sq. yd.)4 ounces
+/- 0.50 oz

E. Fabric Width

60"-61" Width.
60" cuttable minimumF. Finished Count
Warp
Filling ± 5
44 ends
44 picksG. Yarn Size
Warp
Fill20/1
20/1**PERFORMANCE CHARACTERISTICS**

H. Shrinkage

3% - 4%

AATCC 135
3 washings

I. Pilling-60 min.

3.5

ASTM D3512

J. Colorfastness Requirements

Lightfastness

20 hr.

4.0

AATCC 16A

PerspirationShade Change
Staining 3.0

4.0

AATCC 15

ORIGIN DATE**Feb 14, 2014****GENERATED BY****S. New****ERN NO****140041****DESCRIPTION****FABRIC, FLANNEL, 100% COTTON,
60 WIDTH****DOCUMENT NO.****02805-001****RELEASE DATE****5/15/2014****REVISION NO.****A**

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Washfastness AATCC 61-IIA
Shade Change 4.0

Staining 3.0

Crocking AATCC 8
Dry 4.0
Wet 3.0

K. Shading Shade to be consistent within each lot. For each shipment there will be no more variance between lots than a gray scale rating of 4. Shade evaluation to be made using the AATCC gray shade chart.

L. Workmanship the material shall be free from avoidable imperfections in manufacture and from defects or blemishes affecting the appearance or serviceability, otherwise it will be grounds for returning the merchandise at the vendor's expense.

III. PROCUREMENT:

A. Packaging/Shipping

Each roll will be ticketed or labeled to indicate weight and yardage per roll, the dye lot number, manufacture, supplier and part number along with a specific reference number. Rolls are to be palletized for shipment.

Samples will be submitted with the bid (1 continuous yard x full width) requirement of fabric being offered. PEN Products intends to test the sample to be in accordance with written specifications.

All goods will be put up on rolls in continuous length each not less than 100 yards and not more than 150 yards. The final piece to complete the order need not be less than 20 yards long. Each roll must have a cardboard tube in center. All rolls are to be individually wrapped in sealed poly bags .006 mil thickness (minimum).

B. Method of Specifying	Stock Code	Color	Pantone Textile #
	02805-001	Grey	408C

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