ENGINEERING SPECIFICATION
STATE OF INDIANA
DEPARTMENT OF CORRECTION
PEN PRODUCTS

I. OBJECTIVE:
To provide a non-allergenic Vinyl Fabric of acceptable quality to be used in the manufacturing of Mattresses.

II. REQUIREMENTS:

A.	Compatibility	Must be compatible with neoprene or HR foam
B.	Material	Reinforced Vinyl Ticking
C.	Composition	Antibacterial, Antistatic, Flame Retardant, Reinforced Vinyl Ticking, Waterproof and Tear Resistant.
D.	Weight (oz/sq/yd)	10.6
E.	Color	See Method of Specifying
F.	Width	See Method of Specifying
G.	Breaking Strength, (lb)	
	Warp	112
	Filled	110
H.	Tear Strength, (lb)	
	Warp	35
	Filled	31
I.	Flame Resistance	Vertical
	1. After flame and glow time, sec.	
	Warp	0-0.2
	Filled	0.2-0.4
	2. No. of Specimens with zero flame	
	Warp	5
	Filled	4
	3. Char length, inches	
	Warp	3.7
	Filled	4.5
	4. Cigarette ignition	Class A (Barrier) Material

ORIGIN DATE	DESCRIPTION	DOCUMENT NO.
June 26, 1996	VINYL, TICKING, REINFORCED, 10.6 OZ	00011-000
GENERATED BY		RELEASE DATE
C. Patel		11/20/03
ERN NO		REVISION NO.
030031		A

ENGINEERING SPECIFICATION
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PEN PRODUCTS

J. Abrasion Resistance Loss % 3.8-3.9
Highly Durable

K. Adhesion (peel) lbs/2 inches 32-37

L. Liquid Penetration Resistance (psi)
Face 178
Reverse 164

M. Flexibility and Hand Clark Stiffness
@ 20° F 9.6
Cold crease No cracking at @ -30° F

N. Surface Resistively Anti-Static

O. Bacteriostasis
1. Gram Positive 99.9%
2. Gram Negative 90.9%

III. PROCUREMENT:
A. Package/Shipping
Per purchase order

The supplier shall include with each material lot three (3) copies of material flammability test results. The State of Indiana reserves the right to check test such items to determine the validity of the results.

B. References
1. In compliance with the following Fed. Std.:

191 5903	191 5041	191 5100
191 5134	191 5304	191 5102
191 5102	191 5970	191 5512

Also: 16 CFR Part 1632 (FF4-72), NFPA 701

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C.	Method of Specifying	00011-001	Fawn 36.5"
		00011-003	Fawn 42.5"

ORIGIN DATE	DESCRIPTION	DOCUMENT NO.
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GENERATED BY		RELEASE DATE
C. Patel		11/20/03
ERN NO		REVISION NO.
030031		A

ENGINEERING SPECIFICATION
STATE OF INDIANA
DEPARTMENT OF CORRECTION
PEN PRODUCTS

I. OBJECTIVE:
To provide a non-allergenic fabric for the manufacture of mattresses used in correctional and Detention facilities, which meets flammable and smoke standards per State and Federal Re gulations and UL standards.

II. REQUIREMENTS:

A.	Material	PVC Coated 70 Deniar Nylon EPA Regist ration 10466-28 & 10466-23
B.	Composition	Antibacterial, Antistatic, Flame Retardant, Reinforced Vinyl Ticking, Waterproof and Tear Resistant.
C.	Weight (oz/sq/yd)	6.2 (Federal Standard 191-5041)
D.	Color	See Method of Specifying
E.	Width	See Method of Specifying
F.	Flame Resistance	
	1. Vertical	NFPA 701 Pass
	2. Cigarette ignition	16 CFR, Part 1632 Pass
G.	Bacteria Resistance Staphylococcus Aureus	AATCC Method 147-1988 99 % +
	Anti-fungal Resistance, Asper gullus Niger	AATCC Method 147-1988 99 % +
H.	Mullen Hydrostatic	Fed Std 191-5512 150 psi.

III. PROCUREMENT
A. Package/Shipping
Per purchase order

B. Method of Specifying 03859-001 Dark Blue 58"

ORIGIN DATE	DESCRIPTION	DOCUMENT NO.
November 18, 2003	NYLON PILLOW TICKING	03859-000
GENERATED BY		RELEASE DATE
J Hughes		12/12/03
ERN NO		REVISION NO.
030032		A

ENGINEERING SPECIFICATION
STATE OF INDIANA
DEPARTMENT OF CORRECTION
PEN PRODUCTS

I. OBJECTIVE:
To provide a Film used for vacuum draw on foam cores in the mattress assembly process.

II. REQUIREMENTS:

A. Material — 4.0 mil polyethylene copolymer, Ethyl Methyl Acrylate (EMA) Trade Name: ExxonMobil OPTEMA EMA TC115

B. Thickness (mil.) — 4 ± 10%

C. Width — See Method of Specifying

D. Length (ft/roll)
- 03161-001 (54"W) — 4630
- 03162-001 (60"W) — 6250

E. Yield (yd^2/roll)
- 03161-001 (54"W) — 2315
- 03162-001 (60"W) — 3472

F. Density (lbs./in^3) — .0339

G. Color — Opaque White

H. Film Elongation at Break %

MD	370	ASTM D882
TD	600	ASTM D882

I. Elmendorf Tear Strength (g/mil)

MD	20	ASTM D1922
TD	100	ASTM D1922

J. Dart Drop (g/mil) — 260 — ASTM D1709

K. Film Tensile Strength at Break (psi)

MD	3510	ASTM D882
TD	3660	ASTM D882

ORIGIN DATE	DESCRIPTION	DOCUMENT NO.
June 21, 2009	SILKFILM, OPTEMA EMA	03161-000
GENERATED BY		RELEASE DATE
G. W. Rosen		7/22/09
ERN NO		REVISION NO.
-		

L.	1% Secant Modulus (psi)		
	MD	9320	ASTM D882
	TD	8760	ASTM D882
M.	Melting Temperature	192°F	ExxonMobil Method
	Vicat Softening Point	147°F	ASTM D1525

III. PROCUREMENT:

A. Package/Shipping: Per purchase order.

B. Vendor (Reference): Mayer Paetz
321 South Alabama St.
Indianapolis, Ind. 46206

BJK Industries
945 South 15th St.
Louisville, KY 40210

C. Weight (Reference): 1 Roll = 60 lbs.

D. Method of Specifying

	Width
03161-001	54.0 inches
03162-001	60.0 inches

ENGINEERING SPECIFICATION
STATE OF INDIANA
DEPARTMENT OF CORRECTION
PEN PRODUCTS

I. OBJECTIVE:
To provide a clear non-allergenic reinforced vinyl fabric of acceptable quality to be used in the manufacturing of mattresses.

II. REQUIREMENTS:

A.	Foam Compatible	Pass – loss <3.0% HTM test method Compatible with Densified Polyester
B.	Material	Reinforced Vinyl Ticking
C.	Composition	Antibacterial, Antifungal, Flame Retardant, Stain Resistant, Waterproof and Tear Resistant
D.	Weight (oz/sq/yd)	11 minimum
E.	Color	Clear
F.	Width	See Method of Specifying
G.	Substrate Description	1000 d, 9x9 polyester weft inserted warp knit
H.	Coating	Extruded PVC
I.	Trapezoid Tear Strength, (lb)	
	Warp	100
	Filled	60
J	Tensile (lb/in)	
	Warp	230
	Filled	200
K.	Adhesion (lb/in)	
	Warp	15
	Filled	20
L.	Flame Resistance:	NFPA 701-2004 TM2 Pass Cal 117 Section E Pass
M.	Draize Dermal Toxicity	No irritation

ORIGIN DATE	DESCRIPTION	DOCUMENT NO.
September 22, 2008	TICKING, PLASTICIZED CLOTH, 11OZ, with SUBSTRATE, CLEAR	03906-000
GENERATED BY J. Davis		RELEASE DATE
ERN NO		REVISION NO.

ENGINEERING SPECIFICATION
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PEN PRODUCTS

N. Heat seal ability — Seam strength 50 lbs with 1 inch RF weld

O. Standard Antimicrobial

AATCC 30-1988	Pass
AATCC 100-1999	Pass
AATCC 147-1998	Pass
NY State 1241-1985	Pass

III. PROCUREMENT:

A. Package/Shipping
Per purchase order

B. References:

Cal TB 117 Section E	Cal TB 121	Cal TB 129
Cal TB 133	Cal TB 603	ASTM D3776
ASTM D751	NFPA 701-2004 TM2	

C. Method of Specifying

Stock Code #	Width
03906-001	40"
03906-002	80"
03906-003	41"
03906-004	39"

ORIGIN DATE	DESCRIPTION	DOCUMENT NO.
September 22, 2008	TICKING, PLASTICIZED CLOTH, 11OZ, with SUBSTRATE, CLEAR	03906-000
GENERATED BY J. Davis		RELEASE DATE
ERN NO		REVISION NO.