UNIVERSITY OF NORTHERN IOWA
TEXTILE AND APPAREL PRODUCT DEVELOPMENT AND MATERIALS ANALYSIS LABORATORY

TEST SERVICES AND PRICE LIST

The University of Northern Iowa provides no guarantees or warranties, express or implied, regarding outcomes or services relating to this agreement or testing service, or any use of related technology. The client agrees that the University of Northern Iowa shall not be liable for any direct or indirect loss or damage to any materials, equipment, product, information, or other property provided by the client. The client also agrees that the University's total liability to the client relating to any cause of action shall be limited to the total fee received by the University from the client for these contracted services.

BASIC CONSTRUCTION ANALYSIS	*Sample Fee*	*Test Method*
Fabric / Thread Count		
• Woven: Thread Count- the number of warp and filling yarns per inch	$40	ASTM D3775
• Knit: Gauge- the number of wales and courses per inch	$40	ASTM D3887
Fabric Thickness- thickness of a knit, woven, or nonwoven fabric	$40	ASTM D1777
Yarn Size / Number	$40	ASTM D1059
Fabric Weight	$40	ASTM D3776
Woven Pattern Analysis	$100	

PHYSICAL TESTS	*Sample Fee*	*Test Method*
Dimensional Change: Laundering- the dimensional change (shrinkage or stretching) in washable woven and knit fabrics or garments and other textile products when subjected to repeated home laundering procedures. *Specify care procedures on the Textile Testing Request Form.*		
• 1 Cycle	$70/$110	AATCC 135/150
• 3 Cycles	$75/$115	
• 5 Cycles	$80/$125	
Breaking Strength and Elongation- the ability of a fabric to withstand a pulling force until rupture occurs.		
• Grab Test (unsuitable for knits)	$85	ASTM D5034
• Strip Test: Cut Strip (treated woven and nonwoven fabrics)	$85	ASTM D5035
• Strip Test: Raveled Strip (woven fabrics)	$110	ASTM D5035
Tear Strength- the initial resistance to tear in most textile fabrics.		
• Tongue Tear (preferred method)	$85	ASTM D2261
• Elmendorf	$85	ASTM D1424
Ball Burst- the bursting resistance of knit fabrics with high elongation and some woven fabrics.	$85	ASTM D3787
Individual Fiber and Yarn Strength Analyses	negotiated on demand	

FLAMMABILITY	*Sample Fee*	*Test Method*
45º Flame Test- used to test most apparel textiles. Identifies flammability classification (Class 1, 2, or 3). Original and refurbished samples tested.	$180	16 CFR,Part 1610 ASTM D1230
Vertical Flame Test- measures the vertical flame resistance of textiles. Afterflame, afterglow, and char length are evaluated.	$180	ASTM D6413
Flammability Test for Children's Sleepwear (Sizes 0-14)- Vertical Ignition Tester used to evaluate char length according to burning criteria. Original and refurbished samples are tested.	$450	CFR 1615/1615

SPECTROPHOTOMETRIC ANALYSIS	*Sample Fee*	*Test Method*
• **Color Analysis-** instrumental measurement of chromatic coordinates such as CIE LAB's L*a*b* system.	$50	AATCC EP6
• **Batch and Standard Comparisons** – Determination of ΔE	$50	
• **Spectral Power Distributions –** Reflectance and Absorbance analyses	$50	

COLORFASTNESS	*Sample Fee*	*Test Method*
Crocking (Dry and Wet)- evaluation of color transference from rubbing a colored textile material onto a white test cloth. Suitable for all dyed and printed textile fabrics.	$45	AATCC 8
Light (Xenon)- evaluation of color change resulting from light exposure to a xenon lamp (large or special cycles require quote).		
• Light Exposure (20 hours standard) (up to 20 specimens)	$600	AATCC 16
• Color Change Evaluation (instrumental or visual)	$50	AATCC EP7
	$50	AATCC EP1
Laundering: Accelerated- evaluation of the colorfastness and staining of textiles intended to withstand frequent launderings. One cycle approximates 5 domestic laundering cycles.	$135	AATCC 61
Laundering: Domestic- evaluation of the colorfastness of textile fabrics to home laundering conditions.		
• 1 Cycle	$70	
• 3 Cycles	$80	
• 5 Cycles	$90	AATCC 172
• Add Bleach (Chlorine or Non-Chlorine)	add $50	AATCC 188
Perspiration- evaluation of colorfastness to perspiration.	$70	AATCC 15
Dye Transfer Storage: Fabric to Fabric- evaluation of color transfer that can result from prolonged storage. Can occur when garments are stored with different shades contacting each other.	$60	AATCC 163

PILLING/ABRASION RESISTANCE	*Sample Fee*	*Test Method*
Abrasion Resistance: Martindale Method- measurement of the resistance of a textile fabric to abrasion by rubbing the fabric in patterned cycles. Results are examined and recorded with a video microscope.	$100	ASTM D4966
Pilling Resistance: Random Tumble- evaluates the resistance of a textile fabric to pilling and other related surface changes using the random tumble pilling tester. The procedure is generally applicable to all types of woven and knitted fabrics (except silicon resin treated fabrics).	$80	ASTM D3512

RESISTANCE/REPELLENCY	*Sample Fee*	*Test Method*
Air Permeability- determines the rate of air flow though a textile fabric. Indicates the "breathability" of weather resistant, rainproof, or coated fabrics.	$60	ASTM D737
Water Repellency: Spray Test- evaluates the resistance of textile materials to wetting by water. Indicates the effectively of water-repellant finishes. Applicable to all textile fabrics, whether or not they have been treated for water-repellency.	$40	AATCC 22
Water Resistance: Impact Penetration- measures textile resistance to penetration of water by impact; used to simulate rain penetration. Applicable to all textile fabrics, whether or not they have been treated for water-resistance/repellency.	$60	AATCC 42
Weather Resistance: Xenon Lamp Exposure- evaluates resistance of textile fabrics to weathering in a controlled, simulated environment. Resistance to degradation can then be measured in strength loss and/ or colorfastness.		
• Exposure (20 hours standard) (up to 20 specimens)	$700	AATCC 169
• Post Weathering Evaluations (per fabric)		
➢ Breaking Strength and Elongation	$85	ASTM D5035
➢ Bursting Strength	$85	ASTM D3787
➢ Tear Strength	$85	ASTM D2261
➢ Colorfastness to Light (instrumental or visual)	$50	AATCC EP7
	$50	AATCC EP1

CUSTOMIZED TESTS	*Sample Fee*	*Test Method*
Tests not delineated above are negotiable	Quote	

The University of Northern Iowa provides no guarantees or warranties, express or implied, regarding outcomes or services relating to this agreement or testing service, or any use of related technology. The client agrees that the University of Northern Iowa shall not be liable for any direct or indirect loss or damage to any materials, equipment, product, information, or other property provided by the client. The client also agrees that the University's total liability to the client relating to any cause of action shall be limited to the total fee received by the University from the client for these contracted services.

Please note that all prices are subject to reasonable change without notice.