

TECHNICAL BULLETIN



COTTON INCORPORATED

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TRI 3002

COTTON INCORPORATED

DYEING AND FINISHING

LABORATORIES

WHAT ARE THEY?

The Dyeing and Finishing Laboratories include the Color Services Laboratory (CSL) and the Dyeing and Finishing Applications Laboratory (DFAL). They are well-equipped research and technical service laboratories with facilities and equipment for preparing, bleaching, color matching, dyeing, printing, and finishing all-cotton and cotton blend fibers, yarns, fabrics, and garments.

WHERE ARE THEY?

The Dyeing and Finishing Laboratories are at Cotton Incorporated's world headquarters in Cary, North Carolina.

HOW ARE THEY STAFFED?

The labs are staffed with textile chemists and technicians with manufacturing and research experience.

WHO CAN OBTAIN SERVICES?

Textile manufacturers, weavers, knitters, converters, and retailers with specific interests in producing or marketing all-cotton or NATURAL BLEND[®] textile products of U.S. cotton are eligible for services provided by the Dyeing and Finishing Laboratories. Importers of cotton textile products into the U.S. are also eligible for these services. Requests for service should be directed to the Technology Implementation team at Cotton Incorporated in Cary.

NOTE: NATURAL BLEND[®] is a registered trademark of Cotton Incorporated to identify blended products containing a minimum of 60% Upland cotton, which meet the objective criteria established by Cotton Incorporated.

WHAT ARE SOME OF THE SERVICES OFFERED?

1. Product development research.
2. Technical assistance with preparation, dyeing, and finishing procedures for textile mills, manufacturers, etc., needing to process cotton fibers, yarns, fabrics, and garments.
3. Evaluation and/or development of new procedures for dyeing and finishing of cotton fabrics.
4. Solving manufacturing problems.

DYEING AND FINISHING LABORATORIES EQUIPMENT

Laboratory Equipment for Dyeing

- 1 - 30 cm. wide Werner-Mathis vertical or horizontal lab padder
- 1 - 40 cm. wide BTM horizontal lab padder
- 2 - Ahiba Texomat laboratory dyeing machines
- 1 - Ahiba Polymat laboratory dyeing machine
- 1 - Mathis Labomat BFA-24 laboratory dyeing machine
- 1 - Roaches Pyrotec 2000 laboratory dyeing machine
- 1 - HunterLab Ultrascan XE Spectrophotometer
- 1 - GretagMacbeth Color iControl (Color iMatch Textiles with integrated Color iQC package)
- 1 - Zimmer laboratory printing table
- 1 - 80 lb. (36.4 kg.) Unimac rotary drum washing machine with microprocessor
- 1 - 50 lb. (22.7 kg.) Unimac rotary drum washing machine with microprocessor
- 1 - 35 lb. (16.0 kg.) Unimac rotary drum washing machine with microprocessor
- 1 - 18 lb. (8.2 kg.) Unimac rotary drum washing machine with microprocessor
- 1 - 1 to 5 lb. (2.2 - 11 kg) OPTILAB garment dye machine (atmospheric & pressure)
- 1 - 35 lb. (77 kg) OPTIDYE-7 garment dye machine (atmospheric & pressure)
- 1 - 8 package capacity Gaston County pressure package dyeing machine
- 1 - 16 package capacity Gaston County pressure package dyeing machine
- 1 - 3 kilogram KWG lab paddle dye machine
- 1 - Groen small steam kettle for desizing, scouring, bleaching, and dyeing small samples
- 1 - Benz continuous dyeing range
- 1 - Ahiba Turbocolor 1000

Full-Width Equipment for Dyeing

- 1 - 200 cm. wide deflection roll pad-batch system complete with perforated 180 cm. beams with beam wash-off system
- 1 - 40 kilogram capacity Sclavos pressure dye jet with PC-based controller
- 1 - 90 kilogram capacity TSI Turbojet pressure dye jet with PC-based controller
- 1 - 120 kilogram capacity Fong's pressure dye jet with PC-based controller
- 1 - 50 kilogram capacity centrifugal extractor
- 1 - 175 cm. wide Vald Henriksen automatic jig
- 1 - 175 cm. BTM beam dye machine (Burlington Textile Machinery)
- 1 - 160 cm. Mimaki TX-1600S Digital Ink Jet Printer
- 1 - Arioli continuous steamer

Laboratory Equipment for Finishing

- 1 - 60 cm. horizontal pad for finishing
- 1 - Spraying system for metered addition process
- 1 - Simtek profiler oven with 16" x 18" adjustable pin frames and fabric temperature probe

Full-Width Equipment for Finishing

- 1 - 225 cm. wide horizontal roll finishing padder with 40 liter minimum pad trough
- 1 - 210 cm. wide Babcock/Artos pin tenter (gas-fired) oven complete with infrared heat-monitoring units
- 1 - 42" width Gaston County Foam Finishing Unit
- 1 - 250 cm. wide open-width Ruckh two section relaxation dryer with tubular knit pre-spread and overfeed units
- 1 - 23 kilogram gas-fired industrial tumble dryer
- 1 - Tube-TEX tubular knit steam and roll unit with overfeeding and overspreading
- 1 - Tube-TEX four-roll tubular finishing pad
- 1 - Biancalani Airo 1000 fabric tumbling
- 1 - 250 cm. wide open-width Lafer Ultrasoft brushing unit with variable drum and brush tension parameters

Other Equipment

- 1 - 200 cm. wide Bond inspection frame with automatic edge finding
- 2 - Despatch hot air sample drying ovens
- 1 - Ruckh slitler for tubular knits
- 1 - Hot head press
- 1 - Gaston County package dryer
- 1 - Sussman curing oven with seven garment capacity
- 2 - Hoffman presses for pants (legs and topper)
- 1 - Mathis Laboratory Steamer
- 1 - Associated Environmental Chamber
- 1 - Brookfield Viscometer
- 1 - Greerco Homogenizer Mixer
- 1 - Yarn Reel
- 1 - GretagMacbeth Spectrolight III light box

"The statements, recommendations, and suggestions contained herein are based on experiments and information believed to be reliable only with regard to the products and/or processes involved at the time. No guarantee is made of their accuracy, however, and the information is given without warranty as to its accuracy or reproducibility either express or implied, and does not authorize use of the information for purposes of advertisement or product endorsement or certification. Likewise, no statement contained herein shall be construed as a permission or recommendation for the use of any information, product, or process that may infringe any existing patents. The use of trade names does not constitute endorsement of any product mentioned, nor is permission granted to use the name Cotton Incorporated or any of its trademarks in conjunction with the products involved."

RESEARCH AND TECHNICAL SERVICES

Cotton Incorporated is a research and promotion company representing cotton worldwide. Through research and technical services, our company has the capability to develop, evaluate, and then commercialize the latest technology to benefit cotton.

- Agricultural research leads to improved agronomic practices, pest control and fiber variants with properties required by the most modern textile processes and consumer preferences. Ginning development provides efficient and effective machines for preservation of fiber characteristics. Cottonseed value is enhanced with biotechnology research to improve nutritional qualities and expand the animal food market.
- Research in fiber quality leads to improved fiber testing methodology and seasonal fiber analyses to bring better value both to growers and then mill customers.
- Computerized fiber management techniques result from in-depth fiber processing research.
- Product Development and Implementation operates programs leading to the commercialization of new finishes and improved energy and water conserving dyeing and finishing systems. New cotton fabrics are engineered -- wovens, circular knits, warp knits, and nonwovens -- that meet today's standards for performance.
- Technology Implementation provides comprehensive and customized professional assistance to the cotton industry and its customers -- textile mills and manufacturers.
- A fiber to yarn pilot spinning center allows full exploration of alternative methods of producing yarn for various products from cotton with specific fiber profiles.
- The Company operates its own dyeing and finishing laboratory, knitting laboratory, and a laboratory for physical testing of yarn, fabric, and fiber properties including High Volume Instrument testing capable of measuring micronaire, staple length, strength, uniformity, color, and trash content.

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