



TM

TOUGH COTTON



WHAT CONSUMERS ARE SAYING¹ :

80%

OF PARENTS FEEL DURABILITY AND QUALITY PLAY AN IMPORTANT ROLE IN PURCHASING DECISIONS FOR CHILDREN'S CLOTHING

58%

BELIEVE THAT "GOOD QUALITY" MEANS DURABLE OR LONG LASTING, 23% BELIEVE IT MEANS GOOD OR STRONG FIBERS AND MATERIALS, AND 12% BELIEVE THE GARMENT WAS MADE WELL

58%

SAY THAT QUALITY AND DURABILITY (49%) ARE VERY IMPORTANT IN THEIR CLOTHING PURCHASE DECISIONS

77%

SAY BETTER QUALITY GARMENTS ARE MADE FROM ALL-NATURAL FIBERS SUCH AS COTTON

GET TOUGH WITH COTTON.

Consumers already know cotton for its quality and durability. That's nothing new. Now, the long lasting comfort of cotton is even better. Cotton can withstand even the toughest challenges — falls on the playground, climbing the trail and dominating that sales pitch. TOUGH COTTON™ technology brings you increased durability and superior abrasion and wrinkle resistance throughout the life of the garment. So go ahead, GET TOUGH. We aren't afraid of a little wear and tear.

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DURABLE TECHNOLOGY FOR COTTON THAT OFFERS SUPERIOR PERFORMANCE

- Improves strength, durability and abrasion resistance
- Improves wrinkle resistance with a durable press option
- Maintains the natural comfort and breathability of cotton
- Available as a yarn, fabric or garment finish
- Applicable on knit and woven fabrics
- Lasts the life of the garment





MADE TO LAST.

WHAT IS TOUGH COTTON™ TECHNOLOGY?

Through everyday use and home laundering, fabrics can become abraded, causing cotton fibers to rise to the surface, weakening the fabric and making the appearance look faded. With TOUGH COTTON™ technology, you don't need to worry about poor performance. Yarns, fabrics and garments treated with TOUGH COTTON™ technology offer enhanced durability—a combination of abrasion resistance, strength and colorfastness.

TOUGH COTTON™ technology is designed for a variety of product categories, from workwear to tailored apparel, depending on the type of application. No matter the product, yarns and fabrics treated with TOUGH COTTON™ technology are made to last throughout the life of the garment.

- OUTERWEAR & JACKETS
- KNIT & WOVEN BOTTOMS
- WORKWEAR & UNIFORMS
- TAILORED APPAREL
- CHILDRENSWEAR
- DENIM
- CANVAS ACCESSORIES
- YOGA & ACTIVEWEAR
- SWEATERS & SOCKS



HOW IT WORKS.

TOUGH COTTON™ technology offers flexibility with application methods and formula options. The TOUGH COTTON™ finish is available with and without resin, providing a solution for any product category and end use.

TOUGH COTTON™ technology without resin uses a proprietary blend of softeners and crosslinking agents to achieve superior abrasion resistance, durability and strength while improving fabric hand and sewability. TOUGH COTTON™ technology with resin is formulated to create flexible bonds on cotton fabric to improve fabric strength and prevent breakage, while providing excellent wrinkle resistance.

The TOUGH COTTON™ technology can be applied in yarn, fabric or garment form, and can be combined with other performance finishes, such as STORM COTTON™ technology, to achieve the ultimate performance cotton garment.

TOUGH COTTON™ WOVENS ARE TESTED ACCORDING TO ASTM D4966 STANDARD

TOUGH COTTON™ KNITS ARE TESTED ACCORDING TO A MODIFIED ASTM D4966 STANDARD USING A 3M™ TRIZACT™ ABRADANT RATHER THAN WOOL TO TEST AGAINST A HARSHER SURFACE



YARN APPLICATION.

YARN ENHANCED FOR DURABILITY.

No need to fear holes or tears in that well-loved yoga sweater – the downward dog pose has never looked better thanks to TOUGH COTTON™ technology keeping you comfortable and protected. Applied in yarn form as a non-resin formula, the TOUGH COTTON™ finish provides enhanced durability, quality and abrasion resistance built to last for the life of the garment. And since it's a yarn finish, high-friction areas such as the heel and toe of a sock or the elbows of a sweater can be targeted to last longer and stay stronger. Take comfort knowing that TOUGH COTTON™ technology has your back – and your feet!

- SOCKS
- SWEATERS
- KNIT-TO-SHAPE GARMENTS
- FLAT KNITTING ENGINEERED GARMENTS
- FULL FASHION GARMENTS
- HANDCRAFTS
- COLLARS AND CUFFS

LASTING PERFORMANCE.

The TOUGH COTTON™ yarn finish is applied to yarn in a kier or in hank form. The yarn is dyed before the finish is applied and the curing step can be completed in yarn, fabric or garment form. With process and application flexibility, the design and product opportunities are endless!

TOUGH COTTON™ technology lives up to its name. Durability, strength and proven performance are all at the core of this versatile finish. When compared to an untreated control, fabrics with TOUGH COTTON™ treated can result in up to five times improved abrasion resistance.



IMPROVED ABRASION RESISTANCE.

Untreated Cotton



300 CYCLES

TOUGH COTTON™



1500 CYCLES

ASTM D4966 Modified Martindale Abrasion Method using 3M Trizact Pad For Knits

Untreated Cotton



TOUGH COTTON™



0 WASHES

30 WASHES

ASTM D4966 - Modified Martindale Abrasion Test – 300 cycles, twill fabric

ROUGH & TOUGH FOR WOVENS.

NON-RESIN FORMULA BENEFITS

From lightweight twills to heavy-duty canvas, TOUGH COTTON™ technology adds that extra layer of protection to any woven fabric. Snags, tears and rips are now the least of your worries when on the mountain or the job site. TOUGH COTTON™ technology for wovens offers significantly improved abrasion resistance compared to untreated cotton wovens. And don't worry about that superior performance declining over time – TOUGH COTTON™ technology has you covered for the life of the garment.

UP TO 8 TIMES BETTER
ABRASION RESISTANCE
THAN UNTREATED COTTON
FOR WOVENS



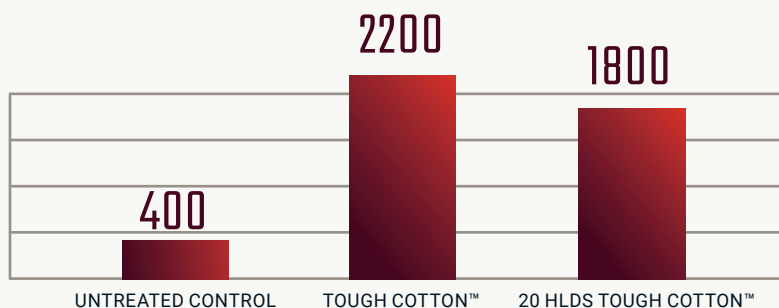
PLAY TESTED FOR KNITS.

NON-RESIN FORMULA BENEFITS

Leave the worry at home. TOUGH COTTON™ technology makes knits stronger and last longer, no matter what you put them through. Clothes treated with TOUGH COTTON™ technology can withstand the toughest playgrounds, the most challenging obstacle courses, and tumbles off the bike. And TOUGH COTTON™ technology isn't just for the kids — it will keep you protected and centered through even the most intense yoga poses. TOUGH COTTON™ technology keeps clothes looking newer longer with improved abrasion resistance, so no need to replace clothes due to holes in the knees or elbows.

**UP TO 4 TIMES BETTER
ABRASION RESISTANCE
THAN UNTREATED COTTON
FOR KNITS**

MARTINDALE ABRASION FOR KNITS



ASTM D4966 modified test - # cycles to break, jersey fabric



30 HLTDS

STANDARD DP FINISH



30 HLTDS

TOUGH COTTON™

AATCC 88C Retention of Creases in Fabrics After Repeated Home Laundering – twill fabric

DURABLE PRESS PERFORMANCE.

RESIN FORMULA BENEFITS

TOUGH COTTON™ technology goes beyond durability and abrasion resistance to offer wrinkle resistance for top and bottom weight wovens. Unlike traditional durable press technologies that may become brittle and weaken fabrics, TOUGH COTTON™ technology remains flexible to maximize comfort without any loss of strength. The durable press technology truly extends the life of the garment and keeps you looking sharp and wrinkle free.

**UP TO 26% IMPROVEMENT IN
TEAR STRENGTH COMPARED
TO STANDARD DP FINISHES**





DOUBLE THE PERFORMANCE.

BREAKING BOUNDARIES WITH DUAL TECHNOLOGIES

TOUGH COTTON™ technology is known for its strength, durability and abrasion resistance – but we’re taking these benefits one step further. TOUGH COTTON™ technology can easily be combined with Cotton Incorporated’s other innovative technology finishes – TransDRY® or STORM COTTON™ technologies – to add moisture management or water repellency to the durability finish for cotton. Cotton is here to perform and meet any challenge – what are you waiting for?

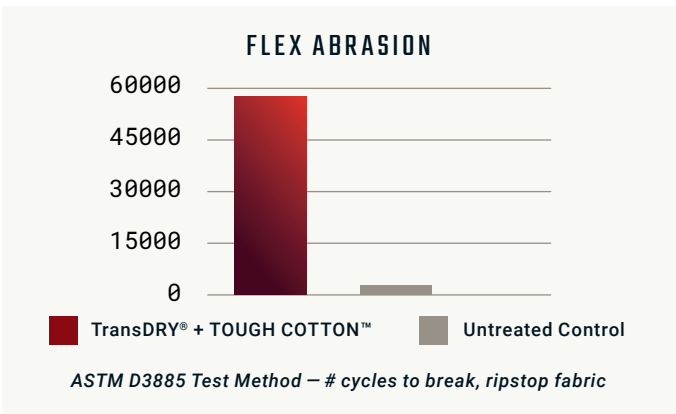
UP TO 2000% IMPROVEMENT
IN ABRASION RESISTANCE

TRANS DRY® + TOUGH COTTON™ FINISHES

Moisture management meets durability by combining Trans DRY® and TOUGH COTTON™ technologies for a double boost of moisture-wicking action and increased protection. This technology combination reduces cotton’s absorbent capacity and moves moisture away from the body to keep the wearer cool and dry – all while providing abrasion resistance and durability. That’s a great combination.



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STORM COTTON™ + TOUGH COTTON™ FINISHES

The performance power of STORM COTTON™ and TOUGH COTTON™ technologies offers a durable duo that results in a water-repellent finish with superior abrasion resistance. This mighty technology combination offers protection from moisture and dries faster than untreated cotton, with added toughness and protection. Grab your kayak and hit the river without worrying about staying dry and comfortable – this technology blend is the perfect solution for that next adventure.

THE STORM COTTON™ + TOUGH COTTON™ TECHNOLOGY COMBINATION FINISH CAN RESULT UP TO A 100 SPRAY RATING BEFORE WASH AND 85 SPRAY RATING AFTER 30 WASHES WHEN TESTED AGAINST AATCC TM 22: SPRAY TEST FOR REPELLENCY.



DOUBLE THE PERFORMANCE



GLOBAL AVAILABILITY.

WE CAN ENGINEER A SOLUTION FOR YOU.

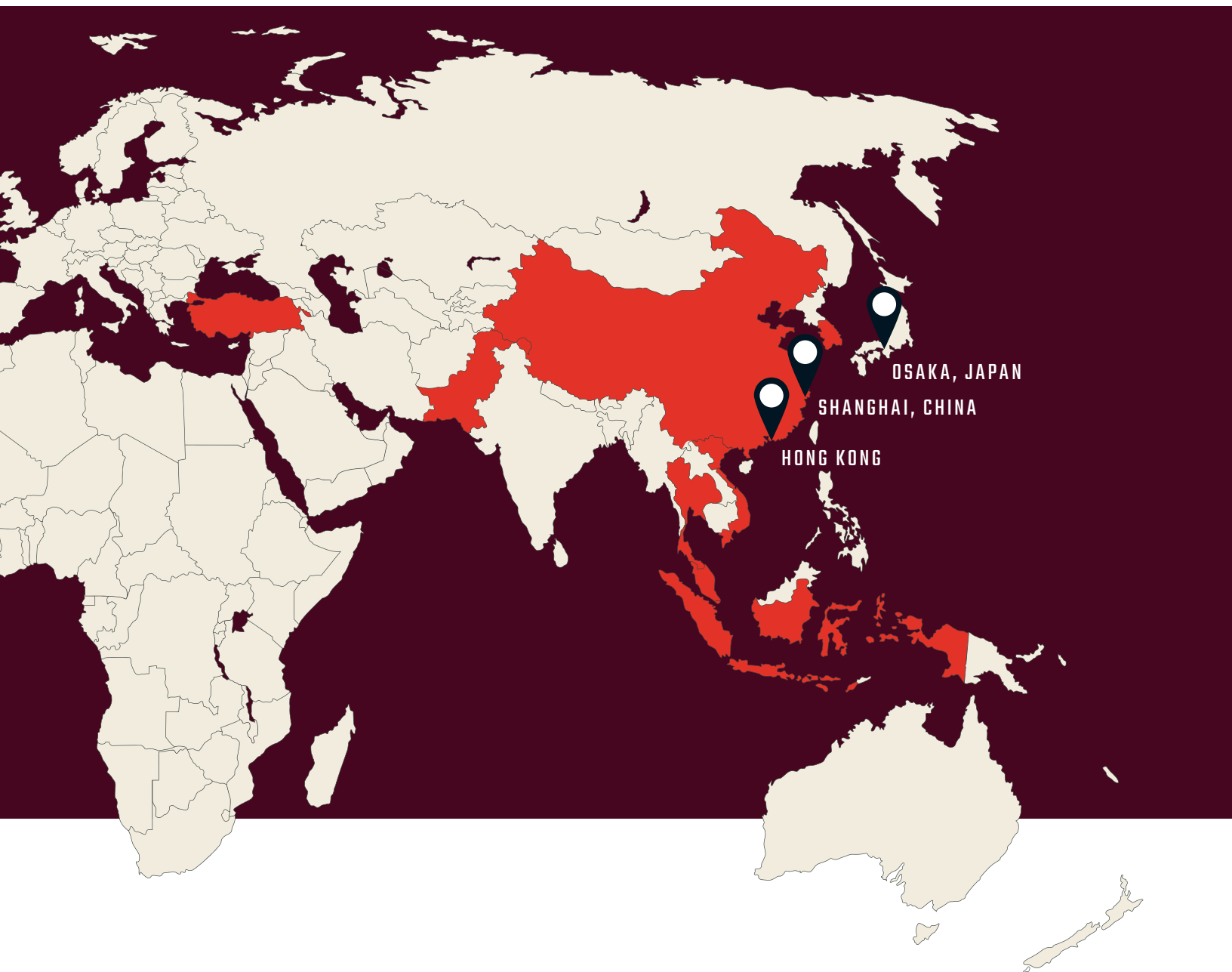
TOUGH COTTON™ technology was developed by Cotton Incorporated. We work with suppliers around the world to implement the technology and we make it easy for brands and retailers to use the technology on cotton products.

Marketing Resources Available for Use and Inspiration:

- Knit and woven fabric developments
- Licensed technology logo on products that meet fabric performance criteria
- Hangtags and other point-of-sale collateral as possible



TOUGH COTTON



TOUGH COTTON™ Technology Suppliers Available In:

- | | |
|-------------|---------------|
| • China | • Pakistan |
| • Colombia | • Peru |
| • Guatemala | • Singapore |
| • Hong Kong | • South Korea |
| • Indonesia | • Thailand |
| • Mexico | • Turkey |
| • Malaysia | • USA |
| • Nicaragua | • Vietnam |



Cotton Incorporated Global Offices:

- New York, NY, USA
- Cary, NC, USA
- Mexico City, Mexico
- Osaka, Japan
- Shanghai, China
- Hong Kong



To feature the TOUGH COTTON™ technology
and logo on your products, contact your
Cotton Incorporated account representative.

Learn more at cottonworks.com.



Cotton
Incorporated

Cary
New York
Hong Kong
Shanghai
Osaka
Mexico City