



X



REFIBRA™
technology

TENCEL™ LYOCELL FIBERS WITH REFIBRA™ TECHNOLOGY



fibers
**for the
future**

A close-up photograph of a person's hand with light-colored nail polish touching a soft, textured green fabric. The hand is positioned on the right side of the frame, with fingers gently resting on the material. The fabric has a subtle, fine-grained texture and is draped, creating soft shadows and highlights. The overall color palette is a range of green tones, from a pale mint to a slightly darker sage green.

fibers
**for the
future**

TENCEL™ X REFIBRA™

Fibers for a sustainable future

TENCEL™ x REFIBRA™ fibers come from nature and return to nature because, similar to other fibers from Lenzing, they are fully compostable and biodegradable, even in seawater, and thus do not generate microplastics.







REFIBRA™
technology

RETHINK

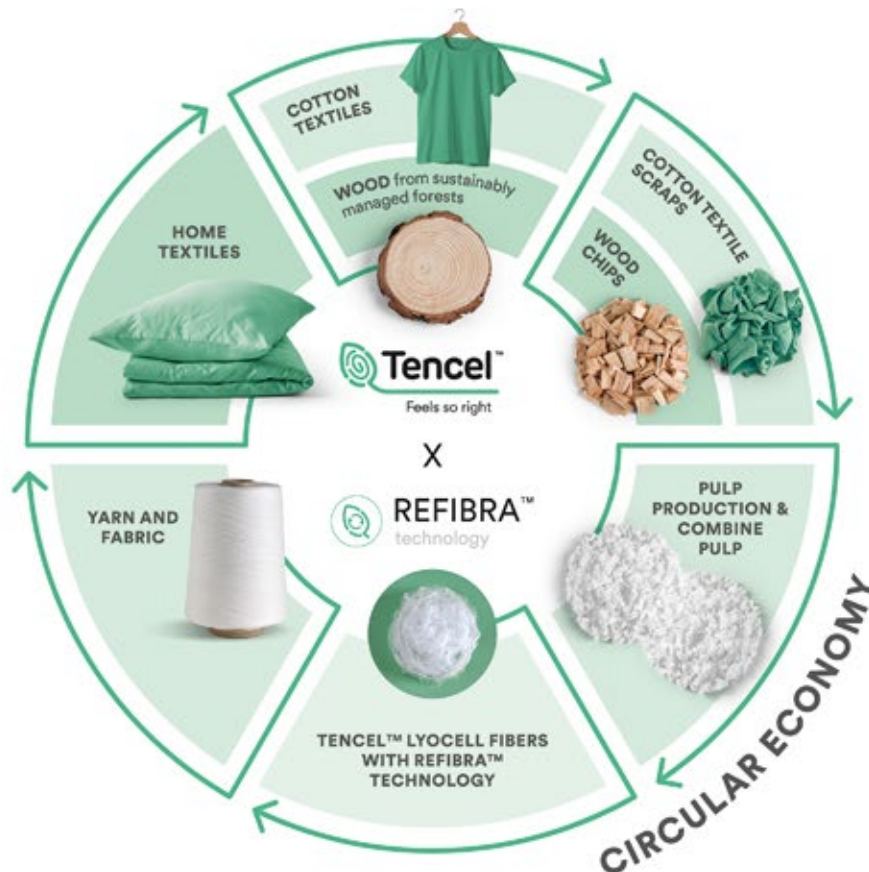
From the very beginning

“Being a researcher and having spent so many hours on the development of REFIBRA™ technology, I am very happy and excited to see the gorgeous textile products made from TENCEL™ x REFIBRA™ fibers in stores. REFIBRA™ technology offers the consumer the choice of starting to make the circular economy a reality.”

Dr. Christian Weilach,
Project Manager Pulp and Biorefinery
Technology, Lenzing AG

Our appetite for fast fashion is literally polluting the planet. The problem starts long before the clothes are even manufactured. Not only does the production of clothes and home textiles consume massive quantities of water and energy, but 10 to 30% of fabric is wasted in the cutting process.* Once worn and used, 48 million tons of textiles end up as waste every year, while 73% end up in landfills or are incinerated.**

When TENCEL™ branded lyocell fibers became available on the market, they were recognized as fibers that could change the textile landscape. The efficient closed-loop lyocell production process made TENCEL™ Lyocell future-proof. However, Lenzing decided to take a step further and contribute to the circular economy in the textile industry. Lenzing developed and patented the REFIBRA™ technology, which involves upcycling a substantial proportion of cotton textile scraps. The pulp from this material is combined with dissolving wood pulp from sustainably managed forests and plantations, and converted in the environmentally responsible lyocell production process into high-quality virgin TENCEL™ x REFIBRA™ fibers.



Sources:
* Reverse Resources – How Much Does the Garment Industry Actually Waste?
** Ellen MacArthur Foundation Report – A New Textiles Economy: Redesigning Fashion's Future, 2017

RECYCLE

Innovating with perfection

TENCEL™ x REFIBRA™ fibers are fibers for the future – not only purely white but also strong, absorbent, comfortable, silky and traceable – a high-end basis for sustainable high-quality products.



CIRCULAR ECONOMY

With their launch on the market in 2017, TENCEL™ x REFIBRA™ fibers became the first commercially available chemically recycled cellulose fibers. For these new fibers, pulp from cotton textile scraps is used and combined with dissolving wood pulp from sustainably managed forests and plantations.



QUALITY

Unlike mechanically recycled cotton, there is no loss of quality or performance with TENCEL™ x REFIBRA™ fibers. They retain the round cross-section, smooth fiber surface, high tensile and tear strength of the original TENCEL™ Lyocell fibers.



IDENTIFIABLE

Transparency requires the origin of the textile to be proven unequivocally. In order to assure customers that fibers contain recycled materials, Lenzing uses a special identification technology for TENCEL™ x REFIBRA™ fibers. This makes it possible to identify the TENCEL™ x REFIBRA™ fibers in the final textile product. This helps ensure transparency throughout the processing chain.



TRANSPARENCY

TENCEL™ x REFIBRA™ fibers are certified according to the Recycled Claim Standard (RCS). The RCS provides for the transparent, consistent and comprehensive independent evaluation and verification of recycled material content claims on products.



SNOW-WHITE

Producing white pure fibers from recycled material often represents a challenge. Slightly grey or green shades are common, unwanted outcomes on the market. TENCEL™ x REFIBRA™ fibers are high-quality fibers and as white as the snow in Austria, where they are produced.



SNOW- WHITE

Colorful input, purely white output
TENCEL™ x REFIBRA™ fibers



“Bedding materials have the delicate task of performing in a cold and warm changing ambient to keep the body at the right comfort level throughout the night. Moisture management of textiles is a key factor connecting the body and its surroundings. Among typical fibers used in bedding, TENCEL™ Lyocell fibers are not only a master in moisture management, they can also be designed to provide insulation in duvets, as well as exquisitely smooth bed linen and shell fabrics. The result is unprecedented sleep experience.”

Dr. Mohammad Abu Rous,
Project Manager Fiber Science and
Textile Products, Lenzing AG



REBORN FEELING

Feel refreshed after sleeping in bed textiles containing TENCEL™ x REFIBRA™ fibers

GOOD MOISTURE MANAGEMENT

Human beings spend one-third of their lifetime sleeping in order to maintain their energy. The secret of good sleep comfort lies in part in the quality of bed textile materials. Moisture absorbing materials improve thermal regulation process and the feel of comfort. TENCEL™ Lyocell fibers made with REFIBRA™ technology facilitate good moisture management. The microscopic fibrils of TENCEL™ Lyocell fibers are structured to regulate the absorption and release of moisture, thus supporting the body's natural thermal regulation and providing breathable comfort.



COMFORT ON THE SKIN

The smooth surface of TENCEL™ x REFIBRA™ fibers and the fibers' sorption behavior create fabrics with a silky and cool touch, giving bed textiles a pleasant feel and ensuring long-lasting comfort, even after many washes.





TENCEL™
X

REFIBRA™

Fibers feel good,
do good

REINVENT

BEDifferent

It's the young generation that creates and owns the future. Young people make decisions that may change the world. Lenzing has always invested in the future, so it was natural for the company to start a project with and for young people: BEDifferent. Talented young designers from top European fashion academies were introduced to Lenzing and its world of sustainable fibers. They were then asked to create a collection that reflects the future of bedding and the positive change that can be expressed and supported by TENCEL™ x REFIBRA™ fibers. The only rule: make room for creativity.

Three winners were chosen, and their designs for bed linen, sheets, plaids/throws and decorative cushions went into production and came to life. See what youthful and exciting collections they created!

Juliene Quaglio named her collection "Oh My Gaia". Applying the principles of ecopsychology, she taps into a mainly green and brown palette to show how man and nature depend on each other. As she describes it, "I believe it is necessary to create 'empathy' between man and the environment because we are not separate, isolated beings, but are all part of the great mystery of creation."

Cecilia Ceccherini created the "Deep Dream" collection that was inspired by geological maps and the archaeological findings of primitive cultures. A map for an arrogant humankind that needs to be confronted with the power of natural forces. According to her, "We could start working on sustainable solutions wrapped by Mother Earth's forces, both materially and visually."

Minttumeri Hirsimaa was inspired by Archipelago landscapes and flowers for her "Dreamworld" collection. She wanted the prints to have a lively and a natural mood, so she drew all of them by hand, mixing vivid and relaxing colors. "Nature has always been a source of happiness for me, a place where I can calm down. The result was a collection for enjoying beautiful landscapes and colorful flowers from the home."



Juliene Quaglio
Bachelor of Fashion Design
Nuova Accademia di Belle Arti Milano

**Oh My
Gaia**
COLLECTION

*“Innovative thinking minds created TENCEL™ x REFIBRA™ fibers.
Young and creative thinking minds created the BEDifferent collection.
We hope you will like them as much as our inspiration level from the
younger generation’s way of thinking during the entire process.”*

Dipl. Ing. Ebru Bayramoglu,
Head of Global Business Development
Home and Interiors, Lenzing AG



Cecilia Ceccherini
MA Textile Design
University of the Arts London
Chelsea College of Arts

**Deep
Dream**
COLLECTION



Minttumeri Hirsimaa
Bachelor of Arts
Aalto University · Finland

**Dream
world**
COLLECTION

RENOWNED

Cooperation partners

For BEDifferent project, as for anything in life, the right partners make all the difference. Innovative TENCEL™ x REFIBRA™ fibers need innovative partners in order to be converted into a quality textile product. Zorluteks joined Lenzing, bringing to life the bed linen, cushions and throws that our BEDifferent winners envisioned. This company is Europe's biggest home textiles exporter, and among the top three on the global home textiles market. Zorluteks shares the same vision of superior quality always respecting the planet and its people. A perfect match!

Zorluteks has a vertical operation for home textiles: weaving, knitting, dyeing, printing, finishing and sewing. It produces 250 million square meters of home textiles per year. For the purposes of the BEDifferent project, Zorluteks served not only as producer, but also as consultant. It recommended suitable constructions and converted designers' ideas into real inspiring and functional products.

SAMPLE ①

Fine, digitally printed sateen bed linen fabric, 264 threads/inch², 50% TENCEL™ x REFIBRA™ / 50% TENCEL™ Lyocell

SAMPLE ②

Coarser, digitally printed woven fabric for cushion covers in a half panama weave, 145 threads/inch², 60% TENCEL™ Lyocell / 40% cotton

SAMPLE ③

Digitally printed on a jacquard machine woven throw fabric, 254 threads/inch², 58% TENCEL™ Lyocell / 42% organic cotton

SAMPLE ④

Flat knitted throw fabric containing dyed yarns, 50% TENCEL™ Lyocell / 50% polyacrylics



ZORLUTEKS



Another virtuous partnership for the BEDifferent project took place in the field of bedding essentials. Lenzing joined forces with the progressive and innovative company Wendre, one of the biggest producers of filled bedding in Europe. Wendre designed a product collection of pillows, cushions and comforters to complement award-winning bed linen and cushion cover designs.

As an environmentally conscious and smart textile company, Wendre is the ideal partner to allow sustainability to transform the ambience of the sleeping space. The product collection made by Wendre is filled with TENCEL™ x REFIBRA™ filling fibers. Wendre chose a carding technology for the BEDifferent project bedding collection. A good fiber opening, in combination with carding technology, enables even and smooth fiber distribution in the blend of TENCEL™ x REFIBRA™ and recycled GRS certified polyester fibers, important for optimal washing results and bulkiness retention.

WENDRE



“TENCEL™ x REFIBRA™ filling fibers are the future. They contribute to the circular economy and traceability in the textile industry. In terms of functionality, they are comparable with TENCEL™ Lyocell fibers in the fillings. A recent study on pillows showed that as little as 50% of TENCEL™ Lyocell in the pillow filling led to the driest and coolest microclimate in the area of the highest pillow exposure to the sleeper’s head, and significantly improved water vapor transfer through the pillow (breathability) compared to conventional filling material made from either pure polyester or down/feather. All of these factors influence the feeling of comfort.”

Dr. Danijela Cafuta,
Global Business Development Manager
Home and Interiors, Lenzing AG



RESPECT

For people and the planet
with every single
TENCEL™ x REFIBRA™ fiber

contact for further information

Lenzing: Lenzing Aktiengesellschaft, Werkstraße 2, 4860 Lenzing, Austria
Tel: +43 (0)7672 701-0, Fax: +43 7672 701-3880, E-mail: fibers@lenzing.com

GLOBAL OFFICES

Coimbatore: Lenzing AG, India Branch Office
Race Course 70, 641018 Coimbatore, India
Tel: +91 (422) 4292 800, Fax: +91 (422) 4292 814, E-mail: india@lenzing.com

Hong Kong: Lenzing Fibers (Hong Kong) Ltd.
Units 804-806, 8/F., Lu Plaza, 2 Wing Yip Street, Kwun Tong, Kowloon, Hong Kong
Tel: +852 3718 5600, Fax +852 3718 5601, E-mail: hongkong@lenzing.com

Istanbul: Lenzing Elyaf A.Ş.
Akad Mah. Ebulula Mardin Cd. Maya Meridien Plaza, No.16, 34335, Akadlar-Beşiktaş, Istanbul, Turkey
Tel: +90 212 349 71 71, Fax: +90 212 349 71 81, E-mail: turkey@lenzing.com

Jakarta: PT. South Pacific Viscose
Sampoerna Strategic Square, South Tower, 22nd Floor,
Jl. Jend. Sudirman Kav. 45-46, Jakarta-12930, Indonesia
Tel: +62 (21) 5771630, Fax: +62 (21) 5771640, E-mail: jakarta@lenzing.com

New York: Lenzing Fibers Inc.
530 Seventh Avenue #808, New York, NY 10018, U.S.A.
Tel: +1 212 944-7400, E-mail: newyork@lenzing.com

Seoul: Lenzing Korea Yuhan Hoesa
19th fl. 2, Wiryeseong-daero, Songpa-gu, Seoul, 05544, Korea
Tel: +82 2 782 6131, Fax: +82 2 782 6132, E-mail: seoul@lenzing.com

Shanghai: Lenzing Fibers (Shanghai) Co. Ltd.
Units 06-08, 15th Floor, Garden Square, No.968 West Beijing Road, 200041 Shanghai, China
Tel: +86 (21) 3315 2438, Fax: +86 (21) 6341 0007, E-mail: shanghai@lenzing.com

Singapore: Lenzing Singapore PTE Ltd.
51 Bras Basah Road, Manulife Center 02-02/03, Singapore 189554, Singapore
Tel: +65 65506730

www.tencel.com

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Innovative by nature