



Environmental Product Declaration

ISKOTM

For 26621 REC Finished denim fabric in accordance with ISO 14025

Programme

The International EPD[®] System, www.environdec.com
EPD Turkey, www.epdturkey.org

Programme Operator

EPD International AB & EPD Turkey

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THE INTERNATIONAL EPD[®] SYSTEM



ENVIRONMENTAL PRODUCT DECLARATIONS

This EPD covers the following product group: ISKO 26621 REC Finished in accordance with ISO 14025.

UN CPC CODE: 26620, Woven fabrics of cotton, containing 85% or more by weight of cotton, weighing more than 200 g/m²

Owner of the Declaration: ISKO™

Manufacturer: ISKO Division, Sanko Tekstil İşletmeleri San. ve Tic. A.Ş. Organize Sanayi Bölgesi 3.Cadde 16400 Inegöl / Bursa / Turkey

Programme Operator	EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden E-mail: info@environdec.com Regional Office: EPD Turkey, Nef 09 B Blok 7/15 Kağıthane/ Istanbul, Turkey www.epdturkey.org
Product Category Rules (PCR)	Woven Knitted and Crocheted Fabrics of Natural Fibres (Except Silk), for Apparel Sector 2018:08, version 1.02 UN CPC 265 (except 2651), UN CPC 266, UN CPC 281
PCR Review Was Conducted By	The Technical Committee of the International EPD® System. A full list of members available on www.environdec.com. Chair of the PCR review: Barbara Nebel Contact via: info@environdec.com
Verification	Independent verification of the declaration and data, according to ISO 14025:2006: <input type="checkbox"/> EPD process certification <input checked="" type="checkbox"/> EPD verification
Third Party Verifier	Nikolay Minkov, Eng. MSc. LCA and Sustainability Specialist, Independent EPD Verifier Schwartzkopffstrasse 3, 10115, Berlin, Germany E-mail: niks.minkov@gmail.com Accredited or approved by: The International EPD® System
Data Follow Up	Procedure for follow-up of data during EPD validity involves third party verifier: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
LCA Study & EPD Design Conducted By	Semtrio® Sustainability Consulting AND Plaza No:10-12 Kozyatagi Istanbul/Turkey www.semtrio.com

ISKO™ has the sole ownership, liability and responsibility of this EPD. For further information about this EPD or its content, please contact **Mrs. Ebru Ozkucuk Guler** at sustainability@isko.com.tr.

EPDs within the same product category but from different programmes may not be comparable.

OUR DENIM

“Denim fabrics look at people, and we explore our denim world through their lifestyles.”



ISKO™, the leading ingredient brand on a global level, is the first denim producer in the world to be recognized with the Nordic Swan and EU Ecolabel certifications. It has a production capacity of 300 million meters of fabric per year, with 2000 state-of-the-art automatic looms. It creates the soul of jeans, the essence of the most popular fashion style that has become universal. ISKO™'s vision is as international as the love for denim. It can adapt to different contexts and markets, becoming a point of reference for the most famous designers and inspiring new fashion trends.

INNOVATION since 1904

With a global presence and offices in 35 countries, ISKO™ is part of SANKO TEKSTİL, the textile division of SANKO Group.

ISKO™'s route to textiles began in 1904 and in 1989 we opened our 300,000 m² manufacturing plant, making ISKO™ the world's largest denim manufacturer under one roof.

ISKO Philosophy



PERFORMANCE

ISKO™ is the denim specialist, all fabrics are characterized by an advanced technology and the deeply-rooted care for quality, during all the integrated production from yarn to finishing processes.



INNOVATION

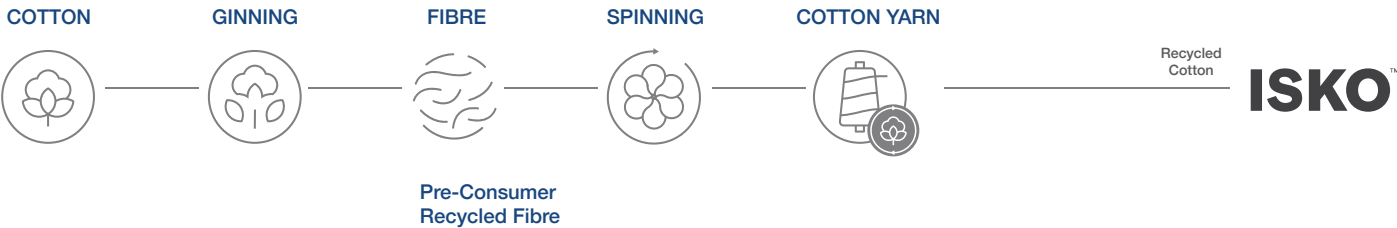
ISKO™'s mission is to always keep in touch with the latest trends and also to anticipate times. ISKO™'s research center is certified by the Turkish government and it consists of more than 25 textile engineers, specialists in creating new denim products.



SUSTAINABLE

Sustainability at ISKO™ we rethink our sourcing strategies and refuse to source more material than we need. Our waste management innovations reduce the environmental performance impact from yarn to fabric production, by using reused and recycled materials.

At ISKO™ we **RETHINK** our sourcing strategies and **REFUSE** to source more material than we need. Our waste management innovations **REDUCE** environmental performance impact of yarn to fabric production by using **REUSED** and **RECYCLED** materials.



GLOBAL RECYCLED STANDARD (GRS)

The GRS is a holistic certification that verifies recycled input material, tracks it from input to the final product, and ensures responsible social, environmental practices and chemical use through production. The desired effect of the GRS is to provide brands with a tool for more accurate labelling, to encourage innovation in the use of reclaimed materials, to establish more transparency in the supply chain, and to provide better information to consumers.



RECYCLED CLAIM STANDARD (RCS)

The RCS is a chain of custody standard that verifies recycled input material that tracks recycled raw materials through the supply chain from input to the final product. The standard was developed through work by the Materials Traceability Working Group, part of Outdoor Industry Association's (OIA) Sustainability Working Group. The RCS uses the chain of custody requirements of the Content Claim Standard (CCS).



26621 REC Finished

ISKO™ denim is the primary ingredient of jeans. The company offers a product range going from stretched fabrics to authentic denim constructions, but all with advanced technical features. In our top-notch denim mill, ISKO™ develops unique textile concepts applying scientific expertise and research to deliver high-performance denim fabrics.

ISKO™'s premium technology guarantees day long comfort and freedom of movement, extreme softness to the feel and touch, all thanks to a range of ISKO™ patents ensuring the highest quality standards and a close attention to responsible innovation.



Technical Specification*

Physical Parameter Evaluated	Test Method	Feature	UOM	Actual Value
Dimensional Stab. to Washing	BS EN ISO 6330	Wrap	%	N/A
		Weft	%	N/A
Tensile Strength	ASTM D5034	Wrap	kg	58.2
		Weft	kg	35.8
Tear Strength	ASTM D1424	Warp	g	5296
		Warp	g	3710
CF to Crocking	AATCC 8	Dry	Rating	4.5
		Wet	Rating	1.5
pH	ISO 3071	-	-	6.51
Stiffness	ASTM D4032	-	kg	0.4
Elongation	ASTM D3107	-	%	16

*The functional unit does not take into account all technical, functional and aesthetic properties of the product. For comparability of products based on the same PCR, these aspects shall also be considered. Thermal insulation properties are not relevant to disclose and weigh per unit is a confidential business information.

Additional Environmental Information

Certifications & Partnerships







ISO
9001:2015

ISO
14001:2015

ISO
27001:2013

ISO
50001

OHSAS
18001:2014

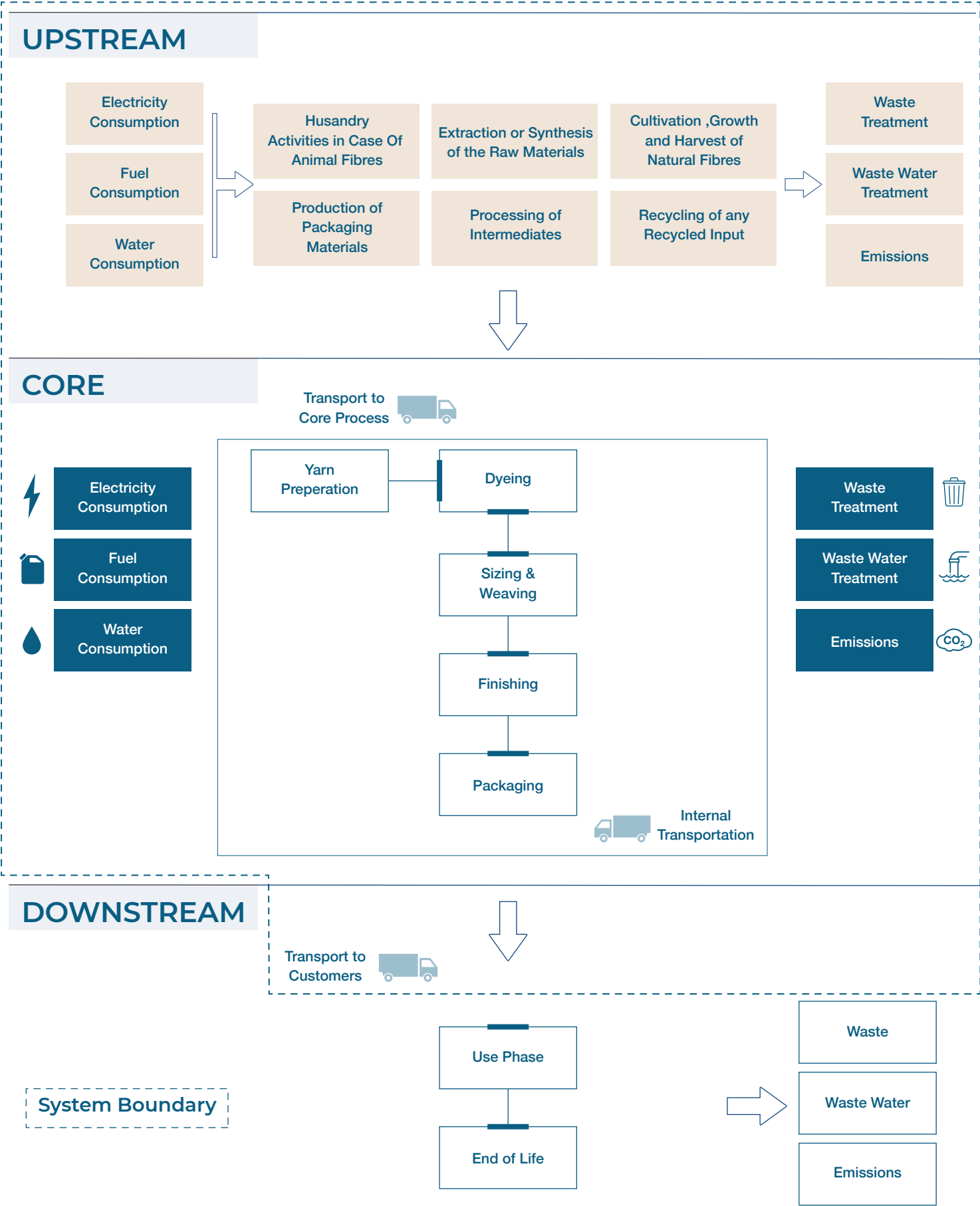
Chemicals used in ISKO™ manufacturing comply with the Regulation (EC) No 1907/2006 of the European parliament and of the council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).



Content Declaration

Materials	Amount
Cotton Fibre	> 85%
Man-Made Fibres	< 15%
Chemicals	Amount
Sodium Hydroxide	< 10%
Reducing agent	< 10%
Sizing Chemical	< 10%
Other Organic Chemicals	20-40%
Other Inorganic Chemicals	< 10%

Packaging: PE packaging film is used to cover the end products. Classified as Distribution Packaging: designed for the purposes of transport, handling and/or distribution.



The International EPD® System has adopted an LCA calculations procedure, which is separated into three different life cycle stages:

- **Upstream module (from cradle-to-gate):** Harvesting of cotton, extraction man-made fibres, processing into warp and weft yarns, extraction and production of the chemicals.
- **Core module, manufacturing processes (from gate-to-gate):** Transportation of raw materials to the core, manufacturing processes, impacts generated by fuel burned, impacts due to the electricity production and transport with in the production plant.
- **Downstream module (from gate-to-customer):**Transportation from preparation to an average retailer distribution. Use phase and end of life phase are excluded from the system boundary. Due to the aim of the EPD is to be used as B2B communication, apparel production (cutting, sewing), use phase (wearing, washing, drying) and end-of-life phases are not evaluated in this LCA study.

Geographical scope of the EPD	Worldwide
Functional Unit	1 square meter of denim fabric
EPD Type (System Boundary)	Cradle-to-Customer
Data Collection	Specific data (primary data) was used for the Core Module and gathered from the ISKO™ Manufacturing Plant. The manufacturing data are monitored and recorded in ISKO™ data collection system specifically per unit of product. Data represents the period from 1st January 2019 to 31th August 2019. For upstream module, selected generic data (secondary data) was applied and was obtained from Ecoinvent v3.5. All databased are in line with ISO 14044 data quality requirements. LCA was modelled in SimaPro v9.0.0.31.
Allocation	No allocation condu cted for input materials and energy consumption was collected specifically per functional unit.
Calculation Methods	All resource use values are calculated from Cumulative Energy Demand V1.11; net use of fresh water has been calculated from SimaPro Inventory result outputs. Potential environmental impacts are calculated with the CML-IA baseline V 3.05; ReCiPe 2016 Midpoint (H) v 1.02; Formation potential of tropospheric ozone (POCP) from LOTOS-EUROS as applied in ReCiPe Midpoint (H) v 1.13, 2008; IPCC 2013 GWP 100a V1.03 and USEtox 2 (recommended + interim) v.1.0 methods in SimaPro software.
Cut-off Rules	Cut-off rule of 1% regarding waste and wastewater treatment was applied. Regarding to material and chemical inputs, no cut-off rule has been applied.

Resource Use for 1 sqm of 26621 REC Finished

RESOURCE USE						
Parameter		Unit	Upstream	Core	Downstream	Total
Primary Energy Resources Renewable	Use as energy carrier	MJ, net calorific value	9.768	0.746	0.001	10.52
	Use as raw materials	MJ, net calorific value	0	0	0	0
	TOTAL	MJ, net calorific value	9.768	0.746	0.001	10.52
Primary Energy Resources Nonrenewable	Use as energy carrier	MJ, net calorific value	17.5	18.5	0.104	36.1
	Use as raw materials	MJ, net calorific value	0	0	0	0
	TOTAL	MJ, net calorific value	17.46	18.5	0.104	36.1
Secondary Material		kg	0.080	0	0	0.080
Renewable Secondary Fuels		MJ, net calorific value	0	0	0	0
Nonrenewable Secondary Fuels		MJ, net calorific value	0	0	0	0
Net use of Fresh Water		m³	0.425	0.030	1.80E-05	0.455

Output Flows for 1 sqm of 26621 REC Finished

OUTPUT FLOWS					
Parameter	Unit	Upstream Raw Materials	Core Manufacturing	Downstream Distribution	Total
Components For Reuse	kg	-	0	-	0
Material For Recycling	kg	-	0.008	-	0.008
Materials For Energy Recovery	kg	-	0	-	0
Exported Energy Electricity	MJ	-	0	-	0
Exported Energy Thermal	MJ	-	0	-	0

Potential Environmental Impacts for 1 sqm of 26621 REC Finished

Environmental Impacts						
Parameter		Unit	Upstream Raw Materials	Core Manufacturing	Downstream Distribution	Total
Global Warming Potential (GWP100a)	Fossil	kg CO ₂ eq	1.153	1.27	0.006	2.43
	Biogenic	kg CO ₂ eq	0.161	0.026	0.000	0.187
	Land Use and Land Transformation	kg CO ₂ eq	4.72E-03	1.65E-03	2.05E-06	6.37E-03
	TOTAL	kg CO ₂ eq	1.319	1.30	0.006	2.62
Acidification Potential		kg SO ₂ eq	0.008	0.004	1.55E-05	0.012
Eutrophication Potential		kg PO ₄ ³⁻ eq	0.004	0.001	3.38E-06	0.005
Formation Potential of Tropospheric Ozone		kg NMVOC eq	0.004	0.002	1.50E-05	0.007
Abiotic Depletion Potential-Elements		kg Sb eq	4.21E-06	2.77E-07	1.82E-08	4.50E-06
Abiotic Depletion-Fossil Fuels		MJ	15.02	16.47	0.097	31.6
Water Scarcity Potential		m³	0.296	0.022	9.02E-06	0.318
Carbon Uptake		kg CO ₂ eq	0.905	0.022	2.86E-05	0.926
Freshwater ecotoxicity		PAF.m³.day	6.61E-08	3.35E-08	1.82E-10	9.98E-08
Human Toxicity, Cancer		cases	8387	3583	10.8	11981
Human Toxicity, Non-Cancer		cases	2.79E-07	1.01E-07	9.02E-10	3.81E-07
Land Use		m² a crop eq	1.775	0.012	2.71E-04	1.787
Ozone Layer Depletion		kg CFC ⁻¹¹ eq	9.92E-08	1.20E-07	1.18E-09	2.20E-07

Waste Production for 1 sqm of 26621 REC Finished

Waste Production					
Parameter	Unit	Upstream	Core	Downstream	Total
Hazardous Waste	kg	-	2.26E-04	-	2.26E-04
Non-hazardous Waste	kg	-	0.002	-	0.002
Radioactive Waste	kg	-	0.00	-	0.00

ISO 14040: 2006 Environmental management | Life cycle assessment | Principles and framework
ISO 14044: 2006 Environmental management | Life cycle assessment | Requirements and guidelines
ISO 14025: 2006 Environmental labels and declarations | Type III environmental declarations | Principles and procedures

The International EPD® System | www.environdec.com

The International EPD® System | The General Programme Instructions
<http://www.environdec.com/tr/The-International-EPD-System/General-Programme-Instructions/>

The International EPD® System | Woven Knitted and Crocheted Fabrics of Naturals Fibres (Except Silk), for Apparel Sector 2018:08, version 1.02

Ecoinvent 3.5 database | <http://www.ecoinvent.org>

SimaPro LCA Software | <https://simapro.com>

ISKO™ | <http://www.isko.com.tr>

Van der Velden, N.M., Patel, M.T., Vogtlander, J.G., 2014 / LCA benchmarking study on textiles made of cotton, polyester, nylon, acryl, or elastane. | International Journal of Life Cycle Assessment 19, 331 - 356.

Environmental Improvement Potential of textiles (IMPRO Textiles) | <https://publications.europa.eu/en/publication-detail/-/publication/f8d0def8-4fd5-4d84-a308-1dfa5cf2e823/language-en>

Third Party Verifier

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Owner of the Declaration

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LCA Author & EPD Design

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More information about ISKO™'s approach to sustainability and its corporate social responsibility initiatives available via the CSR Team at sustainability@isko.com.tr

ISKO™

HEAD OFFICE

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