



Environmental Product Declaration

ISKOTM

for 26623 REC Basic 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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An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

EPD Registration Number: S-P-01984

This EPD covers the following product group: ISKO 26623 REC Basic 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 Inegol / Bursa / Turkey

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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	Dr-Ing. Nikolay Minkov LCA and Sustainability Specialist, Independent EPD Verifier Schwartzkopffstrasse 3, 10115, Berlin, Germany E-mail: nikolay.minkov@greenzero.me 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 BUDOTEK Teknopark, No 4/21, Umraniye / 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

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.

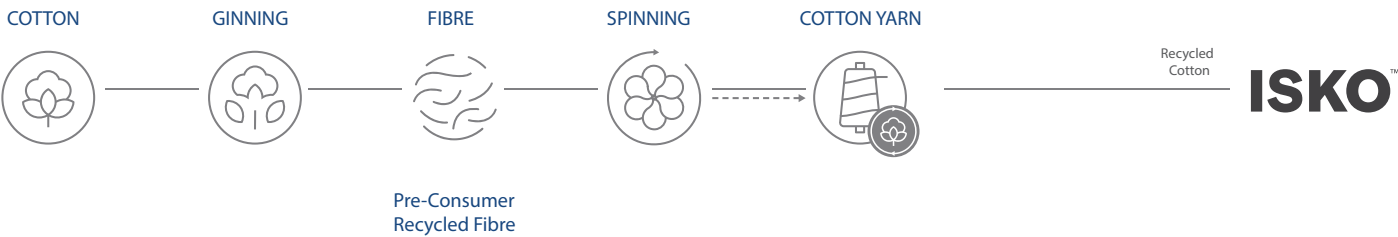


SUSTAINABLE

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.

OUR COMMITMENT

Sustainability is inherent to ISKO's DNA: every day we value responsibility and a 360-degree innovation. This is something we take seriously, and we are dedicated to doing this with beauty, heart, and creativity.



ORGANIC CONTENT STANDARD (OCS -TR)

This scheme verifies that ISKO™'s products have metorganic standards throughout its life cycle – from raw material to finished product. OCS blended is used for our products that contain 5% minimum of organic material blended with conventional or synthetic raw materials



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).



26623 REC Basic

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 Specifications*

Physical Parameter Evaluated	Test Method	Feature	UOM	Actual Value
Pilling Resistance	ISO 12945-2: 2000	-	Rating	N/A
CF to Water	BS EN ISO 105 : E01: 2013	Cotton	Rating	N/A
Tensile Strength	ASTM D5034: 2017	Wrap	kg	105.3
		Weft	kg	49.2
Tear Strength	ASTM D1424: 2019	Wrap	g	8180
		Weft	g	4510
CF to Crocking	AATCC 8: 2016	Dry	Rating	2.5
		Wet	Rating	1
pH	ISO 3071:2020	-	-	7.1
Stiffness	ASTM D4032: 2016	-	kg	3
Elongation	ASTM D3107: 2019	-	%	12

*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 weight per unit is a confidential business information. Similar test methods are used for the product of this LCA study that complies with the test methods in Table 1 in the PCR.

Additional Environmental Information

Certifications & Partnerships

ISO
9001:2015

ISO
14001:2015

ISO
27001:2013

ISO
50001

OHSAS
18001:2014

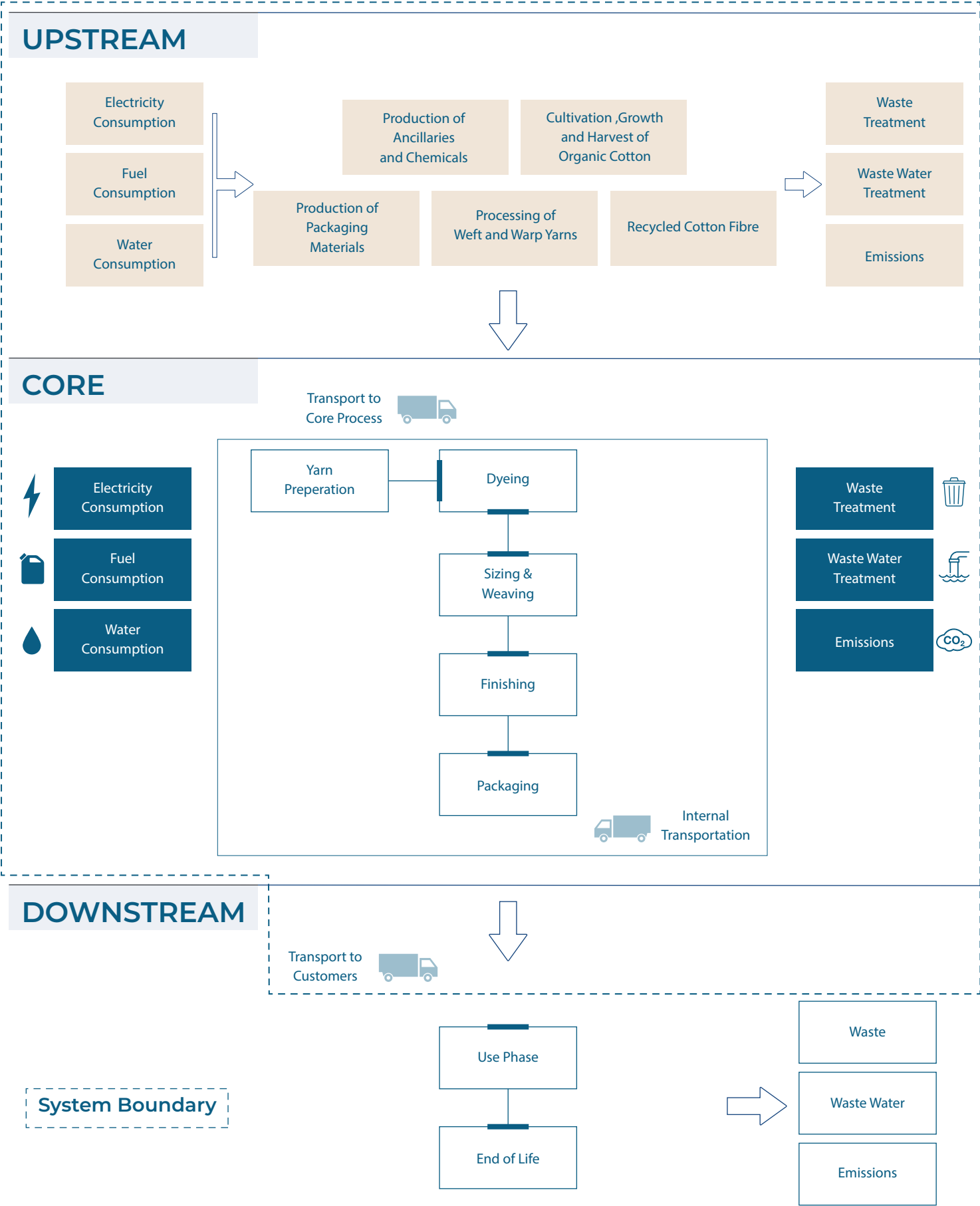
Chemicals used in ISKO™ manufacturing comply with the Regulation (EC) No 1907/2006 of the European parliament and of the council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).



Content Declaration

Materials	Amount
Cotton Fibre	> 85%
Man-Made Fibres	< 15%
Chemicals	Amount
Sodium Hydroxide	10-25 %
Reducing agent	< 5%
Sizing Chemical	< 5%
Other Organic Chemicals	25-40%
Other Inorganic Chemicals	< 1%

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 factory gate to an average retailer/distribution platform. 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 1 st June 2020 to 30 th September 2020. For upstream module, selected generic data (secondary data) was applied and was obtained from Ecoinvent v3.6. For organic cotton LCA data GABI dataset for Cotton fiber (organic) (at gin gate) has been used. All databased are in line with ISO 14044 data quality requirements. LCA was modelled in SimaPro v9.1.
Allocation	No allocation conducted 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 3.06; ReCiPe 2016 Midpoint (H) v 1.04; 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 and Water Scarcity indicator from Pfister et al 2009 v1.02 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 26623 REC Basic

RESOURCE USE						
Parameter		Unit	Upstream	Core	Downstream	Total
Primary Energy Resources Renewable	Use as energy carrier	MJ, net calorific value	1.02	1.41	0.002	2.44
	Use as raw materials	MJ, net calorific value	0	0	0	0
	TOTAL	MJ, net calorific value	1.02	1.41	0.002	2.44
Primary Energy Resources Nonrenewable	Use as energy carrier	MJ, net calorific value	16.3	36.4	0.165	52.9
	Use as raw materials	MJ, net calorific value	0	0	0	0
	TOTAL	MJ, net calorific value	16.3	36.4	0.165	52.9
Secondary Material		kg	0.217	0	0	0.217
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	0.059	0.021	1.86E-05	0.080

Output Flows for 1 sqm of 26623 REC Basic

OUTPUT FLOWS						
Parameter		Unit	Upstream	Core	Downstream	Total
			Raw Materials	Manufacturing	Distribution	
Components For Reuse		kg	-	0	0	0.087
Material For Recycling		kg	-	0.014	0	0.014
Materials For Energy Recovery		kg	-	0	0	0
Exported Energy Electricity		MJ	-	0	0	0
Exported Energy Thermal		MJ	-	0	0	0

Potential Environmental Impacts for 1 sqm of 26623 REC Basic

Environmental Impacts						
Parameter		Unit	Upstream	Core	Downstream	Total
			Raw Materials	Manufacturing	Distribution	
Global Warming Potential (GWP100a)	Fossil	kg CO ₂ eq	0.933	2.35	0.010	3.29
	Biogenic	kg CO ₂ eq	0.015	0.058	5.42E-05	0.073
	Land Use and Land Transformation	kg CO ₂ eq	2.70E-03	2.64E-03	4.54E-06	5.34E-03
	TOTAL	kg CO ₂ eq	0.829	1.14	0.005	1.98
Acidification Potential		kg SO ₂ eq	0.005	0.008	2.68E-05	0.013
Eutrophication Potential		kg PO ₄ ³⁻ eq	0.002	0.002	5.85E-06	0.004
Formation Potential of Tropospheric Ozone		kg NMVOC eq	0.004	0.005	2.58E-05	0.008
Abiotic Depletion Potential-Elements		kg Sb eq	7.53E-06	4.12E-06	2.56E-07	1.19E-05
Abiotic Depletion Potential-Fossil Fuels		MJ	14.5	32.5	0.153	47.1
Water Scarcity Potential		m³	0.120	0.009	8.51E-06	0.128
Carbon Uptake		kg CO ₂ eq	0.416	0.047	5.51E-05	0.463
Freshwater ecotoxicity		PAF.m³.day	9150	6479	55.1	15684
Human Toxicity, Cancer		cases	1.71E-07	1.60E-07	1.47E-09	3.33E-07
Human Toxicity, Non-Cancer		cases	4.02E-08	4.93E-08	3.10E-10	8.98E-08
Land Use		m² a crop eq	5.73	0.095	1.18E-03	5.829
Ozone Layer Depletion		kg CFC ⁻¹¹ eq	1.02E-07	2.70E-07	1.82E-09	3.74E-07

Waste Production for 1 sqm of 26623 REC Basic

Waste Production					
Parameter	Unit	Upstream	Core	Downstream	Total
Hazardous Waste	kg	-	3.68E-04	0	3.68E-04
Non-hazardous Waste	kg	-	0.003	0	0.003
Radioactive Waste	kg	-	0	0	0

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 Natural 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>

GaBi database | Cotton fiber (organic) (at gin gate) <http://www.gabi-software.com/in>

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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Accredited or approved by: The International EPD® System

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™

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