Environmental Product Declaration

ISKO™

for 26630 OCO 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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EPD® THE INTERNATIONAL EPD® SYSTEM

TURKEY EPD® ENVIRONMENTAL PRODUCT DECLARATIONS

This EPD covers the following product group: ISKO 26630 OCO Basic in accordance with ISO 14025.

UN CPC CODE: 26630 Woven fabrics of cotton, containing less than 85% by weight of cotton, mixed mainly or solely with man-made fibres.

Owner of the Declaration: ISKO™

Manufacturer: ISKO Division, Sanko Tekstil Isletmeleri San. ve Tic. A.S. Organize Sanayi Bölgesi 3.Cadde 16400 Inegol / 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 Naturals 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: ☐ EPD process certification ☑ 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: ☐ Yes ☑ 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

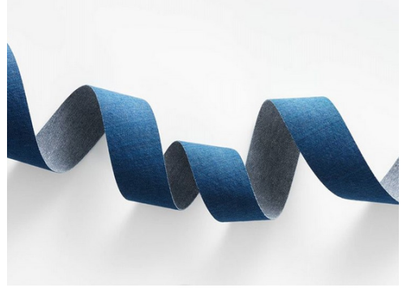
With a global presence and offices in 35 countries, ISKO™ is part of SANKO TEKSTIL, the textile division of SANKO Group.

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

PERFORMACE

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

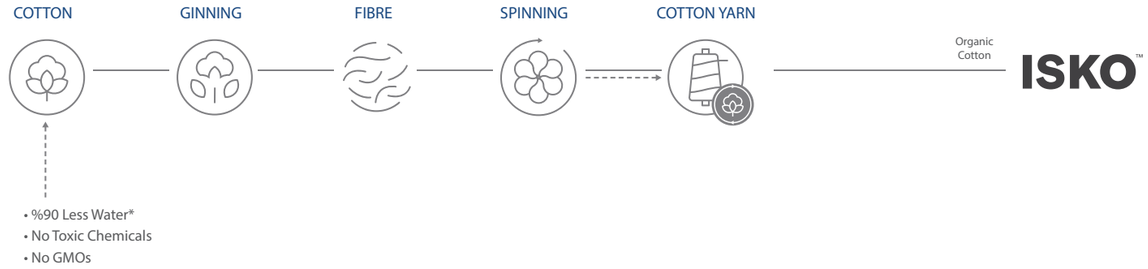
ISKO™'s mission is to always keep in touch with the latest trends and also to anticipate times. ISKO™'s research center is certified by the Turkish government and it consists of more than 25 textile engineers, specialists in creating new denim products.

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

GLOBAL ORGANIC TEXTILE STANDARD (GOTS)

The GOTS is recognised as one of the leading processing standards for textiles made from organic fibres. It defines high-level environmental and toxicological criteria – on for example all input chemicals such as dyestuffs and wastewater treatment – along the entire organic textiles supply chain and all processors must comply with social criteria. Only textile products that contain a minimum of 70% organic fibres can become GOTS certified.

*Textile Exchange, Material Snapshot, Organic Cotton LCA Study, 2016

Technical Specifications*

Physical Parameter Evaluated	Test Method	Feature	UOM	Actual Value
Skew Movement in Washing	AATCC 179	Right	%	0
		Left	%	-0.4
Tensile Strength	ASTM D5034	Wrap	kg	65.3
		Weft	kg	42.5
Tear Strength	ASTM D1424	Wrap	g	4816
		Weft	g	3573
CF to Crocking	AATCC 8	Dry	Rating	3
		Wet	Rating	1.5
pH	ISO 3071	-	-	7.2
Stiffness	ASTM D4032	-	kg	1.6
Elongation	ASTM D3107	-	%	11.2

*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 weigth per unit is a confidential business information.

Additional Environmental Information

Certifications & Partnerships

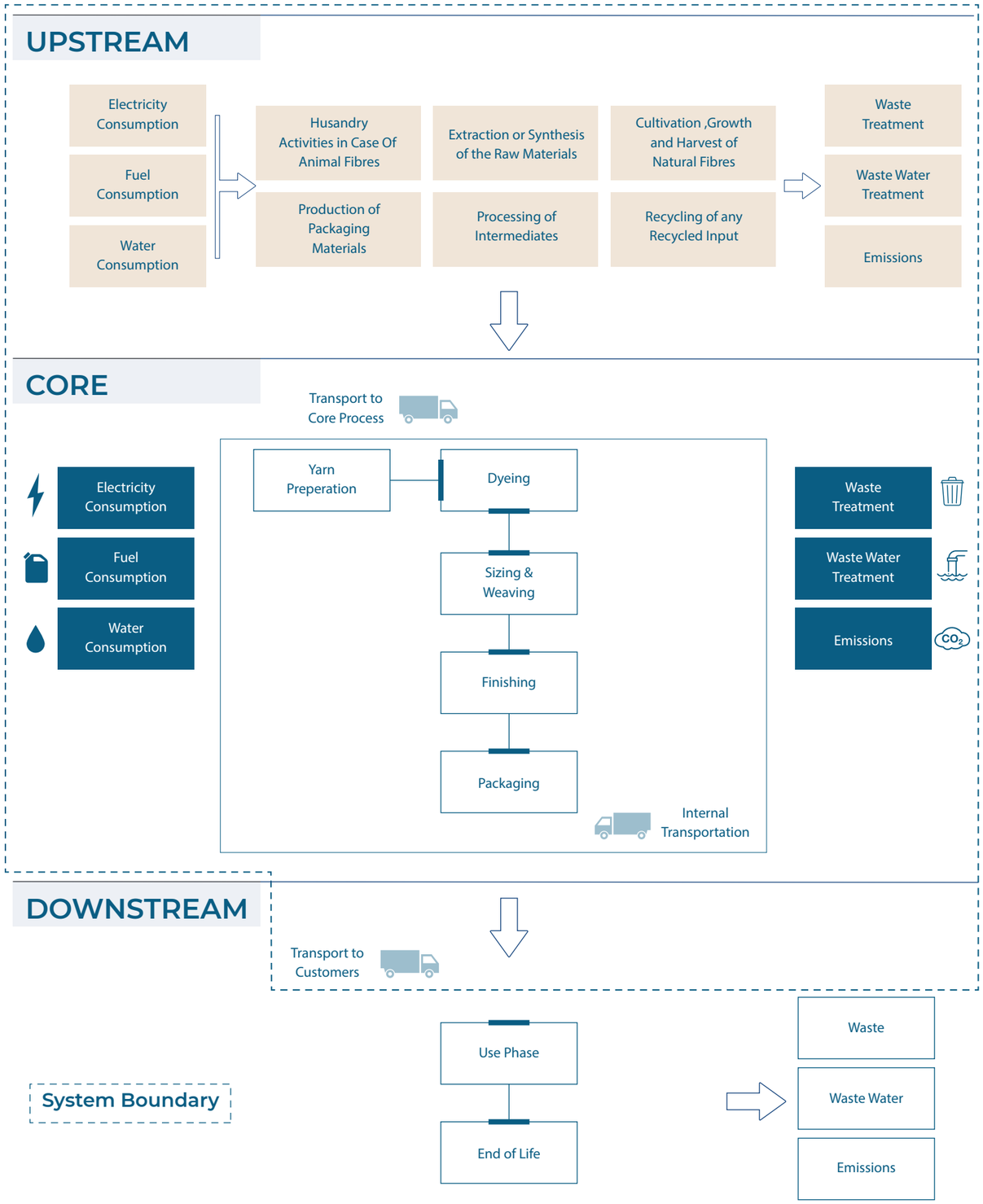
ISO 9001:2015 · ISO 14001:2015 · ISO 27001:2013 · ISO 50001 · OHSAS 18001:2014

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	5-15%
Other Inorganic Chemicals	< 10%

Packaging: PE packaging film is used to cover the end products. Classfied 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. 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. 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 v9.0.0.31.
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 3.05; 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.

More information regarding to ISKO™ and its products is available on www.isko.com.tr.

Resource Use for 1 sqm of 26630 OCO Basic

RESOURCE USE						
Parameter		Unit	Upstream	Core	Downstream	Total
Primary Energy Resources Renewable	Use as energy carrier	MJ, net calorific value	3.167	0.686	0.001	3.85
	Use as raw materials	MJ, net calorific value	0	0	0	0
	TOTAL	MJ, net calorific value	3.167	0.686	0.001	3.85
Primary Energy Resources Nonrenewable	Use as energy carrier	MJ, net calorific value	10.0	16.2	0.089	26.4
	Use as raw materials	MJ, net calorific value	0	0	0	0
	TOTAL	MJ, net calorific value	10.03	16.2	0.089	26.4
Secondary Material		kg	0.038	0	0	0.038
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		m^3	0.143	0.016	1.53E-05	0.159

Output Flows for 1 sqm of 26630 OCO Basic

OUTPUT FLOWS					
Parameter	Unit	Upstream Raw Materials	Core Manufacturing	Downstream Distribution	Total
Components For Reuse	kg	-	0	-	0
Material For Recycling	kg	-	5.20E-03	-	5.20E-03
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 26630 OCO Basic

Environmental Impacts						
Parameter		Unit	Upstream Raw Materials	Core Manufacturing	Downstream Distribution	Total
Global Warming Potential (GWP100a)	Fossil	kg CO_2 eq	0.780	1.12	0.005	1.90
	Biogenic	kg CO_2 eq	0.046	0.024	0.000	0.070
	Land Use and Land Transformation	kg CO_2 eq	2.50E-03	1.54E-03	1.74E-06	4.04E-03
	TOTAL	kg CO_2 eq	0.829	1.14	0.005	1.98
Acidification Potential		kg SO_2 eq	0.005	0.004	1.32E-05	0.009
Eutrophication Potential		kg PO_4^{3-} eq	0.002	0.001	2.88E-06	0.004
Formation Potential of Tropospheric Ozone		kg NMVOC eq	0.003	0.002	1.27E-05	0.005
Abiotic Depletion Potential-Elements		kg Sb eq	1.37E-06	2.26E-07	1.55E-08	1.61E-06
Abiotic Depletion Potential-Fossil Fuels		MJ	8.83	14.44	0.082	23.4
Water Scarcity Potential		m^3	0.157	0.011	7.67E-06	0.168
Carbon Uptake		kg CO_2 eq	0.543	0.020	2.43E-05	0.563
Freshwater ecotoxicity		PAF.m^3.day	3.59E-08	3.06E-08	1.55E-10	6.66E-08
Human Toxicity, Cancer		cases	4288	3292	9.2	7589
Human Toxicity, Non-Cancer		cases	1.95E-07	9.10E-08	7.67E-10	2.87E-07
Land Use		m^2 a crop eq	4.449	0.011	2.30E-04	4.460
Ozone Layer Depletion		kg CFC^{-11} eq	4.30E-08	1.04E-07	1.00E-09	1.49E-07

Waste Production for 1 sqm of 26630 OCO Basic

Waste Production					
Parameter	Unit	Upstream	Core	Downstream	Total
Hazardous Waste	kg	-	1.41E-04	-	1.41E-04
Non-hazardous Waste	kg	-	1.04E-03	-	1.04E-03
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

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

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

Owner of the Declaration

ISKO Division

Sanko Tekstil Isletmeleri San. ve Tic. A.S. Organize Sanayi Bölgesi 3.Cadde 16400

Inegol,Bursa | Turkey
www.iskodenim.com

LCA Author & EPD Design

Semtrio Sustainability Consulting AND Plaza No:10-12 Kozyatagi

Istanbul | Turkey
www.semtrio.com

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

ISKO™

HEAD OFFICE

ISKO Division

Sanko Tekstil Isletmeleri San. ve Tic. A.S. Organize Sanayi
Bölgesi 3.Cadde 16400 Inegol / Bursa / Turkey

T: +90 224 280 77 00

F: +90 224 714 80 19

E: sustainability@isko.com.tr

E: eozkucuk@isko.com.tr