

# Environmental Product Declaration

*In accordance with ISO 14025 for:*

CALIK DNM-615 denim fabric  
*from*

# CALIK DENIM

*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](http://www.environdec.com)*

**Programme:**

The International EPD® System,  
[www.environdec.com](http://www.environdec.com)  
EPD Turkey, [www.epdturkey.org](http://www.epdturkey.org)

**Programme operator:**

EPD International AB & EPD Turkey

**EPD registration number:**

S-P-04120

**Publication date:**

2021-11-23

**Valid until:**

2026-11-22



## 01 | PROGRAMME INFORMATION

EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden  
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**Programme Operator**

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

Independent third-party verification of the declaration and data, according to ISO 14025:2006:

EPD process certification  EPD verification

**Third party verifier:**

Ing. Luca Giacomello, PMP®  
Via Leonardo Fea 35  
10148 Torino- Italy

**Approved by:**

The International EPD® System Technical Committee,  
supported by the Secretariat

Procedure for follow-up of data during EPD validity involves third party verifier:

YES  NO

**LCA Study & EPD Design Conducted By:**

Semtrio Sustainability Consulting  
BUDOTEK Teknopark, No 4/21, Umraniye / Istanbul Turkey  
www.semtrio.com

*Çalık Denim has the sole ownership, liability, and responsibility for the EPD.*

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

**Owner of the EPD: ÇALIK DENİM TEKSTİL SANAYİ VE TİCARET A.Ş.**

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**Name and location of production site:** Malatya/Turkey

## 02 | PRODUCT INFORMATION

**COMPANY INFORMATION**

We **dream** with passion.

We **live** with passion.

We **create** change with passion.

**We have a “Passion for Denim, Passion for Life”...**

*...to make a positive impact for a better life.*



Çalık Denim, one of the global actors in denim fabric production, is also among the two hundred companies that export the most in Turkey. The story of Çalık Denim which holds a special place in the history of the Group as the first industrial investment of the Çalık Holding, started in Malatya, in 1987. Established with an investment of \$111 million, the company has grown up to have a production capacity of 55 million meters per year in a covered area of 407 thousand square meters, employing over 2 000 people.

Within the first decade of its foundation the company began operating the ring spinning facility in 1997 and by 2003, it became an integrated plant having added gabardine/velvet fabrics to its range of products. Over the years the company became a science center by combining its broad knowledge in fabrics with new technologies through R&D. Today, Çalık Denim’s R&D Center paves the way producing game-changing fabrics for Turkish and global textile industries.

### THE STORY OF OUR PURPOSE

We have been pursuing a passion... Ever since Çalık Denim was founded, we have remained on our committed path of making positive impact, creating and pioneering meaningful change in life, in our industry and in the world, we live in. We followed this instinct that had become a part of our corporate culture, the tighter we held it... Up until today, we have sustained and expanded our passion with countless solid steps, collaborations and our keen efforts on truthful innovations.

Walking on our path ever since, as of 2019, we have put our sustainability purpose into words:

**Passion for Denim, Passion for Life...**  
*...is our purpose to make a positive impact for a better life.*



Çalık Denim is passionate to provide a credible assurance and to ensure that entire production is certified under the below-stated standards.



### Product name: CALIK DNM-615 denim fabric

- One of a kind power stretch product group as weft shrinkage values stabilized for rigid articles' standard ( 0/-3,5%)
- Promises flawless premium look
- Garments produced with E-last fabrics fit like the first time every time
- Prevents baggy & saggy look
- Overcomes puckering problem which is valid also for parts with destroy effect on garments
- Consistency created for weft shrinkage values offers advantage for garment manufacturers as;
  - o it restrains size variances
  - o with conventional fabrics, different laundry processes lead to different shrinkage values, hence different patterns



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

**Geographical scope:** Global

#### Technical Specification\*

Characteristic	Reference Standard	Unit	Results
Composition	Regulation (EU) No 1007/2011	%	Natural Fibres 85-90% Synthetic Fibres 10-15%
Width and Length	ASTM D3774	cm	90cm x 100cm
<b>Performance</b>			
Surface fuzzing and pilling	(ISO 12945-2)	Grade	3
Determination of pH	(MORAPEX-A)	pH	4-7.5
Elasticity	(ASTM D3107)	%	85-95%
Dimensional change the washing (Warp)	(AATCC 135)	%	0/-3.5
Dimensional change the washing (Weft)		%	0/-3.5
<b>Colour Fastness</b>			
Colour fastness to artificial light: Xenon arc fading lamp test	(ISO 105 B02)	Grade	4-5
With commercial household detergent at 50°C	(ISO 105 C06)	Grade	CC:4 CS:4
Colour fastness to water	(ISO 105 E01)	Change in colour	CC:4-5 CS:4-5
The resistance of the colour	General appearance after home laundering	Grade	4-5

\*Thermal insulation properties are not relevant and weight per unit are not declared due to being trade secret.



**LCA Information**

**Functional unit:** The functional unit is 1 m<sup>2</sup> packaged denim fabric delivered to an average retailer platform.

**Time representativeness:** The production data in the LCA study represents the period from 1<sup>st</sup> October 2021 to 1<sup>st</sup> November 2021.

**Database and LCA software used:** SimaPro v9.2 software with Ecoinvent v3.7.1 database

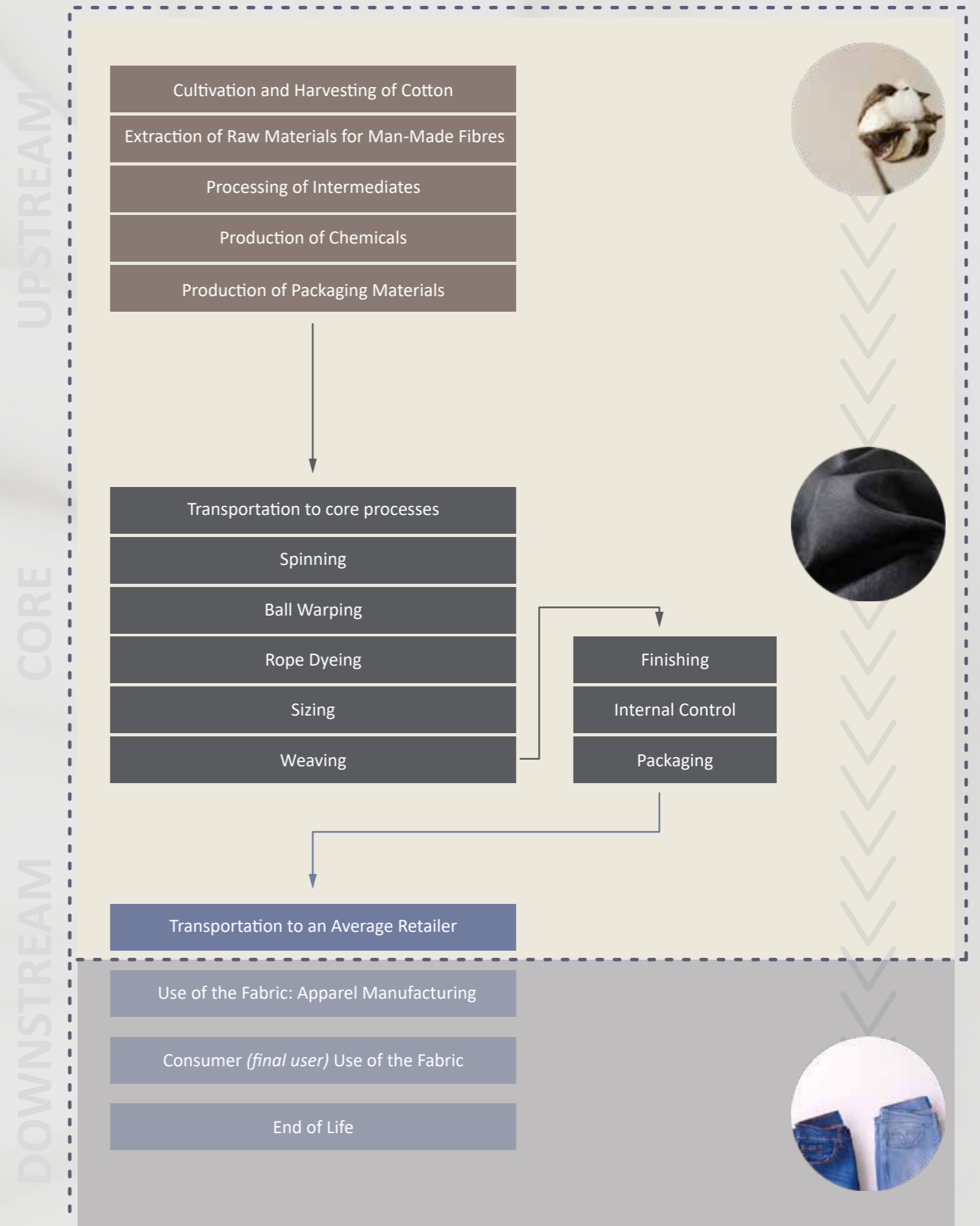
**Description of system boundaries:** Cradle-to-gate with options

**Excluded lifecycle stages:** Use of the fabric at garment manufacturing and denim laundry stages, consumer use stage of the fabric (jeans) and end of life stages have been excluded in the system boundary and not taken into account in the LCA study.

**Data quality and data collection:** Site specific data is collected for the core processes from the mill for the period between 1<sup>st</sup> October 2021 and 1<sup>st</sup> November 2021. Selected generic data is used for up-stream processes and obtained from Ecoinvent v3.7.1. Specific and selected generic data achieve the ISO 14044 data quality requirements and time representatives.

**Allocation:** Allocation was avoided by dividing the unit process into two or more sub-processes and collecting the environmental data related to these sub-processes.

**Cut – off rules:** Life Cycle Inventory data for a minimum of 99 % of total inflows to the three life cycle stages have been included and a cut-off rule of 1% regarding energy, mass and environmental relevance was applied.



Composition	Amount
Natural Fibres	85-90%
Synthetic Fibres	10-15%
Regenerated Fibres	-
Sizing Chemical, kg	<1%
Sodium Hydroxide, kg	25-30%
Pigments and Dye Stuff, kg	1-5%
Chemical, Organic, kg	5-10%
Chemical, Inorganic, kg	1-5%
Reducing Agent, kg	1-5%

- : Fabric doesn't include of this type of fibre.

### Packaging

PE film is used for packaging for the purposes of transport, handling and/or distribution of the fabric. No recycled content included in the packaging materials.



Access [The GREEN PRINT BOOK](#) to see more about Çalık Denim's sustainability path with the latest innovations and connected to the intrinsic values of environmental respect.

### Potential environmental impact

ENVIRONMENTAL IMPACTS						
	PARAMETER	UNIT	Upstream	Core	Downstream	TOTAL
Global warming (GWP100a)	Fossil	kg CO <sub>2</sub> eq	0.98	2.93	0.054	3.96
	Biogenic	kg CO <sub>2</sub> eq	0.029	0.041	3.51E-04	0.070
	Land use and land transformation	kg CO <sub>2</sub> eq	0.226	0.015	2.04E-05	0.242
	TOTAL	kg CO <sub>2</sub> eq	1.23	2.98	0.054	4.27
Acidification potential (AP)		kg SO <sub>2</sub> eq	0.006	0.012	1.34E-04	0.018
Eutrophication potential (EP)		kg PO <sub>4</sub> <sup>3-</sup> eq.	0.010	0.007	1.66E-05	0.017
Formation potential of tropospheric ozone (POCP)		kg NMVOC	0.006	0.007	1.33E-04	0.013
Abiotic depletion potential – Elements		kg Sb eq	1.17E-05	5.11E-06	1.93E-07	1.70E-05
Abiotic depletion potential – Fossil fuels		MJ	13.6	35.8	0.790	50.2
Water scarcity potential		m <sup>3</sup>	13.092	2.892	2.72E-03	15.986
Carbon uptake		kg CO <sub>2</sub> eq	-1.28	-0.018	-2.50E-04	-1.30
Freshwater ecotoxicity		PAF.m <sup>3</sup> .day	328	683	7.30	1019
Human toxicity, cancer		cases	1.77E-08	3.40E-08	9.60E-10	5.27E-08
Human toxicity, non-cancer		cases	-6.69E-08	2.21E-07	5.43E-09	1.60E-07
Land use		m <sup>2</sup> a crop eq	1.59	0.022	0.002	1.61
Ozone layer depletion (ODP)		kg CFC-11 eq	4.37E-07	1.46E-07	9.30E-09	5.92E-07

### Use of resources

RESOURCE USE						
	PARAMETER	UNIT	Upstream	Core	Downstream	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	15.36	4.94	0.009	20.31
	Used as raw materials	MJ, net calorific value	0	0	0	0
	TOTAL	MJ, net calorific value	15.36	4.94	0.009	20.31
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	15.77	40.4	0.85	57.1
	Used as raw materials	MJ, net calorific value	0	0	0	0
	TOTAL	MJ, net calorific value	15.77	40.4	0.85	57.1
Secondary material		kg	0	0	0	0
Renewable secondary fuels		MJ, net calorific value	0	0	0	0
Non-renewable secondary fuels		MJ, net calorific value	0	0	0	0
Net use of fresh water		m <sup>3</sup>	0.667	0.219	5.04E-04	0.887

# 04 | ENVIRONMENTAL PERFORMANCE

## Waste production and output flows

### WASTE PRODUCTION

PARAMETER	UNIT	Upstream	Core	Downstream	TOTAL
Hazardous waste disposed	kg	0	8.07E-05	0	8.07E-05
Non-hazardous waste disposed	kg	0	1.66E-05	0	1.66E-05
Radioactive waste disposed	kg	0	0	0	0

### OUTPUT FLOWS

PARAMETER	UNIT	Upstream	Core	Downstream	TOTAL
Components for reuse	kg	INA	0	0	0
Material for recycling	kg	INA	0.023	0	0.023
Materials for energy recovery	kg	INA	0	0	0
Exported energy, electricity	MJ	INA	0	0	0
Exported energy, thermal	MJ	INA	0	0	0

INA: Indicator Not Assessed

### Other environmental indicators

According to the PCR following environmental indicators are included in the LCA study:

- Freshwater ecotoxicity, PAF.m<sup>3</sup>.day; Human Toxicity cancer and non-cancer, cases. Ref: USEtox 2 (recommended + interim) v1.00
- Land Use, m<sup>2</sup>a crop eq. Ref: ReCiPe 2016 Midpoint (H) v1.03
- Ozone layer depletion, kg CFC-11 eq. Ref: CML baseline v3.06

### Additional information

In this section additional information not derived from the LCA-based calculations regarding the production process of CALIK DNM-615 is presented.

Entire production at Çalık Denim mill is in compliance with 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). The fabric declared in this EPD achieved compliance certification to ZDHC requirements.



# 05 | REFERENCES & CONTACT

## References

- Çalık Denim / <http://calikdenim.com/corporate/>
- 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](http://www.environdec.com)
- The International EPD® System / The General Programme Instructions
- Ecoinvent v3.7.1 database / <http://www.ecoinvent.org/>
- SimaPro LCA Software / <https://simapro.com/>
- The International EPD® System / PCR WOVEN KNITTED AND CROCHETED FABRICS OF NATURALS FIBRES (EXCEPT SILK), FOR APPAREL SECTOR 2018:08 V1.02

## Contact

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