EPD®

FRISTADS®

EPD – Environmental Product Declaration.

In accordance with ISO 14025 for:
Craftsman trousers 241 GS25.

Main fabric GS25: 65% recycled polyester, 35% cotton.

General information

Owner of the EPD:
Fristads AB Prognosgatan 24, 504 64 Borås, Sweden
Contact person: Lisa Rosengren, Head of R&D Raw Material
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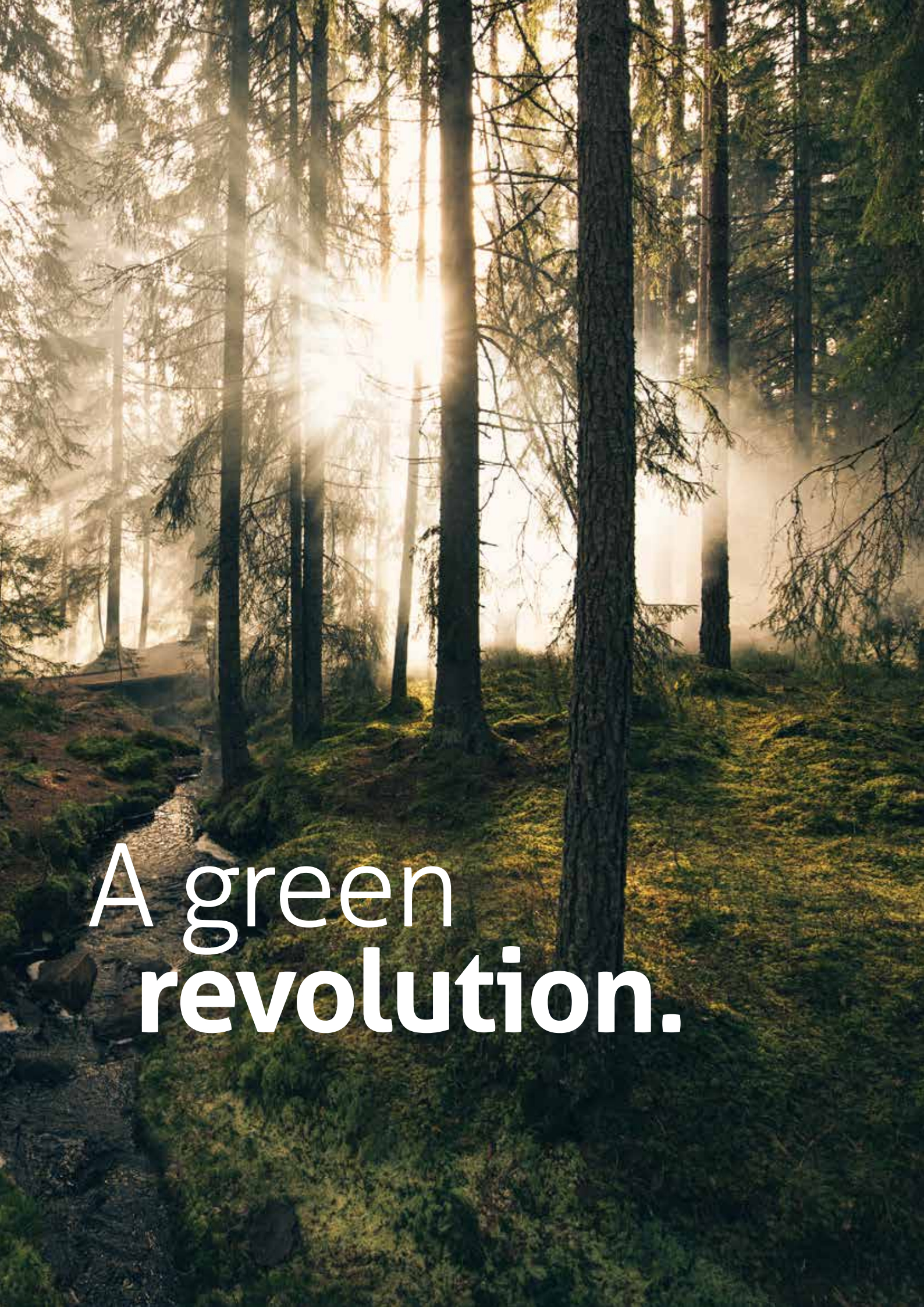
www.fristads.com

Location of production site:
Vientiane, Laos

Programme:	The international EPD® system www.environdec.com
Programme operator:	EPD international AB
EPD registration number:	S-P-10772
Publication date:	2023-10-19
Validity date:	2028-10-19
Geographical scope:	Global


A green
revolution.

Committed to sustainability.

In 2019 Fristads became the first clothing producer in the world to introduce a new standard for measuring the total environmental impact of a garment – from choice of material to delivery of the finished garment.

With three own factories in Europe and sales in more than 20 countries, there are many people around the world working for us – and we care for each and every one of them. These are fine words of course, and we stand firmly behind them. Injustices, unreasonable working hours, low wages, corruption – these are all issues that we resist, where we are constantly on our guard. We work hard to exert our influence wherever our products are made.

We have set high requirements for the companies that want to be our suppliers, at all stages. We give consideration to all the details in the chain, from human rights to environmental impact. It's our duty.

Our work with sustainability is based on the 10 principles in the UN's Global Compact, which forms the basis for our Code of Conduct. We respect and promote human rights according to the United Nations Declaration of Human rights and the Core Conventions of the International Labour Organisation. As a member of amfori BSCI (Business Social Compliance Initiative), we pursue a constructive and open dialogue among our business partners and stakeholders to reinforce the principles of a socially responsible business.

We are certified according to ISO 14001 and work constantly to improve our environmental performance. We monitor the use of chemicals in our products throughout our supply chain. Our Restricted Substance List, shared among all suppliers, reflects the latest EU harmonized legislation which includes REACH, pops regulation, Biocide Regulation and Product Safety Regulation, and is updated regularly based on the guidance of our partner RISE, the Swedish Chemical Group. Furthermore, most of our products are OEKO-TEX® certified.

These efforts are rarely visible from the outside. But, we know they make a difference. For this reason, they are extremely important for us as we strive to make a better world to live in, a world we can proudly leave for the generations that follow us.

Read more at fristads.com.

Human rights, labour, environment, anti-corruption

Social compliance

Environment

Chemical regulations


FRISTADS

CRAFTSMAN TROUSERS 241 GS25

Art. no 300472

Mechanical stretch / 2 loose-hanging CORDURA® pockets, one with 3 smaller pockets and tool loops, one with extra pocket / 2 front pockets / 2 CORDURA®-reinforced bellowed back pockets / Loop for idcard or keys at front / Double reinforced crotch seam / Hammer loop on both sides / Right leg pocket with folding rule pocket, button and loop for sheath knife and pen pocket / Left leg pocket with snap fastening, phone pocket and extra pocket with loop for id-card holder / CORDURA®-reinforced knee pockets with outside opening from above / Height adjustment for knee pads in knee pocket / CORDURA®-reinforced leg ends / Reflective details at knees / Approved according to EN 14404 together with kneepads 124292 / OEKO-TEX® certified.

MATERIAL 65% recycled polyester, 35% cotton, brushed inside.
WEIGHT 290 g/m²
COLOUR 210 Khaki, 544 Dark navy, 940 Black, 941 Dark Grey
SIZE C146-C156, C44-C66

LCA information – Life cycle assessment.

Life Cycle Assessment is a method for analysing the environmental impact of a product throughout its life-cycle, from the extraction of raw materials (the cradle) to handling the waste (the grave).

Goal of the study

An LCA study has been conducted in accordance with ISO 14044 and the requirements stated in the General Programme Instructions by The International EPD® System[1].
The goal of the present LCA study has been to calculate environmental impact values for Fristads' Craftsman trousers 241 GS25, to create this Environmental Product Declaration, to be used for communicating environmental performance to customers[2].

Scope of the study

The scope of the study is cradle to gate and includes all processes up and until finished garment is transported to customer, see Figure 1. Retail, use and end-of-life processes are not included in this EPD. All material and resource consumption is tracked back to the point of raw material extraction, mainly by using cradle-to-gate data[3] from the Ecoinvent database[4].
The declared unit of the study is 1 (one) garment in size C52, in accordance with the Product Category Rules (PCR)[5].

Data collection

The inventory for the LCA study was carried out during 2022-2023. The data for the textile processing was provided by the Fristads' suppliers. Data for the production was collected by Fristads' staff[6, 7, 8]. The collected data cover all steps of the system boundry.

Allocation

Whenever it has been necessary to partition the system inputs and outputs, mass criteria have been used in accordance with the PCR. Such situations have for example been when the share of energy and water consumption, or the wastewater treatment of an entire production plant has been allocated to the specific fabric based on the total production volume of the plant. For assembly, electricity consumption has been allocated by production time.

Cut-off rules

The PCR states that life cycle inventory data for a minimum of 99 % of total inflows to the three life cycle stages (up-stream, core and down-stream modules) shall be included and a cut-off rule of 1% regarding energy, mass and environmental relevance shall apply.

Assumptions and limitations

Some general assumptions have been made around transport vehicles to enable use of database data from Ecoinvent to represent primary data. Transport distances are assumed based on Google Maps distances between locations given by Fristads' suppliers. It is assumed that similar vehicles are used throughout Asia and throughout Europe respectively.

Generally, the LCA data should be used with precaution if interpreted for any other purpose than this EPD.

Data quality

The data quality has been considerably increased by the experience from making a similar study in the past[9, 10]. Generic data, selected generic data and proxy data has been used. It has been investigated and secured in the study that proxy data does not contribute more than 10% to the total impact of each environmental impact category, in accordance with the PCRs.

Additional information about the LCA study

Time representativeness:

2022-2023

Database(s) and LCA software used:

SimaPro version 9.5.0.1[11]
Ecoinvent version 3.9.1[4]

Calculation methods

The potential environmental impact for all impact categories have been calculated with the EN 15804+A2 method as implemented in SimaPro. Use of resources are calculated with the method Cumulative Energy Demand v1.11.

Description of system boundaries:

Cradle-to-gate

LCA practitioner:

The LCA has been conducted by the Raw Material team at Fristads.

Third party reviewer:

Daniel Böckin, Miljögiraff AB,
Övre Hövik 25 B, SE-430 84 Göteborg, Sweden
(daniel@miljogiraff.se)

[1] EPD International. (2021a). *General Programme Instructions for the International EPD® System version 4.0.*
[2] Rosengren, L., Steenari, M. (2023) Life cycle assessment report - GS25 collection.
[3] Cradle-to-gate = all processes from cradle (mining site, forest etc.) to gate (until the goods is produced and ready for delivery at the factory gate).
[4] Ecoinvent. (2023). Ecoinvent (3.9.1). https://ecoinvent.org/the-ecoinvent-database/.
[5] EPD International. (2020). PCR 2019:06 Trousers, shorts, slacks and similar garments, : UN CPC 282. Product Category Rules according to ISO 14025. Version 1.02. Stockholm, Sweden.
[6] Anonymous. (2023a). *Facility M for spinning, weaving, dyeing, and finishing.*
[7] Anonymous. (2023b). *Facility D for spinning, weaving, dyeing, and finishing.*
[8] Anonymous. (2023c). Facility O for cut and sew.
[9] EPD International. (2021c). *S-P-03888 HIGH VIS GREEN STRETCH TROUSERS CLASS 2 2645/2665 GSTP.*
[10] EPD International. (2021b). *S-P-03882 HIGH VIS GREEN CRAFTSMAN STRETCH TROUSERS CLASS 1 2640/CLASS 2 2641 GPLU AND HIGH VIS CRAFTSMAN STRETCH TROUSERS CLASS 2 2707 PLU.*
[11] PRé Consultants. (2023). *SimaPro 9.5.0.1*. Retrieved from http://www.pre-sustainability.com/simapro.

System diagram.

The system boundaries of this EPD are decided by the Product Category Rules (PCR) and illustrated by Figure 1.

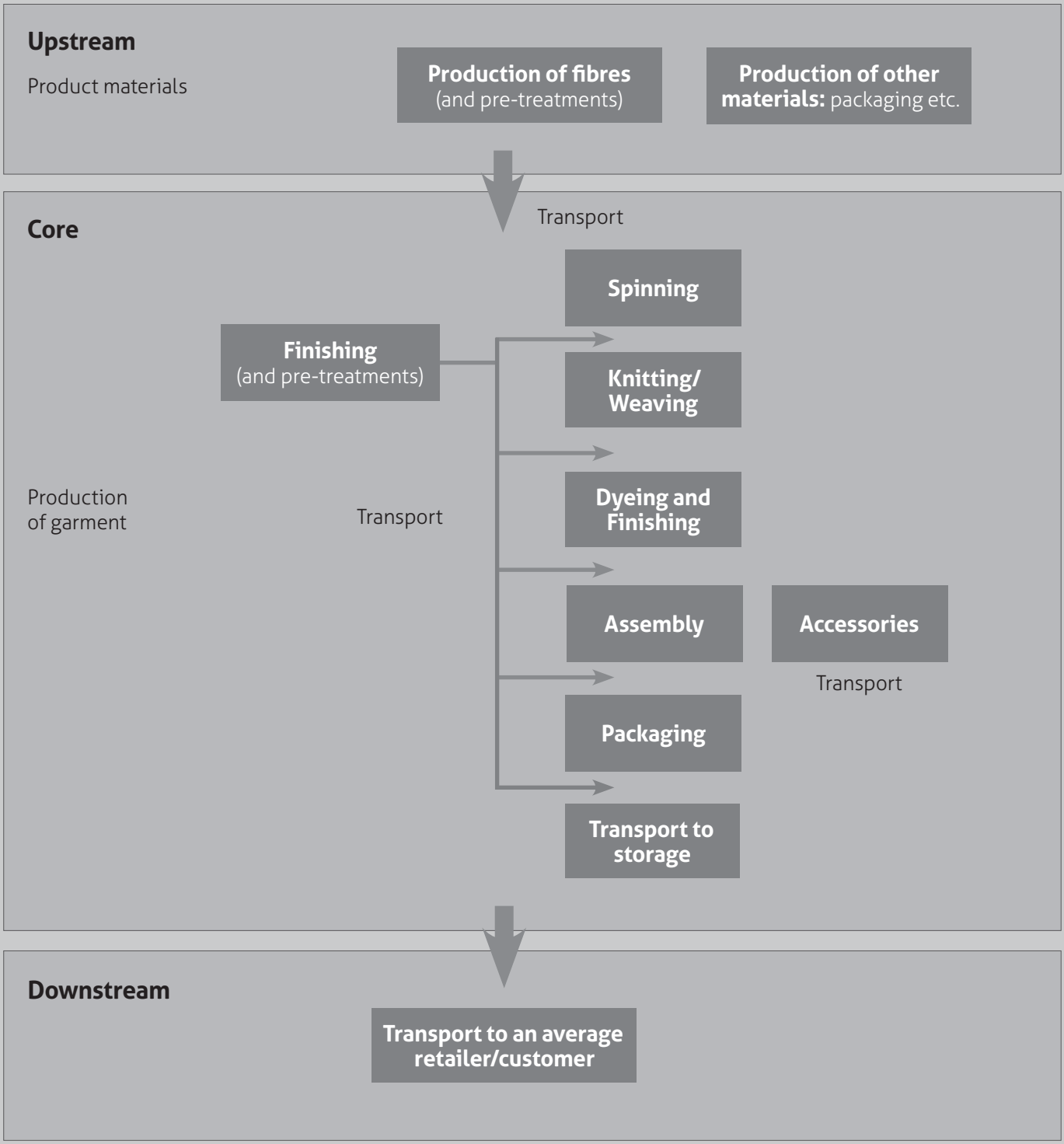


Figure 1. The system boundaries include upstream, core and downstream processes.

Content declaration

Craftsman Trousers 241 GS25.

Content Declaration	%	Environmental/Hazardous properties
Main fabric GS25	59,5	65% Recycled polyester (Post-consumer), 35% Cotton
Reinforcement ADKN	21,9	100% Polyamide
Detail fabric FBLA	12,9	65% Polyester, 35% Cotton
Sewing thread	2,6	100% Polyester
Care and size labels	0,2	100% Polyester (33% Recycled, post-consumer)
Velcro	0,1	100% Polyamide
Metal trims	1,3	100% Brass
Ribbons	0,9	100% Recycled polyester (Pre-consumer)
Zippers	0,3	100% Recycled polyester (Post-consumer)
Paper trims	0,3	100% Paper
Interlining	0,1	100% Cotton

Packaging

Distribution packaging: Cardboard box. Pallets are excluded from the calculations.

Environmental performance

Craftsman Trousers 241 GS25. Declared unit size C52.
Potential environmental impact.

Parameter		Unit	Upstream	CORE	Down-stream	Total
Global warming potential (GWP)	Fossil	kg CO_2 eq.	4,31	9,78	0,127	14,2
	Biogenic	kg CO_2 eq.	-0,707	0,187	1,07	0,551
	Land use and land change	kg CO_2 eq.	0,153	0,00402	0,0000605	0,157
	Total	kg CO_2 eq.	3,75	9,97	1,20	14,9
Acidification potential (AP)		mol H+ eq.	0,0428	0,0442	0,000403	0,0874
Eutrophication potential (EP) - Fresh water		kg P eq.	0,00199	0,00157	0,00000864	0,00358
Eutrophication potential (EP) - Marine		kg N eq.	0,0436	0,00911	0,000139	0,0528
Eutrophication potential (EP) - Terrestrial		mol N eq.	0,133	0,0951	0,00146	0,229
Photochemical ozone creation potential (POCP)		kg NMVOC eq.	0,0161	0,0316	0,000602	0,0483
Abiotic depletion potential (ADP) for fossil resources[1]		MJ	58,2	111	1,75	171
Abiotic depletion potential (ADP) for minerals/metals (non-fossil resources)[2]		kg Sb eq.	0,0000905	0,00000466	0,000000397	0,0000956
Water deprivation potential (WDP)[3]		m^3 depriv.	37,4	1,14	0,00724	38,5
Ozone depletion potential (ODP)		kg CFC 11 eq.	0,00000172	0,000000103	0,00000000269	0,00000183
Particulate matter (Disease inc.)		Disease inc.	0,000000362	0,000000535	0,00000000983	0,000000907

Use of resources

Parameter		Unit	Upstream	CORE	Downstream	Total
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	8,59	4,00	0,0272	16,7
	Used as raw materials	MJ, net calorific value	4,09	0	0	0
	Total	MJ, net calorific value	12,7	4,00	0,0272	17
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	48,0	119	1,86	184
	Used as raw materials	MJ, net calorific value	14,5	0	0	14,5
	Total	MJ, net calorific value	62,6	119	1,86	198,0
Secondary material		kg	0,394	0	0	0,394
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^3	3,67	0,0290	0	3,69

[1,2,3] The results of this environmental impact indicator shall be used with care as the uncertainties of the results are high and as there is limited experience with the indicator.

Product characteristics

Product characteristics

Characteristic	Test method	Results GS25
Composition	Regulation EU No 1007/2011	65% polyester 35% cotton
Weave	ISO 3572	Twill 3/1
Mass per unit area	EN 12127	290 g/m^2
Width	EN 1773	150 cm
Colour index		
Abrasion strength	ISO 12947-2	45000 rubs
Tear strength	ISO 13937-2	Warp: 60 N Weft: 50 N
Tensile strength	ISO 13934-1	Warp: 1700 N Weft: 1000 N
Seam slippage	ISO 13936-2	Warp: 2 mm Weft: 2 mm
Pilling test (Martindale) after 5000 rubs	EN ISO 12945-2	3
Dimensional change to washing	EN ISO 6330 EN ISO 5077	Warp: ±3% Weft: ±3%
pH of water extract	EN ISO 3071	4–7,5
Colour fastness to artificial light: Xenon arc fading lamp test	EN ISO 105 B02	4
Colour fastness to washing	EN ISO 105 C06	Color change: 4 Color staining: Cotton 4 Polyester 3–4 Viscose 4
Acid and alkaline perspiration	EN ISO 105 E04	Alkaline and acid Color change: 4 Color staining: Cotton 4 Polyester 4
Dry and wet rubbing	EN ISO 105 X12	Dry : 3–4 Wet : 2–3

Waste production and output flows

Waste production

Parameter	Unit	Upstream	CORE	Downstream	Total
Hazardous waste disposed	kg	0	0	0	0
Non-hazardous waste disposed	kg	0,00123	0,164	0	0,166
Radioactive waste disposed	kg	0	0	0	0

Additional information

Our garments are OEKO-TEX® certified at garment level and we have a well-established programme to monitor chemical safety compliance.

The results in this EPD is for the declared unit size C52, which is in the middle of Fristads' size range. Results may vary depending on the garment size within the size range.

Programme-related information and verification

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programmes may not be comparable.

Programme:	The International EPD® System EPD International AB Box 210 60 SE-100 31 Stockholm Sweden www.environdec.com info@environdec.com
EPD registration number:	S-P-10772
Published:	2023-10-19
Valid until:	2028-10-19
Product Category Rules:	PCR 2019:06 Trousers, shorts, slacks and similar garments. Version 1.02
Product group classification:	UN CPC 282
Reference year for data:	2022-2023
Geographical scope:	Global

Product category rules (PCR): PCR 2019:06 Trousers, shorts, slacks and similar garments, Version 1.02, UN CPC 282.
PCR review was conducted by: The Technical Committee of the International EPD® System. A full list of members available on www.environdec.com. The review panel may be contacted via info@environdec.com. Chair of the PCR review: Hüdai Kara, Metsims Sustainability Consulting.
Independent third-party verification of the declaration and data, according to ISO 14025:2006: ☐ EPD process certification ☑ EPD verification
Third party verifier: Daniel Böckin, Miljögiraff AB, daniel@miljogiraff.se) Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☑ No

References

Anonymous. (2023a). *Facility M for spinning, weaving, dyeing, and finishing.*

Anonymous. (2023b). *Facility D for spinning, weaving, dyeing, and finishing.*

Anonymous. (2023c). *Facility O for cut and sew.*

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PRé Consultants. (2023). *SimaPro 9.5.0.1.* Retrieved from http://www.pre-sustainability.com/simapro.

Rosengren, L., Steenari, M. (2023). Life cycle assessment report - GS25 collection.

Contact information

Parameter	Unit
EPD owner:	**Fristads AB** Prognosgatan 24 , 504 64 Borås Sweden **Contact person:** Lisa Rosengren lisa.rosengren@fristads.com www.fristads.com
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Programme operator:	EPD International AB info@environdec.com