



Owner: Kvadrat A/S
No.: MD-23119-EN\_rev2

Issued: 31-10-2023
Issued first time: 07-07-2023
Valid to: 07-07-2028

3rd PARTY **VERIFIED** 

EPD

VERIFIED ENVIRONMENTAL PRODUCT DECLARATION | ISO 14025 & EN 15804





Owner of declaration

Kvadrat A/S Lundbergsvej 10 8400 Ebeltoft, Denmark VAT no. DK-45 99 85 17

### kvadrat

Issued: 31-10-2023 Valid to: 07-07-2028

**Basis of calculation** 

This EPD is developed in accordance with the European standard EN 15804+A2.

**Programme** 

EPD Danmark www.epddanmark.dk **L**epddanmark

**Comparability** 

EPDs of construction products may not be comparable if they do not comply with the requirements in EN 15804. EPD data may not be comparable if the datasets used are not developed in accordance with EN 15804 and if the background systems are not based on the same database.

☐ Industry EPD 

Validity

This EPD has been verified in accordance with ISO 14025 and is valid for 5 years from the date of issue.

Declared product(s)

60% new wool, 20% viscose, 10% linen and 10% nylon - Vestland,

76% new wool, 12% viscose, 4% linen and 8% nylon - Vestland, Norway

Number of declared datasets/product variations: 2

The intended use of an EPD is to communicate scientifically based environmental information for construction products, for the purpose of assessing the environmental performance of buildings.

**Production sites** 

Vestland, Norway

Green energy certificates are present for the electricity consumption at the production site in Vestland, Norway, representing 100% Hydro power.

**EPD** type

 $\Box$ Cradle-to-gate with options, modules C1-C4 and D

□Cradle-to-grave and module D

□Cradle-to-gate

□Cradle-to-gate with options

Product(s) use

Kvadrat produces quality contemporary textiles for use in upholsteries and curtains.

CEN standard EN 15804 serves as the core PCR

Independent verification of the declaration and data, according to EN ISO 14025

 $\square$  internal

Declared/ functional unit. 1 kg of woven textile

Year of production site data (A3)

2021

Third party verifier:

N

Guangli Du, Aalborg University, BUILD

**EPD** version

3<sup>rd</sup> version: Result tables updated

Martha Katrine Sørensen EPD Danmark

Life	Life cycle stages and modules (MND = module not declared)															
	Product Construction process Use					End of life				Beyond the system boundary						
Raw material supply	Transport	Manufacturing	Transport	Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Re-use, recovery and recycling potential
A1	A2	А3	A4	A5	B1	B2	В3	B4	B5	В6	В7	C1	C2	C3	C4	D
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X



### Product information

### **Product description**

The main product components are shown in the table below.

Material	Weight-% of declared product
Wool	60 - 76%
Nylon	8 - 10%
Viscose	12 - 20%
Linen	4 - 10%

### **Product packaging:**

The composition of the sales- and transport packaging of the product is shown in the table below.

Material	Weight-% of packaging
Carton	100%

### Representativity

This declaration, including data collection and the modeled foreground system including results, represents the production of 1 kg of woven textile on the production site located in Vestland, Norway. Product specific data are based on average values collected in the year 2021. Background data are based on the GaBi database version 2022.2 and the EcoInvent 3.8 database. Data are less than 10 years old. Generally, the used background datasets are of high quality, and the majority of the datasets are only a couple of years old.

#### **Hazardous substances**

The products declared within this EPD do not contain substances listed on the "Candidate List of Substances of Very High Concern for Authorisation."

(http://echa.europa.eu/candidate-list-table)

#### **Essential characteristics**

The products in this EPD are not covered by harmonized technical specifications. Declaration of performance according to EU regulation 305/2011 is available for all declared product variations.

Further technical information can be obtained by contacting the manufacturer or on the manufacturer's website: <a href="https://www.kvadrat.dk/en">www.kvadrat.dk/en</a>

### **Reference Service Life (RSL)**

Kvadrat offers 10 years guarantee for the majority of its textile products. The actual service life of Kvadrat textile depends on a wide range of various impact factors such as the allocation of the application area to the use class, maintenance, intensity of use and functional purpose. Most often Kvadrat textiles are applied for building and transportation related purposes.

Therefore, technical service life cannot be defined for Kvadrat textiles.

Kvadrat product specific textile warranty are disclosed in the Technical Specifications of each product.



### **Table of products**

		Products from Kvadrat covered in this EPD										
Supplier	Country	Product name	Product composition	kg pr m²								
Vestland	Norway	Carat	55% new wool, 26% viscose, 10% linen and 9% nylon	0,590								
Vestland	Norway	Eikevik	76% new wool, 12% viscose, 4% linen and 8% nylon	0,540								
Vestland	Norway	Fosen	76% new wool, 12% viscose, 4% linen and 8% nylon	0,580								
Vestland	Norway	Fossvik - 1717	76% new worsted wool, 12% viscose, 4% linen and 8% nylon	0,540								
Vestland	Norway	Silva	75% new wool, 12% viscose, 5% linen and 8% nylon	0,590								
Vestland	Norway	Foss Beds	76% new wool, 11% viscose, 5% linen and 8% nylon	0,510								
Vestland	Norway	Tårnvik	62% new wool, 21% viscose, 8% linen and 9% nylon	0,540								
Vestland	Norway	Tårnvik uni	62% new wool, 21% viscose, 8% linen and 9% nylon	0,540								
Vestland	Norway	LEON	59% new wool, 23% viscose, 9% linen and 9% nylon	0,600								
Vestland	Norway	Foss	59% new wool, 23% viscose, 9% linen and 9% nylon	0,510								

### Picture of product(s)





## LCA background

#### **Declared unit.**

The LCI and LCIA results in this EPD relates to environmental impacts caused by the production and end-of-life of 1 kg of woven textiles.

Name	Value	Unit
Declared unit	1	Kg
Conversion factor to 1 kg.	1	-

#### **Functional unit**

### Not defined.

### **PCR**

This EPD is developed according to the core rules for the product category of construction products in EN 15804+A2:2019.

**Guarantee of Origin - certificates** 

### Foreground system:

"Guarantee of Origin" certificates are used in the production at the supplier in Vestland, Norway. Here electricity is modelled as 100% hydro power.

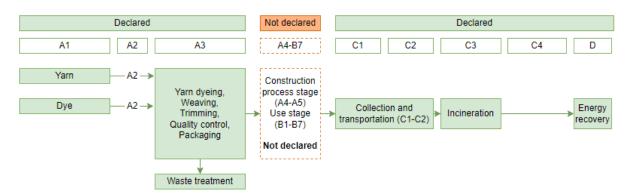
At the other production sites, no "Guarantee of Origin" certificates are used in the manufacturing. Consumption of electricity is modelled with residual electricity grid mix. Consumption of heat is modelled with average data, representative for the geographical area.

### Background system:

Other processes upstream and downstream from the production is modelled with processes from the GaBi background database that is based on average data.

### **Flowdiagram**

The flow diagram below presents the main processes included in the life cycle of the woven textiles.





**System boundary** 

This EPD is based on a cradle-to-gate LCA with modules C1-C4 and D, in which 100 weight-% has been accounted for.

The general rules for the exclusion of inputs and outputs follows the requirements in EN 15804, 6.3.5, where the total of neglected input flows per module shall be a maximum of 5 % of energy usage and mass for unit processes.

### Product stage (A1-A3) includes:

- A1 Extraction and processing of raw materials
- A2 Transport to the production site
- A3 Manufacturing processes

The product stage comprises the acquisition of all raw materials, products and energy, transport to the production site, packaging, and waste processing up to the "end-of-waste" state or final disposal. The LCA results are declared in aggregated form for the product stage, which means, that the sub-modules A1, A2 and A3 are declared as one module A1-A3.

The manufacturing of the woven textiles is handled by a supplier located in Norway.

The yarns used for the textiles are prepared and assembled prior to the weaving. In this step, the warp yarns are wrapped around a rotating drum, creating a warp with the desired length. In the weaving process, the woven fabrics are formed using a loom, interlacing the lengthwise threads, known as warp yarns, and the crosswise threads, known as weft yarns. Subsequently, the fabric is trimmed, quality controlled, rolled-up, packaged, and transported to Kvadrat headquarters in Ebeltoft, Denmark.

The yarns used in the products are dyed using roughly four different dyeing methods, with some yarns being delivered pre-dyed others being dyed inhouse.

(1) For some of the synthetic textiles, dyestuff is added directly during the manufacturing of the yarn and before the yarn has been extruded (dope dyed). In other cases, (2) the dyestuff is added to the fibres before they are spun into a yarn Dyestuff is either added to the loose fibres

(stock dyed) or to combed wool sliver (top dyed). A third option used in both the production of synthetic and natural textiles includes the (3) dyeing of the finished yarns (yarn dyed), which are either sent to an external dyeing house before they arrive at the production sites of the suppliers of this EPD or which are dyed inhouse at the production sites of this EPD. Alternatively, (4) the dyestuff is applied to the finished woven textile (piece dyed).

In the case of the yarn dyeing technology the yarn is wound on perforated cores. From here, the dye flows through the yarn package, penetrating the fibres into the core of the yarn. The yarn dyeing method is both handled internally and externally, depending on the specific supplier. This process requires a significant amount of steam and water.

### End of Life (C1-C4) includes:

C1 – Deconstruction: There are no impacts associated with C1 as the textiles – once they are incorporated into either a curtain or upholstery – are deconstructed manually and without the need for any additional materials and/or machinery. This lifecycle stage is set to 0.

C2 – Transport to waste processing: A general scenario for the transport of waste to waste handling site is used, and this single transport scenario is applied to the end-of-life for all textiles unaffected by their site of origin or material composition.

This transport distance is set to 40 km, based on average distance to waste handling sites.

C3 – Waste processing: The textiles are modelled as one homogenous product that will/cannot be separated at the end-of-life, instead they are all modelled as 1 kg of textile being sent to municipal waste incineration, with each product falling under the same scenario regardless of material composition or site of origin.

End-of-life is modelled using a 100% incineration scenario.



# Re-use, recovery, and recycling potential (D) includes:

Module D includes the potential in energy recovery arising from the incineration of the textiles at the end-of-life. Modelled with average European data for electricity and district heating.



## LCA results

Vestland, Norway - 60% wool, 10% linen, 10% nylon, 20% viscose

ENVIRONMENT	ENVIRONMENTAL IMPACTS PER kg Vestland, Norway - 60% wool, 10% linen, 10% nylon, 20% viscose											
Indicator	Unit	A1-A3	C1	C2	C3	C4	D					
GWP-total	kg CO₂ eq.	1,09E+01	0	4,75E-03	1,74E+00	0	-6,85E-01					
GWP-fossil	kg CO₂ eq.	9,64E+00	0	4,71E-03	4,71E-01	0	-6,80E-01					
GWP-biogenic	kg CO₂ eq.	1,16E+00	0	4,92E-07	1,27E+00	0	-4,60E-03					
GWP-luluc	kg CO₂ eq.	8,22E-02	0	4,36E-05	5,19E-06	0	-1,43E-04					
ODP	kg CFC 11 eq.	1,57E-07	0	6,13E-16	1,98E-13	0	-4,67E-12					
AP	mol H+ eq.	3,49E-02	0	6,45E-06	1,42E-03	0	-1,39E-03					
EP-freshwater	kg PO₄ eq.	5,92E-04	0	1,72E-08	5,39E-08	0	-2,63E-06					
EP-marine	kg N eq.	8,65E-03	0	2,26E-06	6,47E-04	0	-3,68E-04					
EP-terrestrial	mol N eq.	1,25E-01	0	2,70E-05	7,33E-03	0	-3,82E-03					
POCP	kg NMVOC eq.	1,68E-02	0	5,60E-06	1,66E-03	0	-9,77E-04					
ADPm <sup>1</sup>	kg Sb eq.	1,61E-05	0	3,10E-10	1,82E-09	0	-1,06E-07					
ADPf <sup>1</sup>	МЈ	1,49E+02	0	6,41E-02	6,71E-01	0	-9,67E+00					
WDP <sup>1</sup>	m³	9,43E-01	0	5,69E-05	1,99E-01	0	-1,09E-01					
Caption				GWP-fossil = Global Wa al Warming Potential - la AP = Acidifcation;	and use and land use cha							
	EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = Water Depletion Potential											
Disclaimer	<sup>1</sup> The results of this e	nvironmental indica		I be used with care as the ed experienced with the		e results	are high or as there is					

ADDITIONAL E	ADDITIONAL ENVIRONMENTAL IMPACTS PER kg Vestland, Norway - 60% wool, 10% linen, 10% nylon, 20% viscose											
Parameter	Unit	A1-A3	C1	C2	C3	C4	D					
PM	[Disease incidence]	3,09E-07	0	4,71E-11	4,41E-09	0	-1,12E-08					
IRP <sup>2</sup>	[kBq U235 eq.]	3,48E-01	0	1,80E-05	3,89E-03	0	-1,57E-01					
ETP-fw <sup>1</sup>	[CTUe]	8,42E+01	0	4,56E-02	2,28E-01	0	-3,56E+00					
HTP-c <sup>1</sup>	[CTUh]	7,57E-09	0	9,32E-13	5,06E-11	0	-1,19E-10					
HTP-nc <sup>1</sup>	[CTUh]	6,16E-07	0	4,98E-11	4,88E-09	0	-5,69E-09					
SQP <sup>1</sup>	-	6,30E+02	0	2,68E-02	1,36E-01	0	-9,58E+00					
Caption				zing radiation – human TP-nc = Human toxicity								
Disclaimers	<sup>1</sup> The results of this er	nvironmental indica		I be used with care as the car		results	are high or as there is					
	cycle. It does not consi	der effects due to	possible	ntual impact of low dose nuclear accidents, occu tion from the soil, from r measured by this indic	pational exposure nor do adon and from some co	ue to rad	ioactive waste disposal					





RESOUR	CE USE PER kg V	estland, Norv	vay -	60% wool, 10%	linen, 10% nylo	n, <b>20</b> %	% viscose		
Parameter	Unit	A1-A3	C1	C2	C3	C4	D		
PERE	[MJ]	1,21E+02	0	4,67E-03	1,20E-01	0	-5,86E+00		
PERM	[MJ]	1,09E+01	0	0,00E+00	0,00E+00	0	0,00E+00		
PERT	[MJ]	1,32E+02	0	4,67E-03	1,20E-01	0	-5,86E+00		
PENRE	[MJ]	1,46E+02	0	6,44E-02	6,72E-01	0	-9,67E+00		
PENRM	[MJ]	2,62E+00	0	0,00E+00	0,00E+00	0	0,00E+00		
PENRT	[MJ]	1,49E+02	0	6,44E-02	6,72E-01	0	-9,67E+00		
SM	[kg]	0,00E+00	0	0,00E+00	0,00E+00	0	0,00E+00		
RSF	[MJ]	0,00E+00	0	0,00E+00	0,00E+00	0	0,00E+00		
NRSF	[MJ]	0,00E+00	0	0,00E+00	0,00E+00	0	0,00E+00		
FW	[m³]	2,83E-01	0	5,11E-06	4,70E-03	0	-4,07E-03		
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources; PENRM = Use of non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; PENRT = Total use of non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources; SM = Use of non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources; PENRM = Use of non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources; PENRM = Use of non renewable primary energy resources; PENRM = Use of non renewable primary energy resources; PENRM = Use of non renewable primary energy resources; PENRM = Use of non renewable primary energy resources; PENRM = Use of non renewable primary energy resources; PENRM = Use of non renewable primary energy resources; PENRM = Use of non renewable primary energy resources; PENRM = Use of non renewable primary energy resources; PENRM = Use of non renewable primary energy resources; PENRM = Use of non renewable primary energy resources; PENRM = Use of non renewable primary energy resources; PENRM = Use of non renewable primary energy resources; PENRM = Use of non renewable primary energy resources; PENRM = Use of non renewable primary energy resources; PENRM = Use of non renewable primary energy resources; PENRM = Use of non renewable primary energ								

WASTE CATEGORIES AND OUTPUT FLOWS PER kg Vestland, Norway - 60% wool, 10% linen, 10% nylon, 20% viscose											
Parameter	Unit	A1-A3	C1	C2	C3	C4	D				
HWD	[kg]	1,19E-05	0	1,99E-13	5,35E-11	0	-1,34E-09				
NHWD	[kg]	3,75E-01	0	9,81E-06	2,27E-02	0	-1,86E-02				
RWD	[kg]	2,35E-03	0	1,20E-07	2,49E-05	0	-9,29E-04				
	•	-			-						
CRU	[kg]	0,00E+00	0	0,00E+00	0,00E+00	0	0,00E+00				
MFR	[kg]	1,49E-01	0	0,00E+00	0,00E+00	0	0,00E+00				
MER	[kg]	4,66E-02	0	0,00E+00	0,00E+00	0	0,00E+00				
EEE	[MJ]	2,00E-01	0	0,00E+00	3,11E+00	0	0,00E+00				
EET	[MJ]	3,05E-01	0	0,00E+00	5,59E+00	0	0,00E+00				



Vestland, Norway - 76% wool, 4% linen, 8% nylon, 12% viscose

ENVIRONMEN	NTAL IMPACTS P	ER kg Vestland	, Nor	way - 76% wool,	4% linen, 8% r	ylon,	, 12% viscose	
Indicator	Unit	A1-A3	C1	C2	C3	C4	D	
GWP-total	kg CO₂ eq.	1,20E+01	0	4,75E-03	1,74E+00	0	-6,85E-01	
GWP-fossil	kg CO₂ eq.	1,01E+01	0	4,71E-03	4,71E-01	0	-6,80E-01	
GWP-biogenic	kg CO₂ eq.	1,84E+00	0	4,92E-07	1,27E+00	0	-4,60E-03	
GWP-luluc	kg CO₂ eq.	5,31E-02	0	4,36E-05	5,19E-06	0	-1,43E-04	
ODP	kg CFC 11 eq.	9,40E-08	0	6,13E-16	1,98E-13	0	-4,67E-12	
AP	mol H <sup>+</sup> eq.	3,70E-02	0	6,45E-06	1,42E-03	0	-1,39E-03	
EP-freshwater	kg PO₄ eq.	5,36E-04	0	1,72E-08	5,39E-08	0	-2,63E-06	
EP-marine	kg N eq.	8,82E-03	0	2,26E-06	6,47E-04	0	-3,68E-04	
EP-terrestrial	mol N eq.	1,43E-01	0	2,70E-05	7,33E-03	0	-3,82E-03	
POCP	kg NMVOC eq.	1,69E-02	0	5,60E-06	1,66E-03	0	-9,77E-04	
ADPm <sup>1</sup>	kg Sb eq.	1,29E-05	0	3,10E-10	1,82E-09	0	-1,06E-07	
ADPf <sup>1</sup>	МЈ	1,49E+02	0	6,41E-02	6,71E-01	0	-9,67E+00	
$WDP^1$	m³	1,22E+00	0	5,69E-05	1,99E-01	0	-1,09E-01	
Caption				WP-fossil = Global Warm Warming Potential - land AP = Acidifcation;				
	EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = Water Depletion Potential							
Disclaimer	<sup>1</sup> The results of this e	nvironmental indicato		e used with care as the d experienced with the ir		esults a	are high or as there is	

ADDITIONAL	ADDITIONAL ENVIRONMENTAL IMPACTS PER kg Vestland, Norway - 76% wool, 4% linen, 8% nylon, 12% viscose											
Parameter	Unit	A1-A3	C1	C2	C3	C4	D					
PM	[Disease incidence]	3,16E-07	0	4,71E-11	4,41E-09	0	-1,12E-08					
IRP <sup>2</sup>	[kBq U235 eq.]	3,43E-01	0	1,80E-05	3,89E-03	0	-1,57E-01					
ETP-fw <sup>1</sup>	[CTUe]	7,49E+01	0	4,56E-02	2,28E-01	0	-3,56E+00					
HTP-c <sup>1</sup>	[CTUh]	8,63E-09	0	9,32E-13	5,06E-11	0	-1,19E-10					
HTP-nc <sup>1</sup>	[CTUh]	7,48E-07	0	4,98E-11	4,88E-09	0	-5,69E-09					
SQP <sup>1</sup>	-	7,62E+02	0	2,68E-02	1,36E-01	0	-9,58E+00					
Caption				ng radiation – human he P-nc = Human toxicity –								
Disclaimers	<sup>1</sup> The results of this e	nvironmental indicato		e used with care as the I experienced with the ir		esults a	are high or as there is					
	cycle. It does not cons	ider effects due to po	ssible n radiatio	ual impact of low dose ic uclear accidents, occupa n from the soil, from rac neasured by this indicato	tional exposure nor due don and from some cons	to radi	ioactive waste disposal					



RESOU	RCE USE PER kg	Vestland, Norw	vay - I	76% wool, 4% li	nen, 8% nylon,	12%	viscose		
Parameter	Unit	A1-A3	C1	C2	C3	C4	D		
PERE	[MJ]	1,39E+02	0	4,67E-03	1,20E-01	0	-5,86E+00		
PERM	[MJ]	8,99E+00	0	0,00E+00	0,00E+00	0	0,00E+00		
PERT	[MJ]	1,48E+02	0	4,67E-03	1,20E-01	0	-5,86E+00		
PENRE	[MJ]	1,47E+02	0	6,44E-02	6,72E-01	0	-9,67E+00		
PENRM	[MJ]	2,09E+00	0	0,00E+00	0,00E+00	0	0,00E+00		
PENRT	[MJ]	1,49E+02	0	6,44E-02	6,72E-01	0	-9,67E+00		
SM	[kg]	0,00E+00	0	0,00E+00	0,00E+00	0	0,00E+00		
RSF	[MJ]	0,00E+00	0	0,00E+00	0,00E+00	0	0,00E+00		
NRSF	[MJ]	0,00E+00	0	0,00E+00	0,00E+00	0	0,00E+00		
FW	[m³]	3,26E-01	0	5,11E-06	4,70E-03	0	-4,07E-03		
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources.								

WASTE CATE	VASTE CATEGORIES AND OUTPUT FLOWS PER kg Vestland, Norway - 76% wool, 4% linen, 8% nylon, 12% viscose						
Parameter	Unit	A1-A3	C1	C2	С3	C4	D
HWD	[kg]	1,45E-05	0	1,99E-13	5,35E-11	0	-1,34E-09
NHWD	[kg]	4,20E-01	0	9,81E-06	2,27E-02	0	-1,86E-02
RWD	[kg]	2,61E-03	0	1,20E-07	2,49E-05	0	-9,29E-04
					-		
CRU	[kg]	0,00E+00	0	0,00E+00	0,00E+00	0	0,00E+00
MFR	[kg]	1,49E-01	0	0,00E+00	0,00E+00	0	0,00E+00
MER	[kg]	4,66E-02	0	0,00E+00	0,00E+00	0	0,00E+00
EEE	[MJ]	2,00E-01	0	0,00E+00	3,11E+00	0	0,00E+00
EET	[MJ]	3,05E-01	0	0,00E+00	5,59E+00	0	0,00E+00
Caption				on hazardous waste disp recycling; MER = Materi			

BIOGENIC CARBON CONTENT PER kg of TEXTILE			
Parameter	Unit	60% new wool, 20% viscose, 10% linen and 10% nylon – Vestland, Norway	76% new wool, 12% viscose, 4% linen and 8% nylon – Vestland, Norway
Biogenic carbon content in product	kg C	0,424	0,446
Biogenic carbon content in accompanying packaging	kg C	0,0158	0,0158



### Additional information

### **LCA** interpretation

Across all the products and all the sites, the trend is the same: Yarns and fibres used in the production are the most impactful parameter, in part due to the significant contributions of waste arising during production, followed closely by the dyeing/finishing setup in question, and lastly the end-of-life incineration.

### **Technical information on scenarios**

### Reference service life

RSL information	Unit
Reference service Life	10 years
Declared product properties	
Design application parameters	
Assumed quality of work	Technical specifications and guidance can be obtained from the company's website www.kvadrat.dk/en or from direct contact to Kvadrat
Outdoor environment	
Indoor environment	at +45 8953 1866 or kvadrat@kvadrat.org
Usage conditions	
Maintenance	

End of life (C1-C4)

Scenario information	Value	Unit
Collected separately	1	kg
Collected with mixed waste	0	kg
For reuse	0	kg
For recycling	0	kg
For energy recovery	1	kg
For final disposal	0	kg
Assumptions for scenario development	Assumed to be 100% incineration.	-

### Re-use, recovery, and recycling potential (D)

Scenario information/Materiel	Value	Unit
Displaced material	3,11	MJ
Energy recovery from waste incineration	5,59	MJ



**Indoor air** 

The products covered in the EPD are **GREENGUARD®** certified and comply with respective Indoor climate minimum requirements.

The **GREENGUARD**® certification ensures products do not exceed limits for dangerous substance emissions (VOCs) and thereby contribute to a healthier indoor climate.

The certificates and standards as well as the EU Ecolabel are available at the following link, by choosing a textile and selecting the Downloads section, after which the certificates are presented:

https://www.kvadrat.dk/en/products

Soil and water

The EPD does not give information on release of dangerous substances to soil and water because the horizontal standards on the relevant measurements are not available. Read more in EN15804+A1 chapter 7.4.2.

However, selected Kvadrat products are EU Ecolabel certified, which guarantees limited use of substances harmful to the environment and health and reduced water and air pollution.



### References

Publisher	www.epddanmark.dk Template version 2022.2
Programme operator	Danish Technological Institute Sustainable Construction Gregersensvej DK-2630 Taastrup www.teknologisk.dk
LCA-practitioner	Danish Technological Institute Sustainable Construction Gregersensvej DK-2630 Taastrup www.teknologisk.dk
LCA software /background data	GaBi version 10.6, Database 2022.2  www.gabi-software.com  EcoInvent version 3.8  www.ecoinvent.org
3 <sup>rd</sup> party verifier	Guangli Du BUILD – The Department of the Built Environment, Aalborg University

### **General programme instructions**

General Programme Instructions, version 2.0, spring 2020 www.epddanmark.dk

### EN 15804

DS/EN 15804 + A2:2019 - "Sustainability of construction works – Environmental. product declarations – Core rules for the product category of construction products"

### EN 15942

DS/EN 15942:2011 – " Sustainability of construction works – Environmental product declarations – Communication format business-to-business."

### ISO 14025

DS/EN ISO 14025:2010 – " Environmental labels and declarations – Type III environmental declarations – Principles and procedures"

### ISO 14040

DS/EN ISO 14040:2008 – " Environmental management – Life cycle assessment – Principles and framework"

### ISO 14044

DS/EN ISO 14044:2008 - " Environmental management - Life cycle assessment - Requirements and guidelines"