

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

TKR Basic Coating, TKR Gel 2 & 4, TKR Putty 6 & 8, TKR Marine
 Oy TKR-Coatings Ltd



EPD of multiple products
EPD registration number:
 Publication date:
 Valid until:

GENERAL INFORMATION

OWNER OF THE DECLARATION, MANUFACTURER

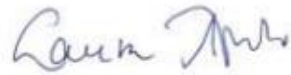
Manufacturer	Oy TKR-Coatings Ltd
Address	Pienteollisuustie 3, 06450 Porvoo
Contact details	myynti@tkr.fi
Website	https://www.tkr.fi/

PRODUCT

Products covered by this EPD	TKR Coatings
Product name	TKR Basic Coating, TKR Gel 2, TKR Gel 4, TKR Putties, TKR Marine
Place of production	Porvoo, Finland
Period for data	calendar year 2023
Averaging in EPD	Multiple products
Variation in GWP-total for A1-A3	12 %



Jukka Seppänen
RTS EPD Committee Secretary



Laura Apilo
Managing Director

EPD STANDARDS, SCOPE AND VERIFICATION

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

EPD program operator, publisher	Rakennustieto Oy Malminkatu 16 A, 00100 Helsinki http://cer.rts.fi
EPD standards	This EPD is in accordance with EN 15804+A2:2019 and ISO 14025 standards.
Product category rules (PCR)	The CEN standard EN 15804 serves as the core PCR. In addition, the RTS PCR (English version, 26.8.2020) is used. Product specific complementary category rules have not been applied in this EPD.
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Hanna Lento, Sweco Finland Oy
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification
EPD verifier	Sigita Židonienė, Vesta consulting, UAB
Verification date	09.01.2025

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

The story of TKR products began in the 1980s, when the founder of a company wanted to develop a healthier coating option for the internal coating of various types of pipes. The development of TKR products and methods has continued together with partners and is still ongoing. TKR-Marketing Oy was established in 2004 to sell and market Finnish coatings manufactured by Oy TKR-Coatings Ltd. Oy TKR-Coatings Ltd's coatings factory is located in Porvoo, from where the products are shipped directly to the customer. With more than 30 years of experience, TKR has been implementing various coating solutions for more than 1.4 million m².

PRODUCT INFORMATION

TKR coatings are two-component, natural oil-based solutions designed for a wide range of applications. These coatings are odorless and free of solvents, offering a durable and long-lasting surface for most cement-based materials, metals, and wood. Extensive research and practical experience have demonstrated that TKR coatings are safe to install.

TKR products offer solutions for sealing, coating and encapsulating. Tested extensively in Finland, M1 emission class TKR products are made from renewable plant oil-based natural resources and are safe both during processing and as a finished product. The M1 classification for low-emitting building materials has been granted by the Finnish Building Information Foundation RTS. TKR products and methods are cost-effective and easy to install.

Further information can be found at <https://www.tkr.fi/>.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals		
Minerals	10-45 %	EU
Fossil materials	31-71 %	EU
Bio-based materials	23-37 %	EU

PRODUCT COMPOSITION BY MATERIALS

Product material	Amount, mass %	Material origin
Methylenediphenyl diisocyanate (MDI)	20-38 %	EU
Castor oil	23-37 %	EU
Polyol	9-15 %	EU
Zeolite paste	3-8 %	EU
Titanium dioxide	3-5 %	EU
SiO ₂	0-3 %	EU
Kaolin	0-32 %	EU
Diammonium phosphate	0-39 %	EU

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	One kilogram of a coating product
Mass per declared unit	1 kg

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

BIOGENIC CARBON CONTENT

Product’s biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0,03 - 0,06
Biogenic carbon content in packaging, kg C	0,009

PACKAGING MATERIAL COMPOSITION

Material	Weight, kg	Post-consumer %	Renewable %	Material origin
polyethylene, HDPE	0,0174	0	0	EU
polypropylene, PP	0,0055	0	0	EU
packaging film, LDPE	0,0107	0	0	EU
kraft paper	0,0032	0	100	EU
cardboard box	0,0192	50	100	EU
metal container, steel	0,079	0	0	EU

PRODUCT DESCRIPTION

The following products are covered by this EPD:

TKR Basic Coating:

TKR Basic Coating is a versatile, two-component, natural oil-based product designed for a wide range of applications. Its most common use is as a primer in various TKR methods and products due to its excellent adhesion and cross-linking properties. It also serves as an effective topcoat, providing a smooth, impermeable surface. TKR Basic Coating is particularly suited for protective coatings, injection applications, and all thin film coatings. Being odourless, it is safe for use in sensitive environments such as food production areas or

customer spaces, even while occupied.

By adjusting the proportions of the two components, TKR Basic Coating can be customized to suit different needs—ranging from a soft, flexible coating ideal for expansion joints and structural connections, to a hard, rigid surface for wear-resistant applications like industrial floors. Additionally, it can be combined with fillers such as silica sand or rubber granules for specific applications and also functions as an adhesive in various uses.

TKR Gel 2 and Gel 4:

TKR Gel 2 and Gel 4 are high-viscosity, two-component, natural oil-based coatings designed to be used alongside TKR Basic Coating in various TKR methods. With a thicker consistency than the Basic Coating, TKR Gels are ideal for building up film thickness and for application on sloping or vertical surfaces. It is recommended to apply TKR Basic Coating as a primer due to its excellent adhesion and absorption properties, followed by TKR Gels for enhanced coverage.

TKR Gels are highly effective for sealing, patching, and filling jobs, adhering well to mortar and screed surfaces. They can be easily applied by brush and are odourless, making them suitable for use in food production facilities or customer spaces, even when the premises are occupied. As with the Basic Coating, the ratio of components can be adjusted to create a flexible, soft coating for joints or a hard, durable surface for wear-prone areas like floors.

TKR Putty 6 and Putty 8:

TKR Putty 6 and Putty 8 are two-component, natural oil-based coatings specifically designed for use with TKR Basic Coating in various TKR methods. These versatile, mouldable fillers are perfect for filling seams, cracks, and surface imperfections on a wide range of materials including wood, concrete, plaster, and metal. They are suitable for both indoor and outdoor applications.

TKR Putties are easy to apply using a spatula, allowing for precise shaping and smooth application. They dry quickly to form a durable, flexible, and airtight surface that can be painted, sanded, or further treated once fully cured. This makes TKR Putty an ideal choice for repairs and finishing work across a variety of substrates.

TKR Marine:

A two-component coating suitable for use as waterproofing and surface material for ships. It ensures a long-lasting surface for most metals, protecting them from wear, moisture, corrosion, and erosion. Applications include ship bathrooms, technical rooms, and pipeline coating.

The coating is emission-free and odourless, making it safe for installers even in areas where effective ventilation is not possible. The finished surface is antistatic and elastic, making it well-suited for expansion joints and structural connections.

The coatings are MED certified with certificate number EUFI29-20001726-MED, making them approved for interior painting of ships. MED-approved products are slow to spread flames and do not emit toxic smoke gases. Non-combustible materials can be applied on top of the coatings for slip resistance and roughening. The coatings are paintable. The TKR Marine coating can be applied using a brush, spatula, roller, or by spraying.

TKR two component cartridges:

TKR Coating products are also available in ready measured two component cartridges. The most used cartridge sizes are 470g and 1400g which both can be used with manual, battery operated or pneumatic dispenser guns. The use of cartridges helps with reducing waste on the installation site, avoiding mistakes in mixing and portioning and keeping the installation site in neat order when there are no open coating containers present. Cartridges are recycled.

PRODUCT APPLICATION

Sealing and Contaminant Control through Coating:

Coating is an effective method for managing harmful substances and ensuring a safer environment by sealing surfaces. In applications like HVAC (heating, ventilation, and air conditioning) systems, coating can be used to seal ductwork and prevent leaks. This not only improves energy efficiency but also minimizes the release of harmful particles into the air. Coating can be applied using a brush, spatula, roller, or by spraying.

Encapsulation of harmful materials:

Coating can be used at preventing the release of harmful substances from porous or damaged structures into the indoor environment. It involves applying a specialized coating to cover porous materials, cracks, and structural gaps where harmful substances could potentially be released. This method is effective for substances like asbestos, mold, volatile organic compounds (VOCs), and creosote.

Asbestos: To prevent asbestos fibres from becoming airborne.

Mold: To inhibit mold growth in damp or humid areas.

Radon: To block radon gas infiltration through basements and foundation gaps.

Creosote: To block creosote emissions from chimneys, wood structures, and surfaces where creosote has been absorbed.

Sealing HVAC Ducts and Fiber Binding:

Coating materials, like specific sealants, are used to seal ducts in HVAC systems, which prevents air leakage and improves the system's overall efficiency. Additionally, coatings can be applied to bind fibres, such as those found in fiberglass insulation, ensuring that airborne particles are not released into the ventilation system. Coating can be applied using a brush, spatula, roller, or by spraying.

Coating Wooden Structures and Moisture Transfer:

Wood structures benefit from coatings that help regulate moisture transfer. Applying a coating to wood surfaces can prevent water absorption, thereby reducing the risk of rot and degradation, which prolongs the wood's durability. Coating can be applied using a brush, spatula, roller, or by spraying.

Extending the Lifespan of Flat Surfaces:

Coatings applied to flat surfaces, such as walls or floors, can protect against wear and tear. By reducing surface degradation, coatings help extend the life cycle of these materials, reducing the need for frequent repairs or replacements, which is both cost-effective and sustainable. Coating can be applied using a brush, spatula, roller, or by spraying.

Waterproofing of the facilities:

Waterproofing solution for bath-, wash-, machine- or utility rooms. Due to strong adhesion and flexibility, the coating can be interlaced seamlessly to a floor drain and perforations without relying on structural bands.



TECHNICAL SPECIFICATIONS & PHYSICAL PROPERTIES OF THE PRODUCT

Attribute	Details
Substrates	Concrete, metal, wood, Styrofoam, fiberglass, rubber, stone
Application Methods	Brush, spatula, roller, pouring, spraying, injection
Hardness	Adjustable, Shore A 60 (3 s) - Shore D 75 (3 s)
Adhesion Strength (metal)	100-250 kp/cm ² depending on hardness
Adhesion Strength (concrete)	5.0 MPa, 100% concrete failure
Mixing Precision	±3%
Pot Life	Approx. 25 minutes at 20°C
Curing Time	Dry to touch: 12h, light use: 24h, full hardness: 7 days
Levelling	Self-levelling on horizontal surfaces, multiple thin layers on inclined surfaces
Emissions	No harmful gas emissions during or after mixing
Solid Content	100%
Density	990-1080 kg/m ³ (plastic part)
Temperature (Application)	16-25°C
Temperature (Storage)	16-25°C
Abrasion Resistance	<3000 mg
Impact Resistance	Class 2: ≥10 Nm
Fire Class (Ventilation Ducts)	B-s1, d0
Fire Class (Flooring)	Cfl-s1
Calorific value TKR Marine	23.2 MJ/KG
Calorific value TKR Basic Coating	32,1 MJ/KG

Calorific value TKR Gel 2	28,9 MJ/KG
Calorific value TKR Putty 6	20,0 MJ/KG
Gloss	Semi-gloss
Thinner	None used
Coverage (Concrete)	1.1 kg/m ² (1 mm thickness), 1 kg = 1-3 m ²
Coverage (Steel)	1 kg = 2-5 m ²
Fillers	Can include washed quartz sand or rubber granules
Crack Bridging Ability (Gypsum)	0.35 mm film: 1.9 mm, 0.45 mm film: 7.1 mm
Crack Bridging Ability (Concrete)	Min. 1.5 mm (EN 1062-7, class 3)
Shrinkage	None
Moisture Resistance	Waterproof film
UV Resistance	Direct sunlight may alter colour
Flexibility (+21°C)	70-400%, adjustable
Electrical Conductivity	Non-conductive, acts as an electrical insulator
Static Properties	Anti-static
Shelf Life (Plastic Part)	24 months from manufacturing date
Shelf Life (Hardener)	6 months from manufacturing date
Colour Options	Clear, white, light grey, dark grey, red, mahogany, black (RAL codes provided)

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This declaration covers the life cycle stages from cradle-to-gate with options (A4-A5), modules C1-C4, and module D. This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
x	x	x	x	x	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, energy used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

The manufacturing process of coating consists of multiple steps. The raw materials are weighted and then mixed in a vessel to a coating paste. In the packaging stage, coating is batched and filled into cans of various sizes and eventually, the coating is transported to retailers and construction sites. The packaging of the coating product includes the canning of coating to metal drums or plastic container.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

The transportation distance is defined according to the weighted average of realized exports and delivery distances. The average transportation distance from the plant to the construction site is 250 km, and the transport will be carried out by truck. There is no loss in transportation as the products are properly packaged.

Environmental impacts from installation into the building (A5) include recycling and treatment of plastic waste and metal waste from packaging.

PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.

Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

The end-of-life product is assumed to be treated in Finland, which is the market for TKR coatings. The EoL scenarios are applicable to Finland. At the end-of-life phase the coating is demolished as part of another construction material. In the demolition phase 100% of the coating waste is assumed to be collected as construction waste from which the product itself cannot be separated.

Demolition of the coating is assumed to be zero, as the increase in consumption of energy and natural resources in the demolition process of the material due to the attached coating is assumed to be negligible. The product is applied to a different material and follows the material into waste treatment (C1).

The demolished construction materials with coatings are transported to a waste processing facility. Transportation distance is assumed to be 50 kilometres and transportation method lorry, which is the most common (C2). It is assumed that 100 % of the coating is transported to the closest recycling plant, where coating is part of deconstructed waste which is recycled as material. Coatings are mostly applied on to concrete and brick which are crushed and recycled as filling material for construction (C3).

For coating, the landfilling for final disposal is not considered (C4).

As the products in this EPD can be applied on different surfaces of a construction material, it is considered to follow the construction material to waste treatment at its end-of-life. It is assumed that benefits and loads arise only from the packaging material recycling.

The packaging materials (metal and plastic cans, cardboard, and packaging film) are sent to recycling and have benefits beyond the system boundary. Recycling reduces the need for virgin packaging materials production. The recycled plastics and cardboard have been modelled to avoid use of primary materials. To avoid double counting the mass of the virgin materials only is modelled to replace the use of primary materials (D).

MANUFACTURING PROCESS

The manufacturing of TKR coatings involves multiple distinct stages. Precise specifications have been established for raw materials approved for TKR production, and each batch must pass a specified incoming inspection.

Composition and Production Process

TKR Coatings are composed of vegetable oil, pigments, and various additives. The raw materials used in TKR production are carefully weighed according to set recipes and mixed in a manufacturing vessel for several hours to achieve a homogeneous consistency.

Quality Assurance

To ensure quality, a laboratory sample is taken from each finished production batch for quality control purposes. The sample undergoes required tests specified in the recipe, including viscosity and density checks. Once the batch meets the established quality criteria, the process moves to the packaging phase.

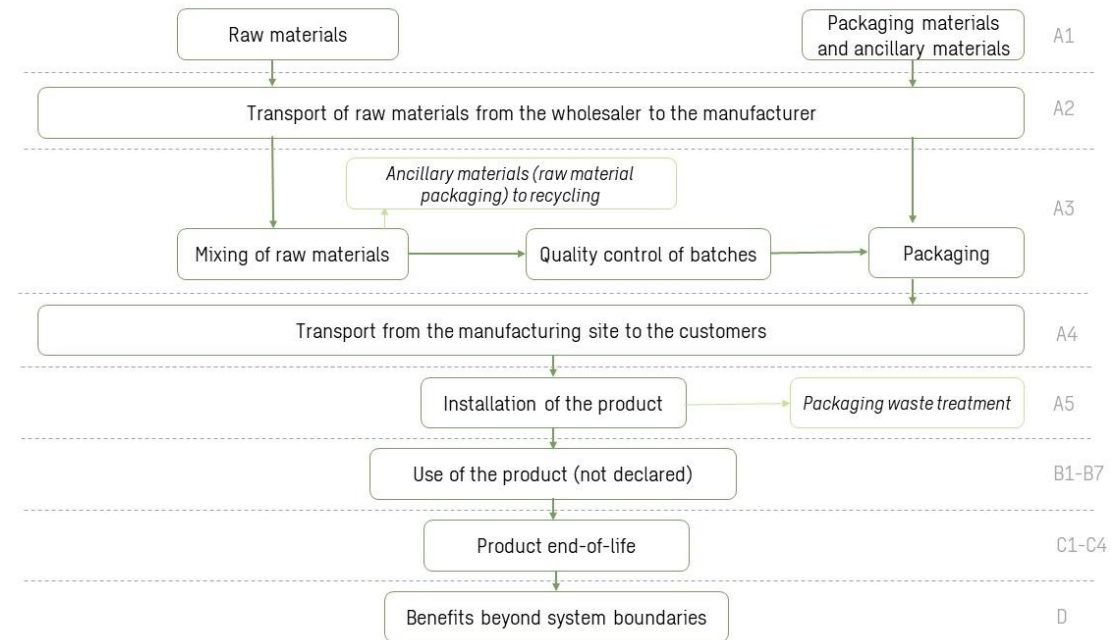
Packaging and Storage

During the packaging phase, the product is weighed at the packaging station and packed into containers of various sizes, which are then labeled. The products are stored on shelves in the storage area, from where they are collected as per the picking dispatch note and transported to retailers, construction sites, or contractors.

Sustainability in Production

In the production of TKR Coatings, there is no "coating waste" generated. Any surplus material from the manufacturing process is utilized in the next production batch.

FLOW DIAGRAM



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging material	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	Multiple products
Averaging method	Not applicable
Variation in GWP-total for A1-A3	12 %

This EPD declares 5 products' results of the product group. The product group of TKR coatings includes TKR Basic Coating, TKR Gel 2 & 4, TKR Putties and TKR Marine. Variation in GWP-total for A1-A3 between the declared products is 12 %.

Sensitivity analysis was conducted for the all the declared coating products in this EPD. All coatings are produced in the same plant in Porvoo, Finland. The manufacturer is Oy TKR-Coatings Ltd and all of their products are coatings for challenging applications.

Core environmental impact indicators according to EN 15804+A2 are declared for all products in the product group. Product-specific result tables are included regarding environmental impacts, use of natural resources, end-of-life waste, and end-of-life output flows. Additional (voluntary) environmental impact indicators are not declared in this EPD.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.8, EN 15804 reference package based on EF 3.0., Plastics Europe, Federal LCA Commons and One Click LCA databases as sources of environmental data.

ENVIRONMENTAL IMPACT DATA

TKR BASIC COATING

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	3,03E+00	5,22E-02	1,29E+00	4,38E+00	4,72E-02	8,15E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,31E-03	7,54E-01	0,00E+00	-1,15E+00
GWP – fossil	kg CO ₂ e	2,65E+00	5,21E-02	1,31E+00	4,01E+00	4,72E-02	6,25E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,31E-03	8,85E-03	0,00E+00	-9,30E-01
GWP – biogenic	kg CO ₂ e	-7,45E-01	0,00E+00	-1,90E-02	-7,64E-01	0,00E+00	1,90E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	7,45E-01	0,00E+00	-2,22E-01
GWP – LULUC	kg CO ₂ e	1,13E+00	2,06E-05	1,03E-03	1,13E+00	1,85E-05	2,68E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,26E-06	6,52E-06	0,00E+00	-1,29E-04
Ozone depletion pot.	kg CFC-11e	1,30E-07	1,21E-08	6,25E-08	2,04E-07	1,09E-08	5,12E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,92E-09	1,81E-09	0,00E+00	-2,43E-08
Acidification potential	mol H ⁺ e	1,13E-02	2,21E-04	1,48E-02	2,63E-02	1,91E-04	2,57E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,37E-05	7,60E-05	0,00E+00	-3,53E-03
EP-freshwater ²⁾	kg Pe	7,78E-03	3,65E-07	3,06E-04	8,08E-03	3,31E-07	1,04E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,83E-08	2,18E-07	0,00E+00	-1,47E-05
EP-marine	kg Ne	9,01E-03	6,55E-05	1,69E-03	1,08E-02	5,72E-05	1,02E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,01E-05	2,88E-05	0,00E+00	-7,03E-04
EP-terrestrial	mol Ne	3,26E-02	7,23E-04	3,41E-02	6,75E-02	6,30E-04	9,31E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,11E-04	3,16E-04	0,00E+00	-8,11E-03
POCP (“smog”) ³⁾	kg NMVOCe	8,44E-03	2,20E-04	5,21E-03	1,39E-02	1,93E-04	2,76E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,40E-05	8,81E-05	0,00E+00	-4,18E-03
ADP-minerals & metals ⁴⁾	kg Sbe	2,12E-05	1,84E-07	5,77E-05	7,91E-05	1,67E-07	7,03E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,95E-08	2,76E-08	0,00E+00	-1,35E-05
ADP-fossil resources	MJ	5,62E+01	7,73E-01	4,21E+01	9,90E+01	7,00E-01	4,61E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	1,50E-01	0,00E+00	-9,30E+00
Water use ⁵⁾	m ³ e depr.	2,02E+00	3,57E-03	4,40E+00	6,42E+00	3,24E-03	2,26E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,70E-04	1,37E-03	0,00E+00	-2,30E-01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

TKR GEL 2

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	3,01E+00	5,43E-02	1,29E+00	4,35E+00	4,72E-02	8,15E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,31E-03	7,34E-01	0,00E+00	-1,15E+00
GWP – fossil	kg CO ₂ e	2,63E+00	5,42E-02	1,31E+00	4,00E+00	4,72E-02	6,25E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,31E-03	8,85E-03	0,00E+00	-9,30E-01
GWP – biogenic	kg CO ₂ e	-7,25E-01	0,00E+00	-1,90E-02	-7,44E-01	0,00E+00	1,90E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	7,25E-01	0,00E+00	-2,22E-01
GWP – LULUC	kg CO ₂ e	1,10E+00	2,14E-05	1,03E-03	1,10E+00	1,85E-05	2,68E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,26E-06	6,52E-06	0,00E+00	-1,29E-04
Ozone depletion pot.	kg CFC-11e	1,36E-07	1,25E-08	6,25E-08	2,11E-07	1,09E-08	5,12E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,92E-09	1,81E-09	0,00E+00	-2,43E-08
Acidification potential	mol H ⁺ e	1,12E-02	2,30E-04	1,48E-02	2,62E-02	1,91E-04	2,57E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,37E-05	7,60E-05	0,00E+00	-3,53E-03
EP-freshwater ²⁾	kg Pe	7,57E-03	3,80E-07	3,06E-04	7,87E-03	3,31E-07	1,04E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,83E-08	2,18E-07	0,00E+00	-1,47E-05
EP-marine	kg Ne	8,79E-03	6,80E-05	1,69E-03	1,05E-02	5,72E-05	1,02E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,01E-05	2,88E-05	0,00E+00	-7,03E-04
EP-terrestrial	mol Ne	3,21E-02	7,50E-04	3,41E-02	6,70E-02	6,30E-04	9,31E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,11E-04	3,16E-04	0,00E+00	-8,11E-03
POCP (“smog”) ³⁾	kg NMVOCe	8,34E-03	2,28E-04	5,21E-03	1,38E-02	1,93E-04	2,76E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,40E-05	8,81E-05	0,00E+00	-4,18E-03
ADP-minerals & metals ⁴⁾	kg Sbe	2,13E-05	1,92E-07	5,77E-05	7,92E-05	1,67E-07	7,03E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,95E-08	2,76E-08	0,00E+00	-1,35E-05
ADP-fossil resources	MJ	5,58E+01	8,04E-01	4,21E+01	9,87E+01	7,00E-01	4,61E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	1,50E-01	0,00E+00	-9,30E+00
Water use ⁵⁾	m ³ e depr.	1,90E+00	3,71E-03	4,40E+00	6,30E+00	3,24E-03	2,26E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,70E-04	1,37E-03	0,00E+00	-2,30E-01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO₄e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

TKR GEL 4

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	2,97E+00	5,97E-02	1,29E+00	4,32E+00	4,72E-02	8,15E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,31E-03	6,73E-01	0,00E+00	-1,15E+00
GWP – fossil	kg CO ₂ e	2,62E+00	5,96E-02	1,31E+00	3,99E+00	4,72E-02	6,25E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,31E-03	8,85E-03	0,00E+00	-9,30E-01
GWP – biogenic	kg CO ₂ e	-6,64E-01	0,00E+00	-1,90E-02	-6,83E-01	0,00E+00	1,90E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	6,64E-01	0,00E+00	-2,22E-01
GWP – LULUC	kg CO ₂ e	1,01E+00	2,35E-05	1,03E-03	1,01E+00	1,85E-05	2,68E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,26E-06	6,52E-06	0,00E+00	-1,29E-04
Ozone depletion pot.	kg CFC-11e	1,46E-07	1,38E-08	6,25E-08	2,23E-07	1,09E-08	5,12E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,92E-09	1,81E-09	0,00E+00	-2,43E-08
Acidification potential	mol H ⁺ e	1,10E-02	2,51E-04	1,48E-02	2,60E-02	1,91E-04	2,57E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,37E-05	7,60E-05	0,00E+00	-3,53E-03
EP-freshwater ²⁾	kg Pe	6,94E-03	4,18E-07	3,06E-04	7,25E-03	3,31E-07	1,04E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,83E-08	2,18E-07	0,00E+00	-1,47E-05
EP-marine	kg Ne	8,20E-03	7,45E-05	1,69E-03	9,96E-03	5,72E-05	1,02E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,01E-05	2,88E-05	0,00E+00	-7,03E-04
EP-terrestrial	mol Ne	3,09E-02	8,22E-04	3,41E-02	6,59E-02	6,30E-04	9,31E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,11E-04	3,16E-04	0,00E+00	-8,11E-03
POCP (“smog”) ³⁾	kg NMVOCe	8,14E-03	2,50E-04	5,21E-03	1,36E-02	1,93E-04	2,76E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,40E-05	8,81E-05	0,00E+00	-4,18E-03
ADP-minerals & metals ⁴⁾	kg Sbe	2,13E-05	2,11E-07	5,77E-05	7,92E-05	1,67E-07	7,03E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,95E-08	2,76E-08	0,00E+00	-1,35E-05
ADP-fossil resources	MJ	5,58E+01	8,84E-01	4,21E+01	9,87E+01	7,00E-01	4,61E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	1,50E-01	0,00E+00	-9,30E+00
Water use ⁵⁾	m ³ e depr.	1,64E+00	4,08E-03	4,40E+00	6,04E+00	3,24E-03	2,26E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,70E-04	1,37E-03	0,00E+00	-2,30E-01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO₄e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

TKR PUTTY

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	2,11E+00	4,37E-02	1,29E+00	3,45E+00	4,72E-02	8,15E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,31E-03	5,73E-01	0,00E+00	-1,15E+00
GWP – fossil	kg CO ₂ e	1,82E+00	4,37E-02	1,31E+00	3,18E+00	4,72E-02	6,25E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,31E-03	8,85E-03	0,00E+00	-9,30E-01
GWP – biogenic	kg CO ₂ e	-5,64E-01	0,00E+00	-1,90E-02	-5,83E-01	0,00E+00	1,90E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	5,64E-01	0,00E+00	-2,22E-01
GWP – LULUC	kg CO ₂ e	8,56E-01	1,72E-05	1,03E-03	8,57E-01	1,85E-05	2,68E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,26E-06	6,52E-06	0,00E+00	-1,29E-04
Ozone depletion pot.	kg CFC-11e	1,09E-07	1,01E-08	6,25E-08	1,82E-07	1,09E-08	5,12E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,92E-09	1,81E-09	0,00E+00	-2,43E-08
Acidification potential	mol H ⁺ e	8,58E-03	1,85E-04	1,48E-02	2,36E-02	1,91E-04	2,57E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,37E-05	7,60E-05	0,00E+00	-3,53E-03
EP-freshwater ²⁾	kg Pe	5,89E-03	3,06E-07	3,06E-04	6,19E-03	3,31E-07	1,04E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,83E-08	2,18E-07	0,00E+00	-1,47E-05
EP-marine	kg Ne	6,76E-03	5,47E-05	1,69E-03	8,50E-03	5,72E-05	1,02E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,01E-05	2,88E-05	0,00E+00	-7,03E-04
EP-terrestrial	mol Ne	2,41E-02	6,03E-04	3,41E-02	5,89E-02	6,30E-04	9,31E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,11E-04	3,16E-04	0,00E+00	-8,11E-03
POCP (“smog”) ³⁾	kg NMVOCe	6,17E-03	1,84E-04	5,21E-03	1,16E-02	1,93E-04	2,76E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,40E-05	8,81E-05	0,00E+00	-4,18E-03
ADP-minerals & metals ⁴⁾	kg Sbe	1,64E-05	1,54E-07	5,77E-05	7,42E-05	1,67E-07	7,03E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,95E-08	2,76E-08	0,00E+00	-1,35E-05
ADP-fossil resources	MJ	3,60E+01	6,48E-01	4,21E+01	7,87E+01	7,00E-01	4,61E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	1,50E-01	0,00E+00	-9,30E+00
Water use ⁵⁾	m ³ e depr.	2,03E+00	2,99E-03	4,40E+00	6,43E+00	3,24E-03	2,26E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,70E-04	1,37E-03	0,00E+00	-2,30E-01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO₄e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

TKR MARINE

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	2,42E+00	3,67E-02	1,29E+00	3,75E+00	4,72E-02	8,15E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,31E-03	4,70E-01	0,00E+00	-1,15E+00
GWP – fossil	kg CO ₂ e	2,18E+00	3,67E-02	1,31E+00	3,53E+00	4,72E-02	6,25E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,31E-03	8,85E-03	0,00E+00	-9,30E-01
GWP – biogenic	kg CO ₂ e	-4,61E-01	0,00E+00	-1,90E-02	-4,80E-01	0,00E+00	1,90E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	4,61E-01	0,00E+00	-2,22E-01
GWP – LULUC	kg CO ₂ e	7,02E-01	1,45E-05	1,03E-03	7,03E-01	1,85E-05	2,68E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,26E-06	6,52E-06	0,00E+00	-1,29E-04
Ozone depletion pot.	kg CFC-11e	1,47E-07	8,49E-09	6,25E-08	2,18E-07	1,09E-08	5,12E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,92E-09	1,81E-09	0,00E+00	-2,43E-08
Acidification potential	mol H ⁺ e	3,19E-02	1,55E-04	1,48E-02	4,69E-02	1,91E-04	2,57E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,37E-05	7,60E-05	0,00E+00	-3,53E-03
EP-freshwater ²⁾	kg Pe	4,84E-03	2,57E-07	3,06E-04	5,15E-03	3,31E-07	1,04E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,83E-08	2,18E-07	0,00E+00	-1,47E-05
EP-marine	kg Ne	5,94E-03	4,60E-05	1,69E-03	7,67E-03	5,72E-05	1,02E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,01E-05	2,88E-05	0,00E+00	-7,03E-04
EP-terrestrial	mol Ne	2,50E-02	5,07E-04	3,41E-02	5,97E-02	6,30E-04	9,31E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,11E-04	3,16E-04	0,00E+00	-8,11E-03
POCP (“smog”) ³⁾	kg NMVOCe	7,78E-03	1,54E-04	5,21E-03	1,31E-02	1,93E-04	2,76E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,40E-05	8,81E-05	0,00E+00	-4,18E-03
ADP-minerals & metals ⁴⁾	kg Sbe	2,48E-05	1,30E-07	5,77E-05	8,27E-05	1,67E-07	7,03E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,95E-08	2,76E-08	0,00E+00	-1,35E-05
ADP-fossil resources	MJ	4,31E+01	5,45E-01	4,21E+01	8,57E+01	7,00E-01	4,61E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	1,50E-01	0,00E+00	-9,30E+00
Water use ⁵⁾	m ³ e depr.	2,33E+00	2,51E-03	4,40E+00	6,72E+00	3,24E-03	2,26E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,70E-04	1,37E-03	0,00E+00	-2,30E-01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO₄e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

STANDARD 7.2.4. USE OF NATURAL RESOURCES AND OTHER INDICATORS

TKR BASIC COATING

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	9,48E+00	1,11E-02	8,32E+00	1,78E+01	1,00E-02	3,08E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,77E-03	7,83E-03	0,00E+00	-8,26E-01
Renew. PER as material	MJ	1,42E+01	0,00E+00	1,67E-01	1,44E+01	0,00E+00	-1,67E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-1,42E+01	0,00E+00	1,44E+01
Total use of renew. PER	MJ	2,37E+01	1,11E-02	8,49E+00	3,22E+01	1,00E-02	-1,64E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,77E-03	-1,42E+01	0,00E+00	1,36E+01
Non-re. PER as energy	MJ	4,28E+01	7,73E-01	4,15E+01	8,50E+01	7,00E-01	4,61E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	1,50E-01	0,00E+00	-7,86E+00
Non-re. PER as material	MJ	1,34E+01	0,00E+00	1,46E+00	1,49E+01	0,00E+00	-1,46E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-1,34E+01	0,00E+00	1,59E+00
Total use of non-re. PER	MJ	5,62E+01	7,73E-01	4,29E+01	9,99E+01	7,00E-01	-1,41E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	-1,33E+01	0,00E+00	-6,26E+00
Secondary materials	kg	6,58E-02	2,60E-04	1,48E-01	2,14E-01	2,35E-04	5,14E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,14E-05	5,40E-05	0,00E+00	3,91E-01
Renew. secondary fuels	MJ	1,50E-04	2,85E-06	4,72E-03	4,88E-03	2,59E-06	2,12E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,56E-07	7,53E-07	0,00E+00	-1,24E-04
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	4,76E-01	9,70E-05	1,93E-01	6,68E-01	8,81E-05	2,45E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,55E-05	7,94E-05	0,00E+00	-6,30E-03

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	2,81E-01	8,69E-04	1,99E-01	4,81E-01	7,86E-04	6,50E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,38E-04	3,18E-04	0,00E+00	-4,05E-01
Non-hazardous waste	kg	2,02E+00	1,54E-02	3,14E+00	5,18E+00	1,39E-02	3,53E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,46E-03	1,84E-01	0,00E+00	-1,38E+00
Radioactive waste	kg	4,93E-05	5,33E-06	5,56E-04	6,11E-04	4,82E-06	2,67E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,50E-07	1,01E-06	0,00E+00	-1,98E-06

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	1,02E-01	1,02E-01	0,00E+00	1,35E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

KEY INFORMATION TABLE (RTS) – KEY INFORMATION PER KG OF PRODUCT

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP - total	kg CO ₂ e	3,03E+00	5,22E-02	1,29E+00	4,38E+00	4,72E-02	8,15E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,31E-03	7,54E-01	0,00E+00	-1,15E+00
ADP-minerals & metals	kg Sbe	2,12E-05	1,84E-07	5,77E-05	7,91E-05	1,67E-07	7,03E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,95E-08	2,76E-08	0,00E+00	-1,35E-05
ADP-fossil	MJ	5,62E+01	7,73E-01	4,21E+01	9,90E+01	7,00E-01	4,61E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	1,50E-01	0,00E+00	-9,30E+00
Water use	m ³ e depr.	2,02E+00	3,57E-03	4,40E+00	6,42E+00	3,24E-03	2,26E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,70E-04	1,37E-03	0,00E+00	-2,30E-01
Secondary materials	kg	6,58E-02	2,60E-04	1,48E-01	2,14E-01	2,35E-04	5,14E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,14E-05	5,40E-05	0,00E+00	3,91E-01
Biog. C in product	kg C	N/A	N/A	5,5E-02	5,5E-02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging	kg C	N/A	N/A	9,1E-03	9,1E-03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TKR GEL 2

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	9,24E+00	1,15E-02	8,32E+00	1,76E+01	1,00E-02	3,08E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,77E-03	7,83E-03	0,00E+00	-8,26E-01
Renew. PER as material	MJ	1,38E+01	0,00E+00	1,67E-01	1,40E+01	0,00E+00	-1,67E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-1,38E+01	0,00E+00	1,44E+01
Total use of renew. PER	MJ	2,31E+01	1,15E-02	8,49E+00	3,16E+01	1,00E-02	-1,64E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,77E-03	-1,38E+01	0,00E+00	1,36E+01
Non-re. PER as energy	MJ	4,26E+01	8,04E-01	4,15E+01	8,49E+01	7,00E-01	4,61E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	1,50E-01	0,00E+00	-7,86E+00
Non-re. PER as material	MJ	1,33E+01	0,00E+00	1,46E+00	1,47E+01	0,00E+00	-1,46E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-1,33E+01	0,00E+00	1,59E+00
Total use of non-re. PER	MJ	5,58E+01	8,04E-01	4,29E+01	9,96E+01	7,00E-01	-1,41E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	-1,31E+01	0,00E+00	-6,26E+00
Secondary materials	kg	6,44E-02	2,70E-04	1,48E-01	2,13E-01	2,35E-04	5,14E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,14E-05	5,40E-05	0,00E+00	3,91E-01
Renew. secondary fuels	MJ	1,53E-04	2,96E-06	4,72E-03	4,88E-03	2,59E-06	2,12E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,56E-07	7,53E-07	0,00E+00	-1,24E-04
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	4,72E-01	1,01E-04	1,93E-01	6,65E-01	8,81E-05	2,45E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,55E-05	7,94E-05	0,00E+00	-6,30E-03

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	2,82E-01	9,04E-04	1,99E-01	4,83E-01	7,86E-04	6,50E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,38E-04	3,18E-04	0,00E+00	-4,05E-01
Non-hazardous waste	kg	2,03E+00	1,60E-02	3,14E+00	5,19E+00	1,39E-02	3,53E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,46E-03	1,84E-01	0,00E+00	-1,38E+00
Radioactive waste	kg	5,00E-05	5,54E-06	5,56E-04	6,12E-04	4,82E-06	2,67E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,50E-07	1,01E-06	0,00E+00	-1,98E-06

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	1,02E-01	1,02E-01	0,00E+00	1,35E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

KEY INFORMATION TABLE (RTS) – KEY INFORMATION PER KG OF PRODUCT

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP - total	kg CO ₂ e	3,01E+00	5,43E-02	1,29E+00	4,35E+00	4,72E-02	8,15E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,31E-03	7,34E-01	0,00E+00	-1,15E+00
ADP-minerals & metals	kg Sbe	2,13E-05	1,92E-07	5,77E-05	7,92E-05	1,67E-07	7,03E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,95E-08	2,76E-08	0,00E+00	-1,35E-05
ADP-fossil	MJ	5,58E+01	8,04E-01	4,21E+01	9,87E+01	7,00E-01	4,61E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	1,50E-01	0,00E+00	-9,30E+00
Water use	m ³ e depr.	1,90E+00	3,71E-03	4,40E+00	6,30E+00	3,24E-03	2,26E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,70E-04	1,37E-03	0,00E+00	-2,30E-01
Secondary materials	kg	6,44E-02	2,70E-04	1,48E-01	2,13E-01	2,35E-04	5,14E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,14E-05	5,40E-05	0,00E+00	3,91E-01
Biog. C in product	kg C	N/A	N/A	5,4E-02	5,4E-02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging	kg C	N/A	N/A	9,1E-03	9,1E-03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TKR GEL 4

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	8,60E+00	1,27E-02	8,32E+00	1,69E+01	1,00E-02	3,08E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,77E-03	7,83E-03	0,00E+00	-8,26E-01
Renew. PER as material	MJ	1,27E+01	0,00E+00	1,67E-01	1,28E+01	0,00E+00	-1,67E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-1,27E+01	0,00E+00	1,44E+01
Total use of renew. PER	MJ	2,13E+01	1,27E-02	8,49E+00	2,98E+01	1,00E-02	-1,64E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,77E-03	-1,27E+01	0,00E+00	1,36E+01
Non-re. PER as energy	MJ	4,26E+01	8,84E-01	4,15E+01	8,50E+01	7,00E-01	4,61E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	1,50E-01	0,00E+00	-7,86E+00
Non-re. PER as material	MJ	1,32E+01	0,00E+00	1,46E+00	1,46E+01	0,00E+00	-1,46E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-1,32E+01	0,00E+00	1,59E+00
Total use of non-re. PER	MJ	5,58E+01	8,84E-01	4,29E+01	9,96E+01	7,00E-01	-1,41E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	-1,30E+01	0,00E+00	-6,26E+00
Secondary materials	kg	6,00E-02	2,97E-04	1,48E-01	2,08E-01	2,35E-04	5,14E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,14E-05	5,40E-05	0,00E+00	3,91E-01
Renew. secondary fuels	MJ	1,57E-04	3,26E-06	4,72E-03	4,88E-03	2,59E-06	2,12E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,56E-07	7,53E-07	0,00E+00	-1,24E-04
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	4,63E-01	1,11E-04	1,93E-01	6,56E-01	8,81E-05	2,45E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,55E-05	7,94E-05	0,00E+00	-6,30E-03

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	2,83E-01	9,94E-04	1,99E-01	4,83E-01	7,86E-04	6,50E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,38E-04	3,18E-04	0,00E+00	-4,05E-01
Non-hazardous waste	kg	2,00E+00	1,76E-02	3,14E+00	5,16E+00	1,39E-02	3,53E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,46E-03	1,84E-01	0,00E+00	-1,38E+00
Radioactive waste	kg	5,07E-05	6,09E-06	5,56E-04	6,13E-04	4,82E-06	2,67E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,50E-07	1,01E-06	0,00E+00	-1,98E-06

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	1,02E-01	1,02E-01	0,00E+00	1,35E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

KEY INFORMATION TABLE (RTS) – KEY INFORMATION PER KG OF PRODUCT

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP - total	kg CO ₂ e	2,97E+00	5,97E-02	1,29E+00	4,32E+00	4,72E-02	8,15E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,31E-03	6,73E-01	0,00E+00	-1,15E+00
ADP-minerals & metals	kg Sbe	2,13E-05	2,11E-07	5,77E-05	7,92E-05	1,67E-07	7,03E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,95E-08	2,76E-08	0,00E+00	-1,35E-05
ADP-fossil	MJ	5,58E+01	8,84E-01	4,21E+01	9,87E+01	7,00E-01	4,61E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	1,50E-01	0,00E+00	-9,30E+00
Water use	m ³ e depr.	1,64E+00	4,08E-03	4,40E+00	6,04E+00	3,24E-03	2,26E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,70E-04	1,37E-03	0,00E+00	-2,30E-01
Secondary materials	kg	6,00E-02	2,97E-04	1,48E-01	2,08E-01	2,35E-04	5,14E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,14E-05	5,40E-05	0,00E+00	3,91E-01
Biog. C in product	kg C	N/A	N/A	4,9E-02	4,9E-02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging	kg C	N/A	N/A	9,1E-03	9,1E-03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TKR PUTTY

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	7,05E+00	9,26E-03	8,32E+00	1,54E+01	1,00E-02	3,08E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,77E-03	7,83E-03	0,00E+00	-8,26E-01
Renew. PER as material	MJ	1,08E+01	0,00E+00	1,67E-01	1,09E+01	0,00E+00	-1,67E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-1,08E+01	0,00E+00	1,44E+01
Total use of renew. PER	MJ	1,78E+01	9,26E-03	8,49E+00	2,63E+01	1,00E-02	-1,64E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,77E-03	-1,07E+01	0,00E+00	1,36E+01
Non-re. PER as energy	MJ	2,83E+01	6,48E-01	4,15E+01	7,04E+01	7,00E-01	4,61E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	1,50E-01	0,00E+00	-7,86E+00
Non-re. PER as material	MJ	7,71E+00	0,00E+00	1,46E+00	9,16E+00	0,00E+00	-1,46E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-7,71E+00	0,00E+00	1,59E+00
Total use of non-re. PER	MJ	3,60E+01	6,48E-01	4,29E+01	7,96E+01	7,00E-01	-1,41E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	-7,56E+00	0,00E+00	-6,26E+00
Secondary materials	kg	5,03E-02	2,17E-04	1,48E-01	1,99E-01	2,35E-04	5,14E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,14E-05	5,40E-05	0,00E+00	3,91E-01
Renew. secondary fuels	MJ	1,22E-04	2,38E-06	4,72E-03	4,85E-03	2,59E-06	2,12E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,56E-07	7,53E-07	0,00E+00	-1,24E-04
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	2,82E-01	8,13E-05	1,93E-01	4,75E-01	8,81E-05	2,45E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,55E-05	7,94E-05	0,00E+00	-6,30E-03

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	2,20E-01	7,27E-04	1,99E-01	4,20E-01	7,86E-04	6,50E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,38E-04	3,18E-04	0,00E+00	-4,05E-01
Non-hazardous waste	kg	1,70E+00	1,29E-02	3,14E+00	4,86E+00	1,39E-02	3,53E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,46E-03	1,84E-01	0,00E+00	-1,38E+00
Radioactive waste	kg	4,10E-05	4,46E-06	5,56E-04	6,02E-04	4,82E-06	2,67E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,50E-07	1,01E-06	0,00E+00	-1,98E-06

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	1,02E-01	1,02E-01	0,00E+00	1,35E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

KEY INFORMATION TABLE (RTS) – KEY INFORMATION PER KG OF PRODUCT

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP - total	kg CO ₂ e	2,11E+00	4,37E-02	1,29E+00	3,45E+00	4,72E-02	8,15E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,31E-03	5,73E-01	0,00E+00	-1,15E+00
ADP-minerals & metals	kg Sbe	1,64E-05	1,54E-07	5,77E-05	7,42E-05	1,67E-07	7,03E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,95E-08	2,76E-08	0,00E+00	-1,35E-05
ADP-fossil	MJ	3,60E+01	6,48E-01	4,21E+01	7,87E+01	7,00E-01	4,61E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	1,50E-01	0,00E+00	-9,30E+00
Water use	m ³ e depr.	2,03E+00	2,99E-03	4,40E+00	6,43E+00	3,24E-03	2,26E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,70E-04	1,37E-03	0,00E+00	-2,30E-01
Secondary materials	kg	5,03E-02	2,17E-04	1,48E-01	1,99E-01	2,35E-04	5,14E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,14E-05	5,40E-05	0,00E+00	3,91E-01
Biog. C in product	kg C	N/A	N/A	4,2E-02	4,2E-02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging	kg C	N/A	N/A	9,1E-03	9,1E-03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TKR MARINE

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	6,36E+00	7,79E-03	8,32E+00	1,47E+01	1,00E-02	3,08E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,77E-03	7,83E-03	0,00E+00	-8,26E-01
Renew. PER as material	MJ	8,79E+00	0,00E+00	1,67E-01	8,96E+00	0,00E+00	-1,67E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-8,79E+00	0,00E+00	1,44E+01
Total use of renew. PER	MJ	1,52E+01	7,79E-03	8,49E+00	2,36E+01	1,00E-02	-1,64E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,77E-03	-8,79E+00	0,00E+00	1,36E+01
Non-re. PER as energy	MJ	3,50E+01	5,45E-01	4,15E+01	7,70E+01	7,00E-01	4,61E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	1,50E-01	0,00E+00	-7,86E+00
Non-re. PER as material	MJ	8,10E+00	0,00E+00	1,46E+00	9,55E+00	0,00E+00	-1,46E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-8,10E+00	0,00E+00	1,59E+00
Total use of non-re. PER	MJ	4,31E+01	5,45E-01	4,29E+01	8,66E+01	7,00E-01	-1,41E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	-7,95E+00	0,00E+00	-6,26E+00
Secondary materials	kg	4,46E-02	1,83E-04	1,48E-01	1,93E-01	2,35E-04	5,14E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,14E-05	5,40E-05	0,00E+00	3,91E-01
Renew. secondary fuels	MJ	1,25E-04	2,01E-06	4,72E-03	4,85E-03	2,59E-06	2,12E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,56E-07	7,53E-07	0,00E+00	-1,24E-04
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	3,14E-01	6,84E-05	1,93E-01	5,07E-01	8,81E-05	2,45E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,55E-05	7,94E-05	0,00E+00	-6,30E-03

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	1,96E-01	6,12E-04	1,99E-01	3,96E-01	7,86E-04	6,50E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,38E-04	3,18E-04	0,00E+00	-4,05E-01
Non-hazardous waste	kg	2,34E+00	1,08E-02	3,14E+00	5,49E+00	1,39E-02	3,53E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,46E-03	1,84E-01	0,00E+00	-1,38E+00
Radioactive waste	kg	5,35E-05	3,75E-06	5,56E-04	6,13E-04	4,82E-06	2,67E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,50E-07	1,01E-06	0,00E+00	-1,98E-06

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	1,02E-01	1,02E-01	0,00E+00	1,35E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

KEY INFORMATION TABLE (RTS) – KEY INFORMATION PER KG OF PRODUCT

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP - total	kg CO ₂ e	2,42E+00	3,67E-02	1,29E+00	3,75E+00	4,72E-02	8,15E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,31E-03	4,70E-01	0,00E+00	-1,15E+00
ADP-minerals & metals	kg Sbe	2,48E-05	1,30E-07	5,77E-05	8,27E-05	1,67E-07	7,03E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,95E-08	2,76E-08	0,00E+00	-1,35E-05
ADP-fossil	MJ	4,31E+01	5,45E-01	4,21E+01	8,57E+01	7,00E-01	4,61E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,23E-01	1,50E-01	0,00E+00	-9,30E+00
Water use	m ³ e depr.	2,33E+00	2,51E-03	4,40E+00	6,72E+00	3,24E-03	2,26E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,70E-04	1,37E-03	0,00E+00	-2,30E-01
Secondary materials	kg	4,46E-02	1,83E-04	1,48E-01	1,93E-01	2,35E-04	5,14E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,14E-05	5,40E-05	0,00E+00	3,91E-01
Biog. C in product	kg C	N/A	N/A	3,4E-02	3,4E-02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging	kg C	N/A	N/A	9,1E-03	9,1E-03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

SCENARIO DOCUMENTATION

Manufacturing energy scenario (A3)

Scenario parameter	Value
Electricity data source and quality	OneClick LCA (IEA2022)
Electricity kg CO ₂ e / kWh	0,14
Geographical scope of electricity	Finland

Transport scenario (A4)

Coating transport	Value
Type of truck	EURO5 lorry, 16-32 t
Specific transport emissions, CO ₂ emissions kg CO ₂ ekv. / tn x km	0,17
Averaged distance	250 km
Capacity	100 %

End of life scenario documentation (C1-C4)

Scenario parameter	Value, kg/kg
Collection process – kg collected separately	0
Collection process – kg collected with mixed construction waste	1
Recovery process – kg for re-use	0
Recovery process – kg for recycling	1
Recovery process – kg for energy recovery	0
Disposal (total) – kg for final disposal	0