

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

ALCRO:

MILLTEX 2 PLUS TAKFÄRG, MILLTEX 2 RF HELMATT
TAKFÄRG, MILLTEX 2 TAKFÄRG, MILLTEX 20 HALVMATT
TÄCKFÄRG, MILLTEX 5 HELMATT TÄCKFÄRG, MILLTEX 7
MATT TÄCKFÄRG, MILLTEX ALLGRUND.

BECKERS:

SCOTTE 3 TAKFÄRG, SCOTTE 5, SCOTTE 7, SCOTTE 20,
SCOTTE GRUND, SCOTTE R2 TAKFÄRG, INTERIO
GRUNDFÄRG, INTERIO VÄGGFÄRG 7, INTERIO VÄGGFÄRG
20, PRIMER GRUNDFÄRG VÄGG, LIVING TAKFÄRG 03, LIVING
VÄGGFÄRG 05, LIVING VÄGGFÄRG 07, LIVING VÄGGFÄRG 20.

TIKKURILA:

SIRO HIMMEÄ, ÄSSÄ 1, ANTI-REFLEX WHITE [2],
YKKÖSKATTO

TIKKURILA GROUP



GENERAL INFORMATION

MANUFACTURER INFORMATION

Manufacturer	Tikkurila Group
Address	Heidehofintie 2, 01300 Vantaa, Finland
Contact details	epd-team@tikkurila.com
Website	https://tikkurilagroup.com/

PRODUCT IDENTIFICATION

Product name	
Brand	Product name
Alcro	Milltex 2 Plus Takfärg, Milltex 2 RF Helmmatt Takfärg, Milltex 2 Takfärg, Milltex 20 Halvmatt Täckfärg, Milltex 5 Helmmatt Täckfärg, Milltex 7 Matt Täckfärg, Milltex Allgrund.
Beckers	Scotte 3 Takfärg, Scotte 5, Scotte 7, Scotte 20, Scotte Grund, Scotte R2 Takfärg, Interio Grundfärg, Interio Väggfärg 7, Interio Väggfärg 20, Primer Grundfärg Vägg, Living Takfärg 03, Living Väggfärg 05, Living Väggfärg 07, Living Väggfärg 20.
Tikkurila	Siro Himmeä, Ässä 1, Anti-reflex white [2], Ykköskatto
Place(s) of production	Nykvarn facility, Sweden

The Building Information Foundation RTS sr

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

EPD INFORMATION

The EPD owner has the sole ownership, liability, and responsibility for the EPD. Construction products EPDs 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	The Building Information Foundation RTS sr
EPD standards	This EPD is in accordance with EN 15804+A2 and ISO 14025 standards.
Product category rules	The CEN standard EN 15804+A2 serves as the core PCR. In addition, the RTS PCR (English version, 26.8.2020) is used.
EPD author	Cecilia Prieto, Tikkurila Sverige AB, 12086 Stockholm, Sweden
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification
Verification date	30.9.2021
EPD verifier	Anni Oviir, Rangi Maja OÜ, www.lcasupport.com
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Jessica Karhu
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PRODUCT INFORMATION

PRODUCT DESCRIPTION

The following products are covered by this EPD:

Alcro:

Milltex 2 Plus Takfärg

Milltex 2 Plus Takfärg is a paint that we recommend for most types of ceilings, both new and previously painted ceilings that require a paint that covers extra well. Milltex 2 Plus covers well and one coat is usually enough. The paint is ergonomically adapted for the professional painter.

Milltex 2 RF Helmatt Takfärg

Milltex 2 RF Helmatt Takfärg is a paint, specially developed for use on ceiling areas with side sheen. The paint can be used on both new and previously painted surfaces such as plasterboard, plaster and concrete. Milltex 2 RF gives an even, non-reflective and perfect end result. The paint is developed for the professional painter.

Milltex 2 Takfärg

This is a paint that we recommend for most types of ceilings, both new and previously painted ceilings. The paint is ergonomically adapted for the professional painter.

Milltex 20 Halvmatt Täckfärg

Milltex 20 Halvmatt Täckfärg is a topcoat for indoor painting on walls and ceilings of plaster, concrete, plasterboard, fibreboard, wallpaper and glass fibre wall covering. The paint has a high opacity and gives a semi-matt and a wipeable surface. Milltex 20 Halvmatt Täckfärg is specially developed for the professional painter.

Milltex 5 Helmatt Täckfärg

Milltex 5 Helmatt Täckfärg is a topcoat for indoor painting on walls and ceilings of plaster, concrete, plasterboard, fibreboard, wallpaper and glass fibre wall covering. The paint has a high opacity and gives a fully matt and non-reflective surface. Milltex 5 Helmatt Täckfärg is specially developed for the professional painter.

Milltex 7 Matt Täckfärg

Milltex 7 Matt Täckfärg is a topcoat for indoor painting on walls and ceilings of plaster, concrete, plasterboard, fibreboard, wallpaper and glass fibre wall covering. The paint has a high opacity and gives a matte surface.

Milltex 7 Matt Täckfärg is specially developed for the professional painter.

Milltex Allgrund

Milltex Allgrund is a primer for priming of walls and ceilings of plaster, concrete, plasterboard, wood fibre boards, wallpaper and glass fibre wall covering. It is full-bodied and saturates absorbent substrates so that the top coat has a smooth and beautiful finish. The paint is ergonomically adapted for the professional painter.

Beckers:

Scotte 3 Takfärg

Scotte 3 Takfärg is a waterborne, versatile full matt paint for interior ceilings. Suitable for painting new or previously painted putty, plaster, concrete, fibreboard, chipboard and plasterboard surfaces as well as wallpaper and similar materials. This paint is free from organic solvents and coalescents, therefore suitable for use in extra sensitive environments where a low emission product is needed.

Scotte 5

Scotte 5 is a waterborne, full matt paint for new or previously painted walls and ceilings indoors. Creates an even texture resistant to gentle washing. It is suitable for painting putty surfaces, plaster, concrete, fibreboards, chipboards and plaster linings, as well as wallpapers and similar materials. The paint does not yellow over time, dries quickly and can be repainted after 3 hours. This paint is free from organic solvents and coalescents, therefore suitable for use in extra sensitive environments where a low emission product is needed.

Scotte 7

A multi-purpose paint that does its job effectively. Scotte 7 is a waterborne, matt paint for new or previously painted walls and ceilings indoors. Creates an even texture resistant to gentle washing. It is suitable for painting putty surfaces, plaster, concrete, fibreboards, chipboards and plaster linings, as well as wallpapers and similar materials. The paint does not yellow over time, dries quickly and can be repainted after 3 hours. This paint is free from organic solvents and coalescents, therefore suitable for use in extra sensitive environments where a low emission product is needed.

Scotte 20

A multi-purpose paint that does its job effectively. Scotte 20 is a waterborne, semi-matt paint for new or previously painted walls and ceilings indoors. Creates an even texture resistant to gentle washing. It is suitable for painting putty surfaces, plaster, concrete, fibreboards, chipboards and plaster linings, as well as wallpapers and similar materials. The paint does not yellow over time, dries quickly and can be repainted after 3 hours. This paint is free from organic solvents and coalescents, therefore suitable for use in extra

sensitive environments where a low emission product is needed.

Scotte Grund

Scotte Grund is a matt primer for interior walls and ceilings. The product has many advantages - it works on different types of surfaces, provides a smooth surface with a uniform degree of gloss and gives a beneficial final result. This paint is free from organic solvents and coalescents, therefore suitable for use in extra sensitive environments where a low emission product is needed.

Scotte R2 Takfärg

Scotte R2 Takfärg is a non-reflective paint for indoor ceilings. It has a deeply matt, uniform, and non-reflective finish, and it can be applied to most types of surfaces in areas such as hallways, kitchens, corridors, etc. It is recommended for large ceilings and ceilings in rooms with large windows. It has a fast drying time and good hiding power – all this makes the application straightforward.

Interio Grundfärg

Interio Grundfärg is a waterborne primer for indoor walls and ceilings. Interio Grundfärg can be used on new or previously painted plaster surfaces, concrete, fibreboards, chipboards and plaster linings, as well as wallpapers and similar materials.

Interio Väggefärg 7

Interio Väggefärg 7 is a waterborne matt paint for indoor walls and ceilings. Interio Väggefärg 7 can be used on new or previously painted plaster surfaces, concrete, fibreboards, chipboards and plaster linings, as well as wallpapers and similar materials.

Interio Vägghärg 20

Interio Vägghärg 20 is a waterborne semi-matt paint for indoor walls and ceilings. Interio Vägghärg 20 can be used on new or previously painted plaster surfaces, concrete, fibreboards, chipboards and plaster linings, as well as wallpapers and similar materials.

Primer Grundhärg Väggh

Primer Grundhärg Väggh is a full-matt primer of very high quality which is used for priming walls and ceilings indoors. It is easy to apply and has good fullness. The primer prevents suction from underneath and therefore provides a more even, finer end result in the top coat. Primer Grundhärg Väggh can be applied to most surfaces such as sand putty, plaster, concrete, fibreboards, chipboards and plaster linings, as well as wallpapers and similar materials.

Living Takhärg 03

Living takhärg 03 is a full-matt premium paint that is used on unpainted and previously painted ceiling surfaces indoors. The paint is suitable for surfaces such as concrete, plaster, fabric and wallpaper and panels of wood fibre, chipboard or plaster. The paint is easy to apply with roller and has a high covering capacity. Living takhärg 03 dries quickly and has insignificant odour.

Living Vägghärg 05

Living Vägghärg 05 is a full-matte premium paint suitable for both unpainted and previously painted or wallpapered surfaces in bedrooms and living rooms. Living Vägghärg 05 is quick drying, has a high covering capacity and is easy to apply.

Living Vägghärg 07

Living Vägghärg 07 is a matt premium paint suitable for both unpainted and previously painted or wallpapered surfaces in bedrooms, living rooms and hallways. Living Vägghärg 07 is quick drying, has a high covering capacity and is easy to apply.

Living Vägghärg 20

Living Vägghärg 20 is a premium paint suitable for both unpainted and previously painted or wallpapered indoor walls. The semi-matte gloss makes the paint durable and very suitable for use in the hallway and kitchen. Living 20 adheres well, has high covering capacity and does not yellow with age.

Tikkurila:

Siro Himmeä

Non-reflective ceiling paint. For interior painting of concrete, plaster, filler-treated, brick, cardboard, chipboard, plasterboard and wood fiberboard surfaces according to instructions. Also suitable for repainting previously painted surfaces.

Ässä 1

Water-borne, full-matt non-reflective special dispersion paint for professional use. Specially for surfaces subject to hard wear. With Nordic Swan ecolabel.

Anti-reflex white [2]

Tikkurila Anti-Reflex White [2] is a white, anti-reflex, waterborne, high quality, deep matt latex paint for interior ceilings. Thanks to unique composition of titan compound and function fillers paint eliminates the light reflex which gives the feeling of the uneven surface - MATT X-TREME TECHNOLOGY. Paint is designed for

decorative-protective painting of interior ceilings inside residential, office and public use buildings, including schools and educational and health care premises (hospitals, clinics – with exception of premises that require disinfection or maintain aseptic), schools, kindergartens, nurseries and workhouses and production plants and also food industry without direct contact with food. It emits neutral smell during application and drying. It creates uniform deep matt surface which is resistant to delicate washing.

Ykköskatto

Pure white, non-reflective ceiling paint. A special dispersion paint for professional use, suitable for roller and spray application. Excellent adhesion both new and previous painted surfaces. Water-borne and full-matt. M1-classificated. Nordic Swan.

PRODUCT APPLICATION

The products are wall and ceiling paints for new and already painted interior surfaces of most substrates such as sand putty, plaster, concrete, wood-fiber board, chipboard and plaster board.

TECHNICAL SPECIFICATIONS

Use area: Interior

Spreading rate: 3-5 – 6-8 m²/l

Gloss: full matt – semi matt

Drying rate: touch dry in 0,5 hours, recoat time: 3 hours (at temperature +23°C and relative air humidity 50%).

PRODUCT STANDARDS

Labeled with Nordic Swan (4096 0027), Swedish Asthma & Allergy label, M1 - noted for the specific products.

Brand	Product	Nordic Swan license	M1 label	Swedish Asthma label
Alcro	Milltex 2 Plus Takfärg	X		X
Alcro	Milltex 2 RF Helmtak Takfärg	X	X	
Alcro	Milltex 2 Takfärg			X
Alcro	Milltex 20 Halvmatt Täckfärg	X		X
Alcro	Milltex 5 Helmtak Täckfärg	X		X
Alcro	Milltex 7 Matt Täckfärg	X		X
Alcro	Milltex Allgrund	X		X
Beckers	Scotte 3			X
Beckers	Scotte 5	X		X
Beckers	Scotte 7	X		X
Beckers	Scotte 20	X		X
Beckers	Scotte Grund	X		X
Beckers	Scotte R2 Takfärg	X	X	
Beckers	Interio Grundfärg			
Beckers	Interio Väggefärg 7	X		
Beckers	Interio Väggefärg 20	X		
Beckers	Primer Grundfärg vägg	X		X
Beckers	Living Takfärg 03	X		X
Beckers	Living Väggefärg 05	X		X
Beckers	Living Väggefärg 07	X		X
Beckers	Living Väggefärg 20	X		X
Tikkurila	Siro Himmeä	X	X	
Tikkurila	Ässä 1	X	X	
Tikkurila	Anti-reflex white 2	X	X	
Tikkurila	Ykköskatto	X	X	

PHYSICAL PROPERTIES OF THE PRODUCT

Average physical properties for products covered by this EPD

- Weight solids 53 %wt
- Water content 47%wt
- Spec. gravity 1,3 kg/l
- VOC content <10 g/l

The individual physical properties of the products can be found in the technical data sheets on the different brand web pages:

<https://www.tikkurilagroup.com/brands>

ADDITIONAL TECHNICAL INFORMATION

Further information can be found at <https://tikkurilagroup.com/>.

PRODUCT RAW MATERIAL COMPOSITION

Product and Packaging Material	Weight, kg	Post-consumer %	Renewable %	Country Region of origin
Binders*	0,336			Europe
Fillers	0,293			Europe
Water solvent	0,443			Europe
Pigments*	0,204			Europe
Preservatives*	0,005			Europe
Thickeners*	0,022			Europe/US
Other small constituents*	0,027			Europe/US
*Of which is water	0,180			Europe/US
Packaging	0,067		10	Europe

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metal oxides	14	Europe
Minerals	23	Europe
Fossil materials	17	Europe/US
Water	46	Europe

SUBSTANCES, REACH - VERY HIGH CONCERN

Products do not contain any REACH SVHC substances in amounts greater than 0,1% (1000 ppm).

None of the products are classified as hazardous according to Regulation (EC) 1272/2008 as amended.

Safety data sheets are available on request from Tikkurila Group.

PRODUCT LIFE-CYCLE

MANUFACTURING AND PACKAGING (A1-A3)

The manufacturing process of paint at Nykvarn consists of four distinct steps. Two steps for the production of paint and two for the packaging of the product. First is pre-mixing, where Water, powders (pigments, fillers, and thickeners), additives and sometimes binders are dispersed in a dissolver to a smooth paint paste. The second step is finishing the paint, where Binders, water, additives including any tinting pastes are mixed with the paint paste to a ready-to use paint. The last two steps include the canning of the paint and loading to pallets. The paint is filled in cans of various sizes in filling machines and then loaded to pallets by robots. The full pallets are moved to a warehouse within the site. Eventually, the paint is moved out and transported to the construction site.

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.

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 RTS PCR. Average distance of transportation from

production plant to building site is 262 km and the transportation method is assumed to be lorry. Transportation does not cause losses as product are packaged properly. The assembly stage at the construction site includes unwrapping of cans and application of the paint with roller or brush, the consumption of energy and natural resources is negligible for the assembly stage. Packages and transportation packaging is handled as a waste and assumed to be sorted and sent to the closest facilities such as recycling and landfill. Transportation distance to the closest disposal area is assumed to be 50 km and the transportation method is assumed as lorry which is the most common.

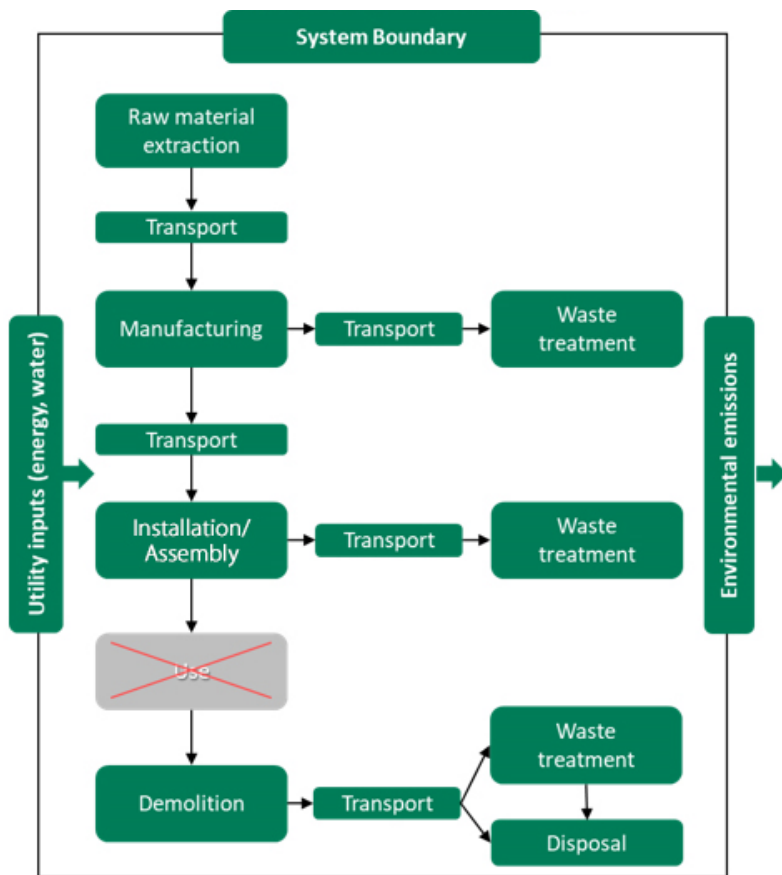
PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase. Air, soil and water impacts during the use phase have not been studied.

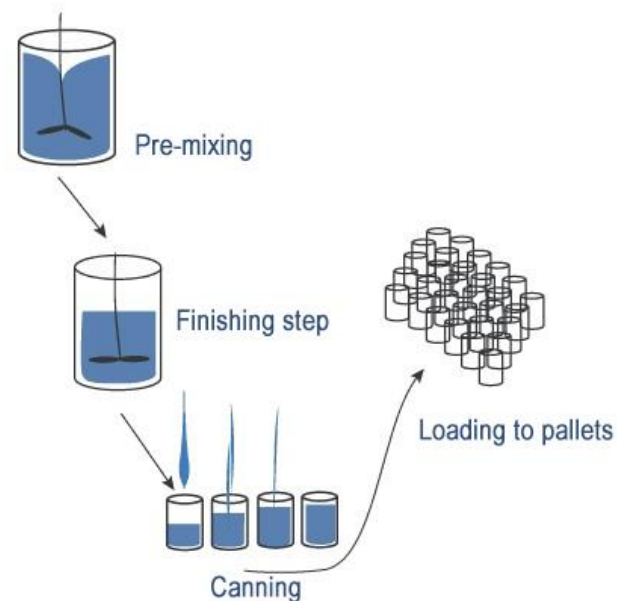
PRODUCT END OF LIFE (C1-C4, D)

Since the consumption of energy and natural resources is negligible for disassembling of the end-of-life product, the impacts of demolition are assumed zero (C1). All of end-of-life product is assumed to be sent to the closest facilities (C2). The heating value of dried paint is assumed negligible so the paint going to incineration is considered in final disposal (C3). About 1,6% of paint is assumed to be disposed of by incineration. The remaining 98,4% of paint is taken to landfill for final disposal (C4). The heating value of dried paint is assumed negligible. (D).

Life cycle stages diagram:



MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

LIFE-CYCLE ASSESSMENT INFORMATION

Period for data Calendar year 2019

DECLARED AND FUNCTIONAL UNIT

Declared unit The declared unit is 1 litre of paint.

Mass per declared unit 1,331 kg

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C -

Biogenic carbon content in packaging, kg C 0,0045

SYSTEM BOUNDARY

This EPD covers the *cradle to gate* scope with following modules; A1 (Raw material supply), A2 (Transport) and A3 (Manufacturing), A4 (Transport), A5 (Assembly) as well as C1 (Deconstruction), C2 (Transport at end-of-life), C3 (Waste processing) and C4 (Disposal). In addition, module D - benefits and loads beyond the system boundary is included.

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	D	D
x	x	x	x	x	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x	x	x
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR.

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 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.

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 and RTS 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 which data are available for are included in the calculation. There is no neglected unit process more than 1% of total mass and energy flows. The total neglected

input and output flows do also not exceed 5% of energy usage or mass. The life cycle analysis includes all industrial processes from raw material acquisition to production, distribution, and end-of-life stages.

For easier modelling and because of lack of accuracy in available modelling resources many constituents under 0,5% of product mass are excluded. These include preservatives and biocides which are all present in the product only in very small amounts and have no serious impact on the emissions of the product.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy, and water use related to company management and sales activities are excluded.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation.

In this study, as per EN 15804, allocation is conducted in the following order;

1. Allocation should be avoided.
2. Allocation should be based on physical properties (e.g. mass, volume) when the difference in revenue is small.
3. Allocation should be based on economic values.

As it is impossible to collect ancillary material, energy, and waste consumption data separately for each product produced the in the plant, data is allocated. Allocation is based on annual production rate and made with high accuracy and precision.

The values for 1 litre of the product which is used within this study is calculated by considering the total annual production. In the factory, several kinds of paints are produced; since the production processes of these products are similar, the annual production percentages are taken into consideration for allocation. Even if the formulations have some changes, all processes are same for all of the products produced in the plant. Therefore, energy consumption and waste streams are assumed to be the same for all types of products.

According to the ratio of the annual production of the declared product to the total annual production at the factory, the annual total energy consumption, packaging materials and the generated waste per the declared product are allocated. Subsequently, the product output fixed to 1 litre of paint the corresponding amount of product is used in the calculations.

This LCA study is conducted in accordance with all methodological considerations, such as performance, system boundaries, data quality, allocation procedures, and decision rules to evaluate inputs and outputs. All estimations and assumptions are given below:

- Module A4: The transportation distance is defined according to RTS PCR. It was assumed that typical installation place is situated in the region of the production plant. Average distance of transportation from production plant to building site is equal to 262 km. Transportation method is assumed to be lorry. The transportation doesn't cause losses as products are packaged properly. Also, volume capacity utilisation factor is assumed to be 1 for the nested packaged products.

- Module C1: Since the consumption of energy and natural resources is negligible for disassembling of the end-of-life product, the impacts of demolition are assumed zero (C1)
- Module C2: It is estimated that the product loses some of its mass as the solvents of the paint evaporate during use. It is assumed that all the solvents in the paint have been released. All of the end-of-life product is assumed to be sent to the closest facilities such as recycling and landfill. Transportation distance to the closest disposal area is assumed to be 50 km and the transportation method is assumed as lorry which is the most common.
- Module A2, A4 & C2: Vehicle capacity utilization volume factor is assumed to be 1 which means full load. In reality, it may vary but as role of transportation emission in total results is small and so the variety in load assumed to be negligible. Empty returns are not taken into account as it is assumed that return trip is used by transportation company to serve needs of other clients.
- Module C3: The heating value of dried paint is assumed negligible so the paint going to incineration is considered in final disposal (C4).
- Module C4: All the paint waste is gathered as a part of another product and is generally not separated from it at the end of life. It is assumed that the paint follows said product to waste treatment and is treated similarly. For the average paint the end of life scenario is the same as for mineral construction waste, and 98,5% of the paint is assumed to be sent to a landfill and 1,5% is assumed to be incinerated without energy recovery, Naturvårdsverket on Waste in

Sweden 2018.

- Module D: The heating value of dried paint is assumed negligible.

Allocation used in Ecoinvent 3.6 environmental data sources follows the methodology 'allocation, cut-off by classification'. This methodology is in line with the requirements of the EN 15804 - standard.

AVERAGES AND VARIABILITY

This is an average EPD. The GWP-total indicator of each individual product does not differ more than $\pm 10\%$.

ENVIRONMENTAL IMPACT DATA

Note: additional environmental impact data may be presented in annexes.

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	kg CO2e	1,53E0	8,59E-2	2,18E-1	1,84E0	6,05E-2	8,48E-2	MND	MND	MND	MND	MND	MND	MND	5,23E-7	4,68E-3	0E0	1,09E-1	-1E-2
GWP – fossil	kg CO2e	1,52E0	8,58E-2	2,15E-1	1,82E0	6,1E-2	9,43E-2	MND	MND	MND	MND	MND	MND	MND	5,74E-8	4,68E-3	0E0	1,09E-1	-4,57E-4
GWP – biogenic	kg CO2e	1,08E-2	4,64E-5	-3,44E-3	7,44E-3	3,25E-5	-9,48E-3	MND	MND	MND	MND	MND	MND	MND	7,57E-8	2,12E-6	0E0	6,15E-5	-9,54E-3
GWP – LULUC	kg CO2e	8,14E-4	3,04E-5	6,18E-3	7,02E-3	2,16E-5	1,11E-6	MND	MND	MND	MND	MND	MND	MND	3,9E-7	1,72E-6	0E0	3,66E-6	-4,55E-6
Ozone depletion pot.	kg CFC11e	1,32E-7	1,93E-8	5,92E-9	1,57E-7	1,39E-8	4,86E-10	MND	MND	MND	MND	MND	MND	MND	4,24E-15	1,03E-9	0E0	2,3E-9	-1,24E-10
Acidification potential	mol H+e	3,1E-2	4,12E-4	8,33E-4	3,23E-2	2,49E-4	2,48E-5	MND	MND	MND	MND	MND	MND	MND	2,45E-10	1,96E-5	0E0	6,51E-5	-1,5E-5
EP-freshwater ²⁾	kg Pe	2,2E-4	7,76E-7	6,26E-6	2,27E-4	5,1E-7	4,47E-8	MND	MND	MND	MND	MND	MND	MND	1,6E-12	4,67E-8	0E0	1,36E-7	-2,32E-7
EP-marine	kg Ne	1,73E-3	1,18E-4	1,48E-4	1,99E-3	7,41E-5	1,04E-5	MND	MND	MND	MND	MND	MND	MND	6,61E-11	5,68E-6	0E0	2,23E-5	-4,76E-6
EP-terrestrial	mol Ne	1,64E-2	1,31E-3	1,66E-3	1,94E-2	8,18E-4	1,07E-4	MND	MND	MND	MND	MND	MND	MND	7,52E-10	6,28E-5	0E0	2,45E-4	-7,36E-5
POCP (“smog”)	kg NMVOCe	6,38E-3	4,02E-4	6,58E-4	7,44E-3	2,5E-4	3,23E-5	MND	MND	MND	MND	MND	MND	MND	2,37E-10	1,96E-5	0E0	8,8E-5	-1,38E-5
ADP-minerals & metals	kg Sbe	2,35E-5	1,94E-6	2,36E-6	2,78E-5	1,65E-6	5,9E-8	MND	MND	MND	MND	MND	MND	MND	5,48E-13	1,14E-7	0E0	8,13E-8	-6,27E-9
ADP-fossil resources	MJ	2,68E1	1,3E0	4,53E0	3,26E1	9,2E-1	3,75E-2	MND	MND	MND	MND	MND	MND	MND	5,01E-7	6,99E-2	0E0	1,75E-1	-5,4E-3
Water use ¹⁾	m3e depr.	1,73E0	4,94E-3	1,35E-1	1,87E0	2,96E-3	4,61E-4	MND	MND	MND	MND	MND	MND	MND	2,57E-7	2,89E-4	0E0	7,73E-3	-7,21E-5

1) GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) 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 experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e.

ADDITIONAL (OPTIONAL) 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
Particulate matter	Incidence	1,08E-7	6,71E-9	9,27E-9	1,24E-7	4,25E-9	4,65E-10	MND	MND	MND	MND	MND	MND	MND	4,68E-15	3,56E-10	0E0	1,22E-9	-1,93E-10
Ionizing radiation ³⁾	kBq U235e	5,46E-2	5,55E-3	3,84E-3	6,4E-2	4,02E-3	1,47E-4	MND	MND	MND	MND	MND	MND	MND	2,46E-9	2,91E-4	0E0	6,87E-4	-2,16E-5
Ecotoxicity (freshwater)	CTUe	3,44E1	1,05E0	3,63E0	3,9E1	7,1E-1	1,04E-1	MND	MND	MND	MND	MND	MND	MND	8,1E-7	5,97E-2	0E0	1,47E-1	-1,28E-1
Human toxicity, cancer	CTUh	3,85E-9	2,85E-11	6,96E-10	4,58E-9	2,06E-11	1,54E-11	MND	MND	MND	MND	MND	MND	MND	1,28E-16	1,55E-12	0E0	4,29E-11	-3,36E-12
Human tox. non-cancer	CTUh	4,02E-8	1,16E-9	4,54E-9	4,59E-8	8,03E-10	2,09E-10	MND	MND	MND	MND	MND	MND	MND	1,33E-15	6,32E-11	0E0	2,26E-10	-6,6E-11
SQP	-	4,06E0	1,51E0	1,91E-1	5,76E0	7,66E-1	4,51E-2	MND	MND	MND	MND	MND	MND	MND	-1,29E-7	7,68E-2	0E0	6,17E-1	-2,84E-3

4) SQP = Land use related impacts/soil quality.5) EN 15804+A2 disclaimer for Ionizing radiation, human health. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

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	MJ	1,95E0	1,61E-2	1,41E0	3,38E0	1,3E-2	9,82E-4	MND	MND	MND	MND	MND	MND	MND	3,79E-5	8,02E-4	0E0	3,07E-3	-1,04E-1
Renew. PER as material	MJ	0E0	0E0	2,04E-1	2,04E-1	0E0	-1,03E-1	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Total use of renew. PER	MJ	1,95E0	1,61E-2	1,62E0	3,59E0	1,3E-2	-1,02E-1	MND	MND	MND	MND	MND	MND	MND	3,79E-5	8,02E-4	0E0	3,07E-3	-1,04E-1
Non-re. PER as energy	MJ	1,77E1	1,3E0	2E0	2,1E1	9,2E-1	3,75E-2	MND	MND	MND	MND	MND	MND	MND	5,01E-7	6,99E-2	0E0	1,75E-1	-5,4E-3
Non-re. PER as material	MJ	7,75E0	0E0	2,53E0	1,03E1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Total use of non-re. PER	MJ	2,55E1	1,3E0	4,53E0	3,13E1	9,2E-1	3,75E-2	MND	MND	MND	MND	MND	MND	MND	5,01E-7	6,99E-2	0E0	1,75E-1	-5,4E-3
Secondary materials	kg	3,82E-2	0E0	2,5E-3	4,07E-2	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Renew. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Non-ren. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Use of net fresh water	m3	3,27E-2	2,48E-4	1,2E-3	3,42E-2	1,57E-4	3,08E-5	MND	MND	MND	MND	MND	MND	MND	8,12E-10	1,33E-5	0E0	2,02E-4	-9,06E-6

6) 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	2,48E-1	1,49E-3	4,1E-2	2,9E-1	9,34E-4	6,39E-4	MND	MND	MND	MND	MND	MND	MND	6,96E-9	9,2E-5	0E0	6,53E-4	-4,58E-5
Non-hazardous waste	Kg	3,01E0	1,17E-1	1,84E-1	3,31E0	6,41E-2	5,52E-2	MND	MND	MND	MND	MND	MND	MND	2,15E-7	6,23E-3	0E0	7,06E-1	-6,86E-3
Radioactive waste	Kg	5,32E-5	8,74E-6	3,47E-6	6,54E-5	6,31E-6	2,11E-7	MND	MND	MND	MND	MND	MND	MND	2,58E-12	4,62E-7	0E0	1,05E-6	-3,27E-8

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	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for recycling	Kg	0E0	0E0	4,7E-3	4,7E-3	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for energy rec	Kg	0E0	0E0	0E0	0E0	0E0	1,3E-2	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0

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 CO2e	1,15E0	6,45E-2	1,63E-1	1,38E0	4,59E-2	6,37E-2	MND	MND	MND	MND	MND	MND	MND	3,93E-7	3,52E-3	0E0	8,22E-2	-7,51E-3
ADP-minerals & metals	kg Sbe	1,77E-5	1,46E-6	1,78E-6	2,09E-5	1,24E-6	4,43E-8	MND	MND	MND	MND	MND	MND	MND	4,12E-13	8,55E-8	0E0	6,11E-8	-4,71E-9
ADP-fossil	MJ	2,01E1	9,74E-1	3,4E0	2,45E1	6,91E-1	2,82E-2	MND	MND	MND	MND	MND	MND	MND	3,77E-7	5,25E-2	0E0	1,32E-1	-4,05E-3
Water use	m3e depr.	1,3E0	3,71E-3	1,02E-1	1,4E0	2,23E-3	3,46E-4	MND	MND	MND	MND	MND	MND	MND	1,93E-7	2,17E-4	0E0	5,81E-3	-5,41E-5
Secondary materials	kg	2,87E-2	0E0	1,88E-3	3,06E-2	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Biog. C in product	kg C	N/A	N/A	0E0	0E0	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	3,38E-3	3,38E-3	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

7) Biog. C in product = Biogenic carbon content in product

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity production, hydro, reservoir, non-alpine region, Sweden, Ecoinvent 3.6, year: 2019
Electricity CO ₂ e / kWh	0.0447
District heating data source and quality	Heat and power co-generation, wood chips, 6667 kw, state-of-the-art 2014, Sweden, Ecoinvent 3,6, year: 2019
District heating CO ₂ e / kWh	0.0111

Transport scenario documentation (A4)

Scenario parameter	Value
Specific transport CO ₂ e emissions, kg CO ₂ e / tkm	0,132
Average transport distance, km	262
Capacity utilization (including empty return) %	100%
Bulk density of transported products	1331
Volume capacity utilization factor	1

End of life scenario documentation

Scenario parameter	Value
Collection process – kg collected separately	0,0145
Collection process – kg collected with mixed waste	0,9139
Recovery process – kg for re-use	-
Recovery process – kg for recycling	-
Recovery process – kg for energy recovery	0,0145
Disposal (total) – kg for final deposition	0,9139
Scenario assumptions e.g. transportation	End-of-life product is transported 50 km with an average lorry.

BIBLIOGRAPHY

ISO 14025:2010 Environmental labels and declarations – Type III environmental declarations. Principles and procedures.

ISO 14040:2006 Environmental management. Life cycle assessment. Principles and frameworks.

ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines.

Ecoinvent database v3.6 (2019) and One Click LCA database.

EN 15804:2012+A2:2019 Sustainability in construction works – Environmental product declarations – Core rules for the product category of construction products.

LCA background report 28.09.2021

ABOUT THE MANUFACTURER

Tikkurila offers a broad range of decorative paints for consumers and professionals for surface protection and decoration. The product offering includes, among others, interior paints, lacquers, and effect products, exterior products for wood, masonry, and metal surfaces, as well as services related to painting. In addition, Tikkurila produces paints and coatings for the metal and wood industries.

EPD AUTHOR AND CONTRIBUTORS

Manufacturer	Tikkurila Group
EPD author	Cecilia Prieto, Tikkurila Sverige AB, 12086 Stockholm, Sweden
EPD verifier	Anni Oviir, Rangi Maja OÜ, www.lcasupport.com
EPD program operator	The Building Information Foundation RTS sr
Background data	This EPD is based on Ecoinvent 3.6 (cut-off) and One Click LCA databases.
LCA software	The LCA and EPD have been created using One Click LCA Pre-Verified EPD Generator for Paints, Coatings, Sealants and Adhesives

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with EN 15804, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The background report (project report) for this EPD

Why does verification transparency matter? [Read more online.](#)

VERIFICATION OVERVIEW

Following independent third party has verified this specific EPD:

EPD verification information	Answer
Independent EPD verifier	Anni Oviir, Rangi Maja OÜ
EPD verification started on	22.9.2021
EPD verification completed on	30.9.2021
Approver of the EPD verifier	The Building Information Foundation RTS sr

Author & tool verification	Answer
EPD author	Cecilia Prieto, Tikkurila Sverige AB
EPD author training completion	7 Sept 2020
EPD Generator module	Paints, Coatings, Sealants and Adhesives
Independent software verifier	Anni Oviir, Rangi Maja OÜ

Software verification date	25 Sep 2020
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THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of

- the data collected and used in the LCA calculations,
- the way the LCA-based calculations have been carried out,
- the presentation of environmental data in the EPD, and
- other additional environmental information, as present

with respect to the procedural and methodological requirements in ISO 14025:2010 and EN 15804:2012+A2:2019.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Anni Oviir



ANNEX 1 : ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO2e	1,47E0	8,5E-2	2,12E-1	1,77E0	6,05E-2	9,33E-2	MND	MND	MND	MND	MND	MND	MND	4,87E-7	4,63E-3	0E0	8,53E-2	-4,58E-4
Ozone depletion Pot.	kg CFC11e	1,27E-7	1,54E-8	5,51E-9	1,48E-7	1,1E-8	3,99E-10	MND	MND	MND	MND	MND	MND	MND	3,65E-15	8,16E-10	0E0	1,84E-9	-1,16E-10
Acidification	kg SO2e	3,44E-2	2,61E-4	6,83E-4	3,53E-2	1,22E-4	1,73E-5	MND	MND	MND	MND	MND	MND	MND	1,75E-10	1,42E-5	0E0	2,93E-5	-9,3E-6
Eutrophication	kg PO4 3e	2,27E-3	5,18E-5	2,05E-4	2,52E-3	2,51E-5	2,67E-4	MND	MND	MND	MND	MND	MND	MND	6,47E-11	3,26E-6	0E0	2,78E-3	-4,6E-6
POCP ("smog")	kg C2H4e	1,19E-3	1,23E-5	8,14E-5	1,28E-3	8,05E-6	3,05E-6	MND	MND	MND	MND	MND	MND	MND	2,21E-11	6,15E-7	0E0	1,24E-5	-3,11E-7
ADP-elements	kg Sbe	2,35E-5	1,94E-6	2,36E-6	2,78E-5	1,65E-6	5,9E-8	MND	MND	MND	MND	MND	MND	MND	5,48E-13	1,14E-7	0E0	8,13E-8	-6,27E-9
ADP-fossil	MJ	2,68E1	1,3E0	4,53E0	3,26E1	9,2E-1	3,75E-2	MND	MND	MND	MND	MND	MND	MND	5,01E-7	6,99E-2	0E0	1,75E-1	-5,4E-3

ANNEX 2 : ENVIRONMENTAL IMPACTS – TRACI 2.1. / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO2e	1,4E0	8,49E-2	2,11E-1	1,7E0	6,04E-2	9,35E-2	MND	MND	MND	MND	MND	MND	MND	4,92E-7	4,63E-3	0E0	8,87E-2	-4,55E-4
Ozone Depletion	kg CFC11e	1,37E-7	2,05E-8	6,95E-9	1,64E-7	1,47E-8	5,19E-10	MND	MND	MND	MND	MND	MND	MND	4,82E-15	1,09E-9	0E0	2,45E-9	-1,41E-10
Acidification	kg SO2e	2,41E-2	3,58E-4	6,9E-4	2,51E-2	2,17E-4	2,32E-5	MND	MND	MND	MND	MND	MND	MND	2,11E-10	1,71E-5	0E0	5,82E-5	-1,23E-5
Eutrophication	kg Ne	1,25E-3	4,5E-5	7,53E-5	1,37E-3	3,05E-5	5,88E-6	MND	MND	MND	MND	MND	MND	MND	2,5E-11	2,37E-6	0E0	1,29E-5	-1,21E-6
POCP ("smog")	kg O3e	8,47E-2	7,51E-3	8,59E-3	1,01E-1	4,69E-3	6,2E-4	MND	MND	MND	MND	MND	MND	MND	4,12E-9	3,6E-4	0E0	1,41E-3	-2,91E-4
ADP-fossil	MJ	3,02E0	1,84E-1	6,01E-1	3,81E0	1,32E-1	5,04E-3	MND	MND	MND	MND	MND	MND	MND	4,27E-8	9,82E-3	0E0	2,41E-2	-7,35E-4