

Rakennustietosäätiö RTS RTS EPD, RTS_13_18
Building Information Water-borne exterior paints
Foundation RTS

RAKENNUSTIETO >

Scope of the declaration

This environmental product declaration covers the environmental impacts of Teknos water-borne exterior paints and coatings. The declaration has been prepared in accordance with EN 15804:2012+A1:2013 and ISO 14025 standards and the additional requirements stated in the RTS PCR (English version, 2.6.2016). This declaration covers the life cycle stages from cradle-to-gate.

26.4.2018
Building Information Foundation
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Laura Sariola
Committee secretary



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General information, declaration scope and verification (7.1)

1. Owner of the declaration, manufacturer

Teknos Oy
Takkatie 3, PL 107, 00371 Helsinki, Finland
Tero Rönkä
+358 9 506 091
tero.ronka@teknos.fi

2. Product name and number

Water-borne exterior paints and coatings

3. Place of production

Rajamäki, Finland

4. Additional information

<http://www.teknos.com/>

5. Product Category Rules and the scope of the declaration

This EPD has been prepared in accordance with EN 15804:2012+A1:2013 and ISO 14025 standards together with the RTS PCR (English version, 2.6.2016). Product specific category rules have not been applied in this EPD. EPD of construction materials may not be comparable if they do not comply with EN 15804 and seen in a building context. This EPD represents environmental impacts of water-borne exterior paints and coatings produced in Rajamäki plant, Finland.

6. Author of the life-cycle assessment and declaration

Bionova Engineering, MSc Anni Oviir. Hämeentie 31, 00500
Rakennustietosäätiö RTS Building Information Foundation

7. Verification

This EPD has been verified according to the requirements of ISO 14025:2010, EN 15804:2012+A1:2013 and RTS PCR by a third party. The verification has been carried out by Bionova Ltd, Rodrigo Castro, according to the above-mentioned PCR. Hämeentie 31, 00500 Helsinki, Finland +358 404826648 www.bionova.fi

8. Declaration issue date and validity

10.04.2018 - ~~Ä~~€04.2023

European standard EN 15804: 2014 A1 serves as the core PCR

Independent verification of the declaration and data, according to ISO14025:2010

Internal

External

Third party verifier:

Rodrigo Castro (PhD), Bionova Ltd

Product information

9. Product description

This EPD covers a range of high-quality water-borne Teknos paints, wood stains and wood oils for decorating, protecting and priming wooden and mineral exterior facades, sheet iron and mineral roofs and other structures in outbuildings. The products are designed to meet variable requirements of professional painters and DIYs concerning durability, washability and environmental sustainability. The main market area of the product is Europe. This EPD is representing environmental impacts of an average Teknos water-borne exterior paint based on production data. The EPD is representing environmental impacts of the products:

AKRYLIN

Semi-matt house paint for wooden surfaces for exterior use. For new and previously with acrylate and oil paint painted wooden surfaces and for industrially primed and/or undercoated wooden surfaces, e.g. exterior walls, facial boards and weather boards outdoors.

FERREX AQUA

Anticorrosive paint for exterior and interior use. For iron and steel surfaces as well as aluminium. Also for zinc-coated (galvanized) surfaces as well as on prefabrication primers.

FÖNSTERFÄRG AQUA

Semi-gloss paint for exterior use. New, previously treated, pressure impregnated or previously oil painted windows, doors, moldings etc.

KIRJO AQUA

Matt paint for sheet-iron roofs for exterior use. Suitable for new unpainted zinc coated/galvanized sheet-iron and for maintenance painting of sheet-iron roofs which are previously painted with alkyd or acrylate paints. Can also be used for maintenance painting of industrially paint coated sheet steel: polyurethane, PURAL, PUREX, polyester, acrylic and PVC-Plastisol coatings.

KIRJO TILE

Full-matt paint for tile roofs for exterior use. For maintenance painting of concrete tiles. Suitable for both industrially painted and throughout dyed concrete and cement roof tiles.

JRM-EDGES

Semi-matt paint for wood ends for exterior and interior use. For painting and protecting edges of building timber: building logs, pillars and glulam beams.

NORDICA EKO

Gloss house paint for wooden surfaces for exterior use. For new and previously with acrylate and oil paint painted wooden surfaces and for industrially primed and/or undercoated wooden surfaces, e.g. exterior walls, facial boards and weather boards outdoors.

NORDICA MATT

Full-matt house paint for wooden surfaces for exterior use. For new and previously with acrylate and oil paint painted wooden surfaces and for industrially primed and/or undercoated wooden surfaces, e.g. exterior walls, facial boards and weather boards outdoors.

NORDICA PRIMER

Full-matt priming paint for wooden surfaces for exterior use. Walls, doors etc. wooden surfaces outdoors, when they are going to be top coated with acrylate, alkyd or oil paints.

PANU

Semi-matt house paint for wooden surfaces for exterior use. For new and previously with acrylate and oil paint painted wooden surfaces and for industrially primed and/or undercoated wooden surfaces, e.g. exterior walls, facial boards and weather boards outdoors.

PUNAMAALI

Full-matt red ochre paint for wooden surfaces for exterior use. For unpainted sawn plank surfaces, rough log surfaces and surfaces painted previously with linseed oil based red ochre paint.

RIIHI

Full-matt paint for wooden surfaces for exterior use. For sawed wood and for rough log surfaces outdoors.

SAKU

Matt paint for concrete socle walls for exterior use. Intended for painting socles and concrete buttresses.



SILIKATFÄRG

Full-matt paint for mineral surfaces for exterior and interior use. For painting of lime plaster, lime cement plaster and cement plaster as well as concrete, cement fibre board and lime-sand brick. Can also be used for maintenance painting of surfaces previously painted with lime paint, lime cement paint, cement paint or silicate paint.

SILIKATBINDER

Primer for mineral surfaces for exterior and interior use. For pretreatment and priming of mineral surfaces which will be painted with SILIKATFÄRG silicate paint.

SILOKSAN ANTI-CARB

Matt paint for mineral facades for exterior use. New and previously painted mineral facades outdoors, e.g. concrete, plaster, lime-sand brick and mineral boards.

SILOKSAN BINDER

Priming agent for mineral facades for exterior use. For priming of porous, water absorbing mineral surfaces before top coating with e.g. SILOKSAN FACADE or SILOKSAN ANTI-CARB paint.

SILOKSAN CAVE

Dust binder paint for walls and ceilings for interior and exterior use. For painting caverns, unheated interior spaces, as well as walls and ceilings in exterior locations which are protected from weather. Application on concrete surfaces, filler, building boards etc.

SILOKSAN FAÇADE

Full-matt paint for mineral facades for exterior use. New and previously painted mineral facades, e.g. concrete, plaster, lime-sand brick and mineral boards.

SILOKSAN GEL

For use together with SILOKSAN FACADE Silicone Emulsion Paint on mineral surfaces.

SILOKSAN SOCLE

Full-matt coating for socle walls for exterior use. Outdoors on new and old mortar-finished block socles. Can also be used for previously painted socles.

TALOMAALI

Semi-matt house paint for wooden surfaces for exterior use. For new and previously with acrylate and oil paint painted wooden surfaces and for industrially primed and/or undercoated wooden surfaces, e.g. exterior walls, facial boards and weather boards outdoors.

TEKNOSTONE

Protective agent for exterior and interior use. For porous rock material surfaces, such as roof tiles, stone pavings, concrete socles and other porous mineral surfaces.

VISA

Semi-matt opaque wood stain for exterior use. To be used for renewed treatment of old, faded wood stain surfaces and, also when a uniform colour is desired on old and new wood stain surfaces. Suitable also for use on new and press-impregnated wood as well as for log surfaces.

VISA PREMIUM

Gloss opaque wood stain for exterior use. To be used for renewed treatment of old, faded wood stain surfaces and, also when a uniform colour is desired on old and new wood stain surfaces. Suitable also for use on new and press-impregnated wood as well as for log surfaces.

WINTEROL

Full-matt paint for mineral facades for exterior use. New and previously with alkyd or acrylate paints painted mineral surfaces outdoors, e.g. concrete, plaster, lime-sand brick and mineral boards.

WOODEX AQUA BASE

Wood preservative for exterior use. For treatment of wooden surfaces outdoors before top coating is applied. Priming on planked and log surfaces, porches, jetties, garden furniture and similar untreated wooden surfaces. Use biocides safely. Always read the label and product information before use.

WOODEX AQUA CLASSIC

Transparent wood stain for exterior use. New wood and wood previously treated with non-film-forming wood stain, e.g. walls, doors, window frames, fences and poles outdoors.

WOODEX AQUA SOLID

Semi-matt opaque wood stain for exterior use. To be used for renewed treatment of old, faded wood stain surfaces and, also when a uniform colour is desired on old and new wood stain surfaces. Suitable also for use on new and press-impregnated wood as well as for log surfaces.



WOODEX AQUA WOOD OIL

Wood oil for exterior use. Used for garden furniture made of pine and exotic wood sorts, for example teak, hardwood, oak and mahogany. Other suitable objects are jetties, fences, trellises and doors.

WOODEX EKO

Transparent special wood stain for exterior use. New and previously with transparent wood stain treated wooden surfaces outdoors, e.g. planked and log walls, weatherboards, doors, window frames and fences. Also, suitable for treatment of press-impregnated wood.

10. Technical specifications

The product consists of the following materials: binders, water, fillers, pigments, solvents and fungicides. Average coverage is 6-10 m²/L. Practical spreading rate depends on surface quality and application method. The average density of the product is 1.20 kg/l.

11. Product standards

EN 13163:2015 Thermal insulation products for buildings

12. Physical properties

Detailed physical properties for all Teknos interior paints are available at <http://www.teknos.com/decorative-paints/>.

13. Raw-materials of the product

Product structure / composition / raw-material	Amount %
Binders	44-46%
Water	26-28%
Fillers	10-12%
Pigments	7-9%
Solvents	1-2%
Fungicides	<1%

14. Substances under European Chemicals Agency's REACH, SVHC restrictions

Name	EC Number	CAS Number
Binders and thickeners include CIT/MIT (less than 10 ppm of the total raw materials)	611-341-5	55965-84-9

15. Functional / declared unit

1 liter

16. System boundary

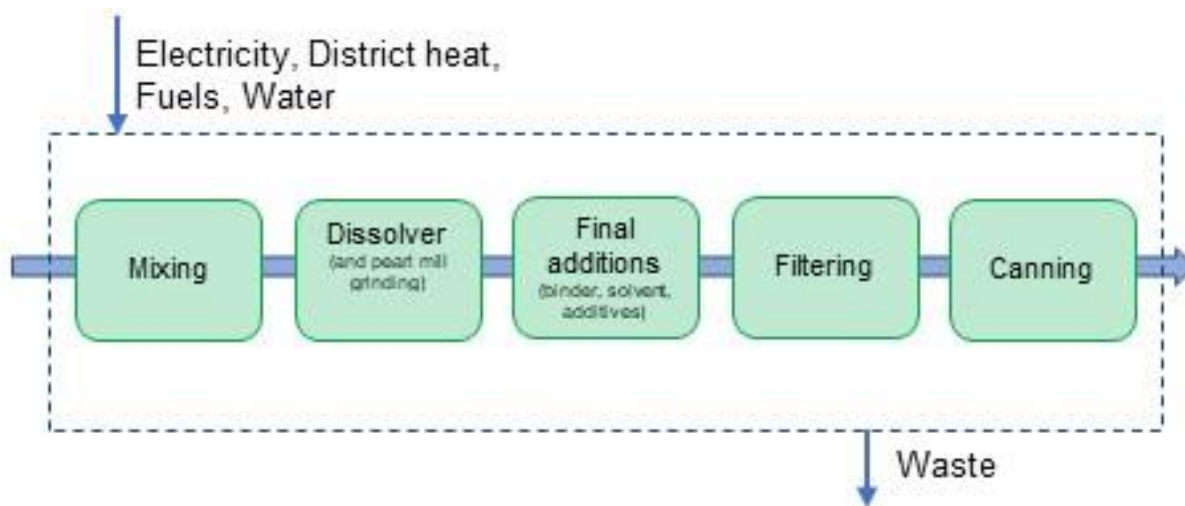
This EPD covers the following modules; A1 (Raw material supply), A2 (Transport), A3 (Manufacturing)

17. Cut-off criteria

All main flows of production materials, energy and packing have been included. The results have been provided as an aggregate of A1-A3 life cycle stages. The study excludes some minor raw materials which contribute less than 0.2 w% of the total raw materials mass. The total amount of excluded raw materials is less than 5% as per the requirements of EN 15804. The study does not exclude any hazardous materials or substances. The transportation module (A4) has been excluded since the impacts of the module are remarkably smaller (less than 20%) from the A1-A3 modules as per RTS PCR requirements.

18. Production process

The product is manufactured from raw materials, that are transported to the Teknos plant from different locations. The materials are mixed after which the substance is treated in dissolver and pearl mix grinding. The binder, solvents, additives are added and product is filtered. Final process is canning.



Scope of the Life-Cycle Assessment (7.2.1-2)

Mark all the covered modules of the EPD with X. Mandatory modules are marked with blue in the table below. This declaration covers "cradle-to-gate with options". For other fields mark MND (module not declared) or MNR (module not relevant)

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	MNR	MND	MND	MND	MND	MND	MND	MND	MND	MNR	MNR	MNR	MNR	MNR	MNR	MNR
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

	Mandatory modules
	Mandatory as per the RTS PCR section 6.2.1 rules and terms
	Optional modules based on scenarios

Environmental impacts and raw-material use (7.2.3-7.2.4)

19. Environmental impacts

The results of a life cycle assessment are relative. They do not predict impact on category endpoints, exceeding of limit values, safety margins, or risks. The impacts are presented per declared unit, 1 liter of product. The impacts are mainly caused by the raw material production process (A1).

Environmental impact								
Parameter	Unit	A1-A3	A4	C1	C2	C3	C4	D
Global warming potential (GWP)	kg CO2 -eqv	2,1E0	MNR	MNR	MNR	MNR	MNR	MNR
Depletion of stratospheric ozone layer (ODP)	kg CFC11-eqv	3,98E-7	MNR	MNR	MNR	MNR	MNR	MNR
Formation of photochemical ozone (POCP)	kg C2H4 -eqv	1,41E-3	MNR	MNR	MNR	MNR	MNR	MNR
Acidification (AP)	kg SO2 -eqv	1,91E-2	MNR	MNR	MNR	MNR	MNR	MNR
Eutrophication (EP)	kg PO4 3--eqv	2,9E-3	MNR	MNR	MNR	MNR	MNR	MNR
Abiotic depletion of non fossil resources (ADP-e)	kg Sb-eqv	1,27E-4	MNR	MNR	MNR	MNR	MNR	MNR
Abiotic depletion of fossil resources (ADP-f)	MJ	3,48E1	MNR	MNR	MNR	MNR	MNR	MNR

20. Use of natural resources

Resource use								
Parameter	Unit	A1-A3	A4	C1	C2	C3	C4	D
Renewable primary energy resources used as energy carrier	MJ	1,47E0	MNR	MNR	MNR	MNR	MNR	MNR
Renewable primary energy resources used as raw materials	MJ	6,5E-1	MNR	MNR	MNR	MNR	MNR	MNR
Total use of renewable primary energy resources	MJ	2,12E0	MNR	MNR	MNR	MNR	MNR	MNR
Nonrenewable primary energy resources used as energy carrier	MJ	3,78E1	MNR	MNR	MNR	MNR	MNR	MNR
Nonrenewable primary energy resources used as materials	MJ	4,27E0	MNR	MNR	MNR	MNR	MNR	MNR
Total use of nonrenewable primary energy resources	MJ	4,2E1	MNR	MNR	MNR	MNR	MNR	MNR
Use of secondary materials	kg	1,06E-2	MNR	MNR	MNR	MNR	MNR	MNR
Use of renewable secondary fuels	MJ	2,4E-3	MNR	MNR	MNR	MNR	MNR	MNR
Use of nonrenewable secondary fuels	MJ	1,96E-4	MNR	MNR	MNR	MNR	MNR	MNR
Use of net fresh water	m ³	2,59E0	MNR	MNR	MNR	MNR	MNR	MNR

21. End of life - Waste

Waste								
Parameter	Unit	A1-A3	A4	C1	C2	C3	C4	D
Hazardous waste	kg	2,78E-2	MNR	MNR	MNR	MNR	MNR	MNR
Non-hazardous waste	kg	1,08E-1	MNR	MNR	MNR	MNR	MNR	MNR
Radioactive waste	kg	1,19E-4	MNR	MNR	MNR	MNR	MNR	MNR

22. End of life - Output flow

Output flow								
Parameter	Unit	A1-A3	A4	C1	C2	C3	C4	D
Components for reuse	kg	7,91E-5	MNR	MNR	MNR	MNR	MNR	MNR
Materials for recycling	kg	1,35E-2	MNR	MNR	MNR	MNR	MNR	MNR
Materials for energy recovery	kg	2,35E-2	MNR	MNR	MNR	MNR	MNR	MNR
Exported energy	MJ	5,97E-5	MNR	MNR	MNR	MNR	MNR	MNR

Scenarios and additional technical information (7.3)

23. Electricity in the manufacturing phase (7.3.A3)

Object	Value	Data quality
A3 data quality of electricity and CO2 emission kg CO2 eq. / kWh	FI 0.235	The impacts of Finnish electricity were calculated based on Energiategollisuus (2016b) and Statistics Finland (2016), which provide the yearly fuel mixes for electricity production in Finland. Imported electricity has been calculated based on ecoinvent 3.3 database. The impacts include all upstream processes as well as transmission losses.
District heating/cooling data quality and CO2 emissions kg CO2 eq./kWh	FI 0.072	Based on specific fuel mix of the district heating plant in Rajamäki (Rajamäen biolämpökeskus) by Nurmijärven Sählö Oy, Finland for 2015 (Energiategollisuus 2016).

24. Transport from production place to user (7.3.2A4)

N/A

25. End-of-life process description (7.3.4)

N/A

26. Additional technical information

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27. Product data sheet

Find product data sheets from Teknos website <https://www.teknos.com/decorative-paints/products/product-search/Exterior-paints/>

28. Additional information (7.4)

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

29. 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. EN 15804:2012+A1 Sustainability in construction works – Environmental product declarations – Core rules for the product category of construction products. RTS PCR 2.6.2016 RTS PCR protocol: EPDs published by the Building Information Foundation RTS sr. PT 18 RT EPD Committee. (English version)