



ENVIRONMENTAL PRODUCT DECLARATION

Load-bearing wood based board

OSB2 Unsanded, OSB3 Unsanded, OSB4 Unsanded



Version	2.0
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Valid until:	2026-04-27

In accordance with EN 15804+A1 and ISO 14025



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COMPANY AND PRODUCT INFORMATION

COMPANY INFORMATION

Owner of the EPD:

SIA KRONOSPAN Rīga
Daugavgrīvas soseja 7B
Rīga, LV-1016 Latvia
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Contact person

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Description of the organization: Kronospan is the world's leading manufacturer of wood-based panels using advanced technology, and as such Kronospan have pioneered many of industry's key advances and will continue to lead product development and innovation into the future. Kronospan have more than 120 years of experience in the industry and more than 40 manufacturing sites around the world.

For additional information about KRONOSPAN please visit the company web site at <https://lv.kronospan-express.com/en>.

Product-related or management system-related certifications: Declared products are manufactured in the KRONOSPAN Daugavgrīvas soseja factory.

Name and location of production site: KRONOSPAN Daugavgrīvas soseja factory production plant in Latvia.

Base materials / Ancillary materials

Product does not contain Substance of Very High Concern.

- Wood content is 95–98 % with dominant amount of spruce and pine (70%). Products has been assessed and certified according FSC-STD-40-004 V3-0; FSC-STD-40-0005 V3-1; FSC-STD-40-007 V2-0; FSC-STD-50-001 V2-0 and PEFC ST 2002:2013 Chain of Custody Certification.
- Binder (2–4 % of content) is PMDI - polymeric diphenyl methane diisocyanate binder used is generally reacted into polyuria and biurets, a small number of urethane and polyurete bonds may also be formed. This product does not liberate MDI vapour. MDI and pMDI are not classified as carcinogenic by ACGIH or IARC, they are not regulated as carcinogens by OSHA nor listed as carcinogens by NTP.
- Paraffin wax emulsion (0.6- 0.99 %) is used as a water repellent.

Manufacturing

- Debarking of logs
- Transforming round wood to the strands in flaker
- Drying
- Sorting strands to outer and middle layer fraction
- Mixing strands with resin
- Forming station spreading and orientating strands on the belt
- Pressing stands in continuous press at high pressure
- Cooling of the raw format OSB boards
- Cutting OSB according standard sizes
- Packaging OSB boards

Environment and health during manufacturing

In face of the manufacturing conditions, no particular statutory or regulatory health protection measures are required.

Air from manufacturing is cleaned in accordance with statutory specifications. Emissions are significantly below the requisite limit values.

Production is free of waste water.

Waste wood products (bark etc.) are internally using for heat production and drying of inputs

Product processing/Installation

It is not necessary to use special tools. Kronospan OSB Unsanded boards can be cut, drilled or milled using conventional woodworking tools. Boards can be installed using known methods, standard tools and fasteners (nails, screws or staples).

When processing, standard safety measures must be taken. Protective goggles, gloves and dust mask should be worn when sawing and grinding.

Packaging

Recyclable PE foils and tapes, iron clips, paper corners and labels are used for packing.

Conditions of use

Material composition for the time of use complies with the base materials mentioned above.

Environment and health during use

No damage to health and environment can be anticipated if Kronospan OSB Unsanded is used as designated.

Reference service life

The service life of Kronospan OSB Superfinish depends on the area of application and is at least 50 years when used correctly.

Extraordinary effects

- Fire

Building material class according to EN 13501-1: D (normal flammable materials)

LCA : CALCULATION RULES

DECLARED UNIT

The declared unit is one cubic metre (1 m³) of Kronospan OSB2 unsanded, OSB3 unsanded and OSB4 unsanded manufactured by production facility in Riga, Latvia.

OSB bulk density is from 600kg/m³ – 620kg/m³.

REFERENCE SERVICE LIFE

The RSL is 50 years.

TIME REPRESENTATIVENESS

Data were collected by KRONOSPAN from February 2020 to May 2020 and are representative of 2019 manufacturing technologies.

DATABASE AND LCA SOFTWARE USED

Databases used are BDD CODDE-2018-11, ELDC version 3.2, and Ecoinvent 3.0.1. The software used is EIME V5.8.1.

Environmental indicators calculated according to EN 15804 (CEM baseline).

DESCRIPTION OF SYSTEM BOUNDARIES

Type of EPD: cradle to grave, with options

The following life cycle stages are taken into account in the analysis:

- Product stage A1-A3
- Transport stage A4
- End of life stage C4
- Benefits and loads beyond the system boundary D

Hence, as is not relevant for this kind of product, life cycle stages from A5 to C3 have been excluded.

Energetic consumption and waste production have been allocated per m³ of final product.

CUT-OFF CRITERIA

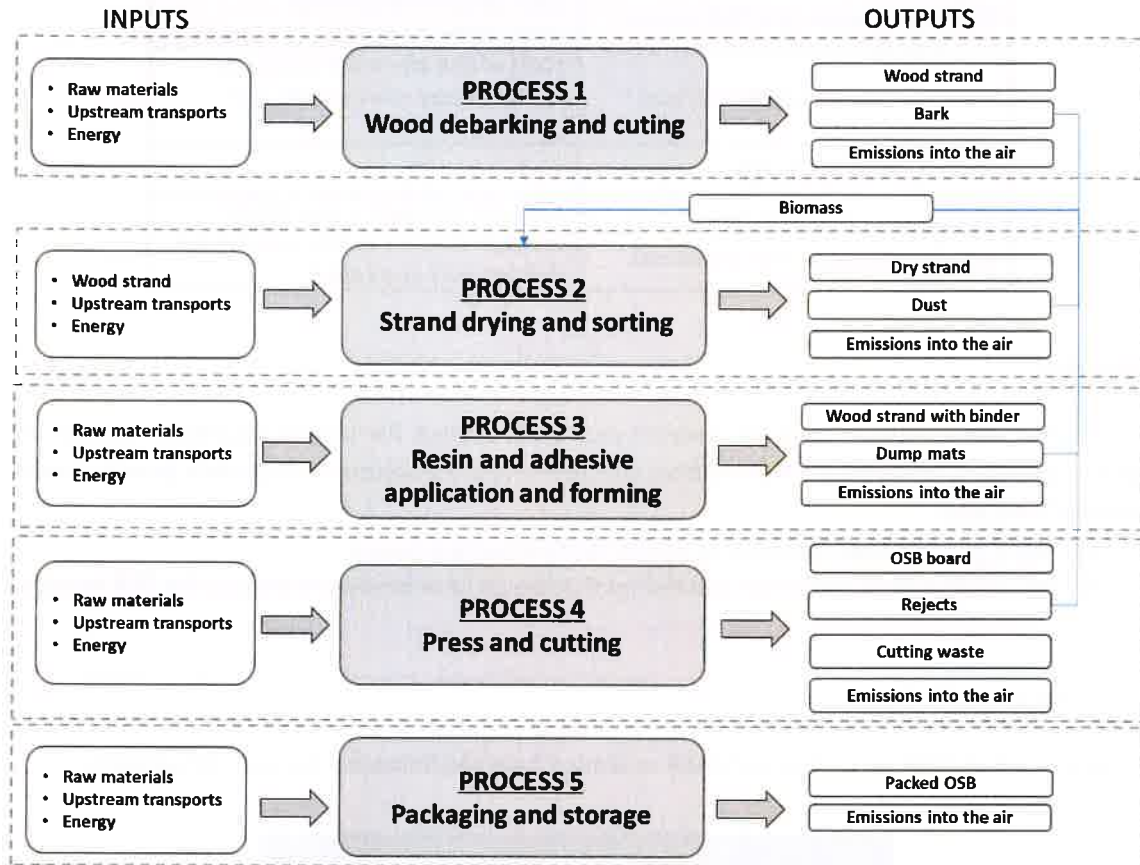
Flows that can be excluded from the study because of the difficulty of attributing them to a particular reference flow are the following:

- The lighting, heating, sanitation and cleaning of facilities
- The transportation of employees and the staff catering facilities.
- The manufacture and maintenance of production tools and infrastructures
- Flows from R&D, administrative, management, and marketing poles.

The proportion of non-modelled elements is in compliance with the 1 % of renewable and non-renewable primary energy usage and the 1%-in-weight cut-off rule over the life-cycle considered. The total of neglected input flows per module shall be a maximum of 5 % of energy usage and mass.

Modularity principle and polluter pays principle have been applied in the study.

FLOW DIAGRAM OF PRODUCT MANUFACTURING



LCA ASSUMPTIONS

Distribution stage

PARAMETER	VALUE/DESCRIPTION
Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat, etc.	Average truck trailer with a 27t payload, diesel consumption 38 liters for 100 km Transoceanic tanker for boat transport
Distance	OSB 2: 1.900 km by truck and 7.139 Km by boat OSB 3: 868 km by truck and 67 Km by boat OSB 4: 1.570 km by truck
Capacity utilisation (including empty returns)	100% of the capacity in volume % included in the database
Bulk density of transported products*	OSB bulk density is from 600kg/m ³ – 620kg/m ³
Volume capacity utilisation factor	1

ENVIRONMENTAL PERFORMANCE

OSB2

Impacts of 1m³ of OSB2 Unsanded load-bearing wood based boards

POTENTIAL ENVIRONMENTAL IMPACT

INDICATORS	UNIT	A1-A3	A4	A5-C1	C2	C3	C4	Total	D
Global Warming Power (GWP) - Total	kg CO2 eq.	-8,25E+02	2,53E+02	MND	1,53E+01	1,09E+03	0,00E+0	5,38E+02	-5,83E+01
Global Warming Power (GWP) - Fossil part	kg CO2 eq.	3,14E+2	2,53E+2	MND	1,53E+01	1,56E-2	0,00E+0	5,82E+02	-1,51E+02
Global Warming Power (GWP) - Biogenic part	kg CO2 eq.	-1,14E+3	0,00E+0	MND	0,00E+0	1,09E+03	0,00E+0	-5,00E+01	9,72E+1
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC 11 eq.	1,17E-05	1,72E-05	MND	1,04E-06	8,73E-10	0,00E+0	3,00E-05	-8,36E-06
Acidification potential (AP)	kg SO2 eq.	2,18E+00	1,74E+00	MND	7,53E-02	3,61E-05	0,00E+0	3,99E+00	-1,32E+00
Eutrophication potential (EP)	kg PO43- -eq	3,33E-01	2,88E-01	MND	1,66E-02	4,20E-06	0,00E+0	6,37E-01	-2,83E-01
Formation potential of tropospheric ozone (POCP)	kg C2H4-eq	2,01E-01	6,01E-02	MND	2,52E-03	2,99E-06	0,00E+0	2,64E-01	-1,58E-01
Abiotic depletion potential - Elements	Abiotic depletion kg Sb-eq resources	2,87E-04	5,22E-04	MND	2,93E-05	2,02E-10	0,00E+0	8,38E-04	-2,15E-04
Abiotic depletion potential - Fossil resources	MJ	2,26E+03	1,14E+03	MND	6,87E+01	2,30E-01	0,00E+0	3,47E+03	3,30E+02

OSB3

Impacts of 1m3 of OSB3 Unsanded load-bearing wood based boards

POTENTIAL ENVIRONMENTAL IMPACT

INDICATORS	UNIT	A1-A3	A4	A5-C1	C2	C4	C3	Total	D
Global Warming Power (GWP) - Total	kg CO2 eq.	-8,40E+02	1,34E+02	MND	1,51E+01	0,00E+00	1,09E+03	3,99E+02	-6,51E+01
Global Warming Power (GWP) – Fossil part	kg CO2 eq.	2,41E+02	1,34E+02	MND	1,51E+01	0,00E+00	1,13E-2	3,90E+02	-5,61E+1
Global Warming Power (GWP) – Biogenic part	kg CO2 eq.	-1,08E+03	0,00E+00	MND	0,00E+00	0,00E+00	1,09E+03	1,00E+01	-9,00E0
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC 11 eq.	1,11E-05	9,20E-06	MND	1,03E-06	0,00E+00	9,22E-10	2,13E-05	-8,26E-06
Acidification potential (AP)	kg SO2 eq.	2,09E+00	7,46E-01	MND	7,44E-02	0,00E+00	3,04E-05	2,91E+00	-1,34E+00
Eutrophication potential (EP)	kg PO43- -eq	3,21E-01	1,49E-01	MND	1,64E-02	0,00E+00	2,72E-06	4,87E-01	-2,80E-01
Formation potential of tropospheric ozone (POCP)	kg C2H4-eq	1,94E-01	2,50E-02	MND	2,49E-03	0,00E+00	4,00E-06	2,22E-01	-1,57E-01
Abiotic depletion potential – Elements	Abiotic depletion kg Sb-eq resources	2,76E-04	2,97E-04	MND	2,90E-05	0,00E+00	8,22E-10	6,02E-04	-2,14E-04
Abiotic depletion potential – Fossil resources	MJ	2,04E+03	6,07E+02	MND	6,79E+01	0,00E+00	1,46E-01	2,72E+03	2,54E+02

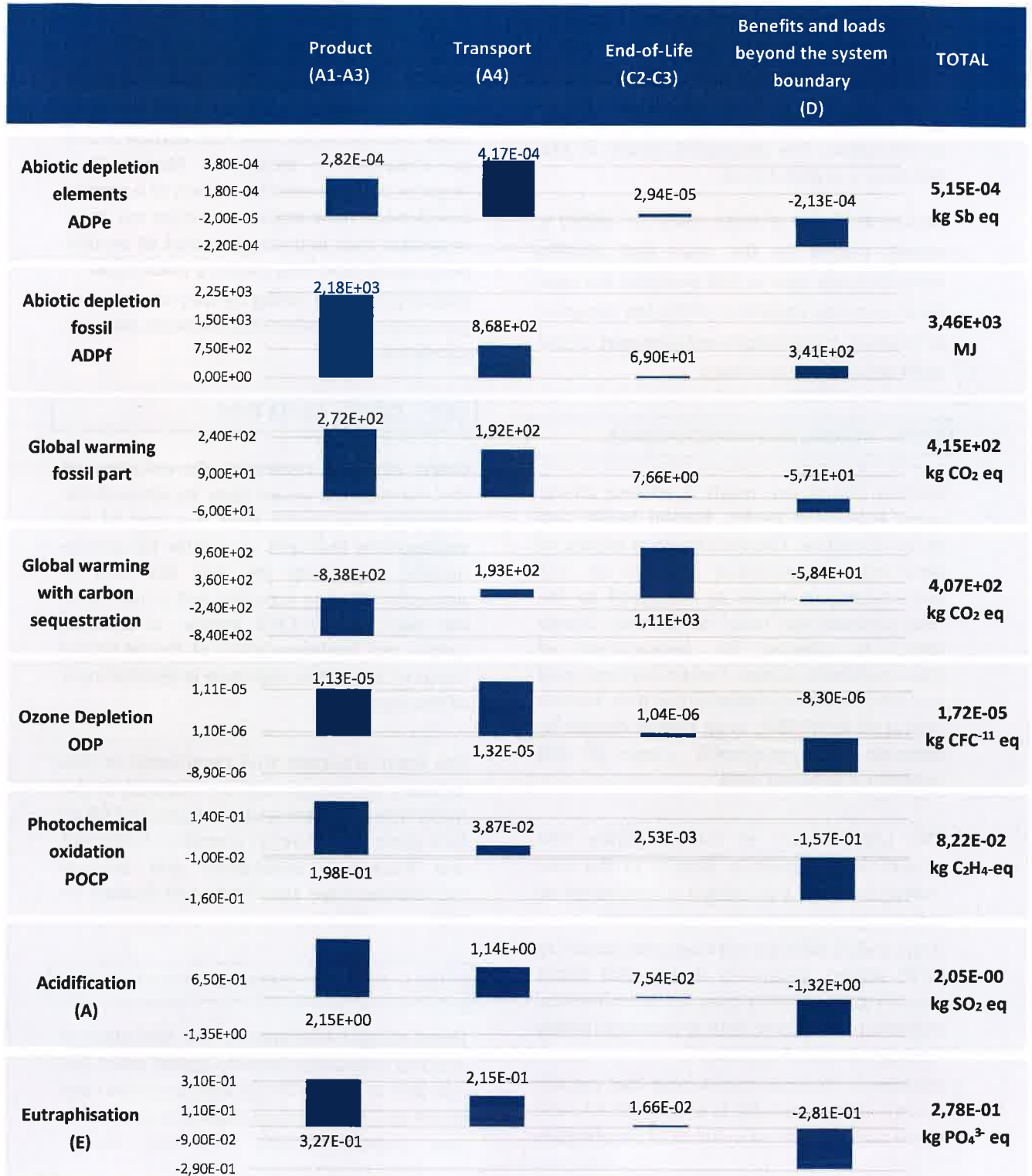
Impacts of 1m3 of OSB4 Unsanded load-bearing wood based boards

POTENTIAL ENVIRONMENTAL IMPACT

INDICATORS	UNIT	A1-A3	A4	A5-C1	C2	C3	C4	Total	D
Global Warming Power (GWP) - Total	kg CO2 eq.	-8,48E+02	1,90E+02	MND	1,55E+01	1,11E+03	0,00E+00	4,68E+02	-5,19E+01
Global Warming Power (GWP) - Fossil part	kg CO2 eq.	2,61E+02	1,90E+02	MND	1,55E+01	6,98E-3	0,00E+00	4,68E+02	-1,00E+00
Global Warming Power (GWP) - Biogenic part	kg CO2 eq.	-1,11E+03	0,00E+00	MND	0,00E+00	1,11E+03	0,00E+00	0,00E+00	-5,09E+01
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC 11 eq.	1,13E-05	1,31E-05	MND	1,06E-06	5,57E-13	0,00E+00	2,54E-05	-8,28E-06
Acidification potential (AP)	kg SO2 eq.	2,18E+00	9,39E-01	MND	7,66E-02	2,94E-05	0,00E+00	3,20E+00	-1,30E+00
Eutrophication potential (EP)	kg PO43- -eq	3,28E-01	2,09E-01	MND	1,69E-02	2,45E-06	0,00E+00	5,54E-01	-2,80E-01
Formation potential of tropospheric ozone (POCP)	kg C2H4-eq	2,00E-01	3,09E-02	MND	2,56E-03	1,75E-06	0,00E+00	2,33E-01	-1,56E-01
Abiotic depletion potential – Elements	Abiotic depletion kg Sb-eq resources	2,84E-04	4,33E-04	MND	2,98E-05	1,43E-09	0,00E+00	7,47E-04	-2,12E-04
Abiotic depletion potential – Fossil resources	MJ	2,25E+03	8,61E+02	MND	6,99E+01	7,58E-02	0,00E+00	3,18E+03	4,39E+02

LCA INTERPRETATION

In next diagram are represented results declared as an average of environmental results of OSB2 Unsanded, OSB3 Unsanded, OSB4 Unsanded



Photochemical Ozone Creation Potential (POCP) for emission of substances to air is calculated and expressed in kg ethylene equivalents/kg emission. The time span is 5 days and the geographical scale varies between local and continental scale.

The main contributor to POCP is the combustion of fuel, natural gas and biomass for heat and power production. Forestry operation (harvesting) has also significant contribution on this indicators.

A - ACIDIFICATION

Acidifying substances cause a wide range of impacts on soil, groundwater, surface water, organisms, ecosystems and materials (buildings). Acidification Potential (AP) for emissions to air is calculated with the describing the fate and deposition of acidifying substances. AP is expressed as kg SO₂ equivalents/ kg emission. The time span is eternity and the geographical scale varies between local scale and continental scale.

The main processes in this category is the combustion of fuel, natural gas and biomass for heat and power production. Resin consumption and forestry operation (harvesting) that occurs during the manufacturing stage are other important

contributors. Also the distribution step (transport of OSB from manufacturing plant to final client) has a significant impact on this indicator.

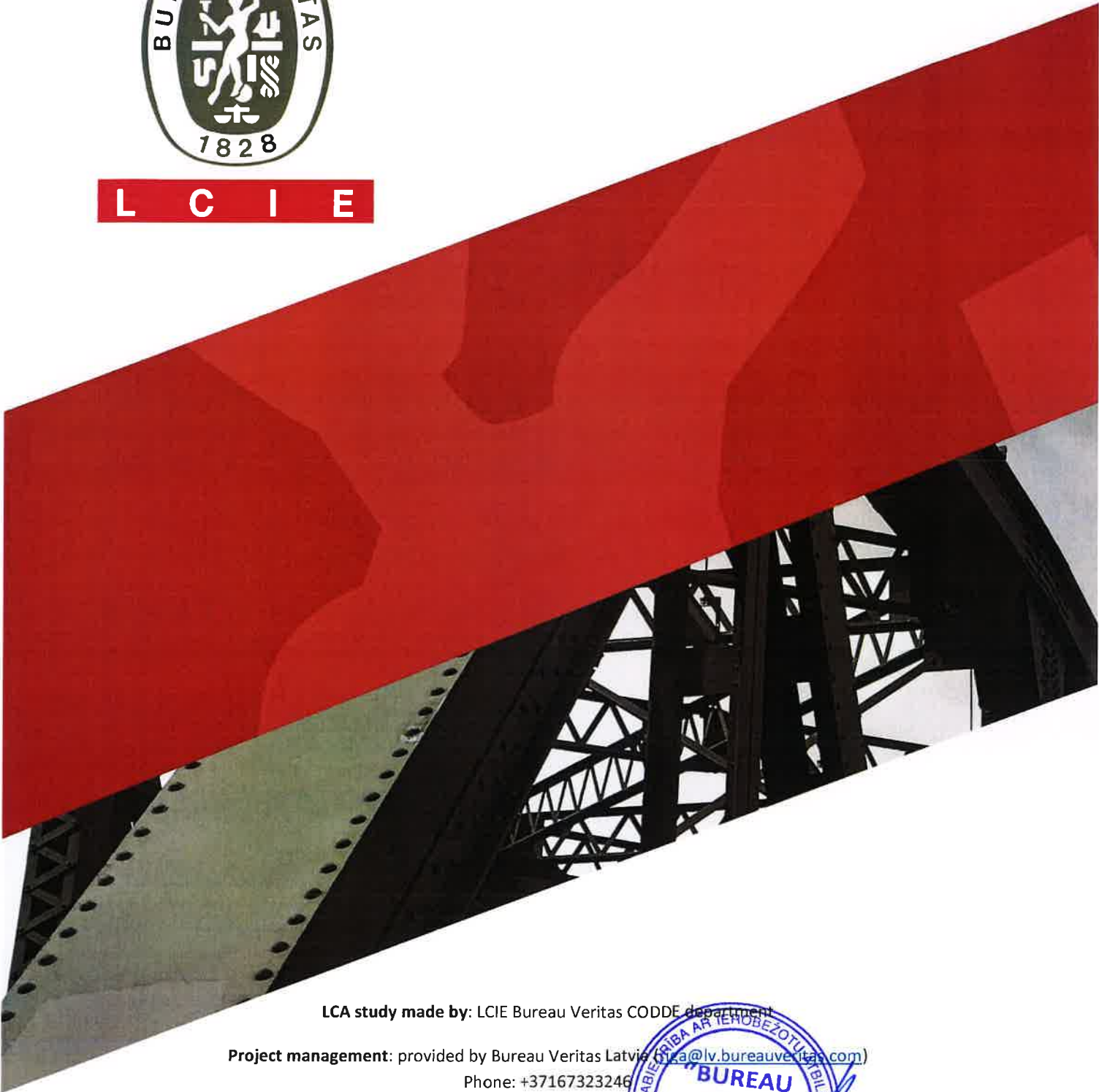
EP - EUTROPHISATION

Eutrophication (also known as nutrification) includes all impacts due to excessive levels of macro-nutrients in the environment caused by emissions of nutrients to air, water and soil. Nutrification potential (NP) is expressed as kg PO₄ equivalents per kg emission. Fate and exposure is not included, time span is eternity, and the geographical scale varies between local and continental scale.

The main processes in this category is the combustion of fuel, natural gas and biomass for heat and power production. Forestry operation (harvesting) needed to get wood and transport (of raw materials to the manufacturing plant and of OSB board to final client) have a significant contribution to this indicator.



L C I E



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