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Environmental Product Declaration

In accordance with ISO14025:2006 and EN15804:2012+A2:2019

CE Marked Structural Steel

CSK STEEL

Owner of the declaration:
CSK Steel A/S

Product name:
CE Marked Structural Steel

Declared unit:
1 kg of CE Marked Structural Steel

Product category /PCR:
CEN Standard EN 15804 serves as core PCR; NPCR Part A: Construction products and services version 2.0; NPCR 013 Part B for Steel and Aluminium Construction Products

Program holder and publisher:
The Norwegian EPD foundation

Declaration number:
NEPD-16961-20841

Registration number:
NEPD-16961-20841

Issue date:
08.07.2026

Valid to:
08.07.2031

General information

Product:
CE Marked Structural Steel

Program operator:
EPD-Global
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Declaration number:
NEPD-16961-20841

This declaration is based on Product Category Rules:
CEN Standard EN 15804 serves as core PCR; NPCR Part A: Construction products and services version 2.0; and NPCR 013 Part B for Steel and Aluminium Construction Products

Statement of liability:
The owner of the declaration shall be liable for the underlying information and evidence. EPD-Global shall not be liable with respect to manufacturer, life cycle assessment data and evidences.

Declared unit:
1 kg of CE marked structural steel

Declared unit with option:
A1-A3, A4, C1-C4 and D

Functional unit:
N/A

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

internal ☐ external ☒

Ole M. K. Iversen
Independent verifier approved by EPD-Global

Owner of the declaration:
CSK Steel A/S
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Manufacturer:
CSK Steel A/S

Place of production:
Denmark: Sdr. Thorstedvej 1, DK-7700 Thisted, Denmark

Latvia: Stacijas iela 6a, LV-3101 Tukums, Latvia

Management system:
NS-EN ISO 9001:2015, NS-EN ISO 14001:2026

Organisation no:
202 16 883

Issue date:
08.07.2026

Valid to:
08.07.2031

Year of study:
2023-2025

Comparability:
EPDs from other programmes than EPD-Global may not be comparable.

The EPD has been worked out by:
Dan André Johansen and Johanna Steinnes, Asplan Viak AS

Approved

Manager of EPD-Global

Product

Product description:

CE marked structural steel are beams (UNP-UPE-HEA-HEB-IPE-HEM) manufactured by CSK per customer specification. Incoming hot-rolled profiles are first sand blasted, then cut and welded to the desired shape. Products are then surface treated before transportation to building site. The surface treatment depends on if the product is to be used indoors or outdoors. For steel to be used indoors, a coating of paint is used for corrosion resistance. Steel that is used outdoors will be galvanized instead of painted. The EPD is an average of both indoor and outdoor steel.

Product specification:

The declaration is valid for all products of CE marked structural steel.

Materials	kg	%
Alloyed steel	0,93-0,99	93-99
Zinc	0-0,06	0-6
Paint	0,01	0-1
Sum product	1	100
Packaging, Wooden pallet	0-0,0012	100%
Packaging, Wooden boards	0,0036-0,0112	

Technical data:

Type	**Dimensions (mm)**
IPE	80-900
HD/HEA/B/M	100-1100
UNP/UPE	120-600
L	40-200
L	65x50-200x150
T	30-140
Wide steels	160-500, t=5-100

Steel grade ≤ S355. EN 10025 and EN1090-2 standards are applied.

Market:

Nordic countries

Reference service life, product:

Reference service life (RSL) is not relevant for cradle-to-gate (with options).

LCA: Calculation rules

Declared unit:

1 kg of CE marked structural steel, cradle-to-gate A1-A3 with options

Cut-off criteria:

All major raw materials and all essential energy are included. The production process for raw materials and energy flows that are included with very small amounts (<1%) are not included. This cut-off rule does not apply for hazardous materials and substances.

Allocation:

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production inhouse are allocated equally among all products through mass allocation. Effects of primary production of recycled materials allocated to the main product in which the material was used.

Data quality:

Specific data for the product composition and production are provided by the manufacturer and are based on the production years 2023-2025. The background data is taken from ecoinvent's database v.3.11.

System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Product stage			Assembly stage		Use stage							End of life stage				Benefits & loads beyond system boundary
Raw materials	Transport	Manufacturing	Transport	Assembly[1]	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
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

[1] Module A5 is partially declared to balance biogenic carbon from packaging. Uptake of biogenic carbon in packaging materials in A1-A3 are included as biogenic CO_2-emissions in A5 where it exits the system.

System boundary:

The system boundary is illustrated below. The analysis has been performed for modules A1-A3, A4, C1-C4 and D, according to NS-EN 15804 .

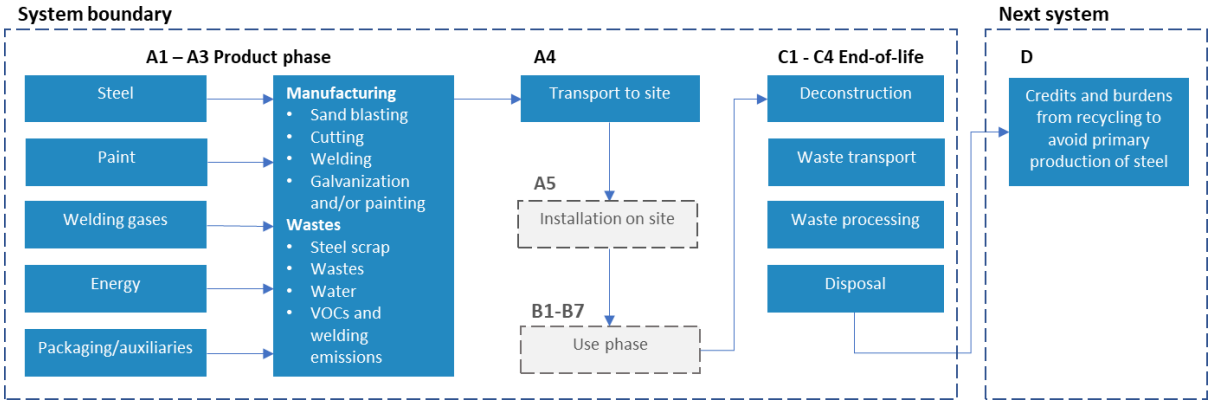

Figure 1 System boundary

LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

Transport from production place to assembly/user (A4)

Transport from production place to assembly/user (A4)	Capacity utilisation (incl. return) [%]	Distance [km]	Fuel/Energy consumption	Unit	Value
Truck	88 %	Lorry, 24t	300	0,0127	3,81

The transport scenario is for a representative customer in a Nordic country.

Assembly (A5)

	Unit	Value
Emissions of biogenic CO_2 from packaging products	kg	0,0167

Emissions of biogenic CO_2 from packaging products (pallet, cardboard) equivalent to the uptake from the packaging products in A1-A3.

End of Life (C1, C3, C4)

	Unit	Value
Energy consumption in demolition	MJ	0,233
Recycling	kg	1

The product is assumed to require a machine for disassembly and is sent to recycling.

Transport to waste processing (C2)

Transport from production place to assembly/user (C2)	Capacity utilisation (incl. return) [%]	Distance [km]	Fuel/Energy consumption	Unit	Value
Truck	50	Lorry, 21t	19	0,28	5,32
Truck	50	16-32 ton EURO 5	278	0,03	8,34

Benefits and loads beyond the system boundaries (D)

Benefits and loads beyond the system boundaries (D)	Unit	Value
Recycling of primary steel	kg	1

LCA: Results

All results are calculated using SimaPro v.10. ecoinvent v3.11 is the database used for calculating the environmental indicators and as a source for generic data. Results are shown per declared unit, one kg CE marked structural steel.

The result tables are given using a *location based approach* for foreground system (A3). More information about transparent reporting of electricity in the additional requirements section.

Core environmental impact indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP - total	kg CO2 eq	8,96E-01	2,54E-02	1,67E-02	2,35E-02	7,96E-02	1,12E-04	0,00E+00	1,67E+00
GWP - fossil	kg CO2 eq	9,02E-01	2,54E-02	0,00E+00	2,35E-02	7,96E-02	1,12E-04	0,00E+00	1,67E+00
GWP - biogenic	kg CO2 eq	-1,68E-02	1,60E-05	1,67E-02	4,75E-06	4,19E-05	5,02E-08	0,00E+00	-7,26E-04
GWP - luluc	kg CO2 eq	1,14E-02	9,48E-06	0,00E+00	2,40E-06	1,97E-05	2,60E-08	0,00E+00	3,57E-05
ODP	kg CFC11 eq	1,09E-08	5,59E-10	0,00E+00	3,48E-10	1,69E-09	1,50E-12	0,00E+00	3,79E-15
AP	molc H+ eq	3,50E-03	8,53E-05	0,00E+00	2,10E-04	3,07E-04	8,84E-07	0,00E+00	3,72E-03
EP-freshwater	kg P eq	1,55E-05	1,84E-07	0,00E+00	8,20E-08	4,36E-07	1,55E-09	0,00E+00	3,14E-07
EP -marine	kg N eq	7,88E-04	2,92E-05	0,00E+00	9,74E-05	1,18E-04	3,62E-07	0,00E+00	6,54E-04
EP - terrestrial	molc N eq	7,40E-03	3,22E-04	0,00E+00	1,07E-03	1,29E-03	3,99E-06	0,00E+00	5,74E-03
POCP	kg NMVOC eq	3,35E-03	1,39E-04	0,00E+00	3,20E-04	5,30E-04	1,22E-06	0,00E+00	2,66E-03
ADP-M&M[2]	kg Sb-Eq	1,07E-05	5,12E-08	0,00E+00	8,37E-09	1,96E-07	6,95E-10	0,00E+00	4,32E-06
ADP-fossil[2]	MJ	9,81E+00	2,86E-02	0,00E+00	1,19E-02	6,63E-02	2,62E-04	0,00E+00	1,59E+01
WDP[2]	m^3	1,94E-01	1,65E-03	0,00E+00	6,52E-04	3,31E-03	8,56E-06	0,00E+00	2,08E+01

GWP-total: *Global Warming Potential;* ***GWP-fossil:*** *Global Warming Potential fossil fuels;* ***GWP-biogenic:*** *Global Warming Potential biogenic;* ***GWP-LULUC:*** *Global Warming Potential land use and land use change;* ***ODP:*** *Depletion potential of the stratospheric ozone layer;* ***AP:*** *Acidification potential, Accumulated Exceedance;* ***EP-freshwater:*** *Eutrophication potential, fraction of nutrients reaching freshwater end compartment; See "additional Norwegian requirements" for indicator given as PO4 eq.* ***EP-marine:*** *Eutrophication potential, fraction of nutrients reaching freshwater end compartment;* ***EP-terrestrial:*** *Eutrophication potential, Accumulated Exceedance;* ***POCP****: Formation potential of tropospheric ozone;* ***ADP-M&M****: Abiotic depletion potential for non-fossil resources (minerals and metals);* ***ADP-fossil:*** *Abiotic depletion potential for fossil resources;* ***WDP:*** *Water deprivation potential, deprivation weighted water consumption*

Reading example: 9.0 E-03 = $9.0*10^{-3} = 9.0*\frac{1}{10}*\frac{1}{10}*\frac{1}{10}=0.009$ 9.0 E+03 = $9.0*10^{3} = 9.0*10*10*10=9000$

Additional environmental impact indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	Disease incidence	4,88E-08	3,18E-09	0,00E+00	5,98E-09	7,60E-09	2,33E-11	0,00E+00	6,25E-08
IRP[1]	kBq U235 eq.	3,00E-02	1,63E-04	0,00E+00	5,08E-05	3,76E-04	5,09E-07	0,00E+00	-3,90E+01
ETP-fw[2]	CTUe	4,82E+00	4,49E-02	0,00E+00	1,66E-02	1,14E-01	2,22E-04	0,00E+00	8,00E-01
HTP-c[2]	CTUh	4,81E-10	3,79E-12	0,00E+00	2,38E-12	1,07E-11	7,60E-14	0,00E+00	7,08E-10
HTP-nc[2]	CTUh	1,09E-08	2,77E-10	0,00E+00	3,75E-11	5,21E-10	8,21E-13	0,00E+00	-2,36E-09
SQP[2]	Dimensionless	7,71E+00	4,58E-01	0,00E+00	2,03E-02	4,79E-01	1,66E-02	0,00E+00	-2,62E-01

PM: *Particulate matter emissions;* ***IRP:*** *Ionising radiation, human health;* ***ETP-fw:*** *Ecotoxicity (freshwater);* ***ETP-c:*** *Human toxicity, cancer effects;* ***HTP-nc:*** *Human toxicity, non-cancer effects;* ***SQP:*** *Land use related impacts / soil quality*

[1] 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.

[2] The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

Resource use

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	2,11E+00	5,90E-03	0,00E+00	1,92E-03	1,41E-02	4,13E-05	0,00E+00	-5,06E-02
PERM	MJ	7,92E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	3,79E+00	5,90E-03	0,00E+00	1,92E-03	1,41E-02	4,13E-05	0,00E+00	-5,06E-02
PENRE	MJ	9,84E+00	2,87E-02	0,00E+00	1,19E-02	6,63E-02	2,62E-04	0,00E+00	1,59E+01
PENRM	MJ	2,73E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	9,84E+00	2,87E-02	0,00E+00	1,19E-02	6,63E-02	2,62E-04	0,00E+00	1,59E+01
SM	kg	1,07E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	6,71E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	5,72E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	5,49E-03	4,80E-05	0,00E+00	1,91E-05	1,11E-04	2,40E-07	0,00E+00	7,27E-03

PERE *Renewable primary energy resources used as energy carrier;* ***PERM*** *Renewable primary energy resources used as raw materials;* ***PERT*** *Total use of renewable primary energy resources;* ***PENRE*** *Nonrenewable primary energy resources used as energy carrier;* ***PENRM*** *Nonrenewable primary energy resources used as materials;* ***PENRT*** *Total use of non-renewable primary energy resources;* ***SM*** *Use of secondary materials;* ***RSF*** *Use of renewable secondary fuels;* ***NRSF*** *Use of non-renewable secondary fuels;* ***FW*** *Use of net fresh water.*

End of life – Waste

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	1,17E-03	1,04E-05	0,00E+00	2,86E-06	2,31E-05	2,04E-08	0,00E+00	0,00E+00
NHWD	kg	3,17E-01	3,98E-02	0,00E+00	2,06E-04	3,76E-02	3,60E-06	0,00E+00	0,00E+00
RWD	kg	7,11E-04	1,08E-07	0,00E+00	3,20E-08	2,52E-07	3,36E-10	0,00E+00	0,00E+00

HWD *Hazardous waste disposed;* ***NHWD*** *Non-hazardous waste disposed;* ***RWD*** *Radioactive waste disposed.*

End of life – output flow

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
CRU	kg	1,12E-23	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	4,52E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,00E+00	0,00E+00	0,00E+00
MER	kg	1,30E-10	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	1,75E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	4,48E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

CRU *Components for reuse;* ***MFR*** *Materials for recycling;* ***MER*** *Materials for energy recovery;* ***EEE*** *Exported electric energy;* ***EET*** *Exported thermal energy.*

Information describing the biogenic carbon content at the factory gate

Biogenic carbon content	Unit	Value
Biogenic carbon content in product	kg C	0
Biogenic carbon content in the accompanying packaging	kg C	1,17E-02

Note: 1 kg biogenic carbon is equivalent to 44/12 (approx. 3.67) kg CO_2

Additional requirements

Transparent reporting of energy

The EPD provides in the main result tables environmental impact categories based on a *location based approach*. The information below is provided so EPD users are able to understand the effect of these methodological choices.

The table below shows calculation of GWP-total for energy resources used in the manufacturing process (A3) for each approach.

Energy source	Data source	Amount	Unit	GWP_{total} [kg CO_2 - eq/unit]	SUM [kg CO_2 - eq]
Location based approach					
Electricity, medium voltage {DK}| market for electricity, medium voltage | Cut-off, U	ecoinvent 3.11	0,0822	kWh	0,30	0,025
Electricity, medium voltage {LV}| market for electricity, medium voltage | Cut-off, U	ecoinvent 3.11	0,0619	kWh	0,51	0,032
Market based approach					
Electricity, medium voltage {DK}| electricity, medium voltage, residual mix | Cut-off, U	ecoinvent 3.11	0,0822	kWh	0,724	0,060
Electricity, medium voltage {LV}| electricity, medium voltage, residual mix | Cut-off, U	ecoinvent 3.11	0,0619	kWh	0,691	0,043

The residual mix is calculated using statistics from AIB (2024), following the methodology of grexel (2020).

Additional environmental impact indicators required for construction products

In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-IOBC	kg CO_2-eq.	9,13E-01	2,54E-02	0,00E+00	2,35E-02	7,96E-02	1,12E-04	0,00E+00	1,67E+00

GWP-IOBC *Global warming potential calculated according to the principle of instantaneous oxidation.*

Hazardous substances

The declaration is based upon reference to threshold values and/or test results and/or material safety data sheets provided to EPD verifiers. Documentation available upon request to EPD owner.

☒ The product contains no substances given by the REACH Candidate list.

☐ The product contains substances given by the REACH Candidate list that are less than 0,1 % by weight.
☐ The product contains dangerous substances, more then 0,1% by weight, given by the REACH Candidate List, see table.
☐ The product contains no substances given by the REACH Candidate list.
☐ The product is classified as hazardous waste, see table.

Name	CAS no.	Amount

Indoor environment

N/A

Carbon footprint

While a carbon footprint analysis has not been conducted for the product separately, the results section does include an evaluation of Global Warming Potential (GWP) with such an analysis. The GWP total results presented in this EPD document represents the carbon footprint of the product studied

Bibliography

ISO 14025:2010	Environmental labels and declarations - Type III environmental declarations - Principles and procedures
ISO 14044:2006	Environmental management - Life cycle assessment - Requirements and guidelines
EN 15804:2012+A2:2019	Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products
ISO 21930:2017	Sustainability in building construction - Environmental declaration of building products
NPCR Part A	NPCR Construction products and services. Version 2.0
NPCR Part B	NPCR 013 Part B for Steel and Aluminium Construction Products Version 4.0
LCA Software	SimaPro 10.2
Background database	ecoinvent 3.11 allocation, cut-off by classification – unit
EN 10025	Hot Rolled products and Steels

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