

Environmental Product Declaration

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

Copper-impregnated pine lumber class AB



Owner of the declaration:
Kynna Bruk A/S

Product name:
Copper-impregnated pine lumber class AB

This EPD represents the average results of the products included in the study.

Declared unit:
1 m³

Product category /PCR:
PCR 2019:14 for Construction products and
NPCR 015 for Wood and wood-based products
for use in construction.

Program holder and publisher:
The Norwegian EPD foundation

Declaration number:
NEPD-6425-5686-EN

Registration number:
NEPD-6425-5686-EN

Issue date:
16.04.2024

Valid to:
16.04.2029

General information

Product:

Copper-impregnated pine lumber class AB

Program operator:

The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo, Norway
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Declaration number:

NEPD-6425-5686-EN

This declaration is based on Product Category Rules:

PCR 2019:14 for Construction products and NPCR 015 for Wood and wood-based products for use in construction.

Statement of liability:

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

Functional unit:

1 m³ of impregnated construction timber.

Verification:

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

internal external



Silvia Vilčeková

Independent verifier approved by EPD Norway

Owner of the declaration:

Kynna Bruk A/S
Contact person: Frank Daniel Kristoffersen
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Manufacturer:

Kynna Bruk A/S
Sørskogabygdvegen 930, 2412 Sørskogabygda
Phone: +47 952 84 342
e-mail: frankdaniel@kynnabruk.no

Place of production:

Sørskogabygda, Norway

Management system:

PEFC certified and member of the Norwegian impregnation control (NSAB38).

Organisation no:

938 147 183

Issue date:

16.04.2024

Valid to:

16.04.2029

Year of study:

2022

Comparability:

EPD of construction products may not be able to compare if they do not comply with EN 15804 and are seen in a building context.

The EPD has been worked out by:

Fanni Végvári, CarbonZero AB

Approved



Manager of EPD Norway

Company

Company information:

Kynna Bruk A/S is a family-owned business that specialize in production of multi-purpose timber products, copper-impregnated wood and wholesale business.

Product

Product description:

Impregnated lumber distributed by Kynna Bruk A/S are lumber for cladding, decking and construction products. Kynna Bruk A/S import timber from sawmills and pressure impregnate the timber in their factory with copper impregnation in class AB and class A for exterior use.

Product specification:

Copper-impregnated pine lumber class AB is made from pine wood and copper impregnation. The packaging material is supplied from a supplier and is re-used by Kynna Bruk A/S when distributing to the customer.

Materials (product)	kg	%
Wood, pine	435	82,8
Water content	87	16,6
Impregnation	3,02	0,6
Total	525	100
Materials (packaging)	kg	Weight-% versus product
Plastic band - PET	0,2	0,04
Plastic film – LDPE	0,004	0,0008

Technical data:

The following products are covered by the EPD. The results show an average of the different products. They have the same material composition and production process, but different transportation distances from the lumber distributors.

Nobb no.	Description
Terrace decking	
54629733	FURU 21X095 CUIMP TERRASSE KL1
57977526	FURU 28X095 CUIMP TERRASSE KL1
54629744	FURU 28X120 CUIMP TERRASSE KL1
60168839	FURU 34X145 CUIMP ALTANR RUND KL1
Batten	
60027070	FURU 23x048 CUIMP LEKT KL1
60136242	FURU 30x048 CUIMP LEKT KL1
56574276	FURU 36x048 CUIMP LEKT KL1
55747421	FURU 48x048 CUIMP LEKT KL1
60136252	FURU 36x073 CUIMP LEKT KL1
Construction lumber	
60027199	FURU 36x098 CUIMP K-VIRKE C24
60027198	FURU 36x148 CUIMP K-VIRKE C24
60027201	FURU 36x198 CUIMP K-VIRKE C24

54629752	FURU 48x098 CUIMP K-VIRKE C24
54629763	FURU 48x148 CUIMP K-VIRKE C24
54629778	FURU 48x198 CUIMP K-VIRKE C24
Cladding	
60168821	FURU 16x098 CUIMP REKTKLED KL1
60160725	FURU 19x098 CUIMP REKTKLED KL1
60160729	FURU 19x123 CUIMP REKTKLED KL1
60160774	FURU 19x148 CUIMP REKTKLED KL1
60160776	FURU 22x098 CUIMP REKTKLED KL1
60168824	FURU 22x123 CUIMP REKTKLED KL1
60160797	FURU 22x148 CUIMP REKTKLED KL1
60160798	FURU 22x198 CUIMP REKTKLED KL1
60168842	FURU 19X123 CUIMP D-FALS 60GR KL.1
60168843	FURU 19X123 CUIMP D-FALS 28GR KL.1
60164390	FURU 19X148 CUIMP D-FALS 60GR KL.1
60164391	FURU 19X148 CUIMP D-FALS 28GR KL.1
60168834	FURU 19X148 CUIMP D-FALS E-STAF KL1
60168837	FURU 19X148 CUIMP E-FALS KL1
Waterboards	
60168840	FURU 45X070 CUIMP VANNBRETT KL1
60168841	FURU 45X095 CUIMP VANNBRETT KL1

Market:

Norway.

Reference service life, product:

60 years, 30 years for terrace decking according to PCR and EN 16485.

LCA: Calculation rules

Declared unit:

1 m³

Cut-off criteria:

The following procedures were followed for the exclusion of inputs and output.

- All input and output flows in a unit process were considered i.e., taking into account the value of all flows in the unit process and the corresponding LCI where data was available.
- Data gaps were filled by conservative assumptions with average or generic data. Any assumptions in such cases were documented.
- The use of cut-off criterion on mass inputs and primary energy at the unit process level (1%) and at the information module level (5%).

All hazardous and toxic materials and substances are included in the inventory and the cut-off rules do not apply.

Allocation:

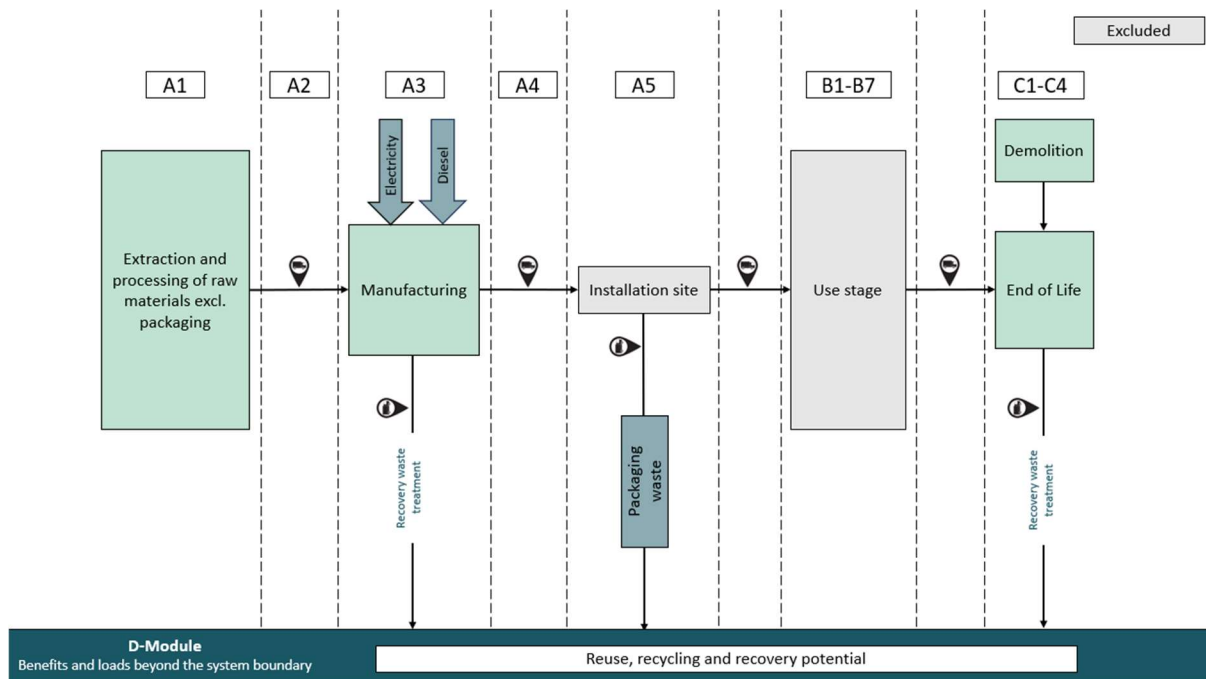
Allocation criteria is based on mass.

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	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	MNR	MNR	MNR	MNR	MNR	MNR	MNR	X	X	X	X	X

System boundary:

The system boundaries are set to cradle to grave with options, as it excludes module B and module A5 only considers the waste management of the packaging that arises on the installation site.



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
Truck	61	105	1,95 l/tkm diesel

End of Life (C1, C3, C4)

The data about waste rates from Norway has been used as these are the largest markets for this product. Statistics Norway was used as the market for the product is Norway and therefore the majority of the material will be waste managed in Norway.

Waste category	Value	Unit
Recycling	43	%
Incineration*	53	%
Landfill	4	%

*Note that the incineration includes energy recovery in module D.

Transport to waste processing (C2)

Transport from production place to assembly/user (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy consumption
Truck	61	50	1,95 l/tkm

LCA: Results

Core environmental impact indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP - total	kg CO ₂ eq	-7,53E+02	5,32E+00	1,02E+00	3,33E-01	1,98E+00	7,97E+02	5,52E+00	-1,21E+02
GWP - fossil	kg CO ₂ eq	1,01E+02	5,10E+00	9,87E-01	3,19E-01	1,89E+00	1,35E+01	7,35E-01	-1,64E+02
GWP - biogenic	kg CO ₂ eq	-8,54E+02	2,29E-01	3,71E-02	1,44E-02	8,46E-02	7,83E+02	7,02E+01	4,26E+01
GWP - luluc	kg CO ₂ eq	4,63E-01	2,89E-04	4,81E-04	1,77E-05	1,08E-04	3,10E-03	7,42E-04	-2,72E-02
ODP	kg CFC11 eq	2,69E-06	1,19E-06	4,55E-09	7,33E-08	4,39E-07	7,90E-11	1,99E-13	-1,33E-10
AP	molc H+ eq	5,22E-01	1,50E-02	2,48E-03	1,94E-03	5,58E-03	1,31E-01	3,21E-03	-7,81E-02
EP- freshwater	kg P eq	9,97E-04	5,44E-05	8,46E-05	3,35E-06	2,02E-05	2,23E-05	5,19E-06	-6,82E-05
EP -marine	kg N eq	2,08E-01	4,43E-03	9,48E-04	7,84E-04	1,65E-03	3,75E-02	9,59E-04	-3,10E-02
EP - terrestrial	molc N eq	2,26E+00	4,87E-02	7,56E-03	8,58E-03	1,81E-02	5,42E-01	1,03E-02	-3,43E-01
POCP	kg NMVOC eq	6,30E-01	1,11E-02	2,56E-03	2,28E-03	4,11E-03	1,03E-01	3,99E-03	-9,50E-02
ADP-M&M ²	kg Sb-Eq	1,18E-05	9,24E-07	2,13E-06	5,68E-08	3,44E-07	7,40E-07	6,01E-08	-8,06E-06
ADP-fossil ²	MJ	1,58E+03	7,32E+01	1,21E+01	4,48E+00	2,75E+01	2,00E+02	1,06E+01	-2,84E+03
WDP ²	m ³	7,63E+00	8,17E-02	1,63E-01	4,72E-03	3,35E-02	8,77E+01	1,94E-02	-3,40E+00

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 = 0,009

Voluntary environmental impact indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG	kg CO ₂ eq	9,97E+01	5,10E+00	1,02E+00	3,19E-01	1,89E+00	1,36E+01	4,29E+00	-1,64E+02

Additional environmental impact indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	Disease incidence	1,12E-04	7,83E-08	1,00E-07	1,94E-08	2,91E-08	8,78E-07	2,41E-08	-6,02E-06
IRP ¹	kBq U235 eq.	1,71E+01	3,55E-01	1,61E-01	2,03E-02	1,48E-01	1,81E+00	7,14E-03	-4,50E+00
ETP-fw ²	CTUe	7,61E+02	1,95E+01	5,20E+00	1,20E+00	7,23E+00	8,23E+01	3,61E+00	-1,32E+02
HTP-c ²	CTUh	5,43E-08	3,25E-10	1,24E-09	1,92E-11	1,29E-10	8,49E-09	1,41E-09	-5,17E-08
HTP-nc ²	CTUh	1,30E-06	5,72E-09	9,18E-09	3,54E-10	2,18E-09	4,67E-07	3,93E-08	-5,92E-07
SQP ²	Dimensionless	1,52E+05	9,25E+00	6,60E+00	5,47E-01	3,68E+00	6,10E+01	8,71E-01	-7,71E+03

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
RPEE	MJ	9,56E+03	7,92E-01	-1,29E+00	1,17E-02	6,73E-01	4,99E+01	6,57E-01	-1,98E+03
RPEM	MJ	-4,11E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,11E-01	0,00E+00	0,00E+00
TPE	MJ	9,56E+03	7,92E-01	-1,29E+00	1,17E-02	6,73E-01	4,99E+01	6,57E-01	-1,98E+03
NRPE	MJ	1,58E+03	7,32E+01	1,21E+01	4,48E+00	2,75E+01	2,00E+02	1,06E+01	-2,84E+03
NRPM	MJ	-5,27E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,27E+00	0,00E+00	0,00E+00
TRPE	MJ	1,57E+03	7,32E+01	1,21E+01	4,48E+00	2,75E+01	2,00E+02	1,06E+01	-2,84E+03
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
W	m ³	3,67E-01	2,65E-03	-1,83E-03	1,10E-04	1,53E-03	2,06E+00	5,26E-04	-2,12E+00

RPEE Renewable primary energy resources used as energy carrier; **RPEM** Renewable primary energy resources used as raw materials; **TPE** Total use of renewable primary energy resources; **NRPE** Nonrenewable primary energy resources used as energy carrier; **NRPM** Nonrenewable primary energy resources used as materials; **TRPE** 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; **W** Use of net fresh water.

End of life – Waste

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HW	kg	2,05E-01	-1,27E-10	7,20E-11	0,00E+00	-1,27E-10	4,52E-09	3,37E-08	-3,31E-08
NHW	kg	9,94E-01	7,80E-04	2,18E-01	0,00E+00	7,80E-04	1,57E+01	5,67E+00	-1,11E+00
RW	kg	9,92E-02	2,27E-04	8,64E-04	0,00E+00	2,27E-04	1,13E-02	7,55E-05	-3,60E-02

HW Hazardous waste disposed; **NHW** Non-hazardous waste disposed; **RW** Radioactive waste disposed.

End of life – output flow

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
CR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MR	kg	1,01E+00	0,00E+00	1,69E+00	0,00E+00	0,00E+00	2,61E+01	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	-6,99E-02	0,00E+00	-1,98E-01	0,00E+00	0,00E+00	-1,11E+03	1,11E+00	0,00E+00
ETE	MJ	-1,36E-01	0,00E+00	-3,56E-01	0,00E+00	0,00E+00	-2,00E+03	0,00E+00	0,00E+00

CR Components for reuse; **MR** Materials for recycling; **MER** Materials for energy recovery; **EEE** Exported electric energy; **ETE** Exported thermal energy.

Information describing the biogenic carbon content at the factory gate

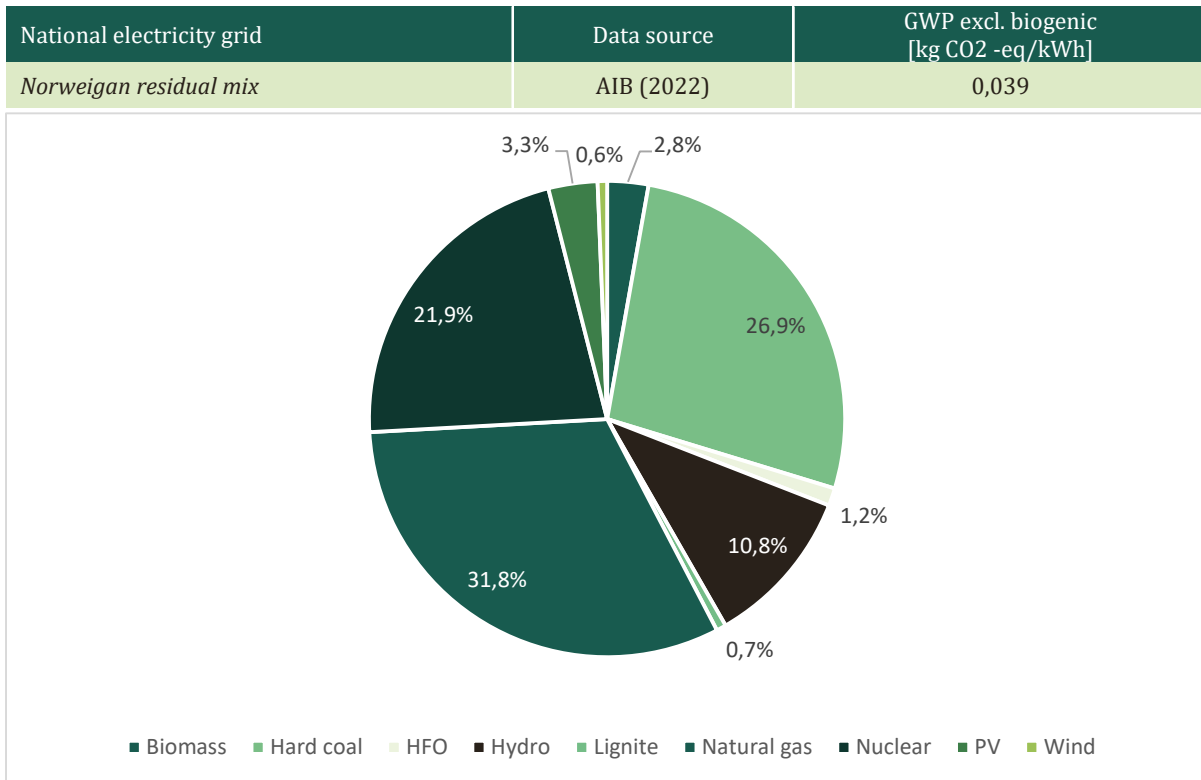
Biogenic carbon content*	Unit	Value
Biogenic carbon content in product	kg C	2,33E+02
Biogenic carbon content in the accompanying packaging	kg C	0

*44/12 is the ratio between the molecular mass of CO₂ and C molecules

Additional requirements

Location based electricity mix from the use of electricity in manufacturing

The manufacturing process has been modelled and calculated according to the national residual mix with data retrieved from the Association of Issuing Bodies (2022).








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.

Bibliography

- Association of Issuing Bodies European Residual Mixes 2021 (2022) https://www.aib-net.org/sites/default/files/assets/facts/residual-mix/2021/AIB_2021_Residual_Mix_Results_1_1.pdf (Retrieved 2023-09-20)
- EN 15804:2012+A2:2019 Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products
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- ISO 14020:2022 Environmental statements and programmes for products — Principles and general requirements
- 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
- ISO 21930:2007 Sustainability in building construction - Environmental declaration of building products
- NPCR 015 NPCR 015 Wood and wood-based products
- SSB Statistics Norway. (2021) Waste account for Norway (1 000 tonnes), by treatment, contents, year and material. <https://www.ssb.no/en/statbank/table/10513/tableViewLayout1/> (Retrieved 2023-10-30)

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