



ENVIRONMENTAL PRODUCT DECLARATION

October 10, 2024

STEICOthermdry
STEICOprotectLdry

Client



STEICO SE
Otto-Lilienthal-Ring 30
85622 Feldkirchen

GOAL AND SCOPE

Norm: EN 15804:2012+A2:2019 and ISO 14025

PCR: Determination method version 1.1 Stichting National Environmental Database

Scope: Modules A1-A5, B1-B5, C1-C4 and D

Author: A.M. Kloppenburg MSc (SHR)

Report: SHR report 23.0053

Verification: External, F. van der Burgh (Agrodome)

Product: Steico wood fibreboard dry process (110 kg/m³) STEICOthermdry and STEICOp ProtectLdry

Functional unit: 1 m² wood fibre insulation with a thickness of 140 mm and a density of 110 kg/m³

Lifespan: 75 years

Composition: 88.6% wood, 5% water, 4.7% glue and 1.7% additives

Objective: Inclusion of the product in the National Environmental Database to enable calculations at building level, in addition to informing customers about the environmental impact of the product

Allocation: Allocation is avoided by separating into subprocesses, there are no multi-output processes

Validity: October 10, 2024 – October 10, 2029

Hazardous substances, REACH: The product does not contain REACH SVHC substances in amounts greater than 0.1% (1000 ppm).

Software and databases: SimaPro version 9.5, EcoInvent 3.6 and NMD process database version 3.7

General: EPDs from different programmes need not be comparable. The producer owns and has the liability and responsibility for the EPD

STEICOthermdry and STEICOProtectLdry is wood fibre insulation made from natural wood fibres in a dry process. The wood fibre insulation is manufactured from wood chips, which are fiberized and then dried. The dry fibres are mixed with glue and other additives. They are then pressed into shape while the glue dries. The boards are then packaged and delivered to the customer.

Technical properties	
Thickness	40 - 300 mm
Fire class according to EN 13501-1	E
Thermal conductivity coefficient λ_D	0.037 [W/ (m*K)]
Diffusion resistance of water vapour μ	3
Specific heat capacity c	2,100 [J/(kg*K)]
Density	110 kg/m ³

In modules A1-A3, extraction of raw materials, transport to the production site, packaging materials and production were considered. In modules A4 and A5, transport to the construction site and installation on the construction site, construction waste and end-of-life of packaging materials have been considered. In modules B1-B5 there is no maintenance or replacement therefore these modules are empty. In modules C1-C4, the end-of-life scenario was considered assuming incineration. Recycling has yet to take off so there is no realistic information available to be included in the LCA study. In module D, benefits outside system boundaries were considered.

Carbon captured:
per m² STEICOProtectLdry and STEICOthermdry insulation of 140 mm thickness, 6.85 kg of biogenic carbon is stored and thus 25.1 kg of CO₂ is captured. In the packaging, 0.67 kg of biogenic carbon is stored.

Scalability:
The results scale (linearly) with the thickness of the product.

LIFE CYCLE ANALYSIS AND INTERPRETATION

140 mm STEICOthermdry or STEICOProtectLdry, Set 2 according to the Bepalingsmethode

(Modules B1-B5, C1 and C4 are zero because there is no maintenance, demolition is manual and there is no landfill)

IMPACT CATEGORY	UNIT	TOTAL	A1 - A3	A4	A5	B1 - B5	C1	C2	C3	C4	D
051. Climate change	kg CO2 eq	1,7E+01	-1,3E+01	2,3E+00	2,6E+00	0,0E+00	0,0E+00	3,1E-01	2,8E+01	0,0E+00	-2,6E+00
052. Climate change - Fossil	kg CO2 eq	1,7E+01	1,5E+01	2,3E+00	8,3E-03	0,0E+00	0,0E+00	3,1E-01	2,5E+00	0,0E+00	-2,6E+00
053. Climate change - Biogenic	kg CO2 eq	1,5E-03	-2,8E+01	1,2E-03	2,6E+00	0,0E+00	0,0E+00	1,4E-04	2,5E+01	0,0E+00	-2,5E-05
054. Climate change - Land use and LU ch	kg CO2 eq	1,6E-01	1,7E-01	8,0E-04	-6,9E-04	0,0E+00	0,0E+00	1,1E-04	3,8E-05	0,0E+00	-1,3E-02
055. Ozone depletion	kg CFC11 eq	1,8E-06	1,7E-06	5,2E-07	-2,4E-08	0,0E+00	0,0E+00	6,9E-08	1,8E-08	0,0E+00	-5,3E-07
056. Acidification	mol H+ eq	7,0E-02	9,4E-02	9,3E-03	-1,6E-03	0,0E+00	0,0E+00	1,8E-03	4,7E-03	0,0E+00	-3,8E-02
057. Eutrophication, freshwater	kg P eq	1,3E-03	1,4E-03	1,8E-05	-6,0E-06	0,0E+00	0,0E+00	3,1E-06	2,8E-06	0,0E+00	-1,2E-04
058. Eutrophication, marine	kg N eq	1,2E-02	1,8E-02	2,8E-03	-4,2E-04	0,0E+00	0,0E+00	6,4E-04	2,2E-03	0,0E+00	-1,1E-02
059. Eutrophication, terrestrial	mol N eq	3,6E-02	1,6E-01	3,1E-02	-7,6E-03	0,0E+00	0,0E+00	7,0E-03	2,5E-02	0,0E+00	-1,8E-01
060. Photochemical ozone formation	kg NMVOC eq	5,7E-02	7,3E-02	9,4E-03	-1,2E-03	0,0E+00	0,0E+00	2,0E-03	6,5E-03	0,0E+00	-3,3E-02
061. Resource use, minerals and metals	kg Sb eq	1,9E-04	1,4E-04	6,2E-05	-4,6E-07	0,0E+00	0,0E+00	7,9E-06	9,5E-07	0,0E+00	-1,7E-05
062. Resource use, fossils	MJ	2,2E+02	2,2E+02	3,4E+01	-1,7E+00	0,0E+00	0,0E+00	4,7E+00	1,5E+00	0,0E+00	-3,8E+01
063. Water use	m3 depriv.	4,9E+00	5,0E+00	9,6E-02	-9,6E-03	0,0E+00	0,0E+00	1,7E-02	3,6E-02	0,0E+00	-2,3E-01
064. Particulate matter	disease inc.	1,6E-07	4,7E-07	1,6E-07	-2,3E-08	0,0E+00	0,0E+00	2,8E-08	3,8E-08	0,0E+00	-5,1E-07
065. Ionising radiation	kBq U-235 eq	5,5E-01	4,4E-01	1,5E-01	-2,6E-03	0,0E+00	0,0E+00	2,0E-02	3,7E-03	0,0E+00	-6,6E-02
066. Ecotoxicity, freshwater	CTUe	2,5E+02	6,0E+02	2,8E+01	-1,9E+01	0,0E+00	0,0E+00	4,2E+00	3,9E+00	0,0E+00	-3,6E+02
067. Human toxicity, cancer	CTUh	8,9E-08	8,5E-08	7,7E-10	9,4E-11	0,0E+00	0,0E+00	1,4E-10	7,3E-09	0,0E+00	-4,2E-09
068. Human toxicity, non-cancer	CTUh	7,8E-07	8,9E-07	3,0E-08	-6,8E-09	0,0E+00	0,0E+00	4,6E-09	2,3E-08	0,0E+00	-1,5E-07
069. Land use	Pt	5,6E+02	2,0E+03	2,4E+01	-7,5E+01	0,0E+00	0,0E+00	4,1E+00	5,0E-01	0,0E+00	-1,4E+03

LIFE CYCLE ANALYSIS AND INTERPRETATION

140 mm STEICOthermdry or STEICOProtectLdry, parameters

(Modules B1-B5, C1 and C4 are zero because there is no maintenance, demolition is manual and there is no landfill)

IMPACT CATEGORY	UNIT	TOTAL	A1 - A3	A4	A5	B1 - B5	C1	C2	C3	C4	D
111. Energy, primary, renewable, excludi	MJ	3,5E+02	7,7E+01	4,9E-01	-1,6E+01	0,0E+00	0,0E+00	5,9E-02	2,9E+02	0,0E+00	-3,0E+02
113. Energy, primary, renewable, materia	MJ	0,0E+00	2,9E+02	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	-2,9E+02	0,0E+00	0,0E+00
101. Energy, primary, renewable (MJ)	MJ	3,5E+02	3,7E+02	4,9E-01	-1,6E+01	0,0E+00	0,0E+00	5,9E-02	6,4E-02	0,0E+00	-3,0E+02
112. Energy, primary, non-renewable, exc	MJ	2,8E+02	1,7E+02	3,6E+01	-1,9E+00	0,0E+00	0,0E+00	5,0E+00	6,2E+01	0,0E+00	-4,2E+01
114. Energy, primary, non-renewable, mat	MJ	0,0E+00	6,1E+01	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	-6,1E+01	0,0E+00	0,0E+00
102. Energy, primary, non-renewable (MJ)	MJ	2,8E+02	2,3E+02	3,6E+01	-1,9E+00	0,0E+00	0,0E+00	5,0E+00	1,6E+00	0,0E+00	-4,2E+01
108. Secondary material (kg)	kg	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
109. Secondary fuel, renewable (kg)	MJ	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
110. Secondary fuel, non-renewable (kg)	MJ	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
104. Water, fresh water use (m3)	m3	3,5E-01	3,4E-01	3,6E-03	2,7E-04	0,0E+00	0,0E+00	5,7E-04	7,2E-03	0,0E+00	-5,1E-03
106. Waste, hazardous (kg)	kg	3,2E-04	2,1E-04	9,0E-05	-3,5E-06	0,0E+00	0,0E+00	1,2E-05	7,0E-06	0,0E+00	-8,0E-05
105. Waste, non hazardous (kg)	kg	3,7E+00	1,6E+00	1,6E+00	-1,5E-02	0,0E+00	0,0E+00	3,0E-01	1,3E-01	0,0E+00	-5,4E-01
107. Waste, radioactive (kg)	kg	7,1E-04	4,4E-04	2,3E-04	-4,2E-06	0,0E+00	0,0E+00	3,1E-05	4,5E-06	0,0E+00	-1,0E-04
120. Components for re-use (kg)	kg	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
121. Materials for recycling (kg)	kg	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
122. Materials for energy recovery (kg)	kg	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
123. Exported energy, electric (MJ)	MJ	6,4E+01	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	6,4E+01	0,0E+00	0,0E+00
124. Exported energy, thermal (MJ)	MJ	1,1E+02	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00	1,1E+02	0,0E+00	0,0E+00

SIGNATURE

SHR is not responsible for information supplied by the client that may affect the validity of the results.

A handwritten signature in blue ink, appearing to be 'A.M. Kloppenburg', written over a faint circular stamp.

A.M. Kloppenburg MSc
Project manager