EN 15804+A2 EPD

ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804 +A2
Owner of the Declaration – MEDITE Europe DAC

Declaration number: EPDIE-22-103
Issue date 12th December 2022
Valid to 11th December 2027

EPD Programme - EPD Ireland
Programme Operator - Irish Green Building Council
www.epdireland.org

MEDITE®
DEFINING THE STANDARD OF MDF

MEDITE OPTIMA MDF

1. General information

PROGRAMME OPERATOR	OWNER OF DECLARATION
Irish Green Building Council 19 Mountjoy Square, Dublin D01 E8P5 info@igbc.ie	MEDITE Europe DAC
DECLARATION NUMBER	**MANUFACTURER ADDRESS**
EPDIE-22-103	Clonmel, Co. Tipperary, Ireland
ECO PLATFORM EPD	**DECLARED UNIT**
Yes	1 m^3 of MDF panel
APPLICABLE PRODUCT CATEGORY RULES	**DECLARED PRODUCT**
1. EN 15804:2012+A2:2019 2. Product Category Rules : Part A, Implementation and use of I.S. EN 15804:2012+A1 and +A2, and CEN TR 16970:2016 in Ireland for the development of Environmental Product Declarations, Version 2.1. 3. EN 16485:2014 PCR for Wood and Wood-based products in Construction.	MEDITE OPTIMA MDF panel
DATE OF ISSUE	**SCOPE OF EPD**
12th December 2022	Cradle to gate, with options including Modules C and D
DATE OF EXPIRY	**LCA CONSULTANT OR PERSON RESPONSIBLE FOR LCA**
11th December 2027	Ecoreview, Kilkenny, Ireland. +353 (087) 258 9783 www.ecoreview.ie
TYPE OF EPD: SINGLE OR MULTI PRODUCT	**LCA SOFTWARE AND DEVELOPER IF APPLICABLE**
Single product	Ecochain version 3.5.60
PRODUCT CLASSIFICATION OR NACE CODE	**NAME AND VERSION OF INVENTORY USED**
1621, Manufacture of medium density fibre panel	Ecoinvent version 3.6
COMPARABILITY	
Environmental Product Declarations from different programmes may not be directly comparable if not compliant with EN 15804:2012+A1:2013. Comparability is further dependent on the specific product category rules, system boundaries and allocations, and background data sources. See clause 5.3 of EN 15804:2012+2012+A1:2013	
The CEN Norm /EN 15804 serves as the core PCR	
Independent verification of the declaration according to ISO 14025	

Internally ☐ Externally ✕

SIGNATURE OF PROGRAMME OPERATOR	SIGNATURE VERIFIER
Pat Barry - CEO - Irish Green Building Council	Kim Allbury - Ricardo Energy & Environment

2. Scope and Type of EPD

Scope

This EPD is Cradle to gate, with options including Modules C and D. The Modules that are declared are shown in the table below.

PRODUCT STAGE			CONSTRUCTION ON PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	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	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X
MDT	MDT	MDT	OP	OP	OP	OP	OP	OP	OP	OP	OP	MDT	MDT	MDT	MDT	MDT

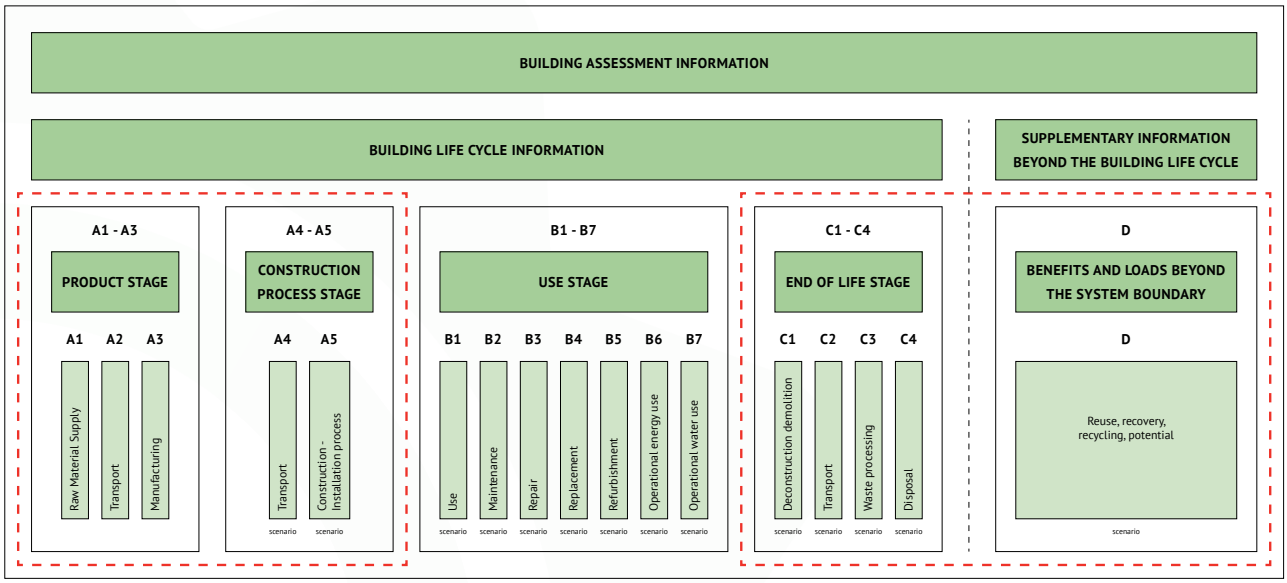
X = Module declared; ND = Module not declared; MDT = Mandatory; OP = Optional.

Declared Functional Unit

1 m^3 of MDF panel, density 750 kg/m^3

System Boundaries

This LCA covers the Product (A1 - A3), Construction Process (A4 - A5), End of Life (C1 - C4), and benefits and loads beyond the system boundary (D).



3. Detailed product description

This EPD is carried out for the MEDITE OPTIMA MDF panel. MEDITE MDF panels are manufactured in accordance with I.S. EN 622-5:2009, Fibrepanels – Specifications, Part 5: Requirements for dry processed panels (MDF).

The constituent raw materials of the MDF panels comprise: wood logs, wood chips and additives such as MDI, urea, resin, fire retardant and wax. By weight, wood comprises 91%, additions 7% and water 2%.

The intended use of the MDF panels is in the construction industry in structural and non-structural applications, such as flooring, roofing, walling, timber-frame sheathing, temporary works and external hoarding.

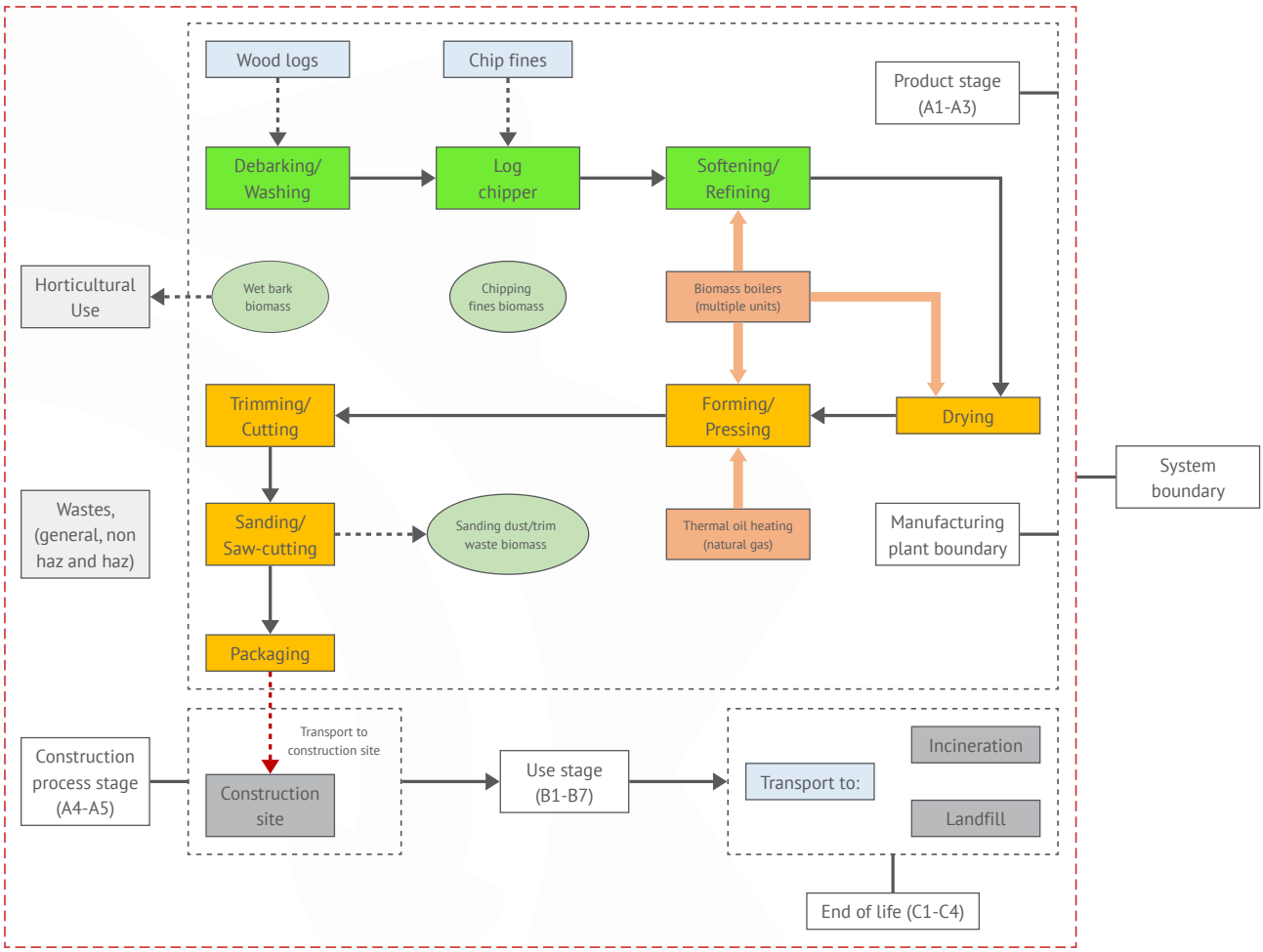
Manufacturing Process Description

MEDITE OPTIMA is manufactured by refining softwood chips into wood fibres and combining them with resin glue and other additives. The wood fibre is then conveyed and dried by hot air through tube driers. The dried fibre passes over a continuous weigh belt and is conveyed to fibre storage bins, ready for the next production stage. The wood fibre mat is then formed by even controlled spreading of the dried resinated wood fibre onto a continuously moving wire mesh belt. The depth and width of wood fibre mat is pre-set according to thickness, width and density required.

The mat is then compressed to a more compact form, excess fibre is trimmed off the edges and recycled back into the wood fibre forming system. The fibre mat then moves through a continuous hot press which consists of an upper and lower continuously moving heated steel belt, the pressed panel is then cross-cut to the required size, then cooled, stacked and moved for either storage or sanding.

This EPD also covers the transport to site and end-of-life stages. This covers: transport to site, and end-of-life transport from site, waste processing and waste disposal. In the end-of-life it is assumed 90% of the MDF is incinerated (C3 phase) and 10% of the MDF ends up in landfill (C4 phase).

The LCA phases are shown below:



PROPERTY	STANDARD	UNIT	Panel 9 - 22mm
Thickness Swelling (24hrs)	EN 317	%	8 - 12
Internal Bond	EN 319	N/mm²	0.55 - 0.65
Modulus of Rupture	EN 310	N/mm²	18 - 23
Modulus of elasticity	EN 310	N/mm²	2100 - 2700
Moisture Content	EN 322	%	4 - 8
Formaldehyde	EN 120	mg/100g	<8
Thermal Conductivity (λ) Value	EN 13986	w/(m.K)	0.1 - 0.14

4.A. LCA results - MEDITE OPTIMA MDF panel

Core Environmental impact per m^3 - Density 750 kg/m^3

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	[kg CO_2 eq.]	-6.97E+02	4.01E+00	3.38E+02	-3.54E+02	6.20E+01	-1.31E+01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.83E+01	9.98E+02	8.37E+00	-3.20E+02
GWP-fossil	[kg CO_2 eq.]	2.84E+02	4.00E+00	1.23E+02	4.11E+02	6.20E+01	2.14E+01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.82E+01	1.02E+01	8.24E-01	-3.20E+02
GWP-biogenic	[kg CO_2 eq.]	-9.82E+02	2.08E-03	2.15E+02	-7.67E+02	1.91E-02	-3.46E+01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	5.88E-03	9.88E+02	7.55E+00	-2.13E-01
GWP-luluc	[kg CO_2 eq.]	7.85E-01	1.05E-03	1.32E-01	9.18E-01	1.86E-02	4.63E-02	ND	ND	ND	ND	ND	ND	ND	0.00E+00	8.43E-03	1.53E-03	3.60E-04	-3.76E-01
ODP	[kg CFC-11 eq.]	4.38E-05	1.00E-06	1.10E-05	5.58E-05	1.42E-05	3.00E-06	ND	ND	ND	ND	ND	ND	ND	0.00E+00	6.46E-06	8.62E-07	2.70E-07	-3.59E-05
AP	[mol H+ eq.]	2.15E+00	1.33E-02	1.24E+00	3.40E+00	2.00E-01	1.75E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	8.19E-02	1.11E-01	7.16E-03	-1.20E+00
EP-freshwater[1]	[kg P eq.]	1.03E-02	5.44E-05	2.23E-03	1.25E-02	9.37E-04	6.39E-04	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.22E-04	2.39E-04	2.32E-05	-8.12E-03
EP-marine	[kg N eq.]	3.19E-01	2.69E-03	5.49E-01	8.70E-01	3.74E-02	4.60E-02	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.52E-02	5.21E-02	4.45E-03	-2.26E-01
EP-terrestrial	[mol N eq.]	6.08E+00	3.07E-02	6.03E+00	1.21E+01	4.27E-01	6.22E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.73E-01	5.57E-01	2.56E-02	-2.66E+00
POCP	[kg NMVOC eq.]	1.17E+00	1.19E-02	2.06E+00	3.25E+00	1.56E-01	1.68E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	6.60E-02	1.37E-01	9.13E-03	-7.00E-01
ADP-minerals&metals[2]	[kg Sb eq.]	5.31E-03	7.74E-06	1.02E-03	6.34E-03	1.85E-04	3.36E-04	ND	ND	ND	ND	ND	ND	ND	0.00E+00	8.50E-05	1.27E-05	1.05E-06	-2.15E-03
ADP-fossils[2]	[MJ] ncv	5.61E+03	6.63E+01	1.84E+03	7.52E+03	9.47E+02	3.91E+02	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.30E+02	9.16E+01	2.04E+01	-7.39E+03
WDP[2]	m^3 world eq. deprived	4.51E+02	5.50E-01	5.61E+01	5.07E+02	7.23E+00	2.58E+01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	3.22E+00	-6.17E+00	8.91E-01	-1.33E+01

GWP-total = Global Warming Potential total; GWP-fossil= Global Warming Potential fossil fuels (GWP-fossil; 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; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&fossils = Abiotic depletion potential for non-fossil resources; ADP-fossils= Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential, deprivation-weighted water consumption.

The measurement of environmental impacts uses the recommended default LCIA methods for the PEF 3.0 method. These methods include amongst others: USEtox® 2.0, ReCiPe (2016), CML-2001, EDIP 2003, IPCC.

[1]To express EP freshwater as kg of PO43- eq, multiply the value for kg P eq. by 3.067

[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.

ND = Module not declared; INA = Indicator not assessed.

4.B. LCA results - MEDITE OPTIMA MDF panel

Resource use per m^3 - Density 750 kg/m^3

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	[MJ]	1.20E+04	7.04E-01	4.05E+03	1.60E+04	1.02E+01	8.02E+02	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.29E+00	1.90E+00	3.35E-01	-1.30E+03
PERM	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	1.20E+04	7.04E-01	4.05E+03	1.60E+04	1.02E+01	8.02E+02	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.29E+00	1.90E+00	3.35E-01	-1.30E+03
PENRE	[MJ]	5.65E+03	7.04E+01	2.01E+03	7.74E+03	1.00E+03	4.24E+02	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.57E+02	9.95E+01	2.17E+01	-7.79E+03
PENRM	[MJ]	4.21E+02	0.00E+00	0.00E+00	4.21E+02	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	6.08E+03	7.04E+01	2.01E+03	8.16E+03	1.00E+03	4.24E+02	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.57E+02	9.95E+01	2.17E+01	-7.79E+03
SM	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	1.10E+01	1.22E-02	1.40E+00	1.24E+01	1.55E-01	6.31E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	6.88E-02	-1.46E-01	2.04E-02	-1.38E+00

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

ND = Module not declared; INA = Indicator not assessed.

4.C. LCA results - MEDITE OPTIMA MDF panel

Output flows and waste categories per m^3 - Density 750 kg/m^3

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	[kg]	6.11E-03	3.84E-05	1.49E-01	1.55E-01	6.02E-04	7.76E-03	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.74E-04	2.04E-04	1.62E-05	-6.03E-03
NHWD	[kg]	3.07E+01	5.61E+00	1.08E+02	1.45E+02	4.47E+01	4.51E+01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.05E+01	7.58E+00	7.52E+01	-1.94E+01
RWD	[kg]	1.48E-02	4.50E-04	2.53E-03	1.78E-02	6.39E-03	9.85E-04	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.89E-03	2.13E-04	1.23E-04	-5.99E-02
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	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	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy.

CRU, MFR, MER, EEE, EET are not calculated by the EcoChain software.

ND = Module not declared; INA = Indicator not assessed.

4.D. LCA results - MEDITE OPTIMA MDF panel

Additonal Environmental impact per m^3 - Density 750 kg/m^3

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM	Disease incidence	5.11E-05	3.49E-07	3.03E-05	8.17E-05	3.93E-06	4.17E-06	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.81E-06	1.15E-06	1.32E-07	-4.70E-06
IRP[1]	kBq U235 eq	1.24E+01	2.86E-01	1.99E+00	1.46E+01	4.05E+00	7.94E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.82E+00	1.54E-01	8.06E-02	-1.17E+02
ETP-fw[2]	CTUe	6.27E+03	4.62E+01	4.74E+03	1.11E+04	6.70E+02	5.67E+02	ND	ND	ND	ND	ND	ND	ND	0.00E+00	3.09E+02	1.46E+02	1.83E+01	-4.66E+03
HTP-c[2]	CTUe	6.55E-07	1.19E-09	7.74E-07	1.43E-06	1.97E-08	7.19E-08	ND	ND	ND	ND	ND	ND	ND	0.00E+00	8.92E-09	2.73E-08	5.16E-10	-1.03E-07
HTP-nc[2]	CTUe	4.84E-06	5.49E-08	3.38E-06	8.28E-06	7.46E-07	4.29E-07	ND	ND	ND	ND	ND	ND	ND	0.00E+00	3.41E-07	1.45E-06	2.00E-08	-3.45E-06
SQP[2]	dimensionless	6.75E+04	7.36E+01	1.58E+04	8.33E+04	6.39E+02	4.19E+03	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.93E+02	2.34E+01	4.45E+01	-4.05E+03

PM = Potential incidence of disease due to PM emissions, IRP = Potential Human exposure efficiency relative to U235, ETP-fw = Potential Comparative Toxic Unit for ecosystems; HTP-c:Potential Comparative Toxic Unit for humans, HTP-nc = Potential Comparative Toxic Unit for humans, SQP = Potential soil quality index.

[1]This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuelcycle. 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.

ND = Module not declared; INA = Indicator not assessed.

5. Calculation rules

The measurement of environmental impacts in this EPD uses the LCIA methodologies recommended for PEF3.0.

The process descriptions and input quantities detailed and used in this study are a true representation of the actual processes and quantities used in the manufacturing and use of the products. The references of all sources, both primary and public sources and literature, have been documented in the LCA report. The 'polluter pays' and 'modularity' principles have been followed.

In addition, to facilitate the reproducibility of this LCA, a full set of data records has been generated which can be accessed via the LCA tool. This data portfolio contains a summary of all the data used in this LCA.

Cut-off criteria

The cut-off criteria of section 6.3.6 of EN15804:2012+A2:2019 have been followed, where 99% of the total energy and materials are included, and the total neglected input flows for the modules reported on in the LCA are less than 5% of the energy usage and mass.

Data Quality

The dataset is representative for the production processes used in 2021, in the country of production, Republic of Ireland. The data Quality Level, according to Table E.1 of EN 15804 +A2, Annex E, is as follows:

- Geographical representativeness: Very Good.
- Technical representativeness: Very Good.
- Time representativeness: Good.

Allocations

Allocation of energy and electricity types and amounts to the various manufacturing processes has been provided by the manufacturers along with production waste. Allocation of impacts to the products is based on the product composition mass.

Flows related to human activities such as employee transport are excluded. The construction of capital assets such as buildings, manufacture of machines and transportation systems are also excluded since the related flows are assumed to be negligible compared to the manufacture of the building material when compared to these systems over a full lifetime of operation.

6. Scenarios and additional technical information

A1. Raw materials supply

This module considers the extraction and processing of all raw materials and energy which occur upstream to the MEDITE MDF manufacturing process, as well as waste processing up to the end-of waste state.

A2. Transport of raw materials to manufacturer

This includes the transport distance of the raw materials to the manufacturing facility via road and ship (sea) transport.

A3. Manufacturing

This module covers the manufacturing of MEDITE MDF panels and includes all processes linked to production such as wood preparation and processing, drying, mixing, forming, compressing, cutting and internal transport. Use of electricity, fuels (biomass and fossil fuels) and auxiliary materials in production is taken into account.

A4. Transport to site

The transport to market is based on the transport from MEDITE factory in Clonmel, Ireland to by a distance of 574 km (road) and 106 km (sea) to a customer in Great Britain.

Parameter	Value / Description
Road transport	Transport, freight, lorry 16-32 metric ton, EURO6 engine
Sea transport	Transport, freight, sea, bulk carrier for dry goods
Distance, road	574 km (road transport in Ireland and GB)
Distance, sea	106 km (sea journey across Irish Sea)
Capacity utilisation, road freight	46%
Bulk density transported goods	750 kg/m^3

A5. Installation on site

In the installation stage, it is assumed that installation losses are 5%, as per the EPD Ireland PCR for implementation of EN 15804. Installation losses are assumed to go to landfill. The distance to the landfill site is 50 km. No materials for installation are modelled, due to the wide variety of uses of MDF panels, and difficulty in specifying a particular installation mode.

C1. De-construction demolition

It is assumed that the MDF materials are removed mostly manually from building. Thus, no energy or other materials are required for module C1, and the impacts are assumed to be zero in C1.

C2. Transport

It is assumed that the removed MDF material travel 50 km to landfill, and 250 km to incineration. These are the default distances given in the EPD Ireland PCR for implementation of EN 15804. It is assumed that these distances of 50 km and 250 km respectively, are also generally representative of UK practice.

C3. Waste processing

It is assumed that 90% of the removed MDF is incinerated.

C4. Disposal

It is assumed that 10% of the removed MDF is disposed of in landfill.

D. Reuse – Recovery – Recycling potential

In Module D, benefits/loads beyond the system, it is assumed that the MDF panels are incinerated in a waste to energy facility, with 40% of the mass converted to energy, at an efficiency of the incineration in converting NCV to energy of 70%. Of the energy recovered from incineration, 82% is assumed to generate electricity, and 12% generates heat.

Declaration of biogenic carbon content at the production gate

Biogenic Carbon Per Delcared Unit (m^3)	MEDITE OPTIMA
Biogenic carbon content in product (kg C per m^3)	265.5
Biogenic carbon content in packaging (kg C per m^3)	2.8

Additional Technical Information

N/A.

7. Mandatory additional information on release of dangerous substances to indoor air, soil and water

None of the substances contained in the product are listed in the “Candidate List of Substances of Very High Concern for authorisation”, or they do not exceed the limit for registration with the European Chemicals Agency.

8. Other optional additional environmental information

N/A.

9. References

[1] 'ISO 14040: Environmental management - Life cycle assessment – Principles and Framework', International Organization for Standardization, ISO 14040:2006.

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[3] 'ISO 14025: Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures', International Organization for Standardization, ISO 14025:2006.

[4] I.S. EN 15804:2012+A1:2013,: Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products', EN 15804:2012+A1:2013.

[5] Ecochain, 2019, web: http://app.ecochain.com.

[6] Product Category Rules : Part A Implementation and use of I.S. EN 15804:2012 and CEN TR 16970:2016 in Ireland.

[7] https://www.igbc.ie/wp-content/uploads/2018/06/Final-reviewed-PCR-29.06.18.pdf

[8] CML - Department of Industrial Ecology, CML-IA Characterisation Factors, Dated August 2016, Leiden University, Leiden, Netherlands Available at: https://www.universiteitleiden.nl/en/research/research-output/science/cml-ia-characterisation-factors

[9] Ministerie van Verkeer en Waterstaat, 8 maart 2004, Toxiciteit heeft z'n prijs, Schaduwprijzen voor (eco-) toxiciteit en uitputting van abiotische grondstoffen binnen DuboCalc.

[10] I.S. EN 16485:2014 Round and sawn timber - Environmental Product Declarations - Product category rules for wood and wood-based products for use in construction.

[11] https://www.tolvik.com/published-reports/view/uk-energy-from-waste-statistics-2020/

10. Annex

N/A.