ENVIRONMENTAL PRODUCT DECLARATION

as per /ISO 14025/ and /EN 15804/

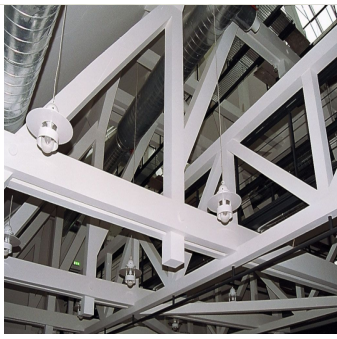
Owner of the Declaration	Etex Building Performance International
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-PMT-20190009-ICA1-EN
Issue date	18/04/2019
Valid to	17/04/2024

PROMATECT®-H
Fire protective board

ETEX BUILDING PERFORMANCE NV

Institut Bauen und Umwelt e.V.

www.ibu-epd.com / https://epd-online.com



1. General Information

ETEX BUILDING PERFORMANCE NV	PROMATECT®-H
Programme holder IBU - Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Berlin Germany	**Owner of the declaration** ETEX BUILDING PERFORMANCE INTERNATIONAL ZONE DU POLE TECHNOLOGIQUE AGROPARC 500 RUE MARCEL DEMONQUE 84140 AVIGNON France
Declaration number EPD-PMT-20190009-ICA1-EN	**Declared product / declared unit** 1m² of PROMATECT®-H with a thickness of 5mm
This declaration is based on the product category rules: Calcium silicate insulating materials, 07.2014 (PCR checked and approved by the SVR)	**Scope:** The life cycle assessment is based on production data of PROMATECT®-H of the year 2017 at the production site Kapelle-op-den-Bos, Belgium.
Issue date 18/04/2019	The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.
Valid to 17/04/2024	**Verification** The standard /EN 15804/ serves as the core PCR Independent verification of the declaration and data according to /ISO 14025:2010/ ☐ internally ☒ externally
Prof. Dr.-Ing. Horst J. Bossenmayer (President of Institut Bauen und Umwelt e.V.)	
Dr. Alexander Röder (Head of Board IBU)	Dr. Frank Werner (Independent verifier appointed by SVR)

2. Product

2.1 Product description / Product definition

PROMATECT®-H is a fire protective calcium silicate board, composed of a calcium silicate matrix, cement and mineral fillers. The board is off-white in colour and has a smooth upper surface and an embossed or sanded reverse face. The board is resistant to moisture, of stable dimensions, large format and self-supporting.
For the placing of the product on the market in the European Union/European Free Trade Association (EU/EFTA) (with the exception of Switzerland) the Regulation /(EU) No. 305/2011 Construction Products Regulation(CPR)/ applies. The product needs a declaration of performance taking into consideration (European Technical Assessment) /ETA 06/0206/, 2018-06-25, PROMATECT®-H and the CE-marking. For the application and use the respective national provisions apply.

2.2 Application

Execution of construction elements for construction and technical fire protection according to EN standard in all the fields of building construction and industrial construction, e.g. in steel structures, fire resistant partitions, fire dampers, wall structures, facade elements.

2.3 Technical Data

Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to /ETA 06/0206/, 2018-06-25/ PROMATECT®-H apply.

Constructional data

Name	Value	Unit
Gross density 23°C, 50% RH; according to /ETA 060206/	940±15%	kg/m3
Gross density 105°C, dry; according to /ETA 060206/	870±15%	kg/m3
Compressive strength according to /ETA 060206/	9.3	N/mm²
Tensile strength (perpendicular tensile) according to /EN1607/	77.9	kPa
Tensile strength (parallel tensile) according to /EN1608/	989.01	kPa
Flexural strength according to /EN12467/	≥4.5	MPa
Thermal conductivity according to /EN12667/	0.175	W/(mK)
Water vapour diffusion resistance factor according to /EN ISO 12572, method C/	20	-

2.4 Delivery status

Fire protective building boards are available in two sizes: 1250x2500 mm or 1250x3000 mm.
The boards are delivered in various thicknesses: 6,8,10,12,15,20 and 25mm.

2.5 Base materials / Ancillary materials

Main raw materials used (in weight percentages):

- sand	5-25%
- cement	5-25%
- lime	5-25%
- calcium silicate	10-50%
- fibres	<7%

The raw materials are mixed in water and combined in a slurry.

This product/article/at least one partial article contains substances listed in the candidate list (date: 15.01.2019) exceeding 0.1 percentage by mass: no

This product contains other CMR substances in categories 1A or 1B which are not on the candidate list, exceeding 0.1 percentage by mass: no

Biocide products were added to this construction product or it has been treated with biocide products (this then concerns a treated product as defined by the (EU) Ordinance on Biocide Products No. 528/2012):no

2.6 Manufacture

All the raw materials are mixed in water and combined to form a thick slurry. The slurry is formed to a board on a forming drum, cut and stacked for curing. The board is autoclaved under saturated steam pressure and dried. Edges are trimmed and the reverse surface sanded to the desired thickness.
All material which is cut off or sanded away is fully recycled within the process.
PROMATECT®-H is produced with quality assurance according to the standard /ISO 9001/.

2.7 Environment and health during manufacturing

Etex Building Performance commits to a clean, healthy and safe working environment for every person working in and for the company.
The company and the manufacturing site have an environment, health and safety management system which is /ISO 14001/ and Occupational health- and safety assessment series /OHSAS 18001/ certified.
The manufacturing plant adheres to the Belgian environmental, health and safety regulations.

2.8 Product processing/Installation

The fire protective board is cut and machined using conventional woodworking equipment.
Fixing the boards will require appropriate means, which will depend upon the application and bearing structure. Boards can be installed using staples, screws, anchors or glue.
Industrial and environmental protection are assured through training and coaching staff on safety and environmental impacts. Dust levels are kept low by performing dust extraction. Noise is reduced by noise insulation on the machines and ear protection is provided for persons entering the production area. Regular measurements on noise and dust are performed and show conformity to the permitted levels.
All national, local and other applicable safety regulations are complied with.

2.9 Packaging

All fire protection boards are packed onto wooden pallets, wrapped with polyester strapping tape and strengthened with cardboard corners. The wooden pallets can be returned by the customer and reused several times. The polyethylene straps and cardboard are recyclable.

2.10 Condition of use

PROMATECT®-H boards are resistant to the effects of moisture and will not physically deteriorate when used in damp or humid conditions. Performance characteristics are not degraded by age or moisture. Boards do not encourage mould growth and are resistant to attacks by insects or vermin. No maintenance or repair is required over their service life.

2.11 Environment and health during use

PROMATECT®-H is chemically inert. When the product is used as designed, the current state of knowledge indicates that there is no risk involved for the environment or health.

2.12 Reference service life

The reference service life (RSL) of the product according to the series of standards ISO 15686 is declared to be 50 years (see in-use conditions described in clause 4). This is the minimum service life according to most building assessment schemes.

The service life according to the table “Service lives of components for life cycle assessment according to Bewertungssystem Nachhaltiges Bauen (BNB)” by the Bundesinstitut für Bau-, Stadt- und Raumforschung (BBSR) is >50 years.

2.13 Extraordinary effects

Fire

PROMATECT®-H boards have a reaction to fire classification A1 or non-combustible according to /EN13501-1/.

Name	Value
Building material class	A1

Water

All ingredients are firmly bound in the matrix. The boards are insensitive to moisture and no ingredients which could be hazardous to water are washed out in the event of extraordinary effects by water.

Mechanical destruction

Mechanical destruction of PROMATECT®-H will have no relevant effects on the environment. When tools are used during destruction, one should ensure that dusts are exhausted and that the regulatory occupational exposure limits are respected.

In order to prevent any reduction of fire performance following unforeseeable mechanical destruction, all damage of the components needs to be repaired using materials specified by the /ETA 06/0206/.

2.14 Re-use phase

Several possibilities exist for the boards after the end-of-life of the application in which they were used.
If the boards are removed non-destructively by releasing the screws, the undamaged product can be re-used in accordance with the original purpose.
If not contaminated with other building construction material, the boards also allow being recycled by the manufacturer.
Furthermore, the products referred to could be used as filler and bulk material in civil engineering or be recycled in cement industry.

2.15 Disposal

Within the production process, most of the generated waste is immediately re-used within the process.
When after end-of-life re-using or recycling the boards as described in the previous paragraph is not practical, the boards can be disposed to landfill class II.
The waste code in accordance with the /European Waste Index/ is 170904.

2.16 Further information

Further information is available on the following web site :
www.promat-international.com

3. LCA: Calculation rules

3.1 Declared Unit

The functional unit is 1m² of PROMATECT®-H with a thickness of 5mm (abbreviated as 1 m²5). For any actual board thickness, the values resulting from the LCA shall be multiplied by the ratio (actual thickness [mm] / 5 mm)

Declared unit

Name	Value	Unit
Gross density used in the calculations, based on 2017 average data	955	kg/m^3
Conversion factor to 1 kg	0.21	-
Declared unit	1	m²
Weight of the functional unit	4.8	kg

3.2 System boundary

Type of the EPD: cradle to grave.

Assessment in this study includes the modules :
- A1 to A3 : the product stage including the raw material and energy production, raw material transports and the product manufacturing. Module A1 also includes the reuse of internal waste coming from all the production lines on site.
- A4 and A5: the construction stage including the transport to the building site (A4) and the installation into the building (A5). It was chosen not to include fixing accessories in module A5 due to many possible types of installation. Module A5 only includes the end of life of the packaging material (sorting) until it is no longer considered a waste.
- B1 to B7: the use stage is considered in the life cycle of PROMATECT®-H but no inputs or outputs are considered during this stage.
- C1 to C4: end-of-life stage including the transport of the boards from the construction site to treatment facility, and waste processing and waste disposal.
- D: loads and benefits from the recycling of product packaging are considered from the moment it is no longer considered a waste.

3.3 Estimates and assumptions

Blue water consumption is taken into consideration in the background data system. Water which is embedded in the product as well as water which is evaporated from the product during production is included in the calculations.
Where possible, specific regional data was used when selecting background data such as for electricity where the Belgian mix was used for the manufacturing stage.
For the waste treatment the European electricity mix was used as the boards are sold on the European market.

3.4 Cut-off criteria

All stages are included into the system boundaries. In the assessment, all available data from production process are considered, i.e. all raw materials used, utilized thermal energy, and electric power consumption. Thus, material and energy flows contributing less than 1% of mass or energy are considered. No flows contributing significantly to any of the indicators of the impact assessment was excluded.
According to /NF EN 15804/CN/ only the flows relative to production of capital equipment, facilities and infrastructure required for manufacture, employee transport, are outside the scope of this assessment.
Background/Generic data from /ecoinvent 3.4/ could include production and/or maintenance of infrastructures.

3.5 Background data

Background data is from /ecoinvent 3.4/.
Primary data provided by Promat is representative of the annual production for the year 2017.

3.6 Data quality

This study is mainly based on primary data collected directly from the manufacturing site and therefore data quality can be assumed to be very good.
Background data is from the ecoinvent database, at the most up-to-date version available.

3.7 Period under review

Data for the entire production period of 2017 were collected and used for this EPD.

3.8 Allocation

Allocation of upstream data:
The production process receives internally recycling provided by PROMATECT®-H and other production process lines.

Allocation of the foreground data:
The production process does not deliver any co-products but a waste that is reused as raw material for the board production.
For the PROMATECT®-H declared in this EPD, only one production line exists, but this line is shared for the production of other boards. The consumed energy and water for this line were allocated by total production volume in square meters of 5 mm thickness to the specific products within the product family.

3.9 Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to /EN 15804/ and the building context, respectively the product-specific characteristics of performance, are taken into account.

For this EPD, background data is from /ecoinvent 3.4/.

4. LCA: Scenarios and additional technical information

Transport to the building site (A4)

For the transport from the factory gate to the building site, an average distance of 100km was assumed. For transport to european countries, the impacts can be easily calculated by multiplying the impacts in module A4 with the transport distance to the specific location and dividing it by 100.
The distance of 100km can be assumed to be representative for deliveries within Belgium.

Name	Value	Unit
Transport distance	100	km
Capacity utilisation (including empty runs)	90	%
Gross density of products transported	955	kg/m^3

Installation into the building (A5)

Because of various types of installation, it was decided not to take fixing accessories into account.
An average loss of product of 5 % was considered during calcium silicate boards installation. Impacts for the production, packaging, transport and end-of-life of this loss was included in module A5.
Waste treatment of packaging is also considered in module A5 until it is no longer considered a waste.

Name	Value	Unit
Material loss	0.25	kg
Waste carboard to recycling	9.3	g
Waste polyethylene to recycling	0.664	g
Waste pallet to incineration	29.16	g

Use (B)

For the use stage of the product, no emission to air or to water (B1) was considered.
No maintenance (B2) , repair (B3), replacement (B4) or refurbishment (B5) operation is required during the product service life.
The product does not require any energy (B6) or water (B7) to fulfill its function.

Reference service life

The Reference Service Life (RSL) is declared to be 50 years by Etex Group under the in-use conditions as declared below. This corresponds to the period after which a building renovation is usually needed, independently of the actual technical lifetime of the product (which can be longer than 50 years). The product keeps its technical performance during the whole duration of its life cycle.

Name	Value	Unit
Reference service life	50	a
Life Span (according to BBSR)	>50	a
Declared product properties (at the gate) and finishes	See §2.3	-
An assumed quality of work, when installed in accordance with the manufacturer's instructions	ETA 06/0206	-
Outdoor environment, (for outdoor applications), e.g. weathering, pollutants, UV and wind exposure, building orientation, shading, temperature	not applicable	-
Indoor environment (for indoor applications), e.g. temperature, moisture, chemical exposure	See §2.3	-
Usage conditions, e.g. frequency of use, mechanical exposure	not relevant	-
Maintenance e.g. required frequency, type and quality and replacement of components	no maintenance needed	-

End of life (C1-C4)

Name	Value	Unit
Landfilling	4.8	kg
Transport distance	50	km

Reuse, recovery and/or recycling potentials (D), relevant scenario information

Although re-use and recycling of the PROMATECT®-H is possible, this is not yet a widely established practice. Therefore, no possible benefits of recycling or re-use of the boards were taken into account in this study. In module D, only the loads and benefits from the recycling of waste packaging (cardboard and polyethylene) were taken into account. The loads considered are due to the recycling processes and transport and the benefits correspond to the avoided impacts of virgin paper and plastic production.

Name	Value	Unit
Cardboard	9.3	g
Polyethylene strip	0.664	g

Promat

5. LCA: Results

The following tables depict the results of the indicators for the Life Cycle Assessment, use of resources and waste with reference to 1m²5 of PROMATECT®-H.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED)

PRODUCT STAGE			CONSTRUCTION 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	X	X	X	X	X	X	X	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 m²5 PROMATECT®-H

Parameter	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP	[kg CO_2-Eq.]	2.67	0.04	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.06	0.00
ODP	[kg CFC11-Eq.]	3.13E-7	6.53E-9	1.71E-8	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.16E-9	0.00E+0	1.44E-8	8.22E-11
AP	[kg SO_2-Eq.]	9.13E-3	1.53E-4	4.90E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.43E-5	0.00E+0	1.41E-1	-1.45E-5
EP	[kg $(PO_4)^{3-}$-Eq.]	2.00E-3	3.98E-5	1.09E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.93E-5	0.00E+0	6.26E-5	-8.16E-6
POCP	[kg ethene-Eq.]	7.27E-4	2.02E-5	4.08E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.78E-6	0.00E+0	5.67E-3	-2.10E-6
ADPE	[kg Sb-Eq.]	2.37E-6	4.49E-7	2.15E-7	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.18E-7	0.00E+0	7.80E-8	-7.35E-9
ADPF	[MJ]	31.29	0.58	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	1.32	-0.06

Caption	GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources

RESULTS OF THE LCA - RESOURCE USE: 1 m²5 PROMATECT®-H

Parameter	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	[MJ]	5.83E+0	1.34E-2	2.95E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.49E-3	0.00E+0	5.28E-2	-6.45E-2
PERM	[MJ]	2.97	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PERT	[MJ]	8.81E+0	1.34E-2	4.44E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.49E-3	0.00E+0	5.28E-2	-6.45E-2
PENRE	[MJ]	41.66	0.60	2.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	1.51	-0.06
PENRM	[MJ]	3.06E-2	0.00E+0	1.53E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PENRT	[MJ]	41.69	0.60	2.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	1.51	-0.06
SM	[kg]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
RSF	[MJ]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NRSF	[MJ]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FW	[m³]	1.87E-2	1.45E-4	9.68E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.03E-5	0.00E+0	1.41E-3	3.24E-6

Caption	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

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 m²5 PROMATECT®-H

Parameter	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	[kg]	1.62E-2	6.74E-4	9.59E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.26E-4	0.00E+0	2.47E-2	-1.57E-4
NHWD	[kg]	0.41	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	4.80	0.00
RWD	[kg]	2.07E-4	3.71E-6	1.12E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.79E-6	0.00E+0	9.67E-6	-1.46E-7
CRU	[kg]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MFR	[kg]	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MER	[kg]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EEE	[MJ]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EET	[MJ]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Caption	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; EEE = Exported thermal energy

6. LCA: Interpretation

The impact assessment results are calculated using characterisation factors generated by the Centre of Environmental Science at Leiden University /CML2001- April 2013/, Netherlands.

It can be seen that main contributions to the impact categories are coming from the production stage, more specifically from the raw material and the manufacturing.
The transport of the material to the building site, the waste treatment of the packaging and the end-of-life scenario of 100% landfill only contribute to a minor extent.

For the raw materials, impacts are mainly coming from:
- Cement
(for global warming potential (GWP), acidification potential (AP), abiotic depletion potential for fossil resources (ADPf), total use of non-renewable primary energy resources (PENRT))
- Hydrated lime
(for ozone depletion potential (ODP), photochemical ozone creation potential (POPC))
- Cellulose
(for eutrophication potential (EP), abiotic depletion potential for non-fossil resources (ADPe), total use of renewable primary energy (PERT), net use of freshwater (FW))

For the manufacturing, impacts are mainly coming from:
- Thermal energy
(for GWP, ODP, AP, POCP, ADPf)
- Electricity
(for GWP, ODP, AP, EP, APDe)

Thermal energy and electricity are mainly used for drying the boards, autoclaving and preparing the raw materials.

7. Requisite evidence

7.1 Radioactivity

Radioactivity measurements on PROMATECT®-H confirm that no other gamma emitters than those originating from the natural radiation sources are contained. The measured radioactivity levels do not exceed the activity concentration indices as specified by the /Article 3 (Radiation Protection 112) for building products/ following the Council /Directive 96/29/.
Activity concentration index ≤ 2.
Date: 2 December 2011
Measuring agency : /SCK.CEN Laboratory for Gammaspectrometry, Mol, Belgium/
Protocol : Activity concentration index (ACI)

7.2 Leaching

Leaching tests based on /EN 12457-2/ on PROMATECT®-H showed that no hazardous compounds were leached out.
Date: 17 June 2015
Measuring agency: /Eurofins Analyses pour l'Environnement/ France-Site de Saverne

7.3 VOC emissions

VOC measurements confirmed compliance with the requirements of Agence francaise de sécurité de l´environnement et du travail (AFSSET) (2009) for use in the indoor environment.
(values in table below having "<" means that the measurements were below the quantification limit)

Name	Value	Unit
Total VOC after 28d (C-C16)	3,6	µg/m³
R after 28d (c/LCI)	<1	-
Sum of VVOC after 28d (<n-C6)	<2	µg/m³
Sum of SVOC after 28d (>n-C16)	<2	µg/m³
Sum of carcinogens	<1	µg/m³
Formaldehyd	<3	µg/m³
Acetaldehyd	<3	µg/m³

Date: 29 November 2011
Measuring agency: /Eurofins Product Testing A/S/, Galten, Denmark
Report number: G10207B

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