ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

Owner of the Declaration	Amorim Revestimentos S. A.
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-AMO-2013121-E
Issue date	01.07.2013
Valid to	30.06.2018

Corkcomfort Floating HPS

Amorim Revestimentos S. A.

Institut Bauen und Umwelt e.V.

www.bau-umwelt.com

1. General Information

Name of manufacturer

Programme holder

IBU - Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Declaration number

EPD-AMO-2013121-E

This Declaration is based on the Product Category Rules:

Floor coverings, 09-07-2012
(PCR tested and approved by the independent expert committee, SVA)

Issue date

01.07.2013

Valid to

30.06.2018

Prof. Dr.-Ing. Horst J. Bossenmayer
(President of Institut Bauen und Umwelt e.V.)

Prof. Dr.-Ing. Hans-Wolf Reinhardt
(Chairman of SVA)

Name of construction product

Owner of the Declaration

Amorim Revestimentos, S.A.
Rua do Ribeirinho, nº 202
Apartado 13
4536 - 907 S. Paio Oleiros
Portugal

Declared product / Declared unit

1 m^2 of Corkcomfort Floating HPS

Scope:

The data on which the Life Cycle Assessment is based is from the production process of Corkcomfort Floating HPS taking place in both industrial units of Amorim Revestimentos (Oleiros and Lourosa). The data used is from both industrial units and is referred to the year of 2011. The owner of the declaration shall be liable for the underlying information and evidence.

Verification

The CEN Norm EN 15804 serves as the core PCR
Independent verification of the declaration and data according to ISO 14025
☐ internally ☒ externally

Dr. Frank Werner
(Independent tester appointed by SVA)

2. Product

2.1 Product description

Corkcomfort Floating HPS (High Performance Surface) is a type of resilient floor covering and has been specially developed for areas with heavy traffic, such as commercial, business or general public areas. This high performance surface has an extra hard wearing surface combined with Nano-Beads Technology, where extremely tiny beads are embedded in a top layer for improved properties such as scratch, slip, scuff and stain resistance.
Corkcomfort Floating HPS tiles consist of a backing cork layer, followed by a HDF board and a flexible and insulating cork veneer. The top hard wearing surface is made of PVC covered with UV resistant varnishes. The decorative cork layer is placed between cork and PVC layers.

2.2 Application

Corkcomfort Floating HPS has a high performance surface layer and has been specially developed for areas with heavy traffic, such as commercial, business or general public areas. This flooring product meets the requirements of the usage classes 33 for commercial use and 23 for domestic use according to ISO 10874 standard. Class 33 products are suitable for commercial areas with heavy traffic.

2.3 Technical Data

Relevant technical construction data for the product is referred in the following table:

General properties - EN 655	Standard- Test Method	Unit	Specification
Overall thickness	ISO 24346	mm	± 0,25
Squareness	ISO 24342	mm	≤ 0,50
Straightness measured at the surface layer	ISO 24342	mm	≤ 0,30
Wear layer density	ISO 23996	kg/m³	nominal value (1360) ± 50
Flatness of the panel: Length: Concave / convex Width: Concave / convex	EN 14085 Annex A	%	≤ 0,50 / ≤ 1,0 ≤ 0,10 / ≤ 0,15
Openings between panels	EN 14085 Annex B	mm	< 0,20
Height difference	EN 14085 Annex	mm	< 0,20

General properties - EN 655	Standard- Test Method	Unit	Specification
between panels	B		
Dimensional stability (humidity)	EN 14085 Annex C / EN 669	mm	< 5
Mass per unit area	ISO 23996	g/m²	nominal value (9900) -10%; +13%

Classification properties - EN 14085	Standard- Test Method	Unit	Specification
Wearing Group	EN 660-1	Thickness loss (mm)	Wear group T
Castor chair	EN 425	Visual effect after 25 000 cycles	No disturbance to the surface other than slight change in appearance and no delamination shall occur
Simulated movement of a furniture leg	EN 424	Visual effect	No damage shall be visible after testing with a type 2 foot
Residual indentation	ISO 24343-1	mm	≤ 0,25

2.4 Placing on the market / Application rules

The standards and general technical approval regarding Corkcomfort Floating HPS are the following:

EN 655:2001 - Resilient floor coverings. Tiles of agglomerated composition cork with polyvinyl chloride wear layer - Specification.

EN 14041:2004 - Resilient, textile and laminate floor coverings – Essential characteristics
EN 14085:2010 - Resilient floor coverings - Specification for floor panels for loose laying

2.5 Delivery status

The dimensions of rectangular panels of Corkcomfort Floating HPS are declared in the following table.

Dimensions of planels (ISO24341)	Specification	Unit
Width Length	± 0,10% up to max. 0,5 mm max. 2,0 mm	mm

The constituting layers of Corkcomfort Floating HPS are showed in the following table.

Name	Value	Unit
Hard wearing surface with a protective varnish	0,5	mm
Genuine cork veneer	0,8	mm
Agglomerate pressed cork layer	1,7	mm
HDF - high density fibreboard	6	mm
Backing cork layer	1,5	mm

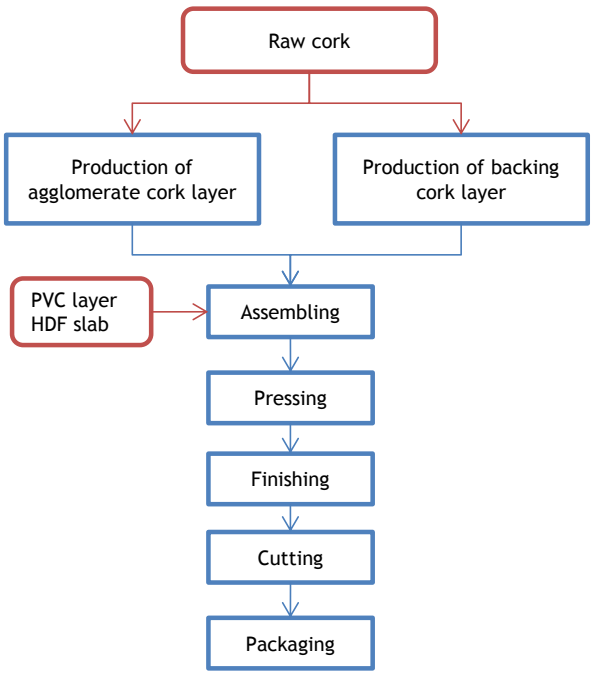
2.6 Base materials / Ancillary materials

The primary product components and materials of the product are indicated as a percentage mass in the following table.

Components	Percentage (in weight)
Cork	24,9%
Adhesives	7,6%
HDF	59,6%
Varnishes	0,2%
PVC	7,7%

2.7 Manufacture

General flow production of Corkcomfort Floating HPS is represented in the following graphic.



The production process begins with the manufacturing of agglomerate cork and the cork backing layer. Following this process, HDF is assembled to both cork layers. After this, the product is assembled to a PVC layer. The top layer is coated with a protective varnish, creating a hard wearing surface. The next stage consists in pre-cutting and cutting, in order to shape the planks. The last stage is packaging.

2.8 Environment and health during manufacturing

During the production process the environmental and health aspects are considered.
Air: The emission of particles and pollutants are collected in filter systems and the levels are below the permissible limits.
Water: The product requires a low water consumption that is totally treated in an IWWTP.
Noise: Noise resulting from operation during the production process is below the permissible limits.

2.9 Product processing/Installation

The subfloor must be even, flat, dry and variations should not exceed 3 mm in 2 m (0.12" in 6.6 feet).
All type of concrete, wooden and ceramic surfaces must be completely dry.
Never install Wicanders floating floors with Corkloc® without using a PE moisture barrier film with a minimum thickness of 0,2 mm (.008").
More information on installing the flooring product can be found in manufacturer's website.

2.10 Packaging

Resilient floor coverings are delivered in packages designed to protect the corners, edges and surfaces of the product, under normal conditions of transport and handling (compliant with EN 13329).
Product planks are laid in cardboard boxes, wrapped in packaging film and placed on wooden pallets, secured by plastic straps.
These packaging materials can be collected separately and recycled.
Pallets can either be re-used (Euro pallets) or recycled as wood.

2.11 Condition of use

Corkcomfort Floating HPS flooring products are mostly constituted by natural renewable raw materials, meaning that they have stored about 13,51 kg of biogenic CO_2 resulting from photosynthesis.

2.12 Environment and health during use

The following table indicates the information about safety properties.

Safety properties - EN 14041	Standard-Test Method	Unit	Specification
Slip Classification	EN 13893	Class	DS
Formaldehyde emission	DIN EN 717-1	Class	E1
Electrical behaviour	EN 1815	KV	Not Antistatic
Content pentachlorophenol (PCP)	CEN/TR 14823 (ihd-W 409)	mg/kg	PCP Free Inferior or equal to 0,5 mg/kg

2.13 Reference service life

The expected service life of the product was determined based on empirical experience of the manufacturer, considering the different use classes, according to /ISO 10874/. The following table indicates the expected service life for domestic, commercial and industrial uses.

Application area	Class	Expected service life
Domestic	23	25 years
Commercial	33	15 years

2.14 Extraordinary effects

Fire

Fire performance according to EN 13501 – 1 (building products) of Corkcomfort Floating HPS is Bfl s1.

Water

There are no environmental impacts on water identified in the use stage of the product since the product is mainly composed by natural materials that are not hazardous to water masses.

Mechanical destruction

There are no potential harm to health and environment known resulting from mechanical destruction of the product.

2.15 Re-use phase

The product is mainly composed by cork, HDF (wood) and PVC. PVC layers can be shredded, granulated or powdered and then re-melted to make a secondary input material. Wood and cork can also be suitable for composting. Waste from this flooring product can be reused in the process as replacement of some of the raw materials. This type of flooring product can also be reused, although its service life is expected to be less than the original warranty from the manufacturer. Regarding energy recovery, wood, cork and PVC can be incinerated in order to produce thermal energy or electricity. However, incineration of PVC originates emissions of chlorine in waste streams, contaminated ash residue and eventual emission of dioxins.

2.16 Disposal

According to the /European Waste Catalogue Directive/ the used floor covering can be classified in the main category “17 Construction and Demolition Waste (including road construction)”.
Considering the specific constitution of this floor covering, and assuming that the layers cannot be separated at the end of life, the waste code applied is the following:
17 09 04 Mixed construction and demolition waste other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
These types of waste materials can be recovered according to the /European Waste Framework Directive/.

3. LCA: Calculation rules

3.1 Declared Unit

The declared unit is 1 m^2 of floor covering with the following characteristics:

Name	Value	Unit
Declared unit	1	m^2
Conversion factor to 1 kg	1,10E-01	-

3.2 System boundary

Type of the EPD: cradle to gate
This product stage includes the provision of all materials, products and energy, as well as waste processing up to the end-of-waste state or disposal of final residues. The system boundary includes also those processes that provide the material and energy inputs into the system and the following manufacturing and transport processes up to the factory gate, as well as the processing of any waste arising from those processes.

3.3 Estimates and assumptions

CO_2 intake due to photosynthesis associated to cork and wood was considered. Information on components and average weight percentage of varnishes and adhesives was obtained from suppliers.

3.4 Cut-off criteria

All available data associated directly to the manufacture of the product was included in the LCA. Hence, the study complies with the cut-off criteria of 1% of renewable and non-renewable primary energy usage and 1% of the total mass of that unit process.

3.5 Background data

Specific data was used based on average production of 2011. For processes which the producer has no influence or specific information, like the extraction of raw materials and electricity production, generic data from Ecoinvent and Industry data 2.2 databases, considering geographical significance, have been used.

3.6 Data quality

Specific data is referred to production of 2011. Data sets of processes from Ecoinvent database were updated in 2010 and created mostly in 2003. The data set used from Industry data 2.2 was created in 2007

and based on literature from 2005. Data sets are based on literature and average data from specific industrial units. Regarding geography coverage, whenever possible it was used average European data and Portugal specific energy mix. In cases where no average European data was available, it was used the most approximate data set, regarding geography and technology coverage.

3.7 Period under review

The period from each the specific data from the manufacturer was obtained is referred to the year 2011.

3.8 Allocation

Cork powder resulting from production is reused in the process to produce thermal energy and electricity. Cork shreds are also reused internally in the process. Internal recycling/reusing of these materials is, therefore, considered a closed loop process. Although there is a surplus of cork waste produced in the process that is not used internally, it is still consumed in production of other products within the factory, for it is not considered a co-product and its impacts are assumed to be insignificant. As there is no clear information about the type of recycling process, the external recycling of waste from process is considered environmentally irrelevant, falling in the cut-off criteria of 1% of total mass of the unit process. However, transport to the site where recycling takes place is considered in this analysis.

Regarding inputs and outputs of water, energy, waste, wastewater and air emissions, it was considered both the total year consumption/production of each specific input or output and the total quantity of products (in m^2) that undergo each stage to calculate a percentage of inputs and outputs associated to the product under study. The diesel consumption due to internal transportation associated to the product is an average based on a percentage of the overall production.

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.

4. LCA: Results

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 BOUNDARYS
Raw material supply	Transport	Manufacturing	Transport	Construction-installation process	Use	Maintenance	Repair	Replacement[1)]	Refurbishment[1)]	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	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 m² of floor covering Corkcomfort Floating HPS (A1-A3)

Parameter	Parameter	Unit	1 m² of floor covering Corkcomfort Floating HPS (A1-A3)
GWP	Global warming potential	[kg CO_2-Eq.]	-6,32E+00
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	8,79E-07
AP	Acidification potential of land and water	[kg SO2-Eq.]	8,29E-02
EP	Eutrophication potential	[kg $(PO_4)^{3-}$- Eq.]	1,69E-02
POCP	Formation potential of tropospheric ozone photochemical oxidants	[kg Ethen Eq.]	3,33E-03
ADPE	Abiotic depletion potential for non fossil resources	[kg Sb Eq.]	1,86E-05
ADPF	Abiotic depletion potential for fossil resources	[MJ]	1,97E+02

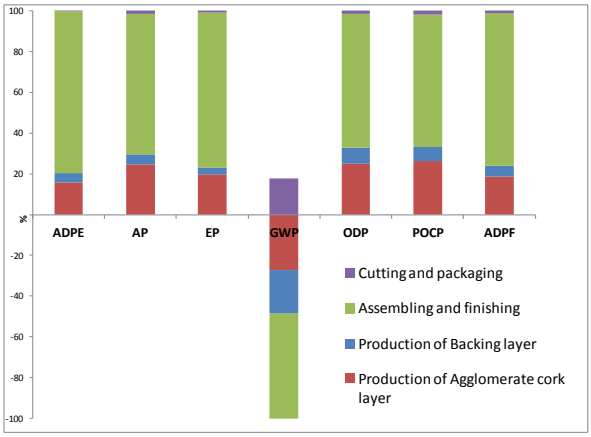
RESULTS OF THE LCA - RESOURCE USE: 1 m² of floor covering Corkcomfort Floating HPS (A1-A3)

Parameter	Parameter	Unit	1 m² of floor covering Corkcomfort Floating HPS (A1-A3)
PERE	Renewable primary energy as energy carrier	[MJ]	1,00E+02
PERM	Renewable primary energy resources as material utilization	[MJ]	1,09E+02
PERT	Total use of renewable primary energy resources	[MJ]	2,09E+02
PENRE	Non renewable primary energy as energy carrier	[MJ]	1,19E+02
PENRM	Non renewable primary energy as material utilization	[MJ]	7,67E+01
PENRT	Total use of non renewable primary energy resources	[MJ]	1,96E+02
SM	Use of secondary material	[kg]	0
RSF	Use of renewable secondary fuels	[MJ]	0
NRSF	Use of non renewable secondary fuels	[MJ]	0
FW	Use of net fresh water	[m³]	4,18E-01

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 m² of floor covering Corkcomfort Floating HPS (A1-A3)

Parameter	Parameter	Unit	1 m² of floor covering Corkcomfort Floating HPS (A1-A3)
HWD	Hazardous waste disposed	[kg]	8,97E-03
NHWD	Non hazardous waste disposed	[kg]	8,11E-01
RWD	Radioactive waste disposed	[kg]	2,64E-04
CRU	Components for re-use	[kg]	0
MFR	Materials for recycling	[kg]	4,16E-02
MER	Materials for energy recovery	[kg]	0
EEE	Exported electrical energy	[MJ]	0
EET	Exported thermal energy	[MJ]	0

5. LCA: Interpretation



According to the previous chart, it is possible to state that the stage which contributes to a greater environmental burden in all categories is the assembly and finishing, except for GWP category.

Global Warming Potential (GWP)
Global warming potential impacts are negative, meaning that there is more sequestration of carbon dioxide during the process then emissions resulting from the process. The fixation of CO_2 is due to the use of cork (in production of agglomerate cork layer and backing layer) and also due to the use of HDF during assembly. Cutting and packaging the final product is the only stage with a negative impact on global warming category.

Depletion Potential of the Stratospheric Ozone Layer (ODP)
Ozone layer depletion is caused by different substances, where the most relevant are fluorine-chlorine-hydrocarbons (CFC's) and nitrogen oxides. The impacts on this category are greatly associated to assembling and finishing stage due to the use of materials and electricity consumption. The natural gas used in production of HDF and electricity consumption are the main responsible to these impacts. Production of agglomerate cork layer is also significant to these impacts, mainly due to the use of a resin, which has associated to its production process the combustion of natural gas.

Acidification Potential of land and water (AP)
Acidification of water and soils has very damaging effects on ecosystems and is caused by transformation of air pollutants into acids. Assembling and finishing stage is the most significant to this effect, being responsible for more than 68% of the impacts in this category. This is mainly due to the use of electricity, considering that its production results in emissions of sulfur dioxide, nitrogen oxides, ammonia and other pollutants that can be converted into acids. Production of thermal energy also releases nitrogen oxides, which also contributes to this effect. The emissions from the production of PVC layer have also a significant impact in this category, as well as electricity use in HDF manufacturing process. The electricity consumption in production of agglomerate cork is also significant to this impact.

Eutrophication Potential (EP)
Eutrophication is caused by anthropogenic emissions, pollutants in waste water and fertilization of soils. It results in an increased concentration of nutrients, causing various damages to the ecosystems. Phosphate, nitrites and ammonia are the main pollutants that contribute to this effect.
The stage with more significant impacts in this category is the assembling and finishing, representing more than 76% of the impacts in this category. Treatment of the effluents resulting from HDF production is responsible for more than 37% of the total impacts, resulting in emission of pollutants to the ground. Emissions resulting from thermal energy production have also a significant weight in this impact category (21,6%). Electricity is also responsible for about 9% of these burdens, due to emission of pollutants associated to combustion of fossil fuels. In production of agglomerate cork, electricity consumption is the main responsible for the impacts on this category.

Photochemical Ozone Creation Potential (POCP)
Production of ozone at ground-level (troposphere) is harmful for ecosystems and humans. It is caused by the chemical reaction between nitrogen oxides with hydrocarbons (VOCs), producing different pollutants, including ozone. Most of the tropospheric ozone is created from the reactions between substances emitted from vehicles, industrial plants and vegetation. As was verified in other categories, the stage with more significant impacts in photochemical ozone creation potential is assembling and finishing (67%). The potential impacts on this category are mainly due to electricity use during production stage and during the manufacturing of pre-products, namely PVC and HDF. Electricity consumption is also responsible for a significant impact in cork layer manufacturing.

Potential for abiotic depletion of resources – elements for non-fossil resources (ADPE)
This category characterizes the depletion of non-energetic resources, reflecting the shortage of these materials in the geosphere. According to the results, the assembling and finishing stage is responsible for the most of the impacts of this category (79,7% of the impacts). These results are mainly due to extraction of raw materials used to produce the PVC layer. Production of agglomerate cork has a significant contribution, due to the use of a resin, resulting in consumption of resources.

Potential for abiotic depletion of resources – fossil fuels (ADPF)
This category characterizes the depletion of fossil fuels used. The impacts of assembling stage in abiotic depletion of fossil fuels are also more significant than in other stages of the production process. By analyzing the inputs and outputs of materials and energy associated with this phase, it is possible to determine that the natural gas and electricity (fossil fuels) used in HDF production, electricity consumption in PVC manufacturing and electricity use in assembling stage are the main responsible for this impact category, representing about 70% of the total impacts. Regarding production of agglomerate cork layer, the consumption of natural gas and electricity associated

to the production of a resin represents the most representative contribution to these impacts.

Other considerations
The analyzed product requires the use of about 0,2% (mass) of varnishes with different compositions. Their composition was obtained from suppliers and producers that provided the information in a range of percentage of weight. Since the considered varnish quantity and composition results from this average of a range of values, this is where it is considered to be the higher level of uncertainty in the overall assessment. The data sets used in modeling comply with the requirements in data quality referred to in standard /CEN/TR 15941:2010/.

6. Requisite evidence

6.1 VOC emissions and other indoor air quality parameters

French legislation
Corkcomfort Floating HPS was subjected to tests in order to determine the quantities of VOCs, formaldehydes, acetaldehyde and other CMR (Carcinogenic, Mutagenic or Toxic to Reproduction) substances to obtain the classification of the product according to criteria established by the recent French legislation.

Name of the testing Institute:	LQAI - Laboratório da Qualidade do ar interior
Number of test report:	LQAI.MC.13/12
Testing methods:	Tests in a room after 28 days of exposure according to ISO 16000-9 standards Analysis of results according to ISO 16000-6

Results
Concentration limits and correspondent classes according to French legislation after 28 days of exposure to specific surface emission rate of 1,25 m^3 h^{-1} m^{-2} are presented in the following table.

	Concentration (µg/m3) Classes			
Substance	**C**	**B**	**A**	**A+**
Formaldehyde	>120	<120	<6	<10
Acetaldehyde	>400	<400	<300	<200
Toluene	>600	<600	<450	<300
Tetrachloroethylene	>500	<500	<350	<250
Xylene	>400	<400	<300	<200
1,2,4 - trimethylbenzene	>2000	<2000	<1500	<1000
1,4 - Dichlorobenzene	>120	<120	<90	<60
Ethylbenzene	>1500	<1500	<1000	<750
2 - Butoxyethanol	>2000	<2000	<1500	<1000
Styrene	>500	<500	<350	<250
COVT	>2000	<2000	<1500	<1000

Concentration limits of CMR and correspondent classes according to French legislation after 28 days of exposure to specific surface emission rate of 1,25 m^3 h^{-1} m^{-2} are presented in the following table.

Substance	**Limits (µg/m3)**
Trichloethylene	<1
Benzene	<1
Phtalate de bis (2-ethylhexyle)	<1
Phtalate de dibutyle	<1

The material has achieved a Classification of A+ according to French legislation since the results have not exceeded the concentration limits correspondent to that class and are also below the concentration limits of CMR substances.

GREENGUARD Indoor Air Quality (IAQ) Certification
This product has also been certified according to the GREENGUARD Indoor Air Quality (IAQ) Certification Program for Low Emitting Products.

Certification Program:	GREENGUARD Indoor Air Quality (IAQ) Certification Program for Low Emitting Products
Number of test report:	5625-410
Reference Standard:	GGPS.001 GREENGUARD IAQ Standard for Building Materials, Finishes, and Furnishings

Criteria: Listing of measured carcinogens and reproductive toxins as identified by California Proposition 65, the U.S. National Toxicology Program (NTP), and the International Agency on Research on Cancer (IARC) must be provided.

Substances	**Allowable Limits**
TVOC	≤ 0,5 mg/m^3
Formaldehyde	≤ 0,05 ppm
Total Aldehydes	≤ 0,1 ppm
Individual VOCs	≤ 0,1 TLV
4-phenylcyclohexene	≤ 0,0065 mg/m^3

Results
GREENGUARD Certification affirms that representative samples of the products tested meet the criteria of the referenced standard and the requirements of the specific certification program.

GREENGUARD Children & Schools Certification Criteria
In addition to meeting the GREENGUARD Children & Schools Certification Criteria, this product complies with CA Section 01350 Version 1.1, including the 2012 update for formaldehyde at 9 µg/m³ (office seating ≤ 4.5 µg/m³).

Certification Program:	GREENGUARD Children & Schools Certification Criteria
Number of test report:	5625-420
Reference Standard:	GGPS.002 GREENGUARD Children & Schools℠ Standards

Criteria	**Allowable Limits**
Individual VOCs	≤ 1/100 TLV and ≤ 1/2 CA CREL (Office Seating ≤ 1/100 TLV and ≤ 1/4 CA CREL)
Formaldehyde	≤ 0,0135 ppm / 13,5 ppb (Office Seating ≤ 0,00675 ppm / 6,75 ppb)
TVOC	≤ 0,22 mg/m^3
Total Aldehydes	≤ 0,043 ppm / 43 ppb
Total Phthalates	≤ 0,01 mg/m^3
Total Particles	≤ 0,02 mg/m^3

Results

GREENGUARD Certification affirms that representative samples of the products tested meet the criteria of the referenced standards and the requirements of the specific certification program.

7. References

Institut Bauen und Umwelt 2011
Institut Bauen und Umwelt e.V., Königswinter (pub.): Generation of Environmental Product Declarations (EPDs);

General principles
for the EPD range of Institut Bauen und Umwelt e.V. (IBU), 2011-09
www.bau-umwelt.de

PCR 2011, Part A
Institut Bauen und Umwelt e.V., Königswinter (pub.): Product Category Rules for Construction Products from the range of Environmental Product Declarations of Institut Bauen und Umwelt (IBU), Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Background Report. September 2012
www.bau-umwelt.de

PCR 2011, Part B
Institut Bauen und Umwelt e.V., Königswinter (pub.): PCR Guidance-Texts for Building-Related Products and Services
From the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU)
Part B: Requirements on the EPD for Floor coverings
June 2012
www.bau-umwelt.de

ISO 10874
DIN EN ISO 10874:2012-04, Resilient, textile and laminate floor coverings - Classification (ISO 10874:2009); German version EN ISO 10874:2012

ISO 14025
DIN EN ISO 14025:2011-10: Environmental labels and declarations — Type III environmental declarations — Principles and procedures

EN 15804
DIN EN 15804:2012-04: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

EN 655
DIN EN 655:2011-07, Resilient floor coverings - Tiles of agglomerated composition cork with polyvinyl chloride wear layer - Specification

EN 14085
DIN EN 14085:2011-07, Resilient floor coverings - Specification for floor panels for loose laying

EN 14041
DI EN 14041:2008-05, Resilient, textile and laminate floor coverings - Essential characteristics

Ecoinvent database v2.2
Swiss Centre for Life Cycle Inventories (ecoinvent Centre) EMPA St. Gallen Lerchenfeldstrasse 5 CH-9014 St. Gallen www.ecoinvent.org

Euroepan Waste Catalogue Directive
2000/532/EC: Commission Decision of 3 May 2000 replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste (notified under document number C(2000) 1147)

European Waste Framework Directive
Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives

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