

# ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

Owner of the Declaration	<b>James Halstead PLC</b>
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-JHA-20140178-ICA1-EN
Issue date	22.09.2014
Valid to	21.09.2019

## **SIMPLAY® Design Vinyl Tile - Resilient Vinyl Floor Covering James Halstead PLC**

[www.bau-umwelt.com](http://www.bau-umwelt.com) / <https://epd-online.com>



## 1. General Information

### James Halstead PLC

#### Programme holder

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

#### Declaration number

EPD-JHA-20140178-ICA1-EN

#### This Declaration is based on the Product Category Rules:

Floor coverings, 07.2014  
(PCR tested and approved by the independent expert committee)

#### Issue date

22.09.2014

#### Valid to

21.09.2019



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



Dr. Burkhard Lehmann  
(Managing Director IBU)

### SIMPLAY® Design Vinyl Tile - Resilient Vinyl Floor Covering

#### Owner of the Declaration

James Halstead PLC  
Beechfield, Hollinhurst Road, Whitefield,  
Manchester, M261JN, UK

#### Declared product / Declared unit

SIMPLAY® DESIGN VINYL TILE - Resilient Vinyl Floor Covering, 1m<sup>2</sup> (A1-A3: produced, incl. A5: installed)

#### Scope:

SIMPLAY® Design Vinyl Tile from James Halstead plc, Manchester, UK. The declaration refers to a loose laid floor covering of thickness 5.0mm with a 0.7mm transparent wear layer. The products are manufactured in Choongnam Province, South Korea. The product is distributed by Objectflor Art Und Design Belags GmbH, Your Flooring Partner. 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.

#### Verification

The CEN Norm EN 15804 serves as the core PCR

Independent verification of the declaration  
according to ISO 14025

internally  externally



Prof. Dr. Birgit Grahl  
(Independent tester appointed by SVA)

## 2. Product

### 2.1 Product description

SIMPLAY® Design Vinyl Tiles from James Halstead PLC are luxury, highly decorative resilient vinyl floor coverings of 5.0mm total thickness with a 0.7mm clear wear layer that are loose laid. SIMPLAY® Design Vinyl Tile is manufactured strictly in accordance with EN ISO 10582. The uppermost surface is treated with a reinforced PUR surface coating offering enhanced resistance to dirt pick up and staining. The uppermost surface also encompasses emboss impressions to give the product a natural wood, stone or design impression along with slip performance class DS to EN 13893 and R10 to DIN 51130. The resilience and life time of the product is imparted with the 0.7mm clear wear layer which meets Type 1 >80% for binder content according to EN ISO 10582:2012 with over 97% binder. The decorative design is achieved through the use of a 0.07mm printed vinyl film comprising wood, design and stone images with high definition realistic impressions.

The products performance with regards to resistance to dimensional stability changes and residual indentation is imparted with the use of specially engineered and formulated high density core and backing layers

### 2.2 Application

SIMPLAY® Design Vinyl Tile features a highly resilient 0.7mm clear wear layer and is a floor covering for extremely heavy traffic areas in domestic, commercial and industrial applications.

SIMPLAY® Design Vinyl Tile is a high performance resilient floor covering for commercial and professional use e.g. in Retail Shops and Stores, Schools, Healthcare, Office and Administration areas. SIMPLAY® Design Vinyl Tile is use classified as 23, 34, 43 according to EN ISO 10874:2012 (EN 685)



### 2.3 Technical Data

Excerpt of technical data sheets widely available at [www.Objectflor.de](http://www.Objectflor.de) or [www.Polyflor.com](http://www.Polyflor.com)

#### Constructional data

Name	Value	Unit
Product thickness EN ISO 24346	5	mm
Grammage EN ISO 23997 (surface weight)	8	kg/m <sup>2</sup>
Abrasion Class EN ISO 10582	Type 1;	-

	97%	
Product Form	Tiles and Planks	-
Length of the surface layer (planks)	1505	mm
Width of the surface layer (planks)	185	mm
Length and width of squared elements (tiles)	600	mm

**2.4 Placing on the market / Application rules**

For the marketing in the EU/EFTA the Regulation (EU) No 305/2011 dated from 9 March 2011 applies. The products need a Declaration of Performance taking into consideration /EN 14041:2004/AC: 2006 Resilient, textile and laminate floor coverings — Essential characteristics/ and the CE-marking.

Further standards are:

EN ISO 10582:2012 (EN 649) – Resilient Floorcoverings – Heterogeneous vinyl floorcoverings Specification.

EN ISO 10874:2012 (EN 685) – Resilient, Laminate and Textile Floorcoverings Classification.

EN 13501-1:2002 – Fire Classification of construction products and building elements.

For the application and use the respective national provisions apply.

James Halstead PLC® floor coverings comply with European technical approval standards (CE Conformity and marking) and respective national approval standards for building products, e.g. the general technical approval of the German Institute for Building Technology (DIBt) and the French Regulation - *L'etiquetage sanitaire des produits de construction. Decret no 2011-321 du mars 2011 relatif a l'etiquetage des produits de construction ou de revetement de mur ou de sol et des peintures et vermis sur leurs emissions de polluants volatis.*

**2.5 Delivery status**

Delivery of tiles up to 600x600 mm and planks 185x1505mm in cardboard packages of average 2.2m<sup>2</sup>.

**2.6 Base materials / Ancillary materials**

The product has the following composition:

Ingredient	SIMPLAY DESIGNN VINYL [%]
PVC	40,25
Calcium Carbonate	41,84
Plasticiser	12,12
Stabiliser	3,03
Pigment / Additive	1,81
Glass Fibre	0,76
Polyurethane Coating	0,2

The floor covering contains 20% of internally recycled production waste.

Vinyl – suspension PVC resin sourced locally to the factory. Vinyl offers flooring its resilient properties of

hard wearing performance in use and coupled with aesthetics of design. Finally the vinyl thermoplastic means the product is 100% recyclable.

Filler – calcium carbonate powder filler sourced locally to the factory to impart strength, impact resilience and dimensional stability properties to the product. Calcium carbonate is a widely abundantly available natural mineral.

Plasticiser – DOTP plasticisers are used to give the product flexibility.

Glass Fibre – a layer of glass fibre is included to impart superior dimensional stability characteristics.

Pigment (Colouring) – the product is offered its decorative layers with thin vinyl print films under the resilient wear layer. The films are printed using a wide variety of standard issue printing colours.

Polyurethane coating- a UV cross linked and reinforced polyurethane coating is added to the surface of the product

According to the latest revision of Article 59, the Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorisation and restriction of Chemicals (REACH). "the REACH list", of substances of very high concern' (SVHC) the product is not manufactured with or contains any of these substances above a concentration of 0.1% by weight.

**2.7 Manufacture**

All the layers are laminated together through a process of time, high pressure and high temperature inside a pressing machine, either continuous or discontinuous, to form a heterogeneous sheet. At the same time the corresponding realistic emboss feel effect is applied. After cooling and conditioning reinforced PUR coating is applied to the surface and the master sheets annealed to relax out. These sheets are then cut in a controlled environment into the respective plank and tile sizes with a supplementary bevelled edge being added to some designs. Finally the floor coverings are packaged (see chapter 2.10). All left overs which arise during production (trimming, cutting, defect product and bevelled leftovers) are without exception placed back into the calendaring process to make new flooring, in a closed loop, internal recycling system. ISO 9001:2008 - Certificate QMS 1394 Notified body KSA  
ISO 14001:2004 – Certificate EMS 0555 Notified body KSA

**2.8 Environment and health during manufacturing**

Since 2000, the environmental management system is certified to ISO 14001 - Environmental management systems (/DIN EN ISO 14001/).

Air: the exhaust air resulting from production processes is cleaned according to local legal requirements. Emissions are significantly below the permitted tolerances.

Water/Soil: Contamination of water and soil does not occur. Effluent resulting from production processes is processed internally and routed back to production.

The quality of water is audited on a regular basis.

Noise protection: noise intensive systems such as granulation are structurally enclosed and controlled.

**2.9 Product processing/Installation**

The relevant installation instructions can be found on the Objectflor website. The appropriate tools for installing vinyl resilient flooring should be used such as



a rule, craft knife, measure. Care should be taken when using sharp tools.  
The installation of the floor covering is based on the technical regulations of DIN 18365.  
When installing loose laid resilient floorings often permanent adhesive systems are not required.  
Observe all liability insurance association regulations for commercial processing operations where appropriate.  
Waste vinyl material accumulated on site (off cuts) shall be collected and separated into waste types. Vinyl can be recycled using the AgPR recycling facility. Any other disposal methods such as landfill and incineration should comply with local waste disposal authority instructions. Where possible though, vinyl products should always be recycled.

### 2.10 Packaging

SIMPLAY® Design Vinyl Tile is packed in cardboard packages. Packaging material and transportation aids such as wooden pallets, cardboard, paperboard PET strapping and recyclable PE film should be collected separately for later recycling.

### 2.11 Condition of use

The product is a vinyl resilient floor. It is inert in its supplied state.

### 2.12 Environment and health during use

According to the current state of knowledge, hazards to water, air and soil cannot occur during the proper use of the described products.  
No damage to health or impairment is expected under normal use corresponding to the intended use of resilient flooring. Indoor Air Quality VOC emissions are independently monitored at least three times annually for performance. SIMPLAY® Design Vinyl complies with the requirements of:

1. The DIBt/AgBB (2012) scheme
2. The requirements of the standard method for the testing and evaluation of volatile organic chemical emissions from indoor sources using environmental chambers (version 1.1) as defined by the California Department of Public Health (CDPH) – version of February 2010.(CA01350 FloorScore)
3. Eurofins v3.1 (2011) Indoor Air Comfort Gold standards.
4. According to the French evaluation method, the product achieves - Class A+ - *L'etiquetage sanitaire des produits de construction. Decret no 2011-321 du mars 2011 relatif a l'etiquetage des produits de construction ou de revetement de mur ou de sol et des peintures et vermis sur leurs emissions de polluants volatis.*

### 2.13 Reference service life

The reference service life of 20 years used as a RSL for the purpose of this EPD constitutes the minimum service life.

The service life of resilient floor coverings depends on the correct installation taking into account the declared use classification and the adherence of the producers cleaning instructions.

## 2.14 Extraordinary effects

### Fire

Flammability rating Bfl according to EN 13501-1:2002 (Exova Warrington Fire, Notified Body 0833, December 2013, test report 336224).

### Fire protection

Name	Value
Building material class EN 13501-1:2002	Bfl s1

### Water

No component materials which could be hazardous to water are washed out. It is clear that water on the surface could present potentially a slip hazard. Water spillages should be cleared immediately. For areas where water and contaminants are frequent an EN 13845 safety flooring is advised.

### Mechanical destruction

Abrasion and impact loading classification see product definition in this EPD. The dragging of heavy objects across the floor can cause damage and breaking of edges (risk of injury).

### 2.15 Re-use phase

Loose Laid vinyl flooring can easily be removed for re-use in an alternative installation or for end of life recycling. Loose laid vinyl tiles can be recycled and put back into new flooring.

### 2.16 Disposal

Vinyl Flooring: leftovers which arise from construction site as well as those from deconstruction measures should be primarily routed to a material utilisation stream such as AgPR.

### 2.17 Further information

Certified by the CSTB for an Avis Technique for France. The classification is U4 P3 E2 C2.  
The approval number is: No AC2014220. See the CSTB website for copies of certificates [www.cstb.fr](http://www.cstb.fr)  
The product is also classed generic A+ for use in major use such as Healthcare and Education areas according to the BRE EAM Life Cycle Analysis (LCA). See the Green Guide to Specification live database at [www.greenbooklive.co.uk](http://www.greenbooklive.co.uk)

## 3. LCA: Calculation rules

### 3.1 Declared Unit

#### Declared unit

Name	Value	Unit
Declared unit installed	1	m <sup>2</sup>
Conversion factor to 1 kg	0.125	-

### 3.2 System boundary

Type of EPD: cradle to grave.

Modules A1-A3 include processes that provide materials and energy input for the system, manufacturing and transport processes up to the factory gate, as well as waste processing.  
Module A4 includes transport of the floor covering to the place of installation.

**Module A5** includes the installation of the floor covering, the production of excess material that becomes the off-cuts and incineration of off-cuts and packaging material.

**Module B1** considers the use or application of installed product. For this case of SIMPLAY® Design Vinyl Tile, this is zero.

**Module B2** is including provision of cleaning agent, energy and water consumption for the cleaning of the floor covering incl. waste water treatment. The LCA results in this EPD are declared for a one year usage.

**Module B3** considers the repair of installed product. For this case of SIMPLAY® Design Vinyl Tile, this is zero.

**Module B4** considers the replacement of installed product. For this case of SIMPLAY® Design Vinyl Tile, this is zero.

**Module B5** considers the refurbishment of installed product. For this case of SIMPLAY® Design Vinyl Tile, this is zero.

**Module B6** considers the operational energy use of installed product. For this case of SIMPLAY® Design Vinyl Tile, this is zero.

**Module B7** considers the operational water use of installed product. For this case of SIMPLAY® Design Vinyl Tile, this is zero.

**Module C1** considers electricity supply for the deconstruction of the flooring. For this case of SIMPLAY® Design Vinyl Tile, this is zero

**Module C2** includes transportation of the post-consumer waste to waste processing.

**Modules C3:** the end of life scenarios declared for SIMPLAY® Design is 95% recycling - according to information from AgPR, (Arbeitsgemeinschaft PVC-Bodenbelag Recycling) and 5% incineration.

**Module C4** considers disposal of the waste product arising at the end of life for SIMPLAY® Design.

**Module D** includes benefits and loads from all net flows given in module A5 and C4 that leave the product boundary system after having passed the end-of-waste state in the form of recovery and/or recycling potentials.

### 3.3 Estimates and assumptions

The methodological approach of recycling materials in this study does consider processing required to prepare the material (electricity for grinding) in module A1-A3. In the end of life scenario the material for recycling leaves the system without environmental burden and without crediting any value.

### 3.4 Cut-off criteria

In the assessment, all available data from production are considered, i.e. raw materials used, utilised thermal energy, and electric power consumption. Thus material and energy flows contributing less than 1% of mass or energy are considered. It can be assumed that the total sum of neglected processes does not exceed 5% of energy usage and mass. The manufacturer provided data on the transport

expenditure for all relevant material flows. Machines and facilities required during production are neglected.

### 3.5 Background data

For life cycle modelling of the considered products, the GaBi Software System for Life Cycle Engineering, developed by PE INTERNATIONAL AG, has been used to model the product systems considered in this assessment. All relevant background datasets are taken from the GaBi 6 software database. The datasets from the GaBi database are documented in the online documentation /GaBi 6 2013/. To ensure comparability of results in the LCA, the basic data of GaBi database were used for energy, transportation and auxiliary materials.

### 3.6 Data quality

The primary data collected from the manufacturer are based on annual quantities, or are projected from measurements on the specific facility for the reporting period. The data quality can be described as good. The primary data collection has been done thoroughly, all relevant flows are considered. Technological, geographical and temporal representativeness is given. The /GaBi 6/ database contains datasets for some of the basic materials used in the respective formulations. Last update of the database was 2013.

Further datasets on the upstream chain of the basic material production are approximated with datasets on similar chemicals or are estimated by consolidation of existing datasets.

### 3.7 Period under review

The period under review is the year 2013.

### 3.8 Allocation

#### Allocation of foreground data

The manufacturing process does not create any by-products. As such, the software model does not include any allocation.

However, foreground data provided by James Halstead for SIMPLAY® Design Vinyl Tile has been extracted from total site production of the facility (which includes production of other products beside the declared product family). James Halstead has used allocation keys of mass, area and production volumes in the plant to provide foreground data pertaining to SIMPLAY® Design Vinyl Tile.

Specific information on allocation the background system is given in the GaBi datasets documentation.

### 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: Scenarios and additional technical information

The following technical information serves as basis for the declared modules. The values refer to the declared unit of 1 m<sup>2</sup>.

### Transport to the construction site (A4)

Name	Value	Unit
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Litres of fuel (truck)	0.0054	l/100km
Transport distance (average truck)	1330	km
Capacity utilisation (including empty runs)	85	%
Litres of fuel (boat)	0.0013	l/100km
Transport distance (average boat)	23177	km
Capacity utilisation (boat)	48	%

**Installation in the building (A5)**

Name	Value	Unit
Material loss	4.5	%

**Maintenance (B2)**

The data below refer to the cleaning requirements for 1 year

Name	Value	Unit
Water consumption	0.003	m <sup>3</sup>
Electricity consumption	0.55	kWh
Material loss	-	kg
Cleaning agent (25% solution)	0.04	kg
Maintenance cycle (per year)	156	Number/a

**Reference service life**

Name	Value	Unit
Reference service life	20	a

**End of Life (C1-C4)**

Name	Value	Unit
Recycling	7.6	kg
Energy recovery	0.4	kg

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

Name	Value	Unit
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For module D the benefits and loads outside the system boundary resulting from reuse, recycling and energy recovery in module A5 and C4 are declared. For waste incineration combustion in a WIP (R1 < 0.6) with energy recuperation is considered.

## 5. LCA: Results

The results for module B2 refer to a period of one year.

For the calculation of the impact of B2 for a certain service life the values for B2 have to be multiplied by the estimated service life in years.

### 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 <sup>1)</sup>	Refurbishment <sup>1)</sup>	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: 1m<sup>2</sup> installed SIMPLAY® Design Vinyl Tile

Parameter	Unit	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP	[kg CO <sub>2</sub> -Eq.]	12.400	3.300	1.080	0.000	0.321	0.000	0.000	0.000	0.000	0.000	0.000	0.076	0.000	0.711	-0.161
ODP	[kg CFC11-Eq.]	8.750E-9	1.230E-11	4.600E-10	0.000E+0	1.860E-10	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	3.640E-13	0.000E+0	9.930E-11	4.570E-11
AP	[kg SO <sub>2</sub> -Eq.]	2.790E-1	8.650E-2	1.620E-3	0.000E+0	1.330E-3	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	3.480E-4	0.000E+0	7.300E-4	-3.870E-4
EP	[kg (PO <sub>4</sub> ) <sup>3-</sup> -Eq.]	4.240E-3	9.040E-3	2.150E-4	0.000E+0	1.050E-4	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	7.950E-5	0.000E+0	4.370E-5	-2.710E-5
POCP	[kg Ethen Eq.]	7.890E-3	4.200E-3	4.090E-4	0.000E+0	1.010E-4	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	-1.120E-4	0.000E+0	7.460E-5	-3.260E-5
ADPE	[kg Sb Eq.]	5.500E-3	9.080E-6	2.750E-4	0.000E+0	8.810E-6	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	2.870E-7	0.000E+0	1.910E-5	-1.240E-6
ADPF	[MJ]	280.000	41.200	13.800	0.000	3.950	0.000	0.000	0.000	0.000	0.000	0.000	1.050	0.000	2.990	-2.290

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: 1m<sup>2</sup> installed SIMPLAY® Design Vinyl Tile

Parameter	Unit	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	[MJ]	16.700	-	0.731	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	-	0.000	-	-
PERM	[MJ]	2.290	-	0.101	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	-	0.000	-	-
PERT	[MJ]	19.000	0.349	0.832	0.000	0.867	0.000	0.000	0.000	0.000	0.000	0.041	0.000	0.152	-0.217	
PENRE	[MJ]	201.000	-	9.710	0.000	-	0.000	0.000	0.000	0.000	0.000	-	0.000	-	-	
PENRM	[MJ]	102.000	-	4.990	0.000	-	0.000	0.000	0.000	0.000	0.000	-	0.000	-	-	
PENRT	[MJ]	303.000	41.400	14.700	0.000	5.670	0.000	0.000	0.000	0.000	0.000	1.050	0.000	3.220	-2.720	
SM	[kg]	1.600	0.000	0.075	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
RSF	[MJ]	4.260E-3	2.500E-4	2.860E-3	0.000E+0	2.830E-4	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	6.760E-6	0.000E+0	3.000E-3	-3.810E-5
NRSF	[MJ]	4.340E-2	2.630E-3	3.2.940E-2	0.000E+0	2.960E-3	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	7.080E-5	0.000E+0	3.080E-2	-3.990E-4
FW	[m <sup>3</sup> ]	5.550E-2	4.090E-4	3.900E-3	0.000E+0	2.440E-3	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	2.920E-5	0.000E+0	1.970E-3	-5.400E-4

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:

#### 1m<sup>2</sup> installed SIMPLAY® Design Vinyl Tile

Parameter	Unit	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	[kg]	1.460E-2	5.500E-5	7.130E-4	0.000E+0	2.240E-3	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	2.400E-6	0.000E+0	1.970E-4	-1.650E-4
NHWD	[kg]	5.320E-1	1.040E-3	3.2.890E-1	0.000E+0	4.880E-3	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	1.320E-4	0.000E+0	2.940E-1	-5.730E-4
RWD	[kg]	8.810E-3	5.140E-5	3.400E-4	0.000E+0	6.840E-4	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	0.000E+0	1.380E-6	0.000E+0	9.090E-5	-1.710E-4
CRU	[kg]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MFR	[kg]	1.600	0.000	0.075	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.600	0.000	0.000	0.000
MER	[kg]	0.000	0.000	0.362	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.400	0.000
EEE	[MJ]	0.000	0.000	0.533	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.583	-0.934
EET	[MJ]	0.000	0.000	1.552	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.700	-2.720

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 main contributors to the environmental impacts and the demand on primary energy are from the basic material provision (A1). The manufacturing of SIMPLAY Design Vinyl Tile at James Halstead PLC

also contributes quite significantly to the environmental impacts in relation to the total production process (A1-A3).

## 7. Requisite evidence

### Indoor Air Quality - VOC Accreditation

**DIBt:** Z.156.603-992 - external audits and surveillance monitoring by Eurofins Product Testing A/S, Galten, Denmark

**Test Report:** Determination of the VOC emissions from SIMPLAY Design Vinyl according to the AgBB (German operation working committee) method (inspection report number G19600) from 14/12/2012.

**Method:** Testing in a 0.25m<sup>3</sup> chamber on the basis of the AgBB Method ISO 16000 series.

**Result:** According to the AgBB evaluation method, the tested product complies with the requirements of the DIBt (October 2010) for use in the indoor environment.

**2011-IACG-019 - Eurofins Indoor Air Comfort Gold v3.1(2011)** – Compliance and external surveillance of VOC by Eurofins Product Testing A/S, Galten, Denmark. For updated copies of certification please ask Objectflor or see [www.eurofins.com/iac-certified.aspx](http://www.eurofins.com/iac-certified.aspx).

**Testing Institute:** Eurofins DK, Galten, Denmark

**Test Report:** Determination of the VOC emissions from SIMPLAY Design Vinyl according to the AgBB (2012) method and Indoor Air Comfort v3.1 (2011) (inspection report number G19600B) from 14/12/2012

**Result:** According to the evaluation methods the product complies with the requirements of Indoor Air Comfort GOLD for use in the indoor environment.

### French VOC Regulation

**Test Report:** Determination of the VOC emissions from Expona Design according to the French Regulation (Decret No 2011-321 du mars 2011) method (inspection report number G19600B) from 14/12/2012.

**Method:** Testing in a 0.25m<sup>3</sup> chamber on the basis ISO 16000 series series.

**Result:** According to the French evaluation method, the tested product complies achieves- Class A+ - *L'etiquetage sanitaire des produits de construction. Decret no 2011-321 du mars 2011 relatif a l'etiquetage des produits de construction ou de revetement de mur ou de sol et des peintures et vermis sur leurs emissions de polluants volatis.*

**SCS FloorScore** - Indoor Air Quality Certified to SCS-EC-10.2-2007. Conforms to California Specification 01350 (standard method v1.1) for the school classroom and private office parameters; also in compliance with 9µg/m<sup>3</sup> formaldehyde CREL for all parameters. Registration SCS-FS-02906. For current live certification please see [www.scs-certified.com/products](http://www.scs-certified.com/products) or ask Objectflor.



## 8. References

### Institut Bauen und Umwelt

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

### ISO 14025

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

### EN 15804

EN 15804:2012-04+A1 2013: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

### IBU 2013, PCR Part A

PCR -Part A: Calculation rules for the Life Cycle Assessment and Requirements on the Background Report, Version 1.2, Institut Bauen und Umwelt e.V., [www.bau-umwelt.com](http://www.bau-umwelt.com)

### IBU 2014, PCR Part B

PCR - Part B: Requirements for the EPD of floor coverings, Version 1.6, Institut Bauen und Umwelt e.V., [www.bau-umwelt.com](http://www.bau-umwelt.com)

### AgPR

Arbeitsgemeinschaft PVC-Bodenbelag Recycling – [www.agpr.de](http://www.agpr.de)

### AgBB

Committee for Health-related Evaluation of Building Products (Ausschuss zur gesundheitlichen Bewertung von Bauprodukten)

### DIBt

Deutsches Institut für Bautechnik

### GaBi 6

GaBi 6 Software-System and Databases for Life Cycle Engineering. Copyright, TM Stuttgart, Echterdingen. 1992-2013.

### ISO 9001

EN ISO 9001:2008: Quality Management Systems – Requirements



**ISO 14001**

EN ISO 14001:2004: Environmental Management systems – Requirements with guidance for use

**EN 13845**

EN 13845:2005: Resilient floor coverings – Polyvinyl chloride floor coverings with particle based enhanced slip resistance – Specification.

**ISO 14025**

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**EN ISO 10582**

EN ISO 10582:2012 - Resilient Floorcoverings - Heterogeneous Vinyl Floorcoverings Specification

**EN ISO 10874 (previously EN 685)**

EN ISO 10874:2012 - Resilient, Laminate and Textile Floorcoverings Classification

**EN 13501-1**

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**EN 14041**

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**EN ISO 24346**

EN ISO 24346:2012 - Resilient Floorcoverings - Determination of Overall Thickness

**EN ISO 23997**

EN ISO 23997:2012 - Resilient Floorcoverings - Determination of Mass per unit Area

**EN 13893**

EN 13893:2002 - Resilient, laminate and textile floor coverings - Measurement of dynamic coefficient of friction on dry floor surfaces

**DIN 51130**

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**ERFMI 2012**

Final report: LCA, by order of ERFMI, PE International, 2012



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