

# ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

Owner of the Declaration	Aspen Yapı ve Zemin Sistemleri Sanayi ve Ticaret A.Ş.
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-ASP-20150291-IAC1-EN
Issue date	12.01.2016
Valid to	11.01.2021

## Sepera Room Partition System

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



## General Information

Aspen Yapı ve Zemin Sistemleri Sanayi ve Ticaret A.Ş.

### Programme holder

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

### Declaration number

EPD-ASP-20150291-IAC1-EN

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

Room partition systems, 07.2014  
(PCR tested and approved by the SVR)

### Issue date

12.01.2016

### Valid to

11.01.2021



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



Dr. Burkhard Lehmann  
(Managing Director IBU)

Sepera

### Owner of the Declaration

Aspen Yapı ve Zemin Sistemleri Sanayi ve Ticaret A.Ş.  
Leylak Sokak Murat İş Merkezi B Blok 3/14  
34387 Mecidiyeköy / İstanbul

### Declared product / Declared unit

Sepera / 1 m<sup>2</sup>

### Scope:

Within this study a life cycle analysis according to /ISO 14040/44/ is performed for Sepera room partition systems manufactured by Aspen Yapı ve Zemin Sistemleri Sanayi ve Ticaret A.Ş - the manufacturer. at the production plant in Sakarya, Turkey. The EPD for Aspen - the brand name- Sepera room partition systems is an average EPD which represents the life cycle analysis of the Sepera product group. 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 verifier appointed by SVR)

## Product

### Product description

It is a combination of factory output modules, defined as separating wall systems, which can be modular or movable. They are mainly used as a structural member for dividing (separating) working environments into organized and clean separated areas in terms of architectural requirements. System structures consisting of aluminum and steel profiles provide a lighter solution compared to conventional walls. A wide range of cladding opportunities on the surface is available.

The calculations were done based on average annual data available in the company. Average breakdown was done by considering Sepera's total area per year (m<sup>2</sup>/year). According to this, the total energy, water, and raw materials used to produce Aspen's five room partition wall system products were divided by the percentage of total Sepera throughput manufactured in the reference year – 2014.

Sepera is a movable wall system which consists of mounted modules with spool and stems to a special alloyed rail system. Its technology and user-friendly usage provide maximum required space in a short time period.

The modules consist of aluminum and steel casing and independently hung natural wood sheathing, laminate,

wallpaper, metal, fabric, and acoustic coating panels on the casing.

At the upper and lower edges, a flexible and moveable gasket on a shaft fixes the modules with pressure to the ground and the ceiling rail. It provides uninterrupted horizontal connection tolerating surfaces' skewness. A flawless wall consists of the modules connections through concave and convex vertical slots' depth and magnetic strips. The system sound insulation is provided by the insulation joint to have the required system impermeability.

### Application

Partition wall systems are used to create separated spaces in interior design.

### Technical Data

Each model of partition wall has its own technical data.

### Constructional data

Name	Value	Unit
Airborne sound reduction	38 - 55	dB
Weight of wall load	0.36 - 0.59	kN/m <sup>2</sup>

### Base materials / Ancillary materials

Main raw materials for partition wall systems are:

Wood: 55-60%  
 Aluminum (Al): 15-20%  
 Steel: 10-15%  
 Plastic (major part of plastic contains cliprail): 5-10%  
 Mineral Wool: 1-5%

Auxiliary materials are;

Glass: 0,1-1%  
 Paper: 0,1-0,5%  
 Glue: 0,01-0,1% - (cut-off criteria applied)

#### Reference service life

According to /EN 15084/, the reference service life (RSL) shall only be declared in the EPDs which cover the entire life cycle of a product. The modules declared in this EPD are the production stage information modules from A1 to A3. However, it can be noted that unless there is an inconformity in the working conditions and maintenance methods, products are expected to be usable for more than 20 years without losing stability and functional properties.

## LCA: Calculation rules

#### Declared Unit

The declared unit is 1 m<sup>2</sup> of Sepera room partition system. The average mass of the product is approximately 69 kg.

#### Declared unit

Name	Value	Unit
Declared unit	1	m <sup>2</sup>
Grammage	69	kg/m <sup>2</sup>
Conversion factor to 1 kg	0.014	-

#### System boundary

The type of the EPD: cradle-to-gate.  
 The system boundary includes the production of Sepera room partition system products from the

extraction of raw materials to the production of finished packaged products at the factory gate - cradle-to-gate. In this study, the product stage information modules A1, A2, and A3 are considered. These modules include extraction and processing of raw materials, A1; transport of the raw materials to the manufacturer, A2; and manufacturing, including the packaging of the product, A3.

#### 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.

## LCA: Scenarios and additional technical information

The modules A4, A5, B1, B2, B3, B4, B5, Reference Service Life (RSL), B6, B7, and C1-C4 are neither considered nor declared in this study.

## 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 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	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

### RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: Sepera / 1 m<sup>2</sup>

Parameter	Unit	A1-A3
Global warming potential	[kg CO <sub>2</sub> -Eq.]	7.32E+1
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	4.71E-8
Acidification potential of land and water	[kg SO <sub>2</sub> -Eq.]	5.52E-1
Eutrophication potential	[kg (PO <sub>4</sub> ) <sup>3</sup> -Eq.]	4.37E-2
Formation potential of tropospheric ozone photochemical oxidants	[kg ethene-Eq.]	4.37E-2
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	2.40E-4
Abiotic depletion potential for fossil resources	[MJ]	1.85E+3

### RESULTS OF THE LCA - RESOURCE USE: Sepera / 1 m<sup>2</sup>

Parameter	Unit	A1-A3
Renewable primary energy as energy carrier	[MJ]	1.24E+3
Renewable primary energy resources as material utilization	[MJ]	9.08E+0
Total use of renewable primary energy resources	[MJ]	1.25E+3
Non-renewable primary energy as energy carrier	[MJ]	2.22E+3
Non-renewable primary energy as material utilization	[MJ]	0.00E+0
Total use of non-renewable primary energy resources	[MJ]	2.22E+3
Use of secondary material	[kg]	0.00E+0
Use of renewable secondary fuels	[MJ]	0.00E+0
Use of non-renewable secondary fuels	[MJ]	0.00E+0
Use of net fresh water	[m <sup>3</sup> ]	1.05

### RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES:

Sepera / 1 m<sup>2</sup>

Parameter	Unit	A1-A3
Hazardous waste disposed	[kg]	6.79E-4
Non-hazardous waste disposed	[kg]	2.43E+1
Radioactive waste disposed	[kg]	1.44E-1
Components for re-use	[kg]	0.00E+0
Materials for recycling	[kg]	0.00E+0
Materials for energy recovery	[kg]	0.00E+0
Exported electrical energy	[MJ]	0.00E+0
Exported thermal energy	[MJ]	0.00E+0

## References

### PCR Part A

PCR Guidance-Text A for Building-Related Products and Services Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Background Report. 04.2013.

### PCR Part B

Institut Bauen und Umwelt e.V., Berlin (pub.): Product Category Rules for Construction Products from the range of Environmental Product Declarations of Institut Bauen und Umwelt (IBU), Part B: Requirements on the EPD for Room partition systems. 10.2013  
www.bau-umwelt.de

### EN 13501-2:2007+A1:2009

Fire classification of construction products and building elements. Classification using data from fire resistance tests, excluding ventilation services

### OHSAS 18001

TS 18001:2008, Occupational health and safety management systems

### TS EN 10140-2

Acoustics- Laboratory measurement of sound insulation of building elements—Part 2: Measurement of airborne sound insulation

### TS EN 755-1

Aluminum and aluminum alloys - Extruded rod/bar, tube and profiles - Part 1: Technical conditions for inspection and delivery

**TS EN 755-3**

Aluminum and aluminum alloys - Extruded rod/bar, tube and profiles - Part 3: Round bars, tolerances on dimensions and form

**TS EN 755-4**

Aluminum and aluminum alloys - Extruded rod/bar, tube and profiles - Part 4: Square bars, tolerances on dimensions and form

**TS EN 755-5**

Aluminum and aluminum alloys - Extruded rod/bar, tube and profiles - Part 5: Rectangular bars, tolerances on dimensions and form

**TS EN 755-9**

Aluminum and aluminum alloys - Extruded rod/bar, tube and profiles - Part 9: Profiles, tolerances on dimensions and form

**TS EN 572-2**

Glass in building - Basic soda lime silicate glass products - Part 2: Float glass

**TS EN 572-4**

Glass in building - Basic soda lime silicate glass products - Part 4: Drawn sheet glass

**TS EN 572-8**

Glass in building - Basic soda lime silicate glass products - Part 8: Supplied and final cut sizes

**TS EN 12150-2**

Glass in building - Thermally toughened soda lime silicate safety glass - Part 2: Evaluation of conformity/Products standard

**TS EN 681-2**

Elastomeric seals-Materials requirements for pipe joints seals used in drainage and sewerage applications-Part 2:Thermoplastic elastomers

**TS EN 438-3**

High-pressure decorative laminates (HPL) - Sheets based on thermosetting resins (Usually called laminates) - Part 3: Classification and specifications for laminates less than 2 mm thick intended for bonding to supporting substrates

**GaBi 6.4.0.3**

thinkstep: GaBi Software-Systems and Databases for Life Cycle Engineering

**Waste Framework Directive**

Commission Decision 2000/532/EC, The European List of Waste

**ISO 14040/44**

Environmental Management; Life cycle assessment, Principles and framework

**Institut Bauen und Umwelt**

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

**General principles**

for the EPD range of Institut Bauen und Umwelt e.V. (IBU), 2013/04  
[www.bau-umwelt.de](http://www.bau-umwelt.de)

**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

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