ENVIRONMENTAL PRODUCT DECLARATION

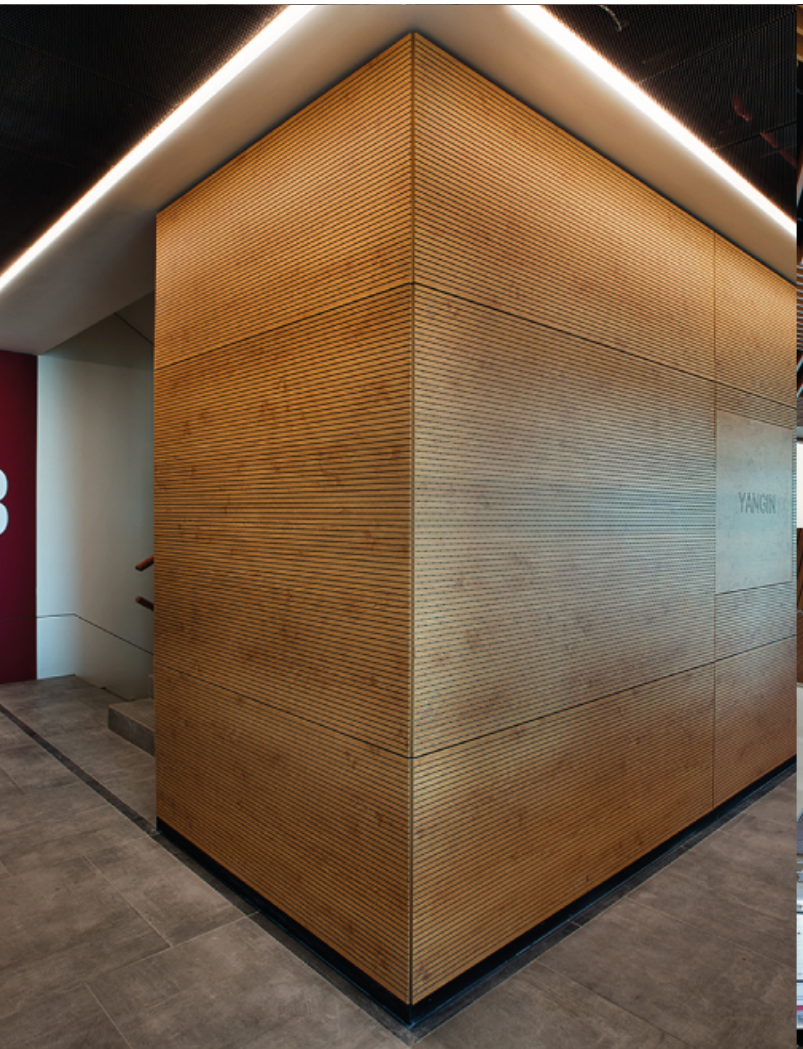
as per ISO 14025 and EN 15804

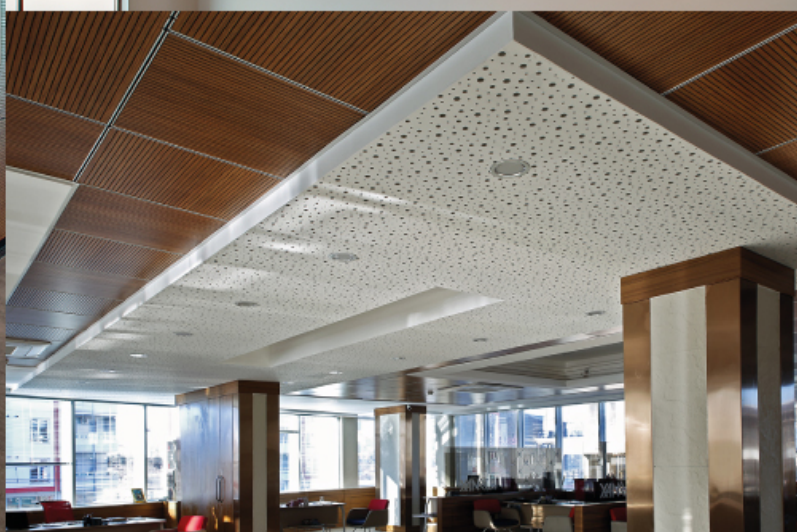
Owner of the Declaration	Aspen Yapı ve Zemin Sistemleri Sanayi ve Ticaret A.Ş.
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-ASP-20160121-CAC1-EN
Issue date	14/09/2016
Valid to	13/09/2021

SEPIA Wood Ceiling and Wall Cladding System

Institut Bauen und Umwelt e.V.

www.bau-umwelt.com / https://epd-online.com





General Information

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

Sepia

Programme holder
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Owner of the Declaration
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Declaration number
EPD-ASP-20160121-CAC1-EN

Declared product / Declared unit
Sepia / 1 m2

This Declaration is based on the Product Category Rules:
Wood based panels, 07.2014
(PCR tested and approved by the SVR)

Scope:
Within this study a life cycle analysis according to /ISO 14040/44/ is performed for SEPIA Wood Ceiling and Wall Cladding System manufactured by Aspen Yapı ve Zemin Sistemleri Sanayi ve Ticaret A.Ş at the production plant in Sakarya, Turkey. . The LCA is based on the data declared by the manufacturer. The EPD for Sepia is an EPD which represents the cradle-to-gate life cycle analysis of the product. The declaration refers to a single product from one plant of one manufacturer. 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.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.

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Verification

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

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

Dr. Burkhart Lehmann
(Managing Director IBU)

Prof. Dr. Birgit Grahl
(Independent verifier appointed by SVR)

Product

Product description
SEPIA Wood Ceiling and Wall Cladding Systems produced by Aspen provide fast installation and simple usage with special mounting accessories and modular solutions. Standard types are perforated acoustic panels, linear wood solutions, canopy panels and integrated wall-ceiling systems.
Sepia can be produced in different sizes and design options according to each different project. The system can be produced as natural wood coated MDF, massive wood or laminate coated wood. However, this EPD covers the option with laminate coated wood due to data constraints on other alternative options. Therefore, the system considered in this EPD is produced with laminate coated wood. The back surface can be covered with an acoustic cloth. Perforation and slot can be applied if necessary.

Application
SEPIA Wood Ceiling and Wall Cladding Systems are used in offices, shopping malls, sport and conference centres, airport terminals, summer terraces and restaurants.

Technical Data
Particle boards and wood fiber should have a smooth surface coated with synthetic resin.

Constructional data

Name	Value	Unit
Gross density acc. to DIN EN 197-1	730 (+/- %7)	kg/m³
Bending strength (transverse)	25 - 40	N/mm²
Dimension change on plate level	+/- 0.2	mm
Tensile strength rectangular	0.55 - 0.8	N/mm²
Surface solidity	1 - 1.15	N/mm2
Distension 24h	Max. %6	%

Base materials / Ancillary materials
SEPIA Wood Ceiling and Wall Cladding Systems are primarily made of wood, laminate and other auxiliary

substances. Main raw materials as mass percentage are as follows:

Name	Value	Unit
Wood	91	%
Laminate	7	%
Auxiliary substances	2	%

Reference service life
According to /EN 15804/, 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 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 m² of SEPIA Wood Ceiling and Well Cladding System. The average mass of the product is approximately 15 kg. The mass of the product is approximately 15 kg. According to the data based on the year 2015 from the manufacturer, of 15 kg of mass of the product, over 90% is laminated woodboard, 2% is steel sheet, and 1.5% is glue. The classification of declaration is 1a, which is *declaration of one specific product from one plant of one manufacturer*, based on PCR-A Chapter 5.2.

Declared unit

Name	Value	Unit
Declared unit	1	m^2
Conversion factor to 1 kg	0.066	-
Grammage	15	kg/m^2

System boundary
The type of the EPD: cradle-to-gate
The system boundary includes the production of SEPIA Wood Ceiling and Well Cladding Systems from the extraction of raw materials to the production of finished packaged products at the factory 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. As stated by PCR A version 1.5, a potential release of carbon in C4 is to be declared. Therefore, assuming that 90% of particleboard is composed of wood, with the carbon content of 52%, the potential CO2 emission in C4 can be calculated as to be 21.75 kg CO2-equiv., which is caused by the use of wood in particleboard part of the product

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	X	MND

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: Sepia ceiling system / 1 m²

Parameter	Unit	A1-A3	C4
Global warming potential	[kg CO_2-Eq.]	-1.19E+1	2.18E+1
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	1.74E-9	IND
Acidification potential of land and water	[kg SO_2-Eq.]	7.84E-2	IND
Eutrophication potential	[kg $(PO_4)^{3-}$-Eq.]	7.08E-3	IND
Formation potential of tropospheric ozone photochemical oxidants	[kg ethene-Eq.]	5.72E-3	IND
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	8.18E-5	IND
Abiotic depletion potential for fossil resources	[MJ]	1.41E+2	IND

RESULTS OF THE LCA - RESOURCE USE: Sepia ceiling system / 1 m²

Parameter	Unit	A1-A3	C4
Renewable primary energy as energy carrier	[MJ]	5.92E+2	IND
Renewable primary energy resources as material utilization	[MJ]	2.19E+2	IND
Total use of renewable primary energy resources	[MJ]	8.11E+2	IND
Non-renewable primary energy as energy carrier	[MJ]	1.59E+2	IND
Non-renewable primary energy as material utilization	[MJ]	2.11E+0	IND
Total use of non-renewable primary energy resources	[MJ]	1.61E+2	IND
Use of secondary material	[kg]	0.00E+0	IND
Use of renewable secondary fuels	[MJ]	0.00E+0	IND
Use of non-renewable secondary fuels	[MJ]	0.00E+0	IND
Use of net fresh water	[m³]	8.63E-2	IND

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: Sepia ceiling system / 1 m²

Parameter	Unit	A1-A3	C4
Hazardous waste disposed	[kg]	3.10E-6	IND
Non-hazardous waste disposed	[kg]	1.92E-1	IND
Radioactive waste disposed	[kg]	6.99E-3	IND
Components for re-use	[kg]	0.00E+0	IND
Materials for recycling	[kg]	0.00E+0	IND
Materials for energy recovery	[kg]	0.00E+0	IND
Exported electrical energy	[MJ]	0.00E+0	IND
Exported thermal energy	[MJ]	0.00E+0	IND

**Assuming that the product may be incinerated at the end of its life, the biogenic CO2 emissions generated during the incineration (C4) is declared. Thus, this value of GWP in the C4 column represents the global warming potential including the biogenic carbon from the incineration*

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