Statement of Verification

BREG EN EPD No.: 000348 Issue 01

This is to verify that the

Environmental Product Declaration

provided by:

Jeld-Wen

BRE Global Verified EPD

is in accordance with the requirements of:

EN 15804:2012+A1:2013

and

BRE Global Scheme Document SD207

This declaration is for:

Solid Wood 93mm Frameset

Company Address

JELD-WEN Danmark A/S
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Denmark

Signed for BRE Global Ltd	Emma Baker Operator	04 February 2021 Date of this Issue
04 February 2021 Date of First Issue		03 February 2026 Expiry Date

BRE Global Verified EPD

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Environmental Product Declaration

EPD Number: 000348

General Information

This environmental product declaration is for 1 solid wood 93mm frameset.

EPD Programme Operator	Applicable Product Category Rules
BRE Global Watford, Herts WD25 9XX United Kingdom	BRE Environmental Profiles 2013 Product Category Rules for Type III environmental product declaration of construction products to EN 15804:2012+A1:2013
Commissioner of LCA study	**LCA consultant/Tool**
JELD-WEN Danmark A/S Danmarksvej 9 DK-9670 Løgstør Denmark	BRE-Lina
Declared/Functional Unit	**Applicability/Coverage**
Painted 93mm frameset in size M10x21 (986x2089 mm), which contains: 3 hinges 3228-110, a strike plate 2864-820 and threshold in dimensions (25x93x930 mm). Frameset weight is 9,09 kg.	Product Average.
EPD Type	**Background database**
Cradle to Gate	ecoinvent 3.2 was released in 2015

Demonstration of Verification
CEN standard EN 15804 serves as the core PCR [a]
Independent verification of the declaration and data according to EN ISO 14025:2010 ☐Internal X External
(Where appropriate [b])Third party verifier: Nigel Jones
a: Product category rules b: Optional for business-to-business communication; mandatory for business-to-consumer communication (see EN ISO 14025:2010, 9.4)

Comparability
Environmental product declarations from different programmes may not be comparable if not compliant with EN 15804:2012+A1:2013. Comparability is further dependent on the specific product category rules, system boundaries and allocations, and background data sources. See Clause 5.3 of EN 15804:2012+A1:2013 for further guidance

Information modules covered

Product			Construction		Use stage							End-of-life					Benefits and loads beyond the system boundary
					Related to the building fabric					Related to the building							
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4		D
Raw materials supply	Transport	Manufacturing	Transport to site	Construction – Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal		Reuse, Recovery and/or Recycling potential
☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐

Note: Ticks indicate the Information Modules declared.

Manufacturing site(s)

JELD-WEN frameset parts are produced in 3 different JELD-WEN factories: Estonia Rakvere, Latvia Dobele and Denmark Løgstor.

JELD-WEN Estonia AS Tootmise 8 EE-44317 Rakvere Estonia	JELD-WEN Latvija SIA Zaļā iela 105 LV-3701 Dobele Latvia
JELD-WEN Danmark A/S Danmarksvej 9 DK-9670 Løgstør Denmark	

Construction Product:

Product Description

Interior Performance frame manufactured in a double rebated profile for optimal design appearance in 40/28 mm solid wood with 93 mm frame depth. The solid frame is manufactured with a special technique which results in a very durable and stabile construction which makes the frame a perfect fit for both commercial and residential use. The frame type can be used for unclassified doors as well as door sets with E30 and EI30 fire rating and 35dB sound reduction (Rw 38dB), cold and hot smoke classification, durability performance in heavy to severe duty and climate classification C1 (temp. 3-23 degrees C°).

Technical Information

Fire and sound classification is valid only, if product is used as a doorset. Product type approvals can be found on RISE certifed product overview. Link to the certification: http://publiccert.ri.se/en/Product/Index/0984/79

Property	Value, Unit
Fire classification: (Test standard: EN 1634-1* Classification standard: According to Boverkets byggregler (BBR), 5:231.)	EI30
Sound classification: (Test standard: EN ISO 10140-1 Classification standard: According to SS 25267:2004 – Swedish standard)	R'w 30/35dB

Main Product Contents

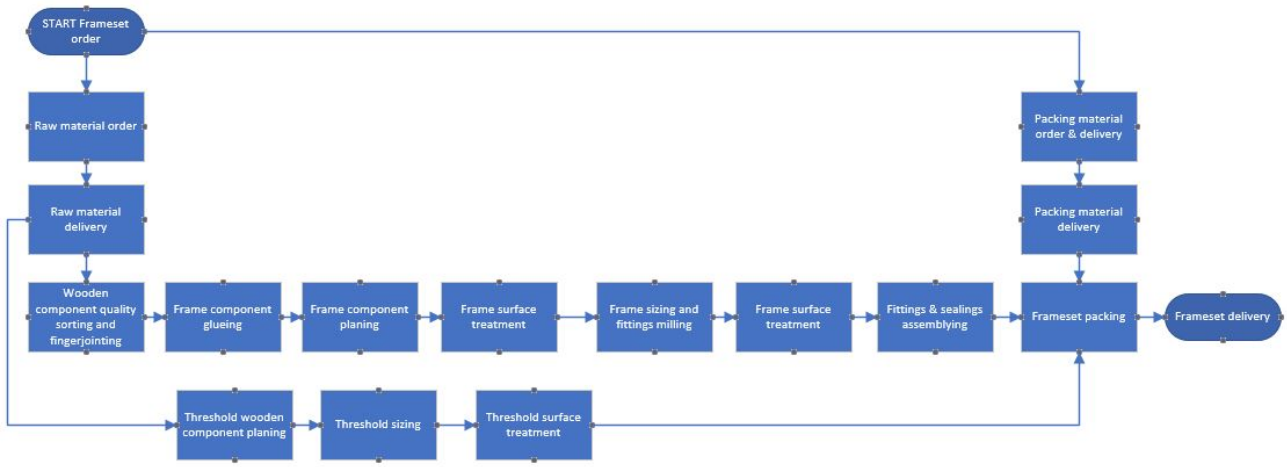
Painted solid wood frameset in width 93mm.

Material/Chemical Input	%
Solid wood (pine)	80
Surface treatment	1,5
Binders	0,9
Metal	4,3
Sealing	1
Treshold (solid wood oak)	12,3

Manufacturing Process

JELD-WEN frameset parts are produced in 3 different JELD-WEN factories: Estonia Rakvere, Latvia Dobele and Denmark Løgstor.
After entering the frameset order in the production program, the presence of raw material is checked. If the raw material is not in our warehouse, an order is placed, and the material manufacturer transports the material to our JELD-WEN Estonia Rakvere factory. The production of a frame begins with the wood quality control and finger jointing the wooden component. Wooden component is glued and pressed into frame component. Frame component is planed and sized. Frame surface is covered with putty. Semi-finished component is shipped to JELD-WEN Dobele factory. Frame components are milled to the correct dimensions and the seal grooves, strike plate and hinge holes are milled. Next, the frame components move to the surface treatment, where frame is painted. After surface treatment, the strike plate, hinges, seals and threshold are installed, and the product is ready for packaging and shipping.
At the same time with frame production threshold is produced in JELD-WEN Denmark Løgstor factory. Threshold wooden component is planed and sized after that surface is treated with UV lacquer. Finished thresholds are shipped to JELD-WEN Latvia Dobele for frameset packing.

Process flow diagram



A flow diagram of door frameset production.

Life Cycle Assessment Calculation Rules

Declared / Functional unit description

Declared unit is 1 Painted 93mm frameset in size M10x21 (986x2089 mm), which contains: 3 hinges 3228-110, a strike plate 2864-820 and threshold in dimensions (25x93x930 mm). Frameset weight is 9,09 kg.

System boundary

The EPD covers the product stage only and is called " cradle-to-gate A1-A3" according to the definition in the PCR. The product stage or "Cradle-to-Gate" includes A1 raw material extraction and processing of secondary materialinput; A2 transport of raw materials and inputs to the manufacturer and A3 manufacturing of the products, and packing. This 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 during the product stage.

Data sources, quality and allocation

Data quality requirements are according to EN 15804:2012+A1:2013, clause 6.3.7. The manufacturer-specific production data have been retrieved for 2019 from the production site. The product components are produced at three JELD-WEN production sites in Rakvere, Estonia, Dobele, Latvia and Løgstor, Denmark.
The allocation is made in accordance to Product Category Rule EN 15804:2012+A1:2013. Energy, water and waste consumption in the factory is allocated to the declared unit by mass allocation in each producing factory. Therefore, all factories waste is being divided with exact factory production percent for that product.

Cut-off criteria

General cut-off criteria are given in standard EN 15804 clause 6.3.5. In compliance with these criteria, all main raw materials and all the essential energy are included. The use of the chemical raw material on the product surface are given in a wet state and the weight of the final product is given in a dry state, which influences < 0,8 % mass balance difference. This cut-off rule is not valid for hazardous materials and substances.

LCA Results

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts									
			GWP	ODP	AP	EP	POCP	ADPE	ADPF
			kg CO_2 equiv.	kg CFC 11 equiv.	kg SO_2 equiv.	kg $(PO_4)^{3-}$ equiv.	kg C_2H_4 equiv.	kg Sb equiv.	MJ, net calorific value.
Product stage	Raw material supply	A1	-3.23e+1	9.07e-7	4.72e-2	1.66e-2	6.85e-3	2.14e-4	9.75e+1
	Transport	A2	3.29e+0	6.06e-7	1.12e-2	2.92e-3	1.93e-3	8.64e-6	4.97e+1
	Manufacturing	A3	4.89e+0	1.74e-7	1.57e-2	3.27e-3	2.02e-3	2.71e-6	4.61e+1
	Total (of product stage)	A1-3	-2.42e+1	1.69e-6	7.41e-2	2.28e-2	1.08e-2	2.25e-4	1.93e+2
Construction process stage	Transport	A4	MND	MND	MND	MND	MND	MND	MND
	Construction	A5	MND	MND	MND	MND	MND	MND	MND
Use stage	Use	B1	MND	MND	MND	MND	MND	MND	MND
	Maintenance	B2	MND	MND	MND	MND	MND	MND	MND
	Repair	B3	MND	MND	MND	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND	MND	MND	MND
End of life	Deconstruction, demolition	C1	MND	MND	MND	MND	MND	MND	MND
	Transport	C2	MND	MND	MND	MND	MND	MND	MND
	Waste processing	C3	MND	MND	MND	MND	MND	MND	MND
	Disposal	C4	MND	MND	MND	MND	MND	MND	MND
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	MND	MND	MND	MND	MND	MND	MND

GWP = Global Warming Potential;
ODP = Ozone Depletion Potential;
AP = Acidification Potential for Soil and Water;
EP = Eutrophication Potential;
POCP = Formation potential of tropospheric Ozone;
ADPE = Abiotic Depletion Potential – Elements;
ADPF = Abiotic Depletion Potential – Fossil Fuels;

LCA Results (continued)

Parameters describing resource use, primary energy								
			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	4.78e+2	1.05e-4	4.78e+2	1.04e+2	1.02e+01	1.14e+2
	Transport	A2	6.62e-1	2.45e-6	6.62e-1	4.94e+1	0.00e+0	4.94e+1
	Manufacturing	A3	3.38e+1	5.67e-6	3.38e+1	2.40e+1	0.00e+0	2.40e+1
	Total (of product stage)	A1-3	5.12e+2	1.13e-4	5.12e+2	1.78e+2	1.02e+01	1.88e+2
Construction process stage	Transport	A4	MND	MND	MND	MND	MND	MND
	Construction	A5	MND	MND	MND	MND	MND	MND
Use stage	Use	B1	MND	MND	MND	MND	MND	MND
	Maintenance	B2	MND	MND	MND	MND	MND	MND
	Repair	B3	MND	MND	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND	MND	MND
End of life	Deconstruction, demolition	C1	MND	MND	MND	MND	MND	MND
	Transport	C2	MND	MND	MND	MND	MND	MND
	Waste processing	C3	MND	MND	MND	MND	MND	MND
	Disposal	C4	MND	MND	MND	MND	MND	MND
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	MND	MND	MND	MND	MND	MND

PERE = Use of renewable primary energy excluding renewable primary energy 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 resource

LCA Results (continued)

Parameters describing resource use, secondary materials and fuels, use of water						
			SM	RSF	NRSF	FW
			kg	MJ net calorific value	MJ net calorific value	m^3
Product stage	Raw material supply	A1	0.00e+0	0.00e+0	0.00e+0	1.28e-1
	Transport	A2	0.00e+0	0.00e+0	0.00e+0	1.08e-2
	Manufacturing	A3	0.00e+0	0.00e+0	0.00e+0	3.08e-2
	Total (of product stage)	A1-3	0.00e+0	0.00e+0	0.00e+0	1.70e-1
Construction process stage	Transport	A4	MND	MND	MND	MND
	Construction	A5	MND	MND	MND	MND
Use stage	Use	B1	MND	MND	MND	MND
	Maintenance	B2	MND	MND	MND	MND
	Repair	B3	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND
End of life	Deconstruction, demolition	C1	MND	MND	MND	MND
	Transport	C2	MND	MND	MND	MND
	Waste processing	C3	MND	MND	MND	MND
	Disposal	C4	MND	MND	MND	MND
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	MND	MND	MND	MND

SM = Use of secondary material;
RSF = Use of renewable secondary fuels;
NRSF = Use of non-renewable secondary fuels;
FW = Net use of fresh water

LCA Results (continued)

Other environmental information describing waste categories					
			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	5.26e-1	1.03e+0	3.81e-4
	Transport	A2	2.08e-2	2.31e+0	3.43e-4
	Manufacturing	A3	1.65e-2	2.95e-1	1.15e-4
	Total (of product stage)	A1-3	5.64e-1	3.64e+0	8.39e-4
Construction process stage	Transport	A4	MND	MND	MND
	Construction	A5	MND	MND	MND
Use stage	Use	B1	MND	MND	MND
	Maintenance	B2	MND	MND	MND
	Repair	B3	MND	MND	MND
	Replacement	B4	MND	MND	MND
	Refurbishment	B5	MND	MND	MND
	Operational energy use	B6	MND	MND	MND
	Operational water use	B7	MND	MND	MND
End of life	Deconstruction, demolition	C1	MND	MND	MND
	Transport	C2	MND	MND	MND
	Waste processing	C3	MND	MND	MND
	Disposal	C4	MND	MND	MND
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	MND	MND	MND

HWD = Hazardous waste disposed;
NHWD = Non-hazardous waste disposed;
RWD = Radioactive waste disposed

LCA Results (continued)

Other environmental information describing output flows – at end of life						
			CRU	MFR	MER	EE
			kg	kg	kg	MJ per energy carrier
Product stage	Raw material supply	A1	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Transport	A2	0.00e+0	0.00e+0	0.00e+0	0.00e+0
	Manufacturing	A3	0.00e+0	5.05e-1	4.48e+0	0.00e+0
	Total (of product stage)	A1-3	0.00e+0	5.05e-1	4.48e+0	0.00e+0
Construction process stage	Transport	A4	MND	MND	MND	MND
	Construction	A5	MND	MND	MND	MND
Use stage	Use	B1	MND	MND	MND	MND
	Maintenance	B2	MND	MND	MND	MND
	Repair	B3	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND
End of life	Deconstruction, demolition	C1	MND	MND	MND	MND
	Transport	C2	MND	MND	MND	MND
	Waste processing	C3	MND	MND	MND	MND
	Disposal	C4	MND	MND	MND	MND
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	MND	MND	MND	MND

CRU = Components for reuse;
MFR = Materials for recycling

MER = Materials for energy recovery;
EE = Exported Energy

Summary, comments and additional information

JELD-WEN introduction

JELD-WEN (NYSE listed), established in 1960, is one of the world's largest manufacturers of doors and windows with production facilities in 20 countries, primarily in North America, Europe and Australia. Headquartered in North Carolina, USA. JELD-WEN designs, manufactures and distributes a wide range of interior doors, exterior doors, wooden, vinyl and aluminum windows, as well as related products for new buildings and the renovation market, for both private and commercial buildings. JELD-WEN is recognized in the production of energy saving products and has been an ENERGY STAR® partner since 1998.
Our products are marketed globally under the brand name JELD-WEN, but also under several market-leading regional brand names such as SWEDOOR® and DANA® in Europe and Corinthian®, Stegbar® and Trend® in Australia.

Forest Stewardship Council (FSC) Certification

JELD-WEN holds FSC multi-site certificate since 2011. Majority of JELD-WEN products on the European market are available as FSC and PEFC certified.

Figure 1 Painted frameset for a door leaf.

References

BSI. Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products. BS EN 15804:2012+A1:2013. London, BSI, 2013.

BSI. Environmental labels and declarations – Type III Environmental declarations – Principles and procedures. BS EN ISO 14025:2010 (exactly identical to ISO 14025:2006). London, BSI, 2010.

BSI. Environmental management – Life cycle assessment – Principles and framework. BS EN ISO 14040:2006. London, BSI, 2006.

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