

EJOT Baubefestigungen GmbH

Product sustainability fact sheet

Product information for the building certification scheme LEED v4® (Leadership in Energy and Environmental Design)

The intention of this document is to support project teams pursuing LEED v4 certification by providing an overview of how your products contribute to LEED v4 credits. Basis of this information is Leed v4 credit library (2014 -07)¹

Fastening systems for ETICS

General Information

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Product information

Product description

The declared products of the EJOT Building Fasteners, business area External Thermal Insulation Composite Systems (ETICS), are produced of various kinds of plastic and/ or steel. The products can be differentiated by their field of application and their effective length. Within the framework of this declaration average anchors and screws with an effective length of 175, 195 and 215 mm are considered. A linear extrapolation is permitted for the not shown lengths. The declaration includes all products included in the portfolio of the following product groups:

- Washer anchors (screw-in and hammer-in anchors)
- Additional washers for washer anchors
- Façade anchors (screw-in and hammer-in anchors)
- Screw- in anchors for securing of double-shell masonry
- Concrete screws for fastening of ceiling insulation
- Accessories

These are products with a European Technical Assessment (ETA) and/ or a national approval as well as constructive products.

Application

The products considered within this framework are mainly for the mechanical fastening of ETICS on different substrates. Part of the considered portfolio is used for the securing of double-shell masonry or for fastening of ceiling insulation.

Technical data

Name	Value	Unit
Diameter of dowel	8 - 10	mm
Plate diameter without additional plate	60	mm
Depth of drill hole	35 - 80	mm

¹ <http://www.usgbc.org/credits> (8/2014)

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Anchoring depth	25 - 70	mm
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Product declarations

Environmental product declaration

Number	EPD-EJO-20140128-IBD1-DE
Program operator	Institute Construction and Environment (IBU - Institut Bauen und Umwelt e.V.), Berlin, Germany
Author of the LCA	PE INTERNATIONAL AG, Leinfelden-Echterdingen, Germany

Materials and Resources (MR)

Summary

Materials and Resources credits encourage using sustainable building materials and reducing waste. Indoor environmental quality credits promote better indoor air quality and access to daylight and views.

Building product disclosure and optimization - environmental product declarations

Intent of this credit

To encourage the use of products and materials for which life-cycle information is available and that have environmentally, economically, and socially preferable life-cycle impacts. To reward project teams for selecting products from manufacturers who have verified improved environmental life-cycle impacts.

Product information for EJOT fastening systems for ETICS within this credit:

Item	Value
Critically reviewed LCA acc. to ISO 14044	yes
Reviewer	Institute Construction and Environment (IBU - Institut Bauen und Umwelt e.V.), Berlin, Germany
Download link of the document/study	http://bau-umwelt.de/download/CY49a0afbfX149653f0993XY36e0/EPD_EJO_20140128_IBD1_DE.pdf
Product specific EPD (Type III, including external verification)	yes
EPD program operator	Institute Construction and Environment (IBU - Institut Bauen und Umwelt e.V.), Berlin, Germany; www.construction-environment.com
EPD program operator country	Germany
EPD number	EPD-EJO-20140128-IBD1-DE

Results of the LCA – ENVIRONMENTAL IMPACTS:

Declared unit: 1 average EJOT fastening system for ETICS with a length of 195 mm		
Declared life cycle stages (standard DIN EN 15978)	PRODUCT STAGE	END OF LIFE STAGE
	A1-A3	C4
GWP [kg CO ₂ -eq.]	1.250E-1	4.530E-4
ODP [kg CFC11-eq.]	1.410E-11	6.200E-15
AP [kg SO ₂ -eq.]	4.700E-4	2.880E-6
EP [kg PO ₄₃ -- eq.]	4.580E-5	3.950E-7
POCP [kg Ethene-eq.]	5.540E-5	2.710E-7
ADPE [kg Sb eq.]	4.760E-6	1.700E-10

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ADPF [MJ]	1.830E+0	5.960E-3
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:

Declared life cycle stages (standard DIN EN 15978)	Declared unit: 1 average EJOT fastening system for ETICS with a length of 195 mm	
	PRODUCT STAGE	END OF LIFE STAGE
	A1-A3	C4
PE total [MJ]	2,16E+0	6,74E-3
PERE [MJ]	1,800E-1	-
PERM [MJ]	0	-
PERT [MJ]	1,800E-1	5,140E-4
PENRE [MJ]	1,590E+0	-
PENRM [MJ]	3,870E-1	-
PENRT [MJ]	1,980E+0	6,230E-3
SM [kg]	2,740E-3	0,000E+0
RSF [MJ]	0	0
NRSF [MJ]	0	0
FW [m³]	3,840E-4	-1,880E-5

Caption

PE total = Total use of primary energy resources (=PERT+PENRT); 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:

Declared life cycle stages (standard DIN EN 15978)	Declared unit: 1 average EJOT fastening system for ETICS with a length of 195 mm	
	PRODUCT STAGE	END OF LIFE STAGE
	A1-A3	C4
HWD [kg]	1,190E-4	2,800E-7
NHWD [kg]	2,230E-3	3,350E-2
RWD [kg]	5,910E-5	1,090E-7
CRU [kg]	0	0
MFR [kg]	0	0
MER [kg]	0	0
EEE [MJ]	0	0
EET [MJ]	0	0

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; EE = Exported energy per energy carrier; EEE = Exported energy, electric energy, EET = Exported energy, thermal energy

Since the raw materials for the production stage are the main contributors to the results of the LCA, there is a linear correlation between the weight of the raw materials (and thus the length of the fastening systems, since the density remains the same) and the impacts on the environment. To calculate the impacts of systems with other lengths, the following formula can be used:

$$P(x) = [P(x1) / x1] * x$$

P(x): indicator of the new system that shall be declared

P(x1): indicator of the declared system (e.g. global warming potential (GWP) of the ETICS fastening system with 195 mm)

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x: length of the new system that shall be calculated [mm] (e.g. 175 mm)

x1: length of the declared system [mm] (here 195 mm)

Building product disclosure and optimization – sourcing of raw materials

Intent of this credit

To encourage the use of products and materials for which life cycle information is available and that have environmentally, economically, and socially preferable life cycle impacts. To reward project teams for selecting products verified to have been extracted or sourced in a responsible manner.

Product information for EJOT fastening systems for ETICS within this credit:

Option 1	Description
Third-party verified corporate sustainability report (CSR)	no
Downloadlink to the report	-
Option 2	Description
Participation in an extended producer responsibility program	no
Postconsumer recycled content	8 % steel scrap (referred to the whole fastening system)
Preconsumer recycled content	-

Building product disclosure and optimization – material ingredients

Intent of this credit

To encourage the use of products and materials for which life-cycle information is available and that have environmentally, economically, and socially preferable life-cycle impacts. To reward project teams for selecting products for which the chemical ingredients in the product are inventoried using an accepted methodology and for selecting products verified to minimize the use and generation of harmful substances. To reward raw material manufacturers who produce products verified to have improved life-cycle impacts.

Product information for EJOT fastening systems for ETICS within this credit:

Type of reporting/Item	Value/Comment
Health Product Declaration (HPD)	no
Material Safety Data Sheet (MSDS)	MSDS is available on request
GreenScreen v1.2 Benchmark	no
REACH compliancy	yes The formulation is checked according to the current REACH candidate list. The formulation does not contain any substances of very high concern. Certificates are available on request.

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