

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

64773631

**KIES BETON KREBS GMBH & CO.
KG**



GENERAL INFORMATION

MANUFACTURER INFORMATION

Manufacturer	Kies Beton Krebs GmbH & Co. KG
Address	Donaubogen 3
Contact details	info@kies-beton-krebs.de
Website	www.kies-beton-krebs.de

PRODUCT IDENTIFICATION

Product name	64773631
Place(s) of production	Germany

EPD INFORMATION

The EPD owner has the sole ownership, liability, and responsibility for the EPD. Construction products EPDs may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

EPD standards	This EPD is in accordance with EN 15804+A2 and ISO 14025 standards.
Product category rules	The CEN standard EN 15804 serves as the core PCR. In addition, the PCR is used.
EPD author	Dr. Frank Brandenburger, Ha-Be Betonchemie GmbH

EPD verification

Independent verification of this EPD and data, according to ISO 14025:

External verification Internal certification



PRODUCT INFORMATION

PRODUCT DESCRIPTION

Diese EPD bezieht sich auf die Betonsorte 64773631

ADDITIONAL TECHNICAL INFORMATION

Further information can be found at www.kies-beton-krebs.de.

PRODUCT RAW MATERIAL COMPOSITION

Product and Packaging Material	Weight, kg	Country Region of origin
Gesteinskörnung	1500-2000	Deutschland
Zement CEM III/A 42,5 N	250-500	Deutschland
Wasser	100-250	Deutschland
Zusatzstoff	50-100	Deutschland
Zusatzmittel	1-5	Deutschland

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).



LIFE-CYCLE ASSESSMENT

LIFE-CYCLE ASSESSMENT INFORMATION

Period for data Kalenderjahr 2021

DECLARED AND FUNCTIONAL UNIT

Declared unit 1 m³

Mass per declared unit 2361 kg

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C -

Biogenic carbon content in packaging, kg C -

SYSTEM BOUNDARY

This EPD covers the *cradle to gate* scope with following modules; A1 (Raw material supply), A2 (Transport) and A3 (Manufacturing

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries			
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	D	D	
x	x	x	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	
Geography by two-letter ISO country code or regions. The International EPD System only.																			
DE	DE	DE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Operational	Deconstr./demol.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

--



ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO2e	2,02E2	8,47E0	5,15E-1	2,11E2	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Ozone depletion Pot.	kg CFC11e	9,22E-6	1,61E-6	9,65E-8	1,09E-5	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Acidification	kg SO2e	6,06E-1	2,01E-2	1,77E-3	6,28E-1	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Eutrophication	kg PO4 3e	1,61E-1	4,33E-3	7,57E-4	1,66E-1	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
POCP ("smog")	kg C2H4e	2,22E-2	1,04E-3	7,56E-5	2,33E-2	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
ADP-elements	kg Sbe	2,33E-3	1,5E-4	2,22E-6	2,48E-3	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
ADP-fossil	MJ	1,31E3	1,36E2	1,57E1	1,46E3	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total	kg CO2e	2,07E2	8,56E0	5,36E-1	2,16E2	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
GWP – fossil	kg CO2e	2,04E2	8,55E0	5,23E-1	2,13E2	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
GWP – biogenic	kg CO2e	3,03E0	4,98E-3	7,09E-3	3,04E0	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
GWP – LULUC	kg CO2e	1,08E-1	2,78E-3	5,63E-3	1,16E-1	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Ozone depletion pot.	kg CFC11e	1,05E-5	2,02E-6	7,17E-8	1,26E-5	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Acidification potential	mol H+e	7E-1	2,82E-2	2,15E-3	7,3E-1	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
EP-freshwater ²⁾	kg Pe	4,09E-3	8,42E-5	2,58E-5	4,2E-3	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
EP-marine	kg Ne	1,54E-1	6,16E-3	3,63E-4	1,61E-1	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
EP-terrestrial	mol Ne	1,82E0	6,86E-2	4,5E-3	1,89E0	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
POCP ("smog")	kg NMVOCe	4,76E-1	2,65E-2	1,15E-3	5,03E-1	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
ADP-minerals & metals	kg Sbe	2,33E-3	1,5E-4	2,22E-6	2,48E-3	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
ADP-fossil resources	MJ	1,31E3	1,36E2	1,57E1	1,46E3	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Water use ³⁾	m3e depr.	4,41E1	5,77E-1	1,16E0	4,59E1	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

1) GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e.



ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	4,98E-6	7,37E-7	9,89E-9	5,73E-6	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Ionizing radiation ³⁾	kBq U235e	6,21E0	5,75E-1	3,83E-1	7,17E0	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Ecotoxicity (freshwater)	CTUe	2,4E3	1,12E2	9,16E0	2,52E3	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Human toxicity, cancer	CTUh	4,58E-8	2,64E-9	2,24E-10	4,87E-8	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Human tox. non-cancer	CTUh	1,79E-6	1,2E-7	5,51E-9	1,92E-6	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
SQP	-	2,7E3	2,03E2	4,36E-1	2,9E3	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

4) SQP = Land use related impacts/soil quality.5) EN 15804+A2 disclaimer for Ionizing radiation, human health. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy	MJ	1,11E2	1,47E0	4,84E0	1,18E2	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Renew. PER as material	MJ	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Total use of renew. PER	MJ	1,11E2	1,47E0	4,84E0	1,18E2	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Non-re. PER as energy	MJ	1,28E3	1,36E2	1,57E1	1,44E3	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Non-re. PER as material	MJ	2,54E1	0E0	0E0	2,54E1	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Total use of non-re. PER	MJ	1,31E3	1,36E2	1,57E1	1,46E3	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Secondary materials	kg	4,72E-1	0E0	0E0	4,72E-1	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Renew. secondary fuels	MJ	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Non-ren. secondary fuels	MJ	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Use of net fresh water	m3	8,68E0	2,85E-2	6,28E-2	8,77E0	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

6) PER = Primary energy resources

KBK

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	Kg	4,73E0	1,65E-1	3,62E-2	4,93E0	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Non-hazardous waste	Kg	1,87E2	1,5E1	9,46E-1	2,03E2	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Radioactive waste	Kg	6,23E-3	9,12E-4	1,63E-4	7,31E-3	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	Kg	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Materials for recycling	Kg	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Materials for energy rec	Kg	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Exported energy	MJ	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG	kg CO2e	2,04E2	8,55E0	5,23E-1	2,13E2	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

8) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013) This indicator is almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.



BIBLIOGRAPHY

ISO 14025:2010 Environmental labels and declarations – Type III environmental declarations. Principles and procedures.

ISO 14040:2006 Environmental management. Life cycle assessment. Principles and frameworks.

ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines.

Ecoinvent database v3.6 (2019) and One Click LCA database.

EN 15804:2012+A2:2019 Sustainability in construction works – Environmental product declarations – Core rules for the product category of construction products.

International EPD System PCR (2019:14)

ABOUT THE MANUFACTURER

--

EPD AUTHOR AND CONTRIBUTORS

Manufacturer	Kies Beton Krebs GmbH & Co. KG
EPD author	Dr. Frank Brandenburger, Ha-Be Betonchemie GmbH
Background data	This EPD is based on Ecoinvent 3.6 (cut-off) and One Click LCA databases.
LCA software	The LCA and EPD have been created using One Click LCA Pre-Verified EPD Generator for Cementitious Products