



ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025:2006 and EN 15804 2012+A2:2019 for:
Hollow bricks and brick products
from
HELUZ cihlářský průmysl, v. o. s.

Programme: The International EPD® System www.environdec.com

Programme operator: EPD International AB

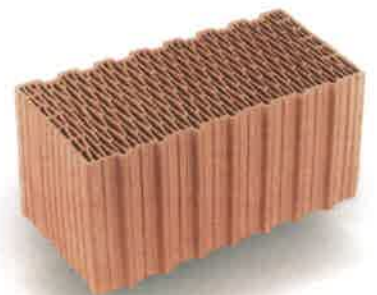
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Verified EPD by Independent Third Party Accredited Certification Body
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Dolní Bukovsko



Libochovice



Hevlin



COMPANY

The hollow bricks **HELUZ** is produced in HELUZ cihlářský průmysl v. o. s., 373 65 Dolní Bukovsko 295, Czech Republic. Registration No. / VAT No.: 466 80 004/ CZ46680004. The company is recorded in the Company Register kept by the Regional Court in České Budějovice, Section České Budějovice, File 1867. The record in the Company Register (22. 5. 1992) was ordered by the District Court in České Budějovice. Tel.: +420 389 018 111, fax: +420 386 354 309, <http://www.heluz.cz/>

The company of HELUZ cihlářský průmysl v. o. s. produces a complex range of brick products which can be further used for rough constructions. At current times, the company has its manufacturing facilities in three locations. There is a brick production plant in Dolní Bukovsko where the company's headquarter can be also find. This plant includes facilities for brick production, production of horizontal structures and production of roller blind lintels and chimney systems. In Hevlín, there are two production plants for complete range of brick products. Brick-kiln of Hevlín II is one of the most advanced manufacturing plants in Europe which is furnished with advanced technology; there are brick blocks which have the best thermal and insulation characteristics produced right here. In the brick-kiln of Libochovice, there is a production facility for brick blocks, accessories and also ceramic ceiling panels of HELUZ. The company of HELUZ cihlářský průmysl v. o. s. sell its goods to foreign markets too - Slovakia, Austria, Germany, Poland and Hungary and offer following categories of brick:

HELUZ FAMILY and **HELUZ FAMILY 2in1**: Unique news on Czech market used for passive and low-energy building without necessary thermal insulation. Passive and low-energy house.

HELUZ STI: Brick blocks of STI quality which comply with parameters of energy saving and low-energy buildings.

HELUZ AKU: Acoustic bricks for housing development.

HELUZ PLUS, **HELUZ P15** and **HELUZ** are brick blocks for internal and external masonry that will be additionally insulated.





PRODUCT

Declared unit 1 000 kg of burnt bricks

UN CPC 3731: Bricks, blocks, tiles and other ceramic goods of siliceous earths

Product description:

The hollow brick HELUZ is a brick for general masonry use it can be used for load bearing, non load bearing and acoustic masonry. Especially it can be used for one layer thermal insulated masonry, that reach U - value 0,15 W/m²K. This EPD covers all HELUZ brick production with the same composition. Differences are only in shape and volume of bricks. Material and energy consumption of production is only product weight depended. As this EPD is based on declaration unit which is 1000 kg of product, environmental data shown below are valid for all bricks.

This EPD is valid for in tables below summarized HELUZ bricks:





Plants Hevlín

Trademark	Type Type	Width	Weight/ pcs	Weight/ m ²	U - Value	Recommended use
		cm	kg	kg	W/m ² K	
HELUZ Family 2in1	calibrated	50	20,0	320	0,11	A, B, C
		44	17,9	286	0,13	A, B, C
		38	15,2	243	0,15	A, B, C
		30	12,5	200	0,23	A, B, C
		25	10,3	165	0,26	B, C
		50	19,7	315	0,14	A, B, C
HELUZ Family	calibrated	44	17,6	282	0,17	A, B, C
		38	15,0	240	0,20	A, B, C
		30	12,4	198	0,26	B, C
		25	10,1	162	0,30	B, C
		49	18,1	289	0,18	A, B, C
HELUZ STI	calibrated	44	15,7	251	0,198	A, B, C
		40	14,3	229	0,21	A, B, C
		38	13,8	221	0,22	A, B, C
HELUZ STI		44	15,0	240	0,20	A, B, C



Expected service life time is 100 years.

U - Value - design value without plaster except of category of use A, there is a design value with thermal plaster

A - One layer thermal insulating masonry

B - Load bearing masonry

C - Non load bearing masonry

D - Acoustic masonry



Trademark	Type	Width	Weight/ pcs	Weight/ m ²	U - Value	Recommended use
		cm	kg	kg	W/m ² K	
HELUZ Plus	calibrated	44	16,2	259	0,20	A, B, C
		40	14,8	237	0,23	A, B, C
		38	13,9	222	0,23	A, B, C
		36,5	13,5	216	0,29	B, C
		30	13,1	210	0,51	B, C
		25	16	171	0,42	B, C
		44	15,6	250	0,21	A, B, C
HELUZ Plus		40	14,9	238	0,24	A, B, C
		38	13,3	213	0,24	B, C
		36,5	13,5	216	0,30	B, C
		30	12,5	200	0,57	B, C
		25	15,7	16822	0,48	B, C
HELUZ UNI	calibrated	30	13,1	210	0,49	B, C
		25	16,6	178	0,66	B, C
HELUZ UNI		30	12,5	200	0,56	B, C
		25	15,8	169	0,74	B, C
HELUZ P15	calibrated	30	12,9	206	0,48	B, C
		25	18,9	202	0,80	B, C
		20	17,9	143	1,11	B, C
HELUZ P15		30	12,3	197	0,55	B, C
		25	18,1	194	0,86	B, C
		20	17,1	137	1,17	B, C



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Trademark	Type Type	Width	Weight/ pcs	Weight/ m ²	U - Value	Recommended use
		cm	kg	kg	W/m ² K	
HELUZ	calibrated	24	14,7	157	0,85	B, C
		20	16,3	130	0,90	B, C
		17,5	14,7	118	0,96	B, C
		14	12,8	102	1,19	C
		11,5	10,3	82	1,30	C
		10	10,0	80	1,55	C
		8	5,3	57	1,53	C
		24	14,8	158	0,91	B, C
HELUZ		20	15,6	125	0,96	B, C
		17,5	14,5	116	1,03	B, C
		14	12,3	98	1,25	C
		11,5	9,9	79	1,38	C
		10	9,5	76	1,45	C
		8	5,1	55	1,63	C



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Trademark	Type	Width	Weight/ pcs	Weight/ m ²	SRI - R _w	Recommended use
		cm	kg	kg	dB	
	30/333 MK	30	21,4	257	58	B, C, D
	30/333	30	23,3	280	56	B, C, D
	25 MK	25	20,4	218	56	B, C, D
HELUZ AKU	25	25	21,7	232	55	B, C, D
	20	20	18,2	195	53	B, C, D
	Z 17,5	17,5	16,5	177	51	B, C, D
	11,5	11,5	11,0	118	47	C, D

Plants Libochovice

Trademark	Type	Width	Weight/ pcs	Weight/ m ²	U - Value	Recommended use
		cm	kg	kg	W/m ² K	
HELUZ Family	calibrated	44	18,2	291	0,16	A, B, C
		38	17,3	277	0,21	A, B, C
		30	13,3	213	0,25	B, C
		25	11,5	184	0,29	B, C
		49	19,4	310	0,17	A, B, C
HELUZ STI	calibrated	44	17,4	278	0,18	A, B, C
		40	16,4	262	0,20	A, B, C
HELUZ STI		44	17,6	282	0,20	A, B, C
		44	20	320	0,19	A, B, C
HELUZ Plus	calibrated	40	16,7	267	0,22	A, B, C
		38	15,9	254	0,3	B, C
		36,5	14,6	234	0,28	B, C
		30	13,2	211	0,58	B, C
		25	16,2	173	0,49	B, C
HELUZ Plus		44	19,1	306	0,20	A, B, C
		40	16	256	0,23	A, B, C
		38	15,2	243	0,3	B, C
		36,5	14,1	226	0,29	B, C
		30	12,8	192	0,66	B, C
		25	15,7	168	0,50	B, C

Expected service life time is 100 years.

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Trademark	Type	Width	Weight/ pcs	Weight/ m ²	U - Value	Recommended use
		cm	kg	kg	W/m ² K	
HELUZ UNI	calibrated	30	13,7	219	0,53	B, C
		25	17,5	187	0,75	B, C
HELUZ UNI		30	13,1	210	0,51	B, C
		25	16,7	179	0,83	B, C
HELUZ P15	calibrated	30	15,1	242	0,48	B, C
		25	19,1	204	0,80	B, C
HELUZ P15		30	14,5	232	0,55	B, C
		25	18,3	196	0,86	B, C
		24	16,7	179	0,82	B, C
		20	17,1	137	0,92	B, C
HELUZ	calibrated	17,5	15,8	126	1,04	B, C
		14	11,4	91	1,20	C
		11,5	10,5	84	1,33	C
		8	5,5	59	1,56	C
		24	16,1	172	0,89	B, C
		20	16,3	130	0,98	B, C
HELUZ		17,5	15,3	122	1,12	B, C
		14	10,9	87	1,27	C
		11,5	10,1	81	1,41	C
		8	5,3	57	1,65	C
Trademark	Type	Width	Weight/ pcs	Weight/ m ²	SRI - R _w	Recommended use
		cm	kg	kg	dB	
HELUZ AKU	36,5 MK	36,5	19,1	306	58	B, C, D
	30/33,3 MK	30	21,5	258	58	B, C, D
	30/33,3	30	23,3	280	56	B, C, D
	25 MK	25	20,3	217	56	B, C, D
	20	20	18,2	195	53	B, C, D
	Z 17,5	17,5	17,3	185	51	B, C, D
	11,5	11,5	11,0	118	47	C, D

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Plants Dolní Bukovsko

Trademark	Type	Width	Weight/ pcs	Weight/ m ²	U - Value	Recommended use
		cm	kg	kg	W/m ² K	
HELUZ Plus	calibrated	44	19,5	312	0,30	A, B, C
		40	16,6	266	0,34	A, B, C
		30	14,4	230	0,59	B, C
		25	16,2	173	0,67	B, C
HELUZ Plus		44	18,6	298	0,31	A, B, C
		40	15,8	253	0,33	A, B, C
		30	14,3	229	0,65	B, C
		25	15,7	168	0,75	B, C
HELUZ UNI	calibrated	30	14,9	238	0,57	B, C
		25	19,1	204	0,80	B, C
HELUZ UNI		30	14,3	229	0,64	B, C
		25	18,3	196	0,87	B, C
HELUZ P15	calibrated	30	16,1	258	0,58	B, C
		25	22,6	242	0,92	B, C
HELUZ P15		30	15,3	245	0,64	B, C
		25	21,6	231	0,96	B, C
		24	17,6	188	0,88	B, C
		20	18,6	149	0,97	B, C
HELUZ	calibrated	17,5	17,3	138	1,12	B, C
		14	13,0	104	1,26	C
		11,5	11,4	91	1,40	C
		8	6,0	64	1,63	C
		24	16,9	181	0,94	B, C
HELUZ		20	17,7	142	1,03	B, C
		17,5	15,8	126	1,18	B, C
		14	12,4	99	1,32	C
		11,5	10,9	87	1,47	C
		8	6,3	67	1,71	C

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SYSTEM BOUNDARY and PRODUCTION PROCESS

The system boundary is "Cradle to gate" with modules C1–C4 and module D (A1–A3 + C + D). The system boundary covers the production of raw materials, all relevant transport down to factory gate and manufacturing by HELUZ cihlářský průmysl v. o. s. Production stages start with yielding of clay raw material in own surface mines. Pretreated clay raw material is mixed with additional mixture of pulp sludges, straw and wooden sawdust. After alteration of mixture material with appropriate amount of water the pressing of bricks to final shape and burning in kiln takes a place. In the case of 2in1 type of bricks filling of hollows with expandable polystyrene is realized. Final product is packed using polyethylene. The review framework comprises the following details:

- Raw materials acquisition and transport
- Further processing of raw materials
- Production operations
- Energy and water consumption
- Waste management
- Packaging of the final product for delivery
- Typical deconstruction using heavy equipment
- Transport and landfilling

Reference service life:

The reference service life is the same as the building.

Time representativeness:

Specific data about the manufacturer were based on the 1-year average (the reference year 2019). Time scope less than 10-years were applied for background data.

Cut off rules:

The cut-off criterion was chosen based on the used PCR. According to the used PCR, more than 95 % of flows were included.

Database(s) and LCA software used:

GaBi software, GaBi database and EcoInvent database

Allocations:

As a general allocation rule, allocation on 1000 kg of the product was chosen. No secondary material and/or fuels used in production.

Geographical scope:

Europe, Global





System Boundary of the LCA study conducted on Heluz burnt bricks

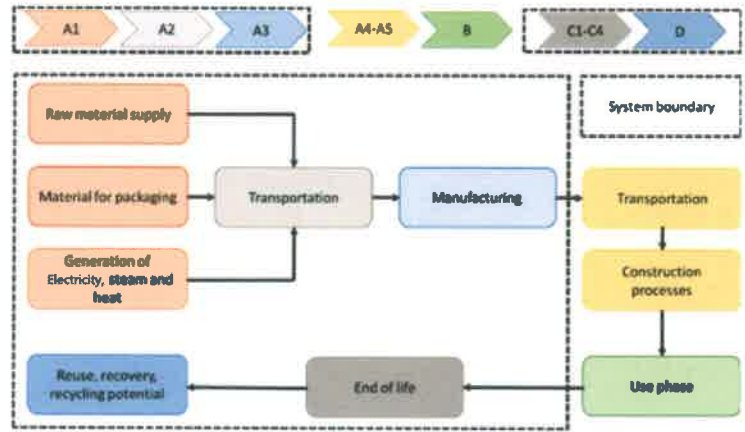


Table 1 Description of the system boundary (D = Declared, Included in LCA, MND = Module Not Declared)

System Boundary Stage	Process	Module	Declared (D) / Not Declared (MND)
A1 - A3 Product stage	Raw material supply	A1	D
	Transport	A2	D
	Manufacturing	A3	D
A4 - A5 Construction process	Transport from the gate to the site	A4	MND
	Assembly	A5	MND
B1 - B7 Use stage	Use	B1	MND
	Maintenance	B2	MND
	Repair	B3	MND
	Replacement	B4	MND
	Refurbishment	B5	MND
	Operational water use	B6	MND
	Operational energy use	B7	MND
C1 - C4 End of life stage	De-construction	C1	D
	Transport	C2	D
	Waste processing	C3	D
	Disposal	C4	D
D Benefits and loads beyond the system boundaries	Reuse- Recycling - Recovery Potential		

