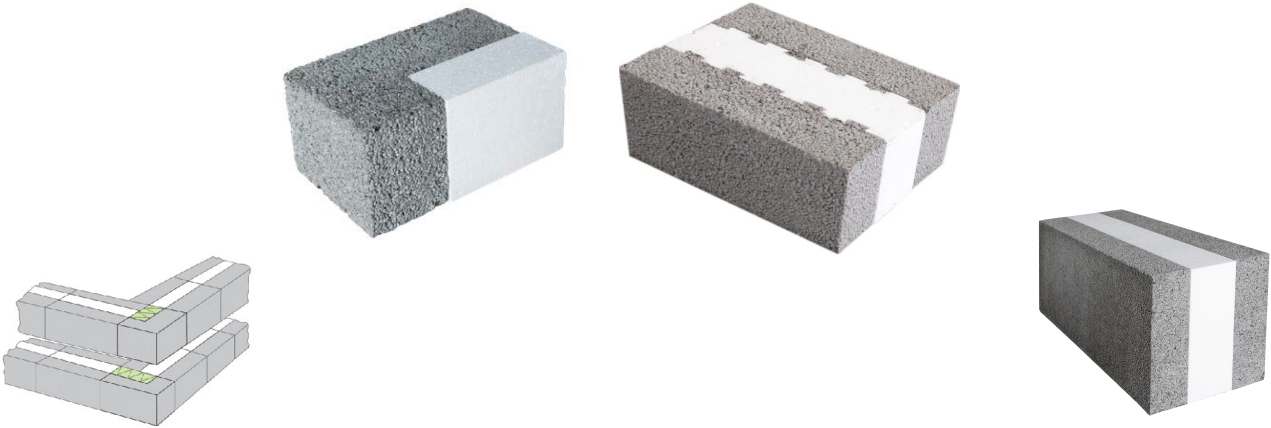


SmartWall Leca® Termbloc & Ligeblok Foundation Block System

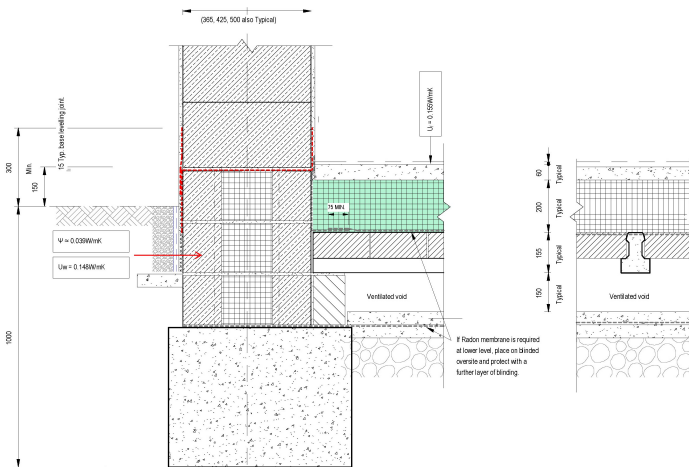
**EVOLVED
SMARTWALL™**



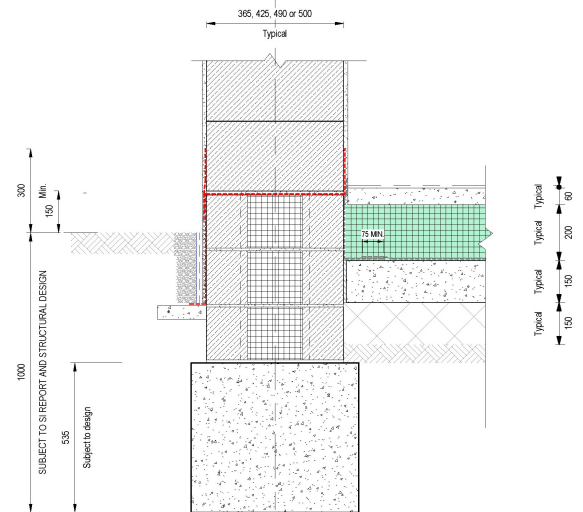
SmartWall Leca® Termbloc

SmartWall Leca® Termblocks are ideal for construction due to their low weight combined with the block's insulating properties and high strength.

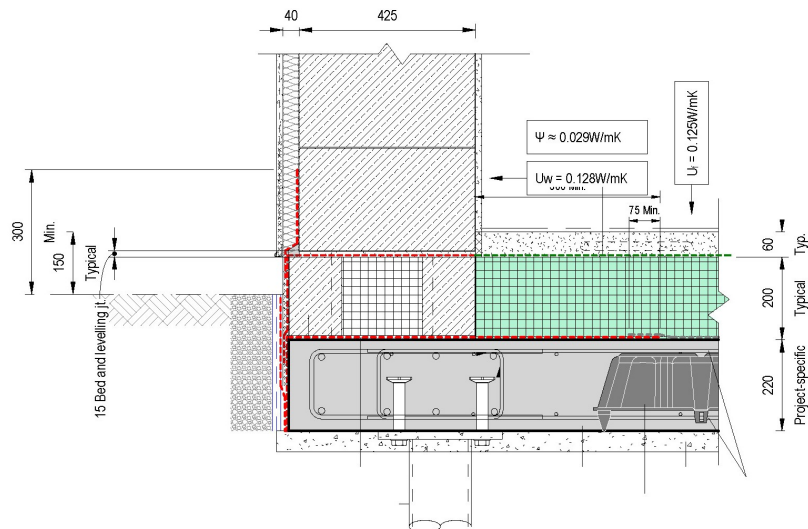
SmartWall Leca® Termbloc



SMARTWALL Leca Termbloc - Insulated Foundation Block On Strip Foundation - Beam & Block



WALL BASE ON STRIP FOUNDATION



WALL BASE ON RAFT FOUNDATION
On Beam or Micro Screw Piling

SmartWall Leca® Termbloc

SmartWall Leca® Termbloc are ideal for construction due to their low weight combined with the block's insulating properties and high strength.

- > **Wide range covers all tasks**
- > **Low weight improves the working environment**
- > **Good properties in terms of moisture, fire, sound insulation and strength lifting**

SmartWall Leca® Termbloc

Width	Height	Length	Weight per piece	U Value W/m2K
33 cm	19 cm	50 cm	16.8 kg	0.27 W/m2K
35 cm	19 cm	50 cm	20.4 kg	0.23 W/m2K
39 cm	19 cm	50 cm	20.5 kg	0.18 W/m2K
45 cm	19 cm	50 cm	17.7 kg	0.14 W/m2K
49 cm	19 cm	50 cm	22.0 kg	0.14 W/m2K



FLEX CORNER BLOCK

Width	Height	Length	Weight per piece
39 cm	19 cm	25 cm	10.0 kg



SmartWall Leca® LIGEBLOK

Ligeblok blocks are ideal for construction due to their low weight combined with the block's insulating properties and high strength.

- > Wide range covers all tasks
- > Low weight improves the working environment
- > Good properties in terms of moisture, fire, sound insulation and strength lifting



Leca® blocks 600

LIGEBLOK

Width	Height	Length	Weight per piece
10 cm	19 cm	49 cm	6.4 kg
12 cm	19 cm	49 cm	7.9 kg
15 cm	19 cm	49 cm	10.0 kg
19 cm	19 cm	49 cm	12.7 kg
23 cm	19 cm	49 cm	15.4 kg
29 cm	19 cm	49 cm	19.5 kg
33 cm	19 cm	49 cm	22.2 kg
35 cm	19 cm	49 cm	25.2 kg
29 cm	19 cm	25 cm	10.0 kg
39 cm	19 cm	25 cm	14.0 kg



FLEX CORNER BLOCK

Width	Height	Length	Weight per piece
39 cm	19 cm	25 cm	10.0 kg

Leca® bricks

Width	Height	Length	Weight per piece
11 cm	5.7 cm	23 cm	1.0 kg



Technical Data



General information

1.1 Scope

This design guide for lightweight clinker blocks includes calculation principles and diagrams for determining the vertical and horizontal load-bearing capacity of block masonry used for partitions, inner leaves, cavity walls, basement exterior walls and foundations.

For calculation principles for bracing and stabilizing walls, see the full guide.

It is assumed that the user of the design guide has the necessary technical insight and has knowledge of the relevant standards and can assess the results obtained

1.2 Block types

Lightweight clinker blocks are made of lightweight clinker, cement, water, and sometimes sand.

Lightweight clinker consists of plastic clay expanded by firing in rotary kilns. In Denmark, lightweight clinker is manufactured by Weber. Lightweight clinker for blocks has a density of approx. 230 - 590 kg/m³.

Control

The blocks are manufactured in factories, all of which are certified in accordance with standard DS EN 771-3 (Equivalent to BS EN 771-3).

The blocks are checked corresponding to the building block, Category 1.

CE label

The blocks are CE marked in accordance with DS EN 771-3.

Blockclasses

Block strengths must be declared on the basis of either a 5% fractile or a 50% fractile. This means that the same basic compressive strength of the masonry can be referred with 2 different block strengths, as indicated in Table 1.2.1. Note that, more generally, the strength figures also depend on block format as well as mortar and block strength.

The masonry Characteristic compressive strength, MPa	Declared compressive strength	
	Mean	5% fractile
2.3	3.0	2.6
3.8	5.0	4.3

Table 1.2.1

The concept of block class is thus not unambiguously related to the basic strength of the masonry. Therefore, the concept of block class in this instruction is related to the density of the blocks, cf Table 1.2.2. Note that the overall masonry strength also depends on the mortar strength.

Density kg/m ³	Block Class	Characteristic Strength (MPa)
600	600	2.3
800	800	3.8

Table 2.2.2

Block class 600

Density 600kg/m³

Characteristic compressive strength:
2.3MPa. Marking: No special marking.

Formats:

Length, mm	Height, mm	Width, mm
490	190	100, 120, 150, 190, 230, 290, 330, 350, 390
248	190	390

Table 3.2.3

Termblok

Termblok blocks have a declared mean strength of 3MPa. Density is 630kg/m³. Filling is EPS.

Formats:

Length, mm	Height, mm	Width, mm	Insulation, mm
500	190	330	75
500	190	350	95
500	190	390	135
500	190	450	195
500	190	490	195

As an example of the way a calculation might proceed, according to EN 1996-1, with the native Danish annex compared to the UK annex:

Example for 490Wx500Lx190H, t = 145mm approx. each side. Mortar $f_m=5\text{MPa}$.

	DK	UK
f_{mean}	3Mpa	3MPa
f_b	3.68Mpa	3.68Mpa
K	0.55	K = 0.75
α	0.7	0.7
β	0.3	0.3
f_k	2.21	3.03
γ_M	1.6	2.3
f_d	1.38	1.32

This shows that there is little difference in design strength according to national approach.

1.3 Mortar

The same rules apply to mortar in the UK as in Denmark. The calculation above includes an indication of the effect of the mortar.

1.4 Material values

Lightweight clinker blocks are declared as building blocks in category 1, that is, blocks that are delivered with a declared compressive strength whose failure probability does not exceed 5%. Masonry of lightweight clinker blocks have the following indicative properties:

		Block Class	
		600 and Termblok	
Property	Unit		
Compressive Strength			
f_k	MPa	2.3	
Elastic Modulus			
E_{ok}	MPa	2300	
E_{longterm}	MPa	800	
G	MPa	900	
Coefficient of thermal expansion			
α	K ⁻¹	8×10^{-6}	
Shrinkage ¹ :			
	mm/m	0.55	
Reversible moisture movement ²			
	mm/m	0.1	
Creep coefficient, long term			
φ_{∞}		2	

Note:

- 1 Length change from moisture content on delivery to equilibrium at 23C and 43% RH.
- 2 Length change from equilibrium at 23 ° C and 43% RH to moisture content after 3 days at 23C and 90% RH.
- 3



SmartWall Leca® Termbloc

JUWO Evolved SmartWall™

T: 0808 2540 500

E: mail@juwo-smartwall.co.uk

www.juwo-smartwall.co.uk

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