# CERTIFICATE

**Certified Passive House Component**

ID: 1550fs03 valid until 31. December 2020

Passive House Institute
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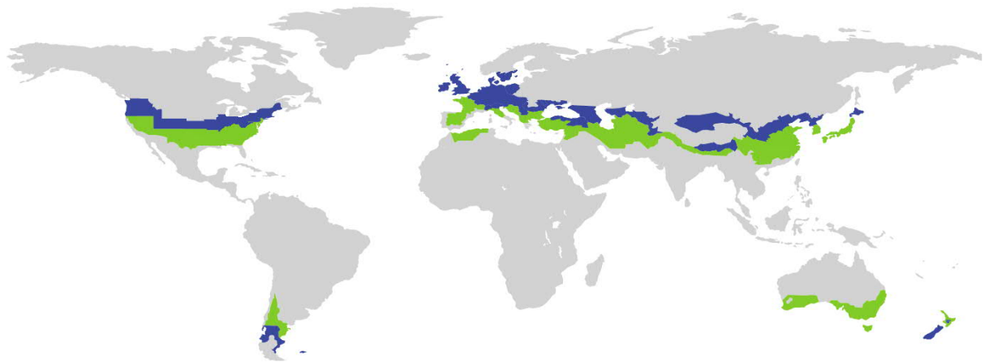

| | |
|---|---|
| Category | **Floor slab insulation system** |
| Manufacturer | **Legalett**<br>**Long Sault**<br>**Canada** |
| Product name | **GEO-Passive Slab Foundation System - Type 2** |

**This certificate for the cold climate zone was awarded based on the following criteria**

### Hygiene criterion

| | | |
|---|---|---|
| The minimum temperature factor of the interior surfaces is | $f_{Rsi=0,25m^2K/W} \geq$ | **0,70** |

### Comfort criterion

| | | |
|---|---|---|
| The U-value of the installed windows is | $U_{W,i} \leq$ | **0,85** W/(m²K) |

### Efficiency criteria

| | | |
|---|---|---|
| Heat transfer coefficient of building envelope | $U*f_{PHI} \leq$ | **0,15** W/(m²K) |
| Temperaturfactor of opaque junctions | $f_{Rsi=0,25m^2K/W} \geq$ | **0,86** |
| Thermal bridge free design for key connection details | $\Psi \leq$ | **0,01** W/(m²K) |

An airtightness concept for all components and connection details was provided.

cool, temperate climate

CERTIFIED COMPONENT
Passive House Institute

**Legalett**
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Phone: | 1-866-299-7567 | kenr.kw@outlook.com | http://legalett.ca/

## Opaque building envelope

The floor slab insulation system consists of a 340 mm thick concrete floor slab which is insulated with 203 mm EPS on the underside. The slab has been modelled with three wall types:

216 mm reinforced concrete wall insulated to the outside with 254 mm of EPS (Type A);

210 mm lightweight timber construction insulated with mineral wool and 102 mm of EPS to the outside (Type B);

Concrete formwork wall consisting of 67 mm of EPS to the inside, a 200 mm reinforced concrete core and 188 mm of EPS to the outside (Type C).

Point fixings have been modelled three-dimensionally and taken into account in the certified U-value. Thermal conductivity data is based on CAN/ULC-S701-05 and -11, "Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering" types 2 and 3. Thermal conductivities for Roxul Plus/ComfortBatt were referenced from NRC Evaluation Listing CCMC 12018-L.

## Explainatory notes

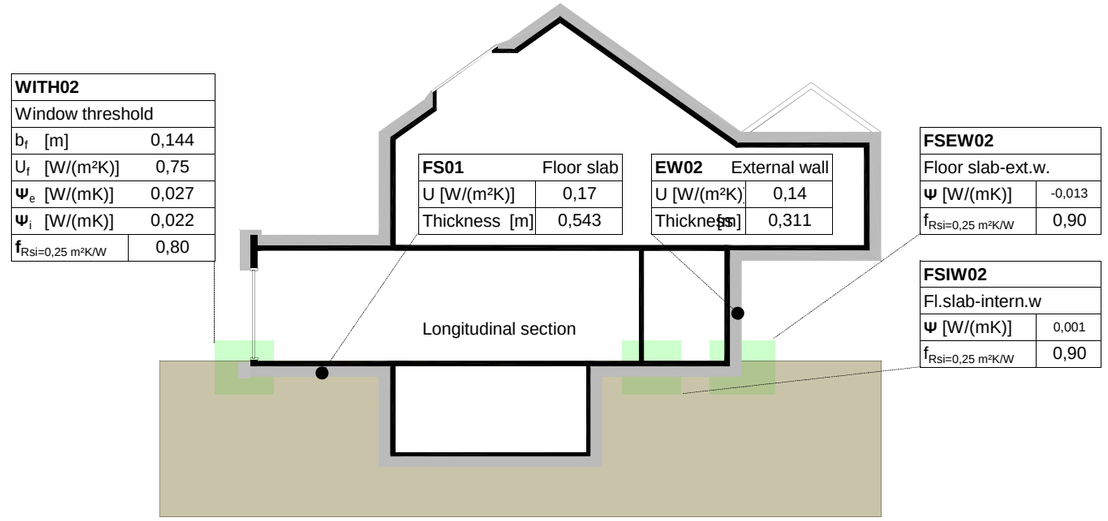
The Passive House Institute has defined international component criteria for seven climate zones based on hygiene, comfort and affordability criteria. In principle, components which have been certified for climate zones with higher requirements may also be used in climates with less stringent requirements. Their use might make economic sense in certain circumstances.

## Windows

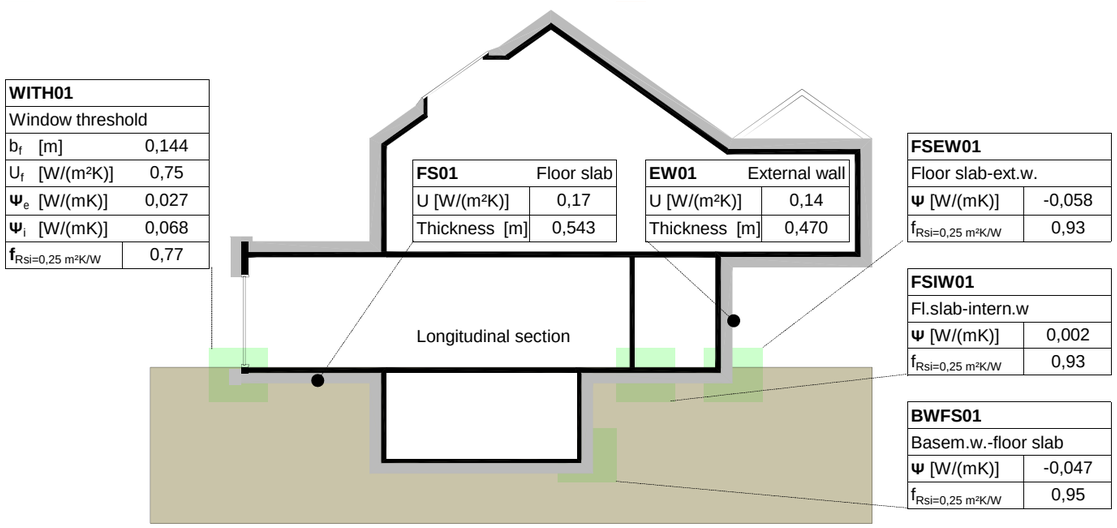
Analysis was undertaken using a high quality Passive House window with a Uw-value of 0,80 W/(m²K) using a Ug of 0,70 W/(m²K), a SuperSpacer Triseal and polysulfide secondary seal. The installed U-value meets the comfort requirement of Passive House buildings using a reference size of 1,1 m by 2,2, m.

## Airtightness concept

The airtightness of the system is achieved through the use of an airtight membrane, fixed to the inside of the structural layer and behind the service cavity. Joints are secured with specialist air tightness tape. The system also includes a wind- and waterproof membrane, fixed to the outside of the exterior insulation, with joints secured as above. Windows are installed with suitable air tightness sealing tapes.




Thermal bridge not calculated
Criteria achieved
Efficieny driteria not achieved
Hygiene- or comfortcriterion not achieved

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