

BecoWallform

INSULATING CONCRETE FORMWORK SYSTEM

A modern building system which provides extra performance to satisfy current and future building standards

Structure and insulation in the same practical building process

Fast-track construction – time and cost benefits

BecoWallform

What is BecoWallform?

Practical energy efficient construction to accommodate our future needs, Beco**Wallform** Insulating Concrete Formwork is designed to offer a range of performance standards to suit all building applications.

This monolithic, insulating concrete formwork system of building is quick to construct yet offers levels of performance significantly better than available from slower, more traditional approaches to building. An insulating concrete formwork (ICF) system, Beco**Wallform** is based on large hollow lightweight block components that lock together without intermediate bedding materials to provide a formwork system into which concrete is poured. Once set, the concrete becomes a high strength structure and the formwork remains in place as thermal insulation, with U-values down to 0.11 W/m²k – ideal for zero energy buildings.

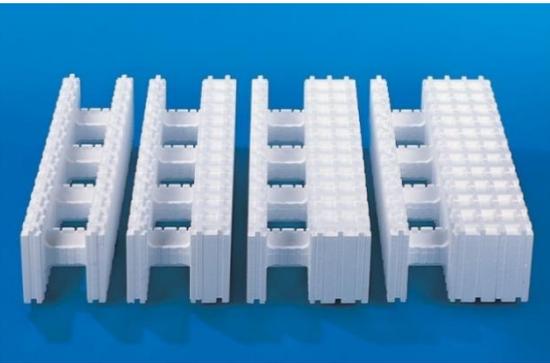
There is a range of concrete core thicknesses for different structural applications and the connecting ties in the wallblocks may be integral insulation or steel to suit the individual project specification. The building process is quick, tidy and precise, with lower labour and equipment requirements than alternative methods.

Creative design (without compromising performance) is encouraged by the availability of a comprehensive range of components, which is further enhanced by the built-in option to incorporate reinforcement for basement and multi storey projects.

The flexibility of building with in-situ concrete makes it more practical to co-ordinate Beco**Wallform** with other products and material systems (different types of floors, roofs, windows etc) and the need for specialised accessories is minimised.

Originally developed and patented by Isorast in the 1970's, this insulating concrete formwork system has been progressively improved and developed to satisfy the very best worldwide standards of energy efficiency and the recognised need for improved building techniques. Isorast constructions (aka Wallform) in the United Kingdom have an established track record of over thirty years' performance and have a long life expectancy.

As a highly insulated structure, Beco**Wallform** may be clad internally and externally with a wide range of finishes, including plaster, masonry, curtain walling and render systems.



The Beco**Wallform** Insulating Concrete Formwork system has a range of features designed to maximise performance whilst simplifying the building process



One of the key features of Beco**Wallform** is the simplicity of the building process

Beco**Wallform** components have tongues on the top and grooves on the bottom, arranged so that they will interlock in parallel or at right angles in a modular grid of 62.5mm.

This means the designer can realise any plan layout to dimensions which are a multiple of 62.5mm.

Smaller site dimensions may be cut exactly to size within the thickness of polystyrene once the concrete is cured.

1. The numerical code assigned to each Wallform system (for example Wallform 375) indicates the overall width of the wallblock in millimetres. The wider the wallblock, the lower the U-value. Standard wallblock widths are 250mm, 313mm, 375mm and 438mm.

2. The tongues on the top and grooves on the bottom of components are arranged to interlink and cross interlink in a modular grid of 62.5mm.

3. The tongues and grooves have a positive interlock so that the elements cannot be carried away by a gust of wind.

4. The normal hollow core of the components is 140mm, calculated to optimise economy of design and building processes. Thicker concrete cores are available in increments of 62.5mm for more demanding structural design.

5. All faces have grooves 2.5mm deep and 17.5mm wide in a pattern repeated every 62.5mm to eliminate thermal bridging. These grooves have a dovetail profile to provide a mechanical key for the application of plaster.

6. Location detail for horizontal reinforcement.

7. End pieces are inserted above and below the bridges to make a closure when forming corners, reveals and wall ends.

8. The bridges are tapered at the top and bottom to avoid trapping air during concreting.

9. Steel bridges may replace the integral insulation bridge for particular performance specifications.

10. The firewall endpiece is used to form the closure where this does not coincide with the bridge or where the system specifies steel bridges.

BecoWallform Building Process



1. The lightweight Wallform elements simply fit together in a modular grid of 62.5mm.



2. With a saw or hot wire cutter, components are easily cut to size.



3. Openings at wall ends, corners and T-junctions are closed with the end pieces.



4. Using the Wallform corner block, 45° corners fit together without thermal bridging.



5. Curved walls in any radius and in any thickness are possible with Wallform curved blocks.



6. The Wallform lintel or roller shutters are placed over window or door openings.



7. Arches are formed by cutting the opening shapes and inserting a metal sheet to act as a curved shutter.



8. The Wallform floor edge blocks accommodate practically all types of solid floor and prevents thermal bridging.



9. With the Wallform prop and screw support system, the wall is held in the vertical position.



10. Concreting with the Wallform nozzle and ready-mix concrete or dry concrete from a silo.



11. Forming service chases in minutes is possible with the Wallform hot wire cutter.



12. Using BTI Wallplugs, lightweight fixings plug into the insulation foam, heavyweight fixings plug into the concrete core.

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BecoWallform Performance Data

SYSTEM / WIDTH (MM)	250 (FIREWALL)	313	375	438
Thermal insulation U-Value	0.30 W/m ² K	0.18 W/m ² K	0.14 W/m ² K	0.11 W/m ² K
Quantity of concrete / m²	0.140 m ³	0.122 m ³	0.122 m ³	0.122 m ³
Weight				
Weight per unit	2.10 kg	1.40 kg	2.13 kg	2.65 kg
Weight per m ² unit	6.72 kg	5.17 kg	6.82 kg	8.00 kg
Weight of wall per m ² with dense concrete infill	343 kg	297 kg	299 kg	300 kg
Weight of wall per m ² with dense concrete infill, both sides plastered	378 kg	332 kg	334 kg	335 kg
Wall surface temperature with internal room temperature at +20 °C				
- outside temperature -10 °C	18.7 °C	19.3 °C	19.5 °C	19.6 °C
- outside temperature -15 °C	18.5 °C	19.1 °C	19.4 °C	19.5 °C
- outside temperature +60 °C	21.8 °C	21.0 °C	20.7 °C	20.6 °C
Fire performance: (DIN 4102)	F90 - AB	F30 - AB	F30 - AB	F30 - AB
Dewpoint Analysis				
- theoretical max. condensation during winter	105 g/m ²	43 g/m ²	32 g/m ²	23 g/m ²
- recorded figures	0 g/m ²	0 g/m ²	0 g/m ²	0 g/m ²
- drying out in summer	279 g/m ²	274 g/m ²	249 g/m ²	225 g/m ²
CO2 Analysis based on heat loss / m ² of wall per annum, using oil central heating	8.9 kg	5.1 kg	3.8 kg	3.0 kg
Sound reduction: both wall sides plastered				
- calculated	~41 dB	~42 dB	~42 dB	~42 dB
- measured	~43 dB	~44 dB	~44 dB	~44 dB

BecoWallform Downloads



Building Information Modelling (BIM)
NBS National BIM Library



Construction Design Details
DWG & PDF formats



BecoWallform

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