



CASTLE FORMS
INSULATED CONSTRUCTION SYSTEMS

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ICF THERM
ADVANCED ICF STRUCTURES

WHAT IS ICF-THERM?

ICF-Therm is an Insulating Concrete Formwork (ICF) system that allows for fast construction of creative, flexible buildings with low running costs and a long sustainable life.

How does ICF-Therm work?



ICF-Therm polystyrene blocks are assembled on-site to create a formwork wall into which horizontal and vertical steel reinforcement are fixed for extra strength. Once braced, the formwork is then filled with readymix concrete. The ICF-Therm blocks remain in place permanently to create a super-insulated monolithic concrete structure.

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What are the key benefits of ICF-Therm?

- **Choice** - Available in the following three different block widths 310mm, 335mm and 360mm.
- **Versatile**: - Straight & corner panels are flippable, with no top or bottom edge.
- **Fast** - Experienced installation crews can achieve 150m² - 200m² of wall area / week, with minimal mechanical equipment and power tools required.
- **Improved programme** - ICF-Therm walls are assembled in less time allowing supporting trades to get on site faster improving construction programmes.
- **Pre-assembled** - ICF-Therm blocks are delivered pre-assembled, leading to faster wall assembly.
- **Robust** - ICF-Therm blocks are designed to withstand the pressures of wet concrete with pours up to 3 meters in height.
- **Simple Installation** - Assembly of the ICF-Therm system requires training and skill, but this is minimal compared to other forms of modern construction methods. Clearly marked cut lines allow for fast and accurate window and door construction.
- **Reduced Labour** - Requires less labour than a traditional building project. This allows for a more cost-effective workforce with better budget and programme control.
- **Designer-friendly** - Ideal for innovative or unusual design features, which allows for freeform shapes.
- **Less waste** - Off cut ICF-Therm blocks are easily incorporated into the courses of follow on walls.
- **Lightweight** - ICF-Therm components are lightweight and easy to handle.
- **Easy to clad** - Inserts moulded into each panel allow for easy mechanical fixing of a wide range of exterior cladding, including timber, stone or brick, ICF-Therm blocks also are perfectly suitable for external render systems.
- **Energy efficient** - The insulation properties of polystyrene and the unique design of the cavity closers around windows and doors openings create a comfortable living environment all year round, keeping energy bills low.
- **It's made in Ireland!** - ICF-Therm is produced in a modern manufacturing facility in Portlaoise, which ensures a fast turnaround time from initial order to delivery on site.

Where can ICF-Therm be used ?

ICF-Therm can be used in a wide variety of different building projects, such as :

- self-build homes
- extensions
- residential developments
- nursing homes
- commercial projects
- hotels
- schools
- stables
- swimming pools
- basements





What's the thermal performance of ICF-Therm?

The thermal performance of a wall structure depends on two key measures - 'thermal mass' (the ability of the exterior envelope to store heat and release it over a 24-hour period) and 'thermal storage' (the ability of the building material to minimise temperature fluctuations and stabilise internal conditions). With an ICF-Therm wall, the thermal mass of the concrete combined with the expanded polystyrene insulation inside and outside the concrete core help keep the building warm in winter and cool in summer, conserving energy and reducing temperature fluctuations.

Air tightness

ICF-Therm walls eliminate air leakage due to the sealing effect of concrete and the low permeability of the form-work. This highly effective system provides a simple and robust structure that will maintain a strong air barrier over the long life of a building, increasing energy efficiency and allowing controlled ventilation.



U-values

The ICF-Therm system offers the following optional wall U values:

ICF Block Type	ICF Wall Thickness (mm)	Concrete Core Thickness (mm)	U-Value (W/m ² k)
310 mm Block White	310	150	.22 *
335 mm Block White	335	150	.19 *
360 mm Block White	360	150	.17 *
310 mm Block Grey	310	150	.19 *
335 mm Block Grey	335	150	.17 *
360 mm Block Grey	360	150	.15 *

* Wall U value based on ICF-Therm wall build up with 12.5mm plasterboard internally and 7mm render externally.

