

Quad-Lock[®] ICF

Insulated Concrete Formwork (ICF)

Building made faster, smarter and stronger

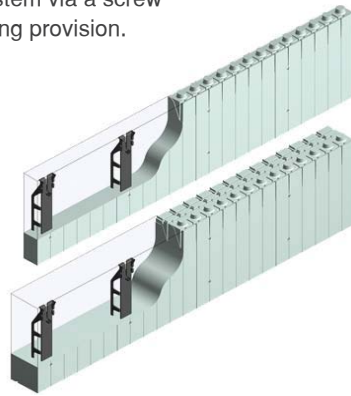
ICF is a simple application of straightforward but effective composite construction technologies. Specially developed insulating formwork is erected on site, and then remains in place after the concrete has been placed in it. From this point on, the formwork provides a secondary function to its primary role of shaping and retaining the newly placed concrete, as it provides a robust thermal insulation layer that performs for the lifetime of the building.

ICF can offer:

- Design flexibility and adaptability
- Quick and easy construction
- A sustainable and thermally efficient building system
- Better living environment
- Economic running costs



ICF systems use lightweight twin-walled expanded polystyrene (EPS) panels or blocks that can be delivered prefabricated or assembled on site to create permanent formwork walls around a building's footprint. Once in place, the formwork is filled with ready-mixed concrete. When the concrete has cured the formwork stays in place, providing complete thermal insulation for the finished building. The interlocking polystyrene blocks or panels give a uniform, smooth surface ready to take most forms of direct internal finish or external cladding system via a screw fixing provision.



- ① Hollowcore painted directly onto
- ② External wall finish
- ③ Inner and outer ICF panels
- ④ Poured concrete structural core
- ⑤ Plastic ties connect panels
- ⑥ Interior render layer
- ⑦ Channels easily cut with a hotwire
- ⑧ Mounting tracks fixed to foundations
- ⑨ Timber shuttering for openings
- ⑩ Charcon's Total Floor System
- ⑪ Insulated flooring
- ⑫ Charcon's FASTBEAM

Construction benefits

Openings

Whatever the desired aesthetics, arches, cantilevered bays and large structural openings can easily be achieved in ICF by incorporating reinforcement within the formwork void, prior to placement of the concrete, thus eliminating the need for expensive specialist products.

Ease of accommodating services

The ICF system enables the incorporation of flush mounted conduits and services within the face of the EPS inner skin.

Required service routes are marked on site and cut out using a hot-wire gun, prior to the placement of services and final fixing of plasterboard. This not only saves time, but also makes for a very efficient method of construction.

Speed of build

ICF is suitable for projects from one-off houses to large scale volume house building. The formwork gives excellent protection to the poured

concrete in the winter months, allowing construction to proceed even in temperatures when traditional builds would be compromised.

Added strength

ICF construction provides a highly insulated monolithic structural concrete core around the footprint of the building which allows precast concrete upper floors and stairs to easily be incorporated if required.



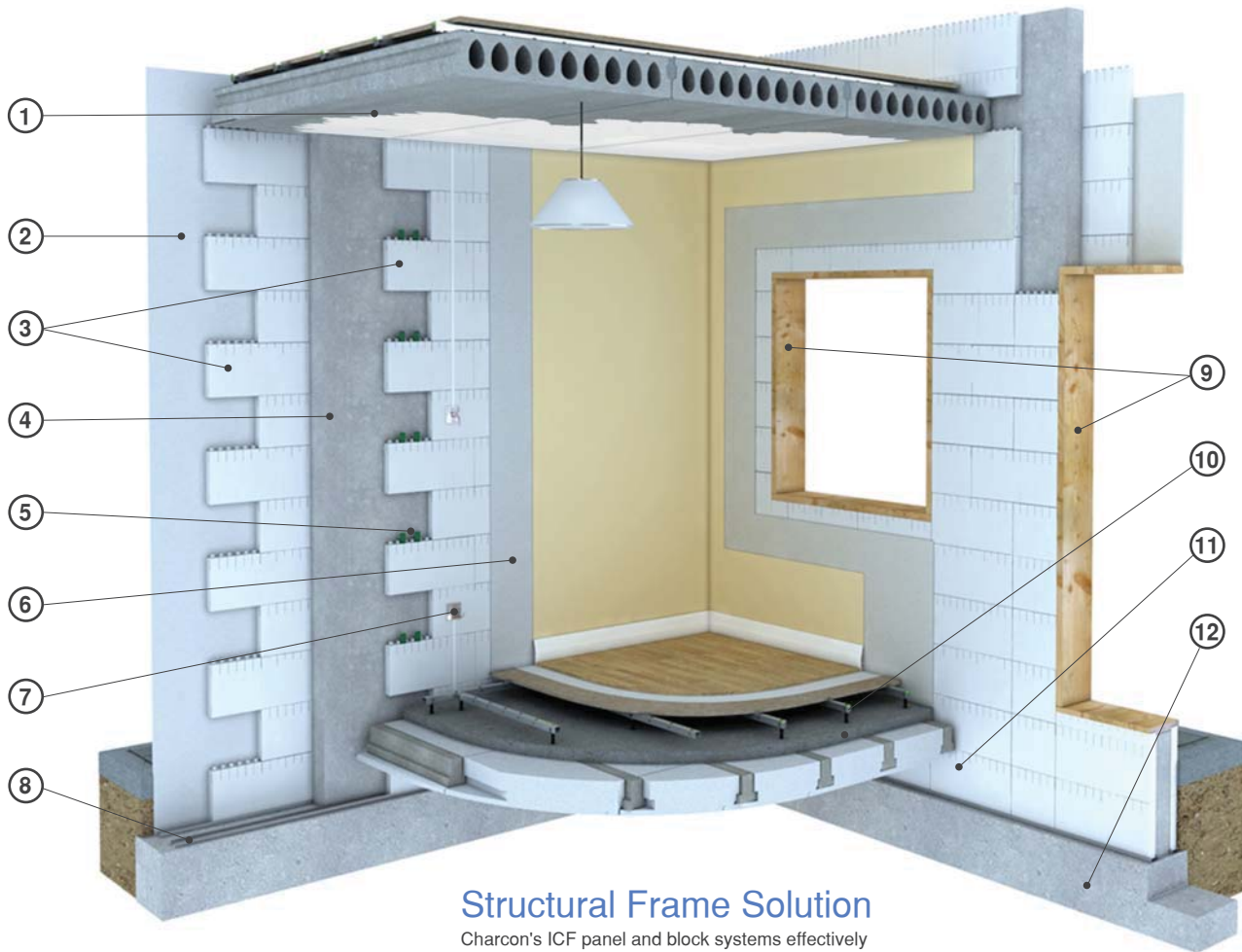
Fast, simple and flexible with minimum waste



No limitations with design or construction options



Easily complies with existing and future Building Regulations



Structural Frame Solution

Charcon's ICF panel and block systems effectively integrate elements of construction to create a strong, airtight building.

Owner benefits

Low running costs

Due to the high level of insulation of the system combined with the inherent air tightness of its concrete core, ICF buildings are very energy efficient, require less space heating and thus cost less to heat.

Mortgage, insurance & planning

NHBC, all mortgage lenders, insurance companies and planning authorities accept ICF's as a standard form of construction.

Air leakage

ICF construction is capable of providing a low level of air leakage by the sealing effect of the monolithic concrete core and when used in conjunction with an efficient window and door system, the external fabric provides a highly effective air barrier, thereby preventing thermal leakage. The simplicity, robustness and stiffness of an ICF structure will help ensure that the integrity of the air barrier is maintained over the lifetime of the building.

Choice of block or panel systems

- Two sheets of EPS joined by plastic ties in an offsite produced block format or
- Tongue and groove EPS sheets fixed firmly together onsite with plastic ties
- Additional insulation can be added to either to meet lower U values as required
- Compact delivery and storage for panel based system

Read more at;

www.charconcs.com/icf



Airtight and energy efficient with consistent internal air temperatures



Fire safe with greater retardation than traditional building methods



Flood safe

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