



NUDURA - Insulated Concrete Forms (ICF)



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Insulated Concrete Forms (ICF) is a proven technology offering a fast-track, economical and sustainable solution that's built to last. That's the view of Jean-Marc Bouvier, UK technical manager for ICF manufacturer, NUDURA.

Building with Insulated Concrete Forms (ICF) is a proven way of creating for your client an eco-friendly, stronger, safer building that's highly energy efficient and one where design possibilities are limitless.

What is an ICF?

The forms consist of two stay-in-place panels of expanded polystyrene. The best engineered systems are connected with a folding web which minimises wastage and offers greatest flexibility. The forms are transported flat to site, opened and stacked, reinforced and then filled with concrete, creating a solid monolithic concrete wall for above and below ground applications.

The result is a main structural element which provides limitless design capabilities, substantially improved durability and requires less maintenance and repair. Compared with concrete block or timber framed walls, ICFs offer greater durability and strength; for example, a 15cm core wall can be designed to heights up to 4.3 metres within a single storey. Six building steps are completed within one product: form and wall structure, insulation, air and vapour barriers, and the interior and exterior finish anchorage.

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Fast track building

The largest and most advanced ICFs available make building measurably easier and faster. In comparison to building with traditional bricks and blocks, a wall 2.75m high x 7.3m long without openings would typically be erected by three men in 16 hours with a total labour time of 48 hours.

The same wall can be erected and poured in five hours by two men utilizing only 10 hours' labour. So there's almost an 80% savings on labour costs. The best ICFs are 50% faster than concrete cavity construction and require as low as 0.5 man-hours/m².

Size does matter and Nadura concrete forms are larger than standard systems. They consist of two panels 67mm in thickness and are connected together by an industry leading web design. Site waste is 50% less than cavity block and when compared to other ICFs, this system offers waste levels as low as 1%, thanks to a four-way reversible design. When the form is able to be folded, this reduces installations times, increases transport capacity by up to 40% and decreases the amount of space required for on-site storage.



The main benefits explained

Energy efficiency: ICF structures greatly reduce air infiltration, which greatly optimizes energy performance. Nadura forms combined with the structural strength and thermal mass of concrete can provide U-values that meet and exceed Passivhaus/Code for Sustainable Homes levels from 0.24, 0.18, 0.14 and 0.11. This saves building owners up to 70% in energy costs when compared to timber frame.

Fire resistance: ICF structures offer maximum safety with a fire protection rating of up to four hours. With a Nadura structure walls are built with steel reinforced concrete and the forms are manufactured with a non-toxic fire retardant expanded polystyrene foam to ensure maximum safety.

Acoustic performance: ICF structures act as an effective sound barrier, filtering out unwanted noise, dampening sound vibrations from unwanted outside noise creating comfortable working or living spaces for occupants. Our system offers superior building comfort via a Sound Reduction Index of 51 (SRI) when combined with a gypsum wall board finish and an exterior finish of acrylic/silicon render. Walls can be easily modified to achieve an SRI of SRI 72 (STC71) if the project requires.

Strength: ICF buildings provide greater impact resistance and will withstand winds of up to 250 mph so building occupants are safe and secure. The strength of the Nadura wall comes from the solid concrete core. ICF technology is a modern method of construction suitable for commercial, residential, industrial, institutional, health care and a variety of other building types.



Do you think the Green Deal will generate more work for you and the construction industry in general?

- Yes, it will bring more work
- No, it won't make any difference
- Don't know
- Never heard of it

VOTE

Installation courses: Looking to change building methods can be a difficult decision. Installation courses are held throughout the UK and Ireland by authorized NUDURA distributors who offer the highest level of training and on-going support. The one-day course provides the builder with manuals, DVDs and other installation documentation that you can take with you to have on site for your installation projects. It covers:

- Understanding general installation of NUDURA Concrete Forms
- Placing reinforcement during installations
- Forming of various openings
- Concrete placement and mechanical vibration
- Services installation along with Interior and exterior finish application

NUDURA is a UK Green Building Council member. For more info on NUDURA visit the company's website:

www.nudura.com

To see a video of the foundations of the 'Curly House' being laid go to: <http://www.youtube.com/watch?v=QfO-RlJb9x8>

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