



INSULATING CONCRETE FORM SYSTEMS



concrete

**Cost effective,
energy efficient
full height
construction**

Insulating concrete form systems provide cost e

With soaring land prices and slimming margins, any way to speed construction, satisfy building codes and actually increase quality is bound to catch on among industrial/commercial designers, builders and developers. It's no wonder then, that insulating concrete form systems (ICFs) have taken the inside track in the race to find more efficient and cost-competitive ways to build.

Insulating concrete form systems combine concrete and polystyrene to create solid, durable, super-insulated reinforced walls. The attraction of

ICFs is that they outperform other walls with no more, and usually less, work than it takes using other building materials. The tremendous potential for reducing on-site labour and overhead, not to mention lower operating costs, has made converts in the low-rise industrial/commercial market across Canada.

Warm up to lower utility bills.

The mass of the concrete in ICF walls slows the passage of heat. The insulation earns the various systems

R-values ranging from RSI 3.0 to RSI 5.3 (R17 to R30), and greater when consideration is given to the overall wall assembly. They also provide an effective barrier to air infiltration from the outside. This combination of higher R-values and lower air infiltration decreases heating and cooling requirements so smaller, less costly HVAC units can be used.

You won't get burned.

Concrete walls won't burn and most ICF systems are made with flame-retardant expanded polystyrene.



Fisheries & Oceans Canada District Office (left) - Municipal Government Office (right)



Heavy Equipment Maintenance Shop



67 Bed, Long Term Health Care Facility

Effective and energy efficient concrete solutions

Depending on the type of finishes used, an ICF wall will provide two to three hours of fire protection. A typical 150 mm (6") concrete wall with a gypsum board interior finish and a stucco exterior will provide a minimum fire rating of three hours.

Quiet comfort.

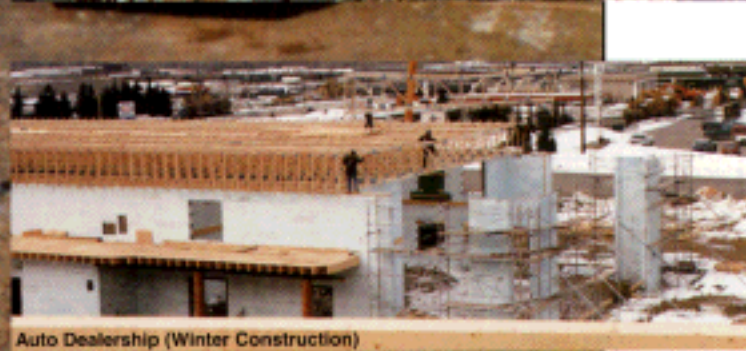
Outside noise can be disruptive to any indoor environment, be it commercial, retail or residential. ICFs, with their concrete mass, provide an excellent sound barrier. Many ICF systems provide Sound Transmission Class (STC) ratings of 50 or greater. Unlike lightweight, thin materials, ICFs easily meet code requirements without any additional soundproofing.

A real stand-up material.

Like conventional reinforced concrete, ICF walls are readily designed with strengths far beyond the code requirements for most low-rise construction. An added benefit of ICF walls is that they can support concrete floors, making it even easier to meet fire separation and acoustic requirements. Solid concrete walls also protect occupants and property from costly disasters like fire, high winds, hurricanes, and tornadoes.

Lower construction and operating costs.

ICF systems are light to handle, so the risk of injury is lower and the crew is less likely to tire. By combining framing, insulating, sheathing, air and vapour barriers into one easy step, ICF walls take less time, equipment and materials to build. Solid construction also means fewer call backs, lower heating and cooling costs, and less maintenance.



Less Labour, Less Energy, Less Time

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All the extras at no extra cost.

Polystyrene is a soft, easily manipulated material. By cutting and assembling the forms, curved walls, arches and other attractive shapes are quickly achieved, offering design flexibility that may be time or cost effective compared to other types of wall construction. Flat surfaces can be given added dimension and visual interest simply by adhering a strip of additional foam to the assembled wall.

Ease of construction, year-round.

Insulating concrete forms offer the advantage of year-round construction. The forms protect the concrete from extreme heat or cold. Placing can be done in temperatures as low as -30°C/22°F. ICFs provide an ideal curing environment so the concrete gains maximum strength without the need for special treatments. Once erected, the highly insulated ICF walls also reduce the need for heated enclosures so the crew stay warm and comfortable even under harsh winter conditions.

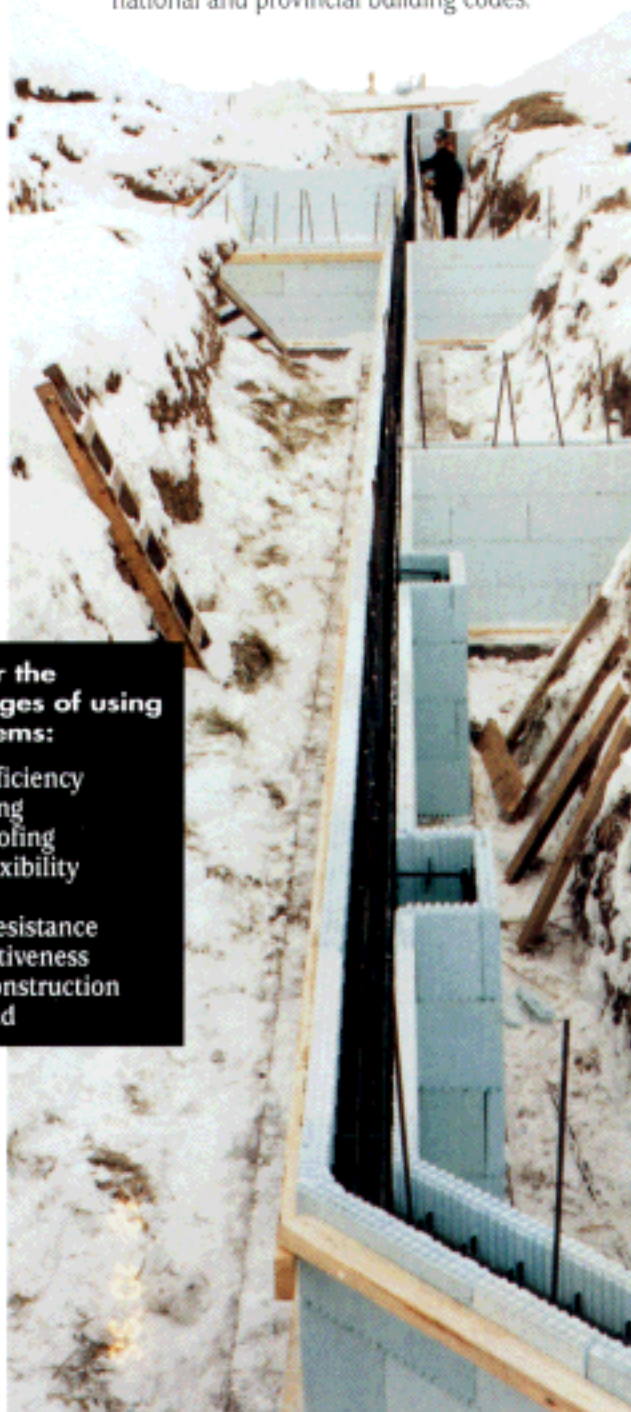


Selecting the right ICF system

Two different types of insulating concrete form systems are available. One uses hollow, interlocking polystyrene blocks which stack like masonry (pictured here), while the other uses rigid foam panels, with a system of ties to space them apart. Both block and panel types can be used to form a variety of wall thicknesses, with vertical and horizontal steel reinforcement. Concrete is pumped into the cavity to form the wall. Most brands of ICFs are distributed nationally, and conform to the national and provincial building codes.

Consider the advantages of using ICF Systems:

- energy efficiency
- fireproofing
- soundproofing
- design flexibility
- strength
- disaster resistance
- cost effectiveness
- ease of construction year-round



Choose an ICF system for your next building project.



Home Hardware Building - "I am very satisfied. Performance of the building has been excellent, even better than we expected. This is the only way to build... I'm planning another building using ICFs. It is just a great building product." *John Lamoureux, Owner*



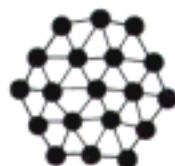
New Glasgow Police Services Building - "Costs for the conventional design of our new police station were well in excess of the \$2 million budget. Our project manager submitted a proposal using ICFs. The building gave us improved quality and more amenities. It was better suited to the end use, and was within budget in spite of a winter construction schedule. The town is very pleased with the results." *Bob Funke, Town Engineer*



McCain Foods: Potato Waste Water Treatment Tanks - "We installed two treatment tanks for McCain Foods that were 112 ft. in diameter and embedded 10 ft. below grade. We chose ICFs for the project. As well as an insulating advantage, the ICFs offered excellent protection for our glass lined tanks. The building process was very versatile and quick to install." *Nelson Ward, Greatario Industrial Storage Systems*

COVER PHOTOGRAPHS:
 Clockwise from upper right,
 Gas Bar, 3-Story Apartment
 Building, High School Addition,
 Funeral Home.

Contact your local ready-mixed concrete association or CPCA office about using an ICF System for your next building project.



READY MIXED CONCRETE 2000

CANADIAN PORTLAND CEMENT ASSOCIATION



ASSOCIATION CANADIENNE DU CIMENT PORTLAND