

# Product Information Bulletin 222

## **Advantage ICF System FAQ**

## Product Information Bulletin

### Advantage ICF System® Frequently Asked Questions

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#### 1. What are the key components in the Advantage ICF System®?

The Advantage ICF (insulating concrete forming) System consists of two layers of expanded polystyrene (EPS) insulation connected with web connectors moulded into the EPS insulation.

#### 2. Can I vibrate concrete in the Advantage ICF System?

Yes, concrete is supposed to be vibrated. The unique design of the Advantage ICF System can withstand full internal vibration as per concrete placing standards.

#### 3. Why is your product 419 mm (16-1/2") high?

A typical basement wall height is 6 courses high – 6 x 419 mm = 2514 mm (6 x 16½" = 8'-3"), plus a 38 mm (1½") sill plate to provides 2552 mm (8'-4½") overall height less 102 mm (4") for the concrete floor slab thickness provides a perfect finish ceiling height of 2450 mm (8'- ½").

#### 4. How high can I go with your product?

The Advantage ICF System can be used to form 152 mm or 203 mm (6" or 8") thick reinforced concrete walls. The National Building Code (NBC) of Canada provides prescriptive design requirements for above or below grade walls up to 3.0 m (10'-0") height. Consult your Advantage ICF System representative for other wall heights that may require specific engineering design input.

#### 5. Can this product be used for above-grade applications?

Yes. A growing part of our business is above grade or whole building applications where building owners have recognized the advantages of energy efficient construction for their whole building.

#### 6. What is the difference between a fire separation and a firewall?

Principal differences between a **fire separation** and a **firewall** relate to the construction materials that are permitted and the requirement for a minimum fire-resistance rating. The following NBC definitions will help to understand the differences:

- 1) **Fire separation** means a construction assembly that acts as a barrier against the spread of fire and smoke. **NOTE: The fire-resistance rating of a fire separation may be waived in some cases on the basis of the presence of an automatic sprinkler system.**
- 2) **Firewall** means a type of fire separation of **noncombustible construction**, which subdivides a building or separates adjoining buildings intended to resist the spread of fire. **A firewall has a fire-resistance rating** as prescribed in the Code and has structural stability to remain intact under fire conditions for the required fire-rated time.
- 3) **Noncombustible construction** means that type of construction in which a degree of fire safety is attained by the use of noncombustible materials for structural members and other building assemblies. Except for closures, the NBC states that required **fire-resistance rating for a firewall shall be provided by masonry or concrete.**

### 7. Can I use the Advantage ICF System for a party wall?

A **party wall** is defined in the NBC as a wall jointly owned and jointly used by 2 parties under easement agreement or by right in law, and erected at or upon a line separating 2 parcels of land each of which is, or is capable of being, a separate real-estate entity.

- 1) In a building of **residential occupancy** in which there is **no dwelling unit above another dwelling unit**, a party wall on a property line between dwelling units can be constructed as a **fire separation** having a fire-resistance rating not less than a 1 h.
- 2) **Except as noted above** for residential occupancy a party wall on a property line must be constructed as a **firewall**.

### 8. Can you use this to construct firewalls?

As noted above, the NBC requires that a **firewall** be constructed of **non-combustible construction**. The fire-resistance rating of a wall constructed with the Advantage ICF System is provided by the 152 mm or 203 mm (6" or 8") concrete wall thickness. However, the stay-in-place EPS insulation that forms the outside face of the wall is a combustible material. Therefore, acceptability for use in constructing a firewall must be confirmed with local code authorities at the time of building permit approval.

### 9. What goes inside?

Concrete with a 100 to 150 mm (4 to 6") slump to provide a minimum 20 MPa (2900 psi) concrete strength reinforced as per design requirements.

### 10. How do you prevent wind from moving the forming system prior to the concrete pour?

The Advantage ICF System itself is light; therefore, lumber bracing or a reusable metal scaffold is attached to the wall when it is assembled. The Advantage ICF System Installation Manual provides additional details on bracing and scaffolding.

### 11. Does the concrete pressure cause blow outs in your system?

When a blow out occurs in an ICF block, 99% of the time it is due to installation error. As a rule, it is an easy fix using the method described in the Advantage ICF System installation manual and you lose no time.

### 12. Who can install it?

Installation of the Advantage ICF System should occur under the direct supervision of either:

- 1) An experienced ICF installer (complete with references),
- 2) A journeyman carpenter (complete with a valid carpenter's ticket),
- 3) A trained professional in the concrete industry (complete with references), or,
- 4) An Advantage ICF System trained installer.

Contractors with knowledge in framing and concrete applications are the preferred installers. Building construction experience is a prerequisite.

### 13. Is it harmful to the environment?

The Advantage ICF System incorporates EPS insulation a rigid foam plastic insulation that contains only air within its cellular structure. EPS insulation is inert to a wide range of chemicals and does not contain any CFC's or HCFC's.

#### 14. Can I design any shape?

Typically, the Advantage ICF System can be cut to provide any shape as long as the structural supports for any projections or bays are designed accordingly.

#### 15. How available is it?

Plasti-Fab maintains an inventory of Advantage ICF System block. However, in order to ensure prompt delivery to your location we recommend you allow minimum 2 weeks notice for delivery in your construction schedule to ensure prompt delivery. If building during the busy summer construction season additional time should be allowed.

#### 16. What about insects or rodents?

EPS insulation does not provide any nutrient value for insects or animals. However, some kinds of insects and rodents also appreciate the thermal insulation provided by EPS insulation for their nesting places. An effective way to prevent burrowing insects or rodents from penetrating into the foam is to coat vulnerable surfaces with a parging from the top of the foundation wall above grade to 150 to 300 mm (6 to 12") below finish grade. For additional information, see Advantage ICF System PIB 206.

#### 17. What types of dampproofing products are recommended?

Many types of damp proofing products are suitable for use with the Advantage from traditional spray ones (cut-back asphalt) to the various types of wraps. We recommend the dimpled type of membranes as they provide both dampproofing and drainage. For additional information, see Advantage ICF System PIB 205.

#### 18. What about stucco?

Conventional stuccos are applied by attaching wire straight to our ties with pan-head screws. Acrylic stucco manufactures may require only typical foam preparation and then application directly onto the surface with no stucco wire.

#### 19. What about siding?

- Horizontal joints: strapping between the Advantage web connectors using metal banding may be required if siding joints line up with the Advantage ICF block joints.
- J trim: bucks may have to be modified to allow for certain types.
- Corners: strapping around corners with metal banding may be necessary for certain corner mouldings.

#### 20. What about electrical?

Openings for standard boxes which are 75 mm (3") deep can be cut into the EPS insulation panels leaving 12.7 mm (1/2") extended beyond the face of EPS panels to accommodate interior gypsum board. Grooving for wires can be done with electrical chain saws.

#### 21. What about plumbing?

The Advantage ICF System is typically used for construction of exterior walls of building. Plumbing is rarely placed in exterior walls, however, if necessary this is done by grooving out the foam as required.

## 22. Setting floors?

Floors can be set on top of the concrete walls, or joists cast be into walls or hung off a ledger. The Advantage ICF System installation manual provides typical connection details. However, other structural details may be accommodated.

## 23. What about installing windows and doors?

A door or window can work with the Advantage ICF System leaving architecturally pleasing deep wall thicknesses, window seats, ledges, etc.

## 24. How much does it cost?

The Advantage ICF System is competitively priced with stick framed buildings, however, reduced energy use, lower insurance and lower maintenance costs and enhanced resale price may provide additional long-term construction and ownership values.

## 25. Do you deliver?

Advantage ICF System is sold through building supply dealers and will deliver to jobsites (haul rates may apply).

## 26. Who can I go to for help?

Part of what makes the Advantage ICF System different from other manufacturers is the quality of training and support provided in the field and throughout the building process. Additional resources available to assist you with construction using the Advantage ICF System can be found on our website at: [www.advantageicf.com](http://www.advantageicf.com).

## 27. What is the typical effective R-value?

The effective R-Value of a wall formed with the Advantage ICF System is the overall thermal resistance of the total wall assembly which includes a monolithic layer of EPS insulation on the interior and exterior of the wall surface provided by the Advantage ICF System and is approximately R-23. See also Advantage ICF System PIB's 214 and 215.

## 28. Do you have any building code evaluation reports?

The Advantage ICF System has been evaluated for compliance with National Building Code of Canada by the Canadian Construction Materials Centre (CCMC), a part of the National Research Council of Canada's Institute for Research in Construction. See Advantage ICF System PIB 201 for a copy of CCMC evaluation report 13101-R.

The Advantage ICF System has been evaluated by the ICC-ES Evaluation Service, a national evaluation service in the United States, for buildings covered by the International Building Code, International Residential Code and International Energy Conservation Code. See Advantage ICF System PIB 203 for a copy of ICC-ES evaluation report ESR-1578.

The Advantage ICF System has been evaluated by Intertek, a evaluation service in both Canada and the United States, for buildings covered by the International Building Code, International Residential Code and International Energy Conservation Code. See Advantage ICF System PIB 220 for a copy of Intertek Research Report IRR-1006.

For more information on the Advantage ICF System, visit the Advantage ICF website at [www.Advantageicf.com](http://www.Advantageicf.com) Advantage ICF System product information can be downloaded at this location.