



13 QUESTIONS YOU SHOULD ASK ABOUT ICF INSTALLATIONS



ICF construction has grown in popularity in the last few years, especially with the demand for safer, durable, more energy-efficient buildings.

Commercial building owners and homeowners alike have chosen ICF systems because it delivers disaster-resilient and cost-saving solutions. Builders and architects enjoy the flexible design and fast, easy construction of ICF.

The benefits of ICF construction are considerable, but there are a few questions that builders, architects, and homeowners might want to ask before choosing ICF as a solution.

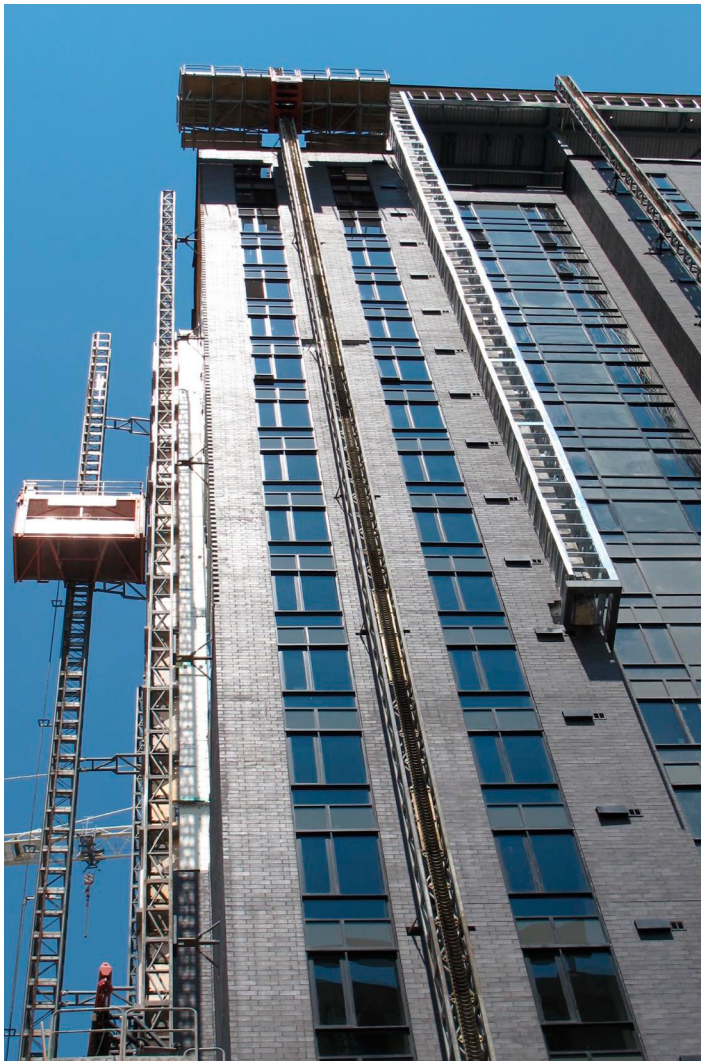
1. What types of construction can I build with ICF?

ICF wall systems are ideal for above and below grade residential construction and low-rise commercial buildings, but it's an excellent solution for multi-story buildings, as well.



The Green Place project features a beachfront ICF structure that's built to withstand Florida storms and hurricanes.

You can check out a gallery of [our favorite residential and commercial projects here](#).



2. How tall can ICF walls be built?

ICFs have been a great solution for low-rise commercial buildings and residential projects for decades now. But there's really no limit to how tall an ICF structure can be.

By working with a structural engineer, building teams can specify ICFs for taller structures like movie theaters and multifamily residential buildings. Some of our Fox Blocks projects are as high as 22-stories!

3. What type of concrete mix is used in ICF construction?

Because raw materials vary based on location, your concrete mix will also vary. Fox Blocks provides concrete mix guidelines, but we cannot provide specifics for your area. Your local concrete supplier can help determine your concrete mix needs based on the ICF application.

You should specify a minimum 28-day compressive strength of 2,500 psi (17 MPa). A slightly higher compressive strength of 3,000 to 4,000 psi provide additional strength to the walls. This also helps the concrete's flowability and pumpability.



4. How much bracing is needed for an ICF build?

The standard ICF bracing system includes scaffolding and an adjustable turnbuckle and strongback. Typically, we place bracing every 6 ft (1.83 m) on one side of the wall. Bracing is also available for taller walls.

As always, look to your local building code jurisdiction to ensure that you meet federal, state, and local standards for construction projects.

5. Do the walls need to be vibrated?

While ICF professionals use a few different methods for consolidation, Fox Blocks recommends using the internal vibration method. This can be done with a light-duty pencil vibrator, to combat voids and honeycombing in the concrete.

6. How do installers handle door and window openings?

In an ICF build, window and door openings are blocked around their perimeters with wood or an EPS buck system.

The buck can't withstand the weight of freshly placed concrete on its own, so installers will need to [brace the buck](#), ensuring the opening doesn't buckle.

7. How are electrical and plumbing installed in an ICF application?

Wall penetration sleeves should be installed to allow for [electrical](#) or [plumbing](#), prior to concrete placement.

After concrete placement, you can install electrical wiring or plumbing chases directly into the EPS foam. Just mark a layout of the path that the wire or chases will follow on the wall.

Detailed guidelines for installing electrical and plumbing work can be found [here](#). You can watch a quick video of how one electrician handled an installation [here](#).

8. How should interior finishes be applied to ICF?

The interior finishes of an ICF aren't much different than traditional construction. Drywall or approved interior finishes can be easily attached directly to the wall.

When hanging heavy objects, like cabinets or large pictures, you'll want to remove the foam from the concrete and replace the removed foam with wood. Fasten the wood directly to the concrete, and secure any heavy objects to the wood.

9. Does ICF need waterproofing or damp proofing?

Any concrete structure that is exposed to moisture needs to be properly waterproofed, especially basements. The EPS foam and concrete in ICF do not prevent water leakage.

Most waterproofing systems are compatible with ICF. You can read more about our [waterproofing recommendations here](#).

Waterproofing isn't an area where anyone should cut corners! The contractor, architect and owner should all share the responsibility of waterproofing properly.

Check out how we handle waterproofing with a simple [peel-and-stick application here](#).

10. Can ICFs be installed above grade?

Absolutely! Below and above grade are both easily installed. Fox Blocks ICFs are great for both foundations and lower level living areas, but they're a great solution for above grade constructions, as well.

11. Are air or vapor barriers needed with an ICF application?

ICF construction simplifies the building process. The ICF's continuous concrete wall already provides a natural air barrier, so no additional air barrier is required in the application. The EPS material is recognized by many jurisdictions as a vapor retarder, so no additional vapor barrier is required.

12. How are exterior applications like cladding or siding attached?

Almost any exterior finish can be used with an ICF system.

Fox Blocks forms are designed with furring strips at the ends of each cross-tie. They're embedded in the EPS and serve to receive fasteners.

Exterior finishes are attached to the furring strips within the ICF form. If additional anchorage is needed, concrete fasteners can be used to secure exterior finishes directly to the concrete wall.



The ARKhouse project showcases what's possible in modern home design with ICF: an attractive, energy-efficient, low-maintenance solution.

13. Is training available for Fox Blocks ICF installation?

As Fox Blocks continues to expand our business, we want to offer more education opportunities to support professionals in the construction industry. Trainings are available by region and focus on building officials, supply yards, contractors, engineers, and architects.

Check out our [free online classes](#) here!