Concrete Pour

If ICF wall is not continuing on make sure concrete is level and anchor bolts have been wetset into the concrete. A laser level will get near perfect elevation making the sub trades coming behind very satisfied with ICF walls.



If the wall is continuing on with ICF make sure rebar is coming through as per specifications and concrete is a couple inches down from the top of the form. In the example to the right vertical rebar was stopped and concrete was brought up to flush at a door opening on main floor making it convenient to run the subfloor directly over the door opening.



Post Pour Concrete Checklist

- All areas are consolidated
- Ensure all embedments are in place and haven't moved.
- Walls are straight, plumb and level. Limit scaffold activity after this.
- Double check that walls are straight, plumb and level.
- Bucks for openings have not moved.
- Service penetrations have not moved.
- Concrete is protected on top from freezing if needed.
- Anchor bolts are in or rebar is in for continuing ICF.
- Beam pockets are in place for any beams needed for framing etc.











Continuing on with ICF / Next Level

For ease of work, safety and efficiency the floor should be installed for working on your next ICF level if there is a floor. Either a subconcontractor will come in and do it or it could be your job.

A ledger support system will have been determined before the pour. The cross ties are not meant to support structural loads.

Installing the simpson hanger step 2 will need to be completed at this stage.



Use all the same practise we outlined regarding ICF all over again. Stack, brace, pour, repeat.





Waterproofing / Damproofing

Keeping water out of your below grade wall cannot be overemphasized. Waterproofing must be compatible with EPS. Below are a few options.

Soprema is a high-quality, self-adhesive, rubberized peel and stick sheet designed for damp-proofing SuperForm ICF construction. Benefits include high tensile strength and puncture resistance, greater flexibility and consistent thickness, ensuring the high-end waterproofing required to give you peace of mind that your below-grade builds won't leak.

Dimple Wrap. A permanent moisture barrier that prevents the exterior backfill from touching the foundation wall. Dimple wrap also provides an air gap allowing the foundation to breath and transmit moisture to the footing drainage. It is fastened with special fasteners through the raised dimples.

Liquid spray on or roll tar is acceptable if it is EPS compatible.







Installing Soprema

Installation guidelines as per Soprema.ca guidelines. Typically you will need at least 2 people to install the peel and stick and it usually works best installed vertically. It is extremely important to follow manufacturer's instructions to receive warranty if product fails.

- **1.** Cover all small projections (pipes, etc.) with a detailed membrane and seal the ends. Make sure EPS is clean.
- 2. All interior and exterior angles and the footing at the corner must first be covered with a 300 mm (12 in) wide strip of detail membrane centered on the corner. This strip must be applied directly on the surface, with no gaps between the surface and the membrane. Outside corners should be double lapped. On a clean, dry surface, COLPHENE ICF membrane does not usually require primer. Use water-based ELASTOCOL STICK H20 where primer is required; solvent-based primers could damage the polystyrene and must not be used.
- **3.** Install the membrane vertically by gradually removing the silicon paper while pressing on the membrane to promote bonding.
- **4.** Continue to install the COLPHENE ICF membrane on the entire foundation wall, making sure it is aligned with the previous roll. Longitudinal overlaps must measure at least 75 mm (3 in.), while transversal overlaps must be at least 150 mm (6 in.) Use the dotted lines on the Soprema for guidance.
- **5.** Apply uniform pressure over the entire protective membrane using a roller.
- **6.** Tears and holes must be repaired using the appropriate membrane. The patch must be at least 100 mm (4 in.) larger than the affected surface. The edges of the patch will be sealed with waterproofing mastic.
- 7. It is recommended to mechanically fasten the top termination of the membrane to the insulating formwork.
- **8.** Any waterproofing membrane that can be seen after filling must be protected from UV rays and mechanical damage.

More Tips

- Make sure the waterproofing wraps around the footing and comes down the vertical wall of the footing.
- Soprema can be precut for efficiency once desired length is attained.
 - Once the back wrapper is off be very careful not to let the soprema stick together as it's almost impossible to pull apart once it does. For this reason Soprema should be applied to the ICF and the brown backer paper should be pulled off simultaneously.

If specified a combination of both can be used soprema and dimple board can be used.



For full detailed instructions visit:

https://soprema.us/products/waterproofing/waterproofing_below_grade_sbs_modified_bitumen_membranes/ colphene-icf/25131/

Brick / Stone

The Ledge Block is designed to provide a ledge base to stack brick or stone. The ledge portion of this block is intended to be tied back into the main wall by means of a minimum of ¼" reinforced steel stirrup that is bent to hook over the horizontal rebar in the wall and the rebar in the front portion of the ledge. The horizontal rebar in the wall must be placed in the rear-most slot, opposite the ledge, and both this steel and the horizontal steel in the front of the ledge must be a minimum of ½"(10mm). When stirrups are placed in every other space in the ledge block (12" on center) and a minimum of 2500 psi strength concrete is poured and allowed to cure sufficiently, this ledge has been designed to carry 1,000 pounds per lineal foot. Stirrups placed in every spaced in the ledge block (6" on center) and a minimum of 2500 psi strength concrete is poured and allowed to cure sufficiently, this ledge can carry 2,000 pounds per lineal foot. All calculations assume that brick or stone is tied back to the wall with metal ties as per local codes, and does not protrude past the outer edge of the concrete ledge by more than one inch, or $\frac{1}{4}$ " of the bricks depth, whichever is less. Higher weight calculations may be arrived at by increasing diameter of the stirrups and by local engineering design of heavier wall reinforcing and stronger concrete.

Refer to drawing 5.1.2 for more details



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Parging

Generally, parging consists of a cement based grout that is troweled over a type of wire mesh or metal lath, much like stucco. This "mesh" extends from the underside of a metal flashing at the bottom of the wall's exterior finish. It is applied over the dampproofing layer and below the exterior grade approximately 12". Conventional concrete type parging and acrylic type cement parging work equally well. As in dampproofing there are several ways to finish the exposed portion of a Superform wall, (the portion that is above the finished ground elevation but below the exterior wall finish). This buffer accomplishes more than one task at the same time. The parging provides a separation between grass, gravel and other ground level materials. Parging protects from moisture, insects and other undesirable elements that may be present. It also provides the start to the walls exterior finish. Parging provides a means of covering the exposed EPS, protecting it from sunlight, impacts and scuffs from lawn mowers, weed trimmers, etc. It also acts as a protector for the damp-proofing material; protecting it from the same hazards previously mentioned.



Commercial finish option:

Run a strip of PWF plywood approximately 1' wide. This will work as a good starting point for your exterior finish.



Backfilling

Take care when backfilling and make sure that the damp proofing/waterproofing is not punctured. Backfill should be free of sharp rocks and debris.

All walls should be laterally supported at the top with a floor system before backfilling.

If required a perimeter drainage system is installed.

If backfilling and compacting is happening on both sides of the wall make sure to bring both sides up at the same time to maintain equal pressure.









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Electrical Installation

Electrical rough in is quite straightforward in SuperForm.

After the concrete has been placed electrical chases and boxes can be cut into the EPS foam using a router, chainsaw with a guard or a hot groover. The boxes are mounted to the tie. Superforms ties are triangular at the top and bottom of the block for ease of cutting to run wires while also preventing settling.

Sleeves should have been installed for through wall services before the pour.









Plumbing Installation

The EPS is thick enough for a 2" I.D pipe to be recessed and fit flush with the face of the wall. Keep in mind some codes will not let you run plumbing in the EPS of the foam. Preplanning of stacks etc. for running in interior walls at the early stages of house plans with your home designer as with the plumber is critical.

All sleeves should have been properly installed in the right location before the pour in wall penetrations earlier.



Interior Finishes

Anything can be applied to the interior of SuperForm ICF however the most typical application is drywall. Often drywall needs to be applied to cover the EPS for fire rating specifications.





Drywall can be perimeter screwed and interior glued. Be sure to use glue that is compatible with EPS.

Refer to drawing 5.4.7 for info on wood walls butting into ICF.







Exterior Finishes

Any type of exterior finish is suitable for use in ICF construction. Typically screws should be used to attach the majority of exterior finishes.

It is important to note that no weather resistant barrier is required over ICF. Flashing is necessary over door and window openings.

Some prep work will be required over Superform ICF for Acrylic stucco. Hard coat stucco with wire lath can also be fastened to the block.

When installing some exterior coverings the contractor may choose to strap the building. However with a little bit of strategic planning you do not need to strap it.

Do not pre drill metal siding if you do not strap it. Only pre mark it and pay close attention to the ties.







Prepour Inspection

Pre pour inspections are very important. They ensure you are 100% ready for concrete. If you are in doubt add additional support.

| All walls are level and plumb. |
|--|
| Wall dimensions are correct. |
| String line is ready to straighten top of wall. |
| All joints are additionally supported if necessary. |
| Anchor bolts are ready (towels and vibrator) if needed. |
| Short wall sections are strapped. |
| Beam pockets are in place. |
| Floor embedments are in place. |
| Concrete placing equipment is ready. |
| Bracing/ICF wall is leaning slightly inward for concrete. |
| Concrete placement plan with crew. |
| Openings are braced and framed. |
| Spray foam can be used to fill any gaps that are left. Any gap bigger then $\frac{1}{4}$ should be spray foamed. |
| Trim off the knobs if desired. Even if you are going up with a second level Superform recommends trimming |

Trim off the knobs if desired. Even if you are going up with a second level Superform recommends trimming off knobs because cleaning is difficult and finishing the top of the wall after the pour is more difficult. The next layer of blocks can be glued on with adhesive foam if continuing ICF.

Vertical rebar is extended through the pour or pieces are cut to wetset in if ICF is continuing.



Post Pour Concrete Checklist

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Notes



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