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Insulbrick ICF

Insulbrick ICF Installation Procedure

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Insulbrick ICF

1. Introduction

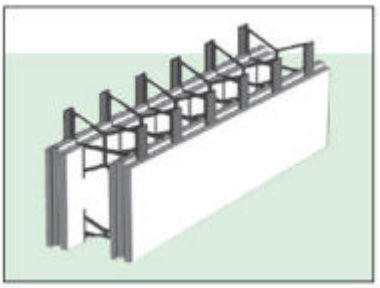
Insulbrick ICFs provide a fire retardant expanded polystyrene [EPS] formwork for casting concrete structures. When interlocked and filled with concrete, they create a solid wall with remarkable insulating properties for both internal and external walls.

The key benefits of the system include:

- ***Versatility and strength -*** *the system is ideal for high wind areas and allows maximum load bearing potential for retaining walls and suspended slabs*
- ***Bushfires and termite protection -*** *no timber is required with Insulbrick ICF construction thus reducing the risk for fire and termite infestation,*
- ***Structural support -*** *concise engineering specifications ensure that all walls are appropriately reinforced,*
- ***Insulation -*** *the polystyrene form provides enormous benefits for sound and thermal insulation. It also insulates the concrete core minimising any movement resulting from temperature fluctuations- concrete will remain at an almost constant temperature*
- ***Guidelines -*** *the simple construction procedures and clear guidelines ensure that erection is fast and efficient,*
- *Maintenance free -* ***no painting or cracking. The cracking often seen with rendered BV structures does not occur with this system.***

2. Which ICF?

Speak to us about your project. We will advise the best ICF options applicable to your project.



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3. Quantity Calculation:

To calculate the quantity of ICFs adopt the following simple equations:

Wall length x Wall height – Wall openings = Required area

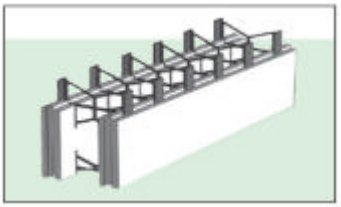
Quantity calculators can be downloaded from our web site. Alternatively forward a drawing of your project and we will perform the calculations for you.

4. Products/ Ordering:

Some of the products we offer are listed and described below:

- **ICF (Insulbrick ICF and Polywall ICF)**





- **Lintelbrick ICF**


Lintelbrick 240 **Lintelbrick 200**

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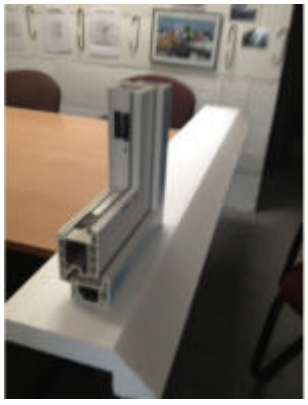
- **Starting channel**

- **Low expansion foam and cleaner**

- **Foam gun dispenser**

- **Decorative window sills**



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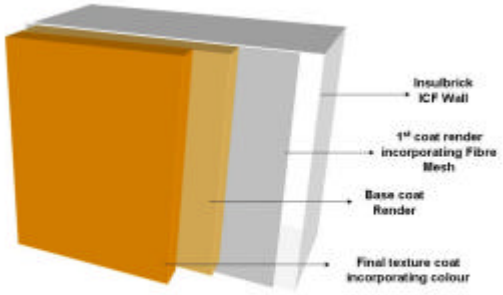
- **Reinforcement ligatures**

- **Brace hire**

- **On site assistance**

Various support packages are available for both Owner Builders and Builders

- **Render mesh- available for purchase in 60m2 rolls**



5. Stock arrival:

The stock will normally be arranged to arrive when the foundations have been poured. The form work is effortless to unload as it is very light. The pallets of ICF are

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delivered shrink wrapped with cardboard protection at each end (note- applicable to Insulbrick ICFs only). Discuss your delivery requirements with us.

6. Setting out location of ICFs:

Concrete slab: There is generally no rebate in the concrete slab for ICF construction. Refer to engineering specifications. Set out the ICFs as follows:

a) Check the measurements of the slab with a long tape to ensure they are consistent with the architectural drawings
b) Assuming the measurements are accurate sit the ICF block you are using on the edge of the slab in the corner and mark the location of the internal face

c) Do the same as item b) at the other corner where the ICF wall will be built
d) Continue this process for the whole perimeter of the slab
e) Continue this process for internal walls if they are ICF

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f) Recheck the measurements from the internal mark on the slab with the measurements shown on the architectural drawings
g) When satisfied that the measurements are accurate connect the marks from corner to corner with a chalk line
h) The inner side of the perimeter walls are now identified by the chalk line. The location of windows and doors can then be determined and marked
i) Anchor the starting channel to the slab with concrete nails. Note- starting channels are not necessary at the location of doors and full height windows


j) By using a block as a guide you can then locate and mark where the start bars will be drilled. Engineering specifications will advise there locations but generally they are in corners, around openings and at 5 metre centres. Once the starter bars are drilled the bars can either be installed now or later.

7. Installing the ICFs:

The ICFs are now ready to install.

a) Starting at the corners the blocks can now be laid into the starting channel.


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b) The blocks are laid so the join does not align with the join below. The join (like brick work) should be staggered so the block being laid sits on the join as central as possible.
c) Corners are formed using an end block and cutting the side of the block away so the concrete can flow around the corner to the abutting interlocked block.


8. Bracing:

When pouring ICFs to full height they must be braced. Don't let anyone tell you otherwise. Some Owner Builders will erect two courses at a time and place the concrete in stages. This is acceptable providing the reinforcement is continuous. The ICF is strong enough to hold the concrete and will remain reasonably straight without bracing. However to ensure a good result is achieved bracing should be adopted. These can be handmade, purchased or hired. Speak to our representatives regarding the options.

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Bracing can be erected in the early stages of wall erection to ensure the ICF is not affected if the wind increases.

Use a level to ensure the braces and therefore the wall are plumb

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Use a string line to ensure the wall is not only plumb- but straight

Bracing will also double as scaffolding to help with the placement of concrete.

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The turn buckle arm can be used to easily adjust the plumb of the wall

9. Pre concrete pour check list:

Your walls are now erected and ready to be filled with concrete. Prior to the pour check/ ensure the following:

1. All polystyrene scraps should be bagged (in recycle bags supplied by manufacturer) and removed from the work area. Polystyrene with concrete on it will not be recycled.
2. Low expansion foam- this should be done the day before the pour to any areas where there have been cuts that have left a gap. The foam dries very hard and acts like a glue for the form work to seal up any weak points.
3. Check all wall are plumb and straight. Even if this has been done during installation it should be checked before the pour in case anything has moved.
4. Ensure all Lintelbrick ICFs are clamped in accordance with manufacturers specifications

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5. Ensure all openings are braced in accordance with manufacturer's specifications.
6. Check access for concrete trucks and concrete pump
7. Ensure sufficient planks are available for access to the top of the wall for pump operator
8. Ensure all bolts to be placed for top plates where applicable are on site with nuts secured to the bolt above the height of where the concrete will be cast in

10. Concrete pour:

We are now ready for the concrete pour. You will need the following:

- Protective gloves
- Trowel
- Buckets
- Wheel barrow
- Hose

If the set up has been performed well the concrete pour will be easy. A line pump with two inch hose and goose neck connection is the best pump to use. The people at Insulbrick ICFs can recommend concrete pump operators with experience in ICF construction in almost all parts of Australia.

Concrete Mix:
Unless noted otherwise the concrete should be as follows:
32MPA
Aggregate- Maximum- 7mm
Slump- 120 (Note depends on which ICF you are using- contact manufacturer for further information.

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Pouring concrete:
This will vary depending on which Insulbrick ICF you are using. A summary follows:
Note- concrete should be placed in all window sills first regardless of which Insulbrick ICF you are using
Insulbrick ICF 200- walls can be filled to 3 metres in one lift
Insulbrick ICF 240- walls can be filled in 1.2 metre lifts
Polywall 250 and 270- walls can be filled in 1.2 metre lifts
Polywall 320- walls can be filled in 900mm lifts

Concrete Pump with goose neck connection

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Note Lintelbricks clamped on the right of picture

Concrete pour being filmed by Grand Design film crew

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Bolts installed in readiness for top pitching plate to be placed

Bracing stripped and project is ready for framing

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Please feel encouraged to discuss your project with our representatives to see if ICF construction is right for you. We will provide you with expert advice and free quotations. When building with ICF we offer support far superior to all our competitors. First choose ICF- then choose Insulbrick ICFs