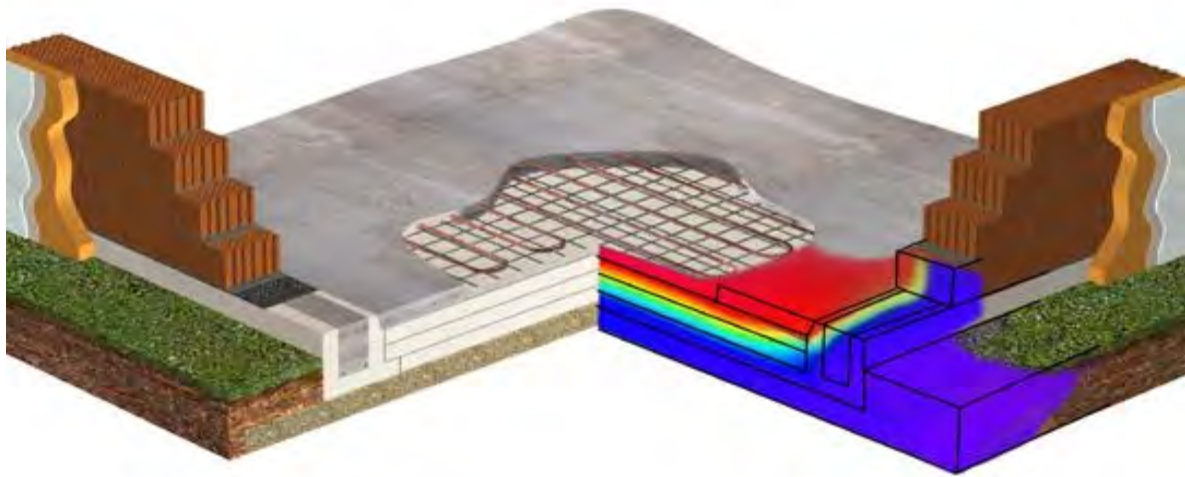


Scandinavian Foundations



Scandinavian Foundations Ltd



U-Min Foundation Systems

The U-Min foundation has the best U-value on the European market. Giving lower heating cost and a superior floor comfort.

- We design foundations for all applications
- We build foundations as sub contractors
- We train and certify builders to use our system
- We provide the required design support
- We supply all EPS components and ancillary items

Visit www.scandinavianfoundations.co.uk to find out about:

- Lower Heating Cost
- Reduced Building Cost
- Warmer floors-Better indoor climate
- A foundation that uses up to 40% less concrete and makes 33% better use of the insulation used.
- Added value to your property
- A foundation safe against rising damp
- A Radon safe foundation
- Typical U-Value 0.100-0.155 W/m²K

How it is done....

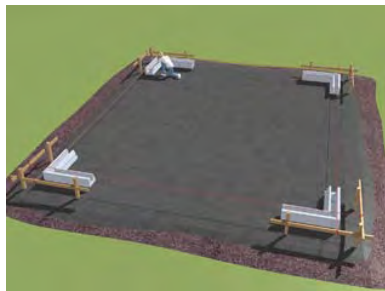
1. Strip the top soil and excavate to normally 600mm under FFL in accordance with Building Regulations.

2. Roll out the Geo Textile and the hard core. The hard core should be in layers of not more than ~125mm and compacted with vibrator or roller between layers. Levels to be monitored with a rotating laser.

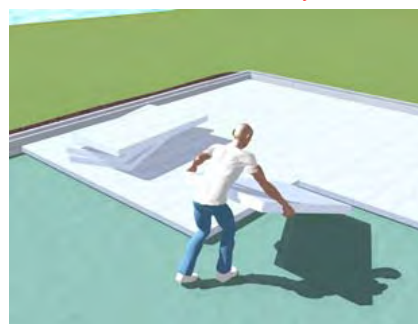
3. Mark out the corners with the help of wood profiles and strings. Diagonals are checked.



4. Use sand blinding for the final levelling. Start the assembling by placing the corner elements in position guided by the strings.



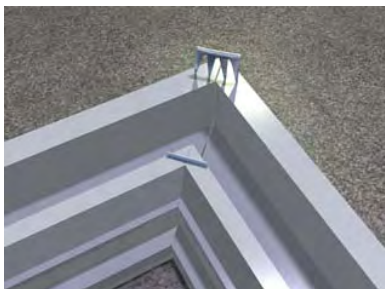
10. Fit the remaining 2nd and 3rd layer of insulation slabs.



16. For top reinforcement of ring beam place and tie steel rods to U-Sinus Ties. Overlap of rods min 600mm.



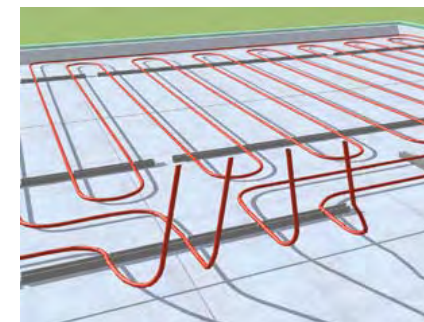
5. All corner elements are cut to the correct angle and fixed with Fixkil, a toothed metal plate as shown on the picture. Always check the angle.



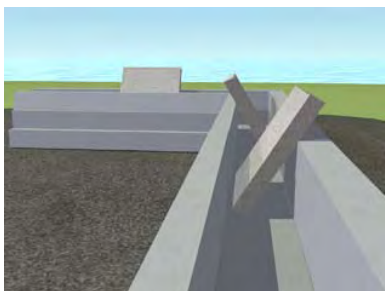
11. All slabs to be nailed with the supplied special insulation nails. One in each corner of the slabs.



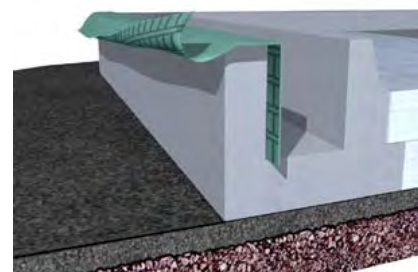
17. For UFH on top of EPS slabs follow work drawing specification.



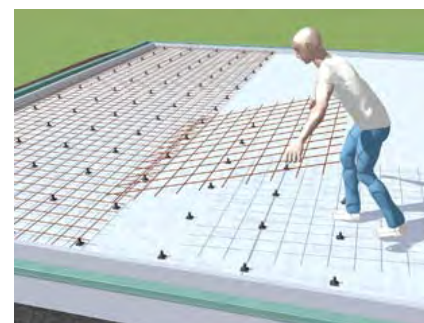
6. Place the remaining elements out until just one is left.



12. Fitting of the Form Foil. The foil starts at the bottom of the outer flange and is folded over the top of the flange as shown on the picture. Important is to fit the checkered side of the foil against the element. No part of the foil under the beam. Form oil must under no circumstances be used as it melts the polystyrene.



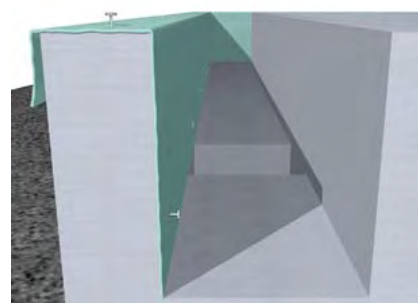
18. Reinforcement of slab is steel mesh as specified in your set of work drawings. If UFH is to be installed tripple overlap must be avoided.



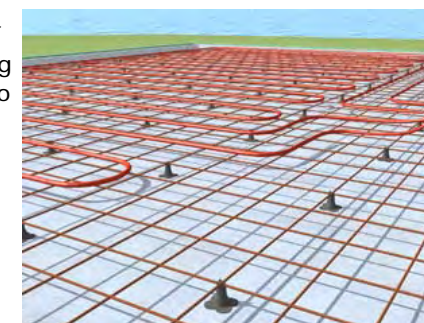
7. Cut the last element with a teflon coated handsaw.



13. Wide headed Felting Nails are used to keep the foil in place. Length ~25mm. Do not let any part of the foil to be at the bottom of the element.



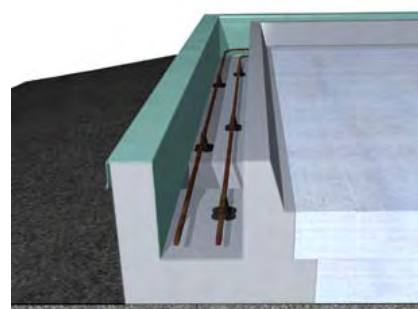
19. When UFH pipes are fitted on top of steel mesh extra care is important in tying pipes to the steel mesh to prevent pipes to float up during concreting



8. Put the first layer of EPS in place.



14. Reinforcement of Ringbeam in accordance with specification on work drawing. Start by placing 50mm plastic spacers at bottom c/c 2meter. Overlap of bars should be minimum 600mm, concrete coverage minimum 40mm.



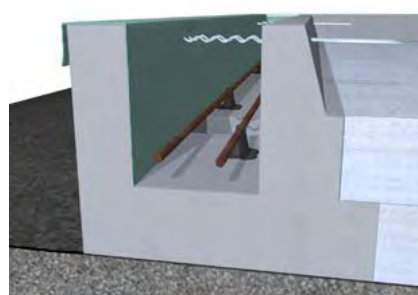
20. Important to be sure that the concrete supplier can mix the concrete in accordance with the specification on the work drawings. Our 300mm and 340mm high elements do not need any support as concrete is poured.



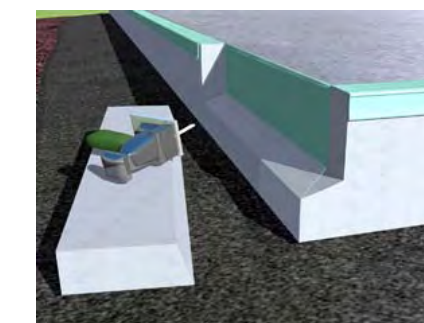
9. Instal the radon barrier on top of the first insulation layer. Over lap with minimum 300mm. Fit sleeves on services coming through the insulation.



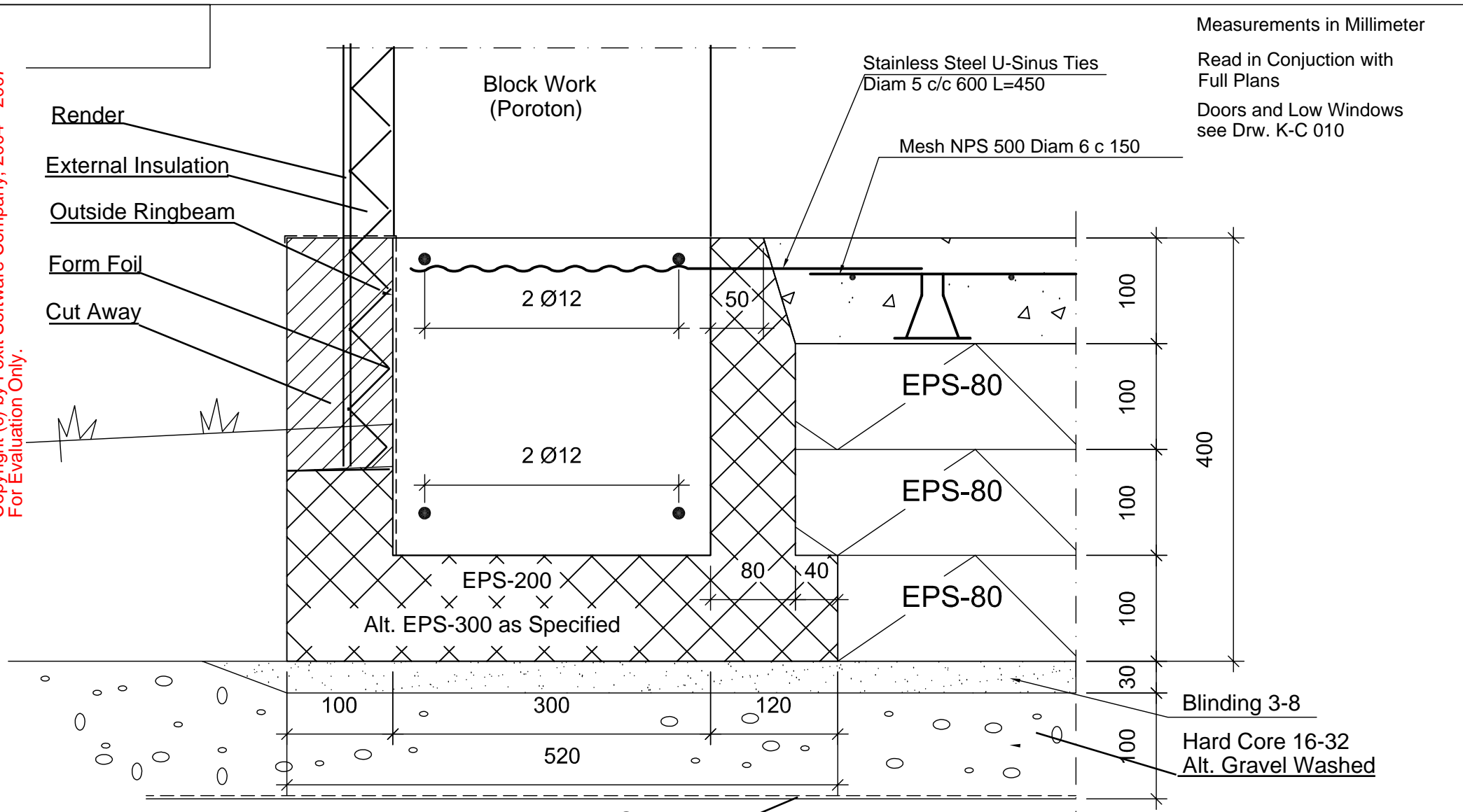
15. The U-Sinus Ties should be placed at the same level as the reinforcement mesh, 50mm from top of RC Slab. Pre-drill holes in inner flange of the element c/c 900mm unless otherwise is specified on your work drawing. Position the ties as shown on the picture.



21. As the concrete has hardened, normally after one day, the outer flange can be cut away. Easiest way is using our specially designed saw. It is possible to use a standard Jig Saw, the blade is tilted 30 degrees.



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 For Evaluation Only.



U-Min Foundation H=400
 U-Value 0.100-0.134 W/m2 K

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U-Min Foundation H=400 Patented					
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					REV

News

Swedish foundation system breaks new ground



Swedish insulated foundation system supplier Supergrund has introduced their groundbreaking foundation system onto the Irish market. Working in association with insulation manufacturer Aerobord and foundation contractors Umin Foundations, the company is looking to capitalize on growing demand for passive house and low energy buildings.

"These foundations combine high and medium density expanded polystyrene insulation to offer below-passive standard linear thermal coefficient and U-values," said Noel Twomey, director of Umin Foundations. "They consist of a unique ring-beam that eliminates thermal bridging by separating the main slab from the beam by way of a layer of high density polystyrene".

According to Twomey, the ring-beam is a completely customisable element, which enables every house type to be catered

for, be it timber frame, poroton, ICF or traditional block construction. "Every house plan gets an individually designed ring-beam based on the wall construction type and loads," he said. "There is no dig out as in a traditional strip foundation. The foundation sits on a level base of compacted hardcore, thus reducing the build time and ensuring that every element of the foundation is completely insulated from the ground.

"The exact amount of concrete needed is easily calculated. The result is a reduction of at least 40 per cent in the amount of concrete used to achieve the same load bearing foundation".

Twomey points out that in a comparative study of a foundation of 131.5m², based on *The Inventory of Carbon & Energy* by Professor Geoff Hammond & Craig Jones of the University of Bath, the Supergrund foundation showed a 35 per cent reduc-

tion in embodied CO₂ over a standard strip foundation with 100mm EPS 70 insulation and 38 per cent reduction in embodied CO₂ where the standard strip foundation used 200mm EPS 70 insulation. "These calculations do not include the obvious further reduction in embodied CO₂ when 60% Ecocem is used in the concrete," he said. "Also, given the energy saving nature of the Supergrund foundation, much greater reductions in embodied CO₂ can be expected over the lifetime of a building".

Currently designed in Sweden and produced by Aerobord in Limerick, both companies are currently working on moving the entire design function to the Limerick base.

(above) The Supergrund system was used to keep below-floor heat loss to a minimum in the passive house spec Greenhus show house in Clonakilty, pictured here under construction last September

Special Designs

High or Extreme Loads on the Ring Beam

To take up high loads, both Point Loads and Linear loads one or more Load Distribution Slabs are positioned under the Ring Beam Element. A hole is cut in the EPS Element to connect the Ring Beam with the slab as concrete is poured into the Ring Beam Element.

High or Extreme Loads on the Slab

With High or Extreme loads on the slab as a loadbearing wall or a fireplace or machinery on an industrial slab the solution is simple. A reinforced beam is created by cutting out the EPS slab where needed and the beam shaped as the concrete is poured.

When Piling is required

If Ground Conditions require piling, the design is as simple as when using the load distribution slabs. The load is taken from the Ring Beam to the Pile Cap without creating any coldbridging. The Pile or the Pile Cap is not cutting across any Iso Therms.

For more about Foundations please visit
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