

Why is an Eco Building Group project so SPECIAL?



First of all we manufacture our own blocks, product of BASF, made in Germany and with exclusivity for Spain!

This means constant quality control and fast deliveries.

There are a few different types of blocks, different dimensions in length and shape, but the basic principle is always the same; there is an internal part which has 5 cm thickness, a middle part which is always 15 cm wide (place to fill in the concrete) and an external part that can vary in width according to ecological wishes. You could call it the internal wall, the cavity and the facing brick. The external part and the internal part are connected by plasic ties and they also ensure that the cavity remains free to be filled with concrete.



In the diagram above you can clearly see that the left part is the internal shell, right part the external shell. The black part is where the concrete and steel are coming.

We adapt the thickness of the external shell according to the desired insulation standard. Our most commonly used block has 35 cm total width.

As you can see we reach an insulation value of 0.15 W/m²K for this kind of block!

THIS MEANS THAT WE VERY EASILY MEET THE STRICTEST EUROPEAN REQUIREMENTS FOR INSULATION!

For example: Belgium: 0.24 W/m²K

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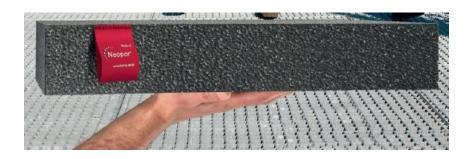
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Eco Building Group blocks are made of Neopor!

Our walls are so strong and highly insulating that it must be something special! And it is! The miracle cure is "Neopor". Neopor is the raw material our blocks are made of.









Neopor is the result of ultimate research and refinement in the production process of Styropor that has guaranteed efficient thermal insulation for decades. These developments make it possible to achieve the same insulation value with 50% less basic raw material, which means that you need less thickness for the walls to keep the same insulation value compared to a traditional building.

Our Eco Building Group blocks are extremely insulating, water and fire resistant, and have a very hard structure making them good and easy to be traded as a building material. One Eco Building Group block weighs between 1,8 and 4,8 kg, depending on the type, and is therefore very easy to process.

Several studies have already shown that Neopor is harmless to health and is even indicated as biologically neutral.

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What about our Eco Building Group foundation?

If you use the highest possible quality and insulation value system for the walls, you must also extend that line to the foundation, otherwise the superior properties of the system will be negatively affected. And so we do with our foundation system.



As for our foundation insulation we use an EPS (Expanded PolyStyrene) based system. It consists of loose bottom plates and side walls, which are provided with unbreakable strips as reinforcement. That makes this system the strongest in the market. In addition, this system is significant easier and faster to process than traditional systems. For example, additional sand or the use of separate corner pieces are not necessary. A three-part system also creates much less waste.



Eco Building Group uses an insulating formwork that ensures a strong connection to the walls without thermal bridges.



The bottom plate can easily be transferred over the metal piket thanks to the integrated provision, so the foundation box can be perfectly aligned to the concrete size.



Reinforcement and spacers, that are suitable for insulation on soft surface, are being placed to make sure that there is sufficient concrete cover.

The necessary openings for drainage and side walls are being placed.

Now only the concrete should be poured, let it dry and the foundation is ready.

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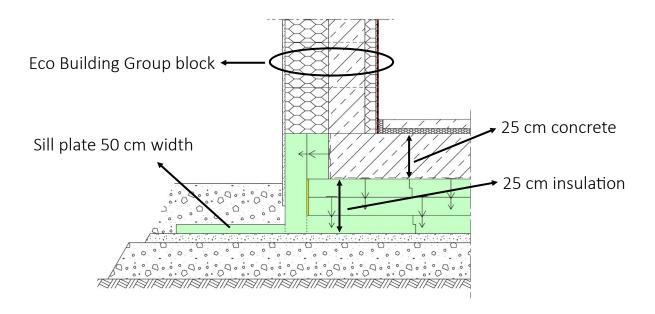
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The Eco Building Group foundation system is unbeatable in processing speed. Apart from the simplicity of installation of a three-part system unlike other systems, there is not the necessity to add sand. Moreover you can perform work such as braiding the reinforcement, placing spacers and making cutouts, much faster.

Alternative foundation system

In some cases, depending on the difficulty of the construction site or for specific constructional reasons, it may be appropriate to use an alternative foundation method.

At Eco Building Group, we have a solution that is both technically and ecologically perfect and that meets our strict requirements for quality and insulation.



As you can see, this system also guarantees the continuity of the insulation, so that the supremacy of the Eco Building Group system is maintained.

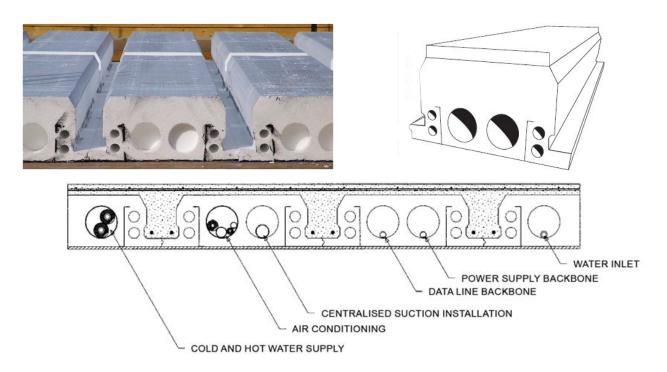
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What kind of floors uses Eco Building Group?

At Eco Building Group we have the perfect solution to maintain our exclusive system of an insulating cage without thermal bridges. Therefor we use a spectacular kind of floors.



Floors and roofs in ICF - Insulated Concrete Form system

Its high performances depend on the perfect collaboration between EPS and galvanized metal profiles, properly drilled and shaped. Such a perfect mix between polistyrene mass and internal metal inserts allow panels, even though very light (Kg/m2 7), to become self-supporting and rigid enough to support initial loads, such as fresh concrete, core grids, workers, etc. Eco Building Group floors are extremely easy and fast to install as each panel unit can be moved manually.

It is possible furthermore, to optimize slab thicknesses as the installations can be all fitted inside thepanel longitudinal holes, thus reducing the floor thickness to the bare minimum.

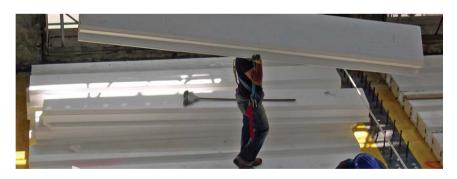
Matching and jointing each panel (male/female), an insulated under-beam section is created, where to host core grids, reinforcement steel and concrete casting getting rid of thermal bridges.

Depending on where to be used, as a storey floor or as a ground floor, there are different types of panels. Those for ground floor use are manufactured of EPS only and so they are not self-supporting, they are layed on the ground floor to grant natural ventilation and insulation without thermal bridges.

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Compared to a floor in clay/concrete mix or to plates, with the same thickness, the weight is cut about 100 kg per m2. This means a consistent saving of iron, concrete and labour.

Repeated saving can be extended to the structure and building foundations too.

The Eco Building Group panel laying, whose weight accounts for about 7Kg/m2, is always manual and very fast. Infact a 5 linear meter panel, for a 3 m2 floor slab, simply weights 21 kg, thus easily and safely handled within the building yard.



Panels are originally self-standing, that is they can stand any weight (concrete casting, workers, reinforcement steel, etc.) with traditional and simple shoring system with prop supports at a maximum distance up to 2 meters.



One of the most important and unique product properties is the continuous insulation, which is ensured partly by the connection with male / female profiles. The thickness of the floor slab can be kept to an absolute minimum and the U values can easily drop to $0.17 \text{ W/m}^2 \text{ K}$.

In the areas declared seismic, our Eco Building Group floor slabs are highly recommended as they offer a consistently lower weight than traditional floors slabs. It is possible then to horizontally use the lightest possible floors with the same resistance, keeping in mind that the seismic intensity is proportional to the weight of the single building units. The use of such a floor slab system allows cutting the weight which is horizontally transmitted to the vertical structures, by 25%. In the case of recovery of earthquake damaged buildings, such a value is extremely important and positive.

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an overview of the advantages of our floor systems :

For

STRUCTURAL ENGINEER AND



- reduces weights on walls and foundations
- reduces horizontal weights in case of an earthquake
- no thermal bridge
- possible to design in a single package: the floor statics, REI, the thermal and sound proofing
- allows to build floors with a large grid and big spans
- allows to fit heating in the flooring while improving any performance
- available in three models, to lay plaster, false ceilings and ventilated / insulated crawl spaces

For

BUILDING



- cuts costs thanks to its versatility
- eases laying in refurbishing
- manually fit with no means or special lifting units, mainly in the areas more difficult to be accessed
- can yard times
- improves the yard safety conditions (walking area and lower weight per person)

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For **FINAL USER**



- better comfort when living in healthy lofts
- economic saving in the room conditioning both in summer and winter
- better access to financing for a optimal & better thermal insulation
- gets rid of the heat dispersions between rooms within the same building
- higher safety in case of fire
- higher safety in case of an earthquake

For **ENVIRONMENT**



- can be recycled
- does not hold gases
- cuts the CO2 emissions in the atmosphere
- cuts the road transportation requirements as it is possible to transport a higher quantity at a time



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What about sloping roofs?

For sloping roofs we work with our partner Unidek. They provide us with roofpanels that allow us to perfectly insulate our sloping roofs.





Insulating your roof properly means a lower U-value and build airtight without thermal bridges. The way to do this is insulate from the outside using self-supporting insulating sandwich elements which have the property to make very effective use of the insulation.

Self-supporting and thermally insulating roof elements are not placed "between" the "traditional" joinery, but on top of wooden horizontal support beams. Right away the entire roof structure is ready to use, inclusive the finish at the bottom.

Some of the advantages:

- fast processing, so 25% cheaper
- no errors and minimal amount of residual waste thanks to customized delivery
- thermal bridge arm thanks to the continuous insulating shell
- large spans
- ready-to-use interior or easy to finish of your choice (wallpapering, painting, plastering)
- gain in living space

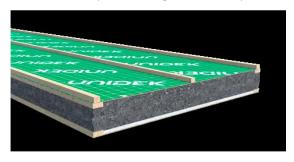
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There are a number of different roof panels. Below we briefly outline the structure and properties.

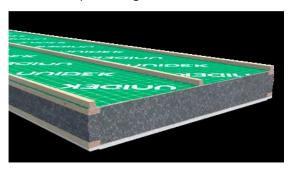
Constructively insulating and soundproof



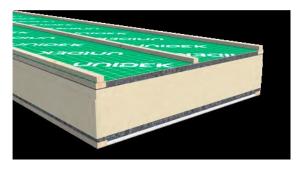
Constructively insulating and extra soundproof



Constructively insulating sound and fire resistant



Constructively insulating for passive houses



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Aero Comfort is an insulating sandwich element with a core of EPS Platinum, fire retardant modified, equipped with 4 integrated stiffeners of 19 mm high and 45 mm wide. The outside is provided with a 3 mm chipboard with green foil and diamond pattern and 3 battens of 20 mm high and 30 mm wide. The inside is provided of a 12 mm plasterboard, which is between two stiffeners applied, finished with a 3 mm chipboard provided of a white visible side.

Min. lenght: 4 m, max. length: 8 m, Width: 102 cm $U: 0.27 \rightarrow 0.10$ // thickness : 13 \rightarrow 22.2 cm

Aero Plus is an insulating sandwich element with a core of EPS Platinum, fire retardant modified, equipped with 4 integrated stiffeners of 19 mm high and 45 mm wide. The outside and inside are finished with extra heavy plate material for improved sound insulation. The outside is equipped with 12 mm OSB III and three counter battens 20 mm high and 30 mm wide. The inside is equipped with a 12 mm plasterboard plate which is fitted between two stiffeners, finished with a 3 mm chipboard with a white visible side. Min. lenght: 4 m, max. lenght: 7.45 m, width: 102 cm

U: $0.26 \rightarrow 0.14$ // thickness: $13.9 \rightarrow 25.1$ cm

Aero Fermacell is an insulating sandwich element with a core of EPS Platinum, fire retardant modified, equipped with 4 integrated stiffeners 19 mm high and 45 mm wide. The outside is provided with a 3 mm chipboard with green foil and diamond pattern and threecounter battens 20 mm high and 30 mm wide. The inside is finished with a 3 mm chipboard and a 10 mm gypsum fiber board with an AK

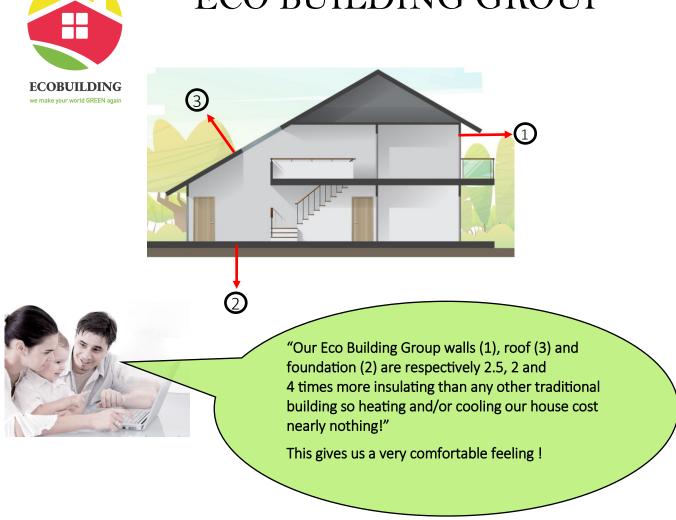
Min. lenght: 4 m, max. lenght: 7.45 m, width: 102 cm

 $U: 0.26 \rightarrow 0.14$ // thickness: 13.4 \rightarrow 24 cm

Aero Passive is an insulating sandwich element with a core of EPS Platinum, PIR and EPS Platinum, fire retardant modified, equipped with 4 integrated stiffeners 19 mm high and 45 mm wide. The outside is provided with a 3 mm chipboard with green foil and diamond pattern and three countertops of 20 mm high and 30 mm wide. The inside is provided with a 12 mm plasterboard plate, placed between two stiffeners, finished with a 3 mm chipboard with a white visible side.

Min. lenght: 4 m, max. lenght: 7.45 m, width: 102 cm

U: 0.11 // thickness: 24.3 cm



The Eco Building Group construction method can be compared to a lost formwork, however limited to the creation of a construction in reinforced concrete. The formwork, made of hard insulation material, serves as an insulation of the new erected concrete wall, and this on the internal and external side. We supply a full range various coordinated elements, in different thickness for both the insulation layer as the concrete core.

The sustainability of the construction is estimated at 150 years. Thanks to the use of adapted reinforcements, it is not only possible to set up buildings for more than 10 floors, but also to build in earthquake prone areas or on plots that have been affected by mine damage.

Thanks to the extensive choice of different kinds of formwork elements, the type of concrete and the reinforcement used, Eco Building Group can construct all types of buildings; multi-family houses, apartment buildings with different floors, individual energy efficient homes, public buildings, swimming pools, industrial buildings, commercial buildings, cold stores, etc... For very high buildings, the client only needs to adjust to one another the necessary type of concrete, the formwork and the width of the concrete core of the elements to bear the burdens of it designed building.

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A good building envelope determines the performance.

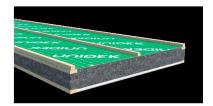
Designers and builders face the task how the best energy performance (low S and E levels) is achieved at the lowest cost. A well insulated building envelope ensures the best result. Thermal insulation is a one-time investment that, as long as the house is there, yields returns. Energy that is not used must not be produced!!

Prevent thermal bridges and air leaks.

In addition to a well-insulated building envelope, it is important that attention is paid to the prevention of thermal bridges and air leaks. These factors are, in addition to technical installation measures (heating, ventilation), sun orientation and geometry, affecting the energy performance of a building. A good energy performance depends on the energetic coherence of all components and materials. This means that preparation, detailing and implementation are of great importance. The quality of the execution is then determing the ultimate real energy performance.









All parts of the Eco Building Group construction, the walls, the foundation slab and the roof insulation, meet each other in a massive, super insulated monolithic building with no thermal bridges at all and avoiding any moisture.

With this technology, compared to classical insulation methods, up to 80 % of energy costs can be saved.

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More benefits from working with Eco Building Group

Time savings



A building layer takes barely 2 to 3 working days, the creation of a complete house, from foundation to roof, takes only a few weeks. Each block is 25 cm high and with a standard block you can finish around 5 m² of structural wall per hour. That makes this construction method up to 6 times faster than traditionally bricked and insulated walls.

A reduction in construction time not only saves working hours, but also reduces credit costs and rents.

profit in living space



Walls built with Eco Building Group blocks are relatively narrow. In order to achieve the same heat conduction coefficient, a traditional wall will have to be about 30% wider than the Eco Building Group wall. This means that for a house of 140 m², about 5 m² of living space can be gained and is an important issue when selling the building.

Good for the environment



Eco Building Group energy efficient homes avoid tons of CO² emission. Moreover, they can very easily be combined with green energy, such as solar panels, because they are almost energy neutral or even passive.

Building with Eco Building Group means winning in all areas. You can build in less time, with the highest possible way of insulation, with less people, with less costs for heating or cooling and with the highest possible level of comfort afterwards.

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Frequently asked questions about Eco Building Group walls

Is an Eco Building Group house durable?

Yes, Eco Building Group constructions are sturdy houses, much more stable than standard brick houses. The oldest building made with rigid foam insulation is about 50 years old and does not show even the slightest signs of aging. Due to the insulation, the concrete core is also reliably protected from the weather elements. And the Neopor that Eco Building Group is using now is even better and stronger than years ago!

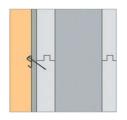
Is it possible to build an Eco Building Group house during frost?

Yes, the material is suitable for winter construction work. Only when the walls are filled with concrete they have to be covered when there is a threat of night frost. The good insulation properties of the Eco Building Group blocks and the concrete's natural heat prevent frost permeating to the concrete core when dried out.

Does an Eco Building Group house burn rapidly?

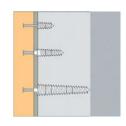
No, the Neopor® used by Eco Building Group to produce the Eco Building Group blocks is made of flame-resistant rigid foam. The material is not flammable. And the interior and exterior plastering is an extra protection.

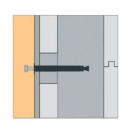
Is it possible to attach things to the walls?











Pictures, lightweight wall shelves and small wall cabinets with standard commercial frame, are screwed into the internal insulation with special Eco Building Group screws holding up to 25 kg.

For heavy wall cupboards, stair railings, etc. it is best to drill into the concrete area using the appropriate screws.

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What about the electrical wiring and water pipes ? (also see at : "construction process")





The electric cables are laid into a melted space into the internal insulation with a special hot knife saving the customer costs and time of intensive break works.







Water and/or sewage pipes may be put into the casted concrete if desired.

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