

GEPANEL



WALL FORMWORK SYSTEM



THE GEOPANEL SYSTEM

The whole idea behind Geopanel is simplicity.

NO CRANE

SELF-LEARNING

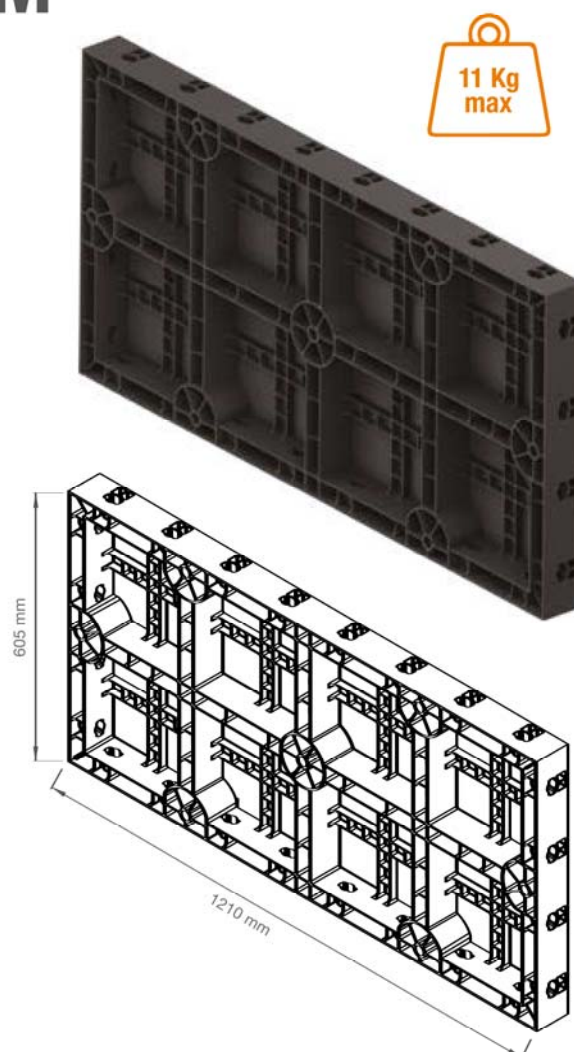
WIDE RANGE OF APPLICATIONS

The concept is that one single person should be able to use formwork safely even working by himself and without a crane: that's why no single element of the Geopanel system weighs more than 11 kg.

Geopanel is made to be versatile and it is used for walls, foundations, shafts, shear walls, as well as a roof-slab formwork (in combination with Geosky elements).

The working of a formwork must be simple and intuitive. It literally takes just a few minutes to understand how Geopanel works: even unskilled personnel is able to start using it virtually right away.

The Geopanel 120x60 is at the heart of a formwork system where a whole range of components interlock in a vast number of combinations and shapes. Sometimes blueprints and shop drawings are simply not available for the site and the formwork must be simple enough to set up in a logical, easy and effective manner. The Geopanel series includes corners, stop-end panels, compensations and accessories which all together make this task simple and straightforward.



Element	Nominal size (m)	Actual size (mm)	Contact surface (m ²)	Weight (kg)
GEOPANEL 120X60	1.20 x 0.60	1210 x 605	0.732	10.38
GEOPANEL 40X60	0.40 x 0.60	404 x 605	0.244	3.85
GEOPANEL 35X60	0.35 x 0.60	353 x 605	0.214	3.53
GEOPANEL 30X60	0.30 x 0.60	303 x 605	0.183	2.82
GEOPANEL 25X60	0.25 x 0.60	252 x 605	0.152	2.59
GEOPANEL 20X60	0.20 x 0.60	202 x 605	0.122	2.29
GEOPANEL 15X60	0.15 x 0.60	150 x 605	0.091	2.04
GEOPANEL 5X60	0.05 x 0.60	50 x 605	0.030	0.75
GEOPANEL 4X60	0.04 x 0.60	40 x 605	0.024	0.69
GEOPANEL 3X60	0.03 x 0.60	30 x 605	0.018	0.62
GEOPANEL WP	0.10 x 0.60	100 x 605	0.036	1.31
GEOPANEL CL 20-25-30	0.46 x 0.60	460 x 605	0.182	4.92
GEOPANEL CL 35-40-45	0.61 x 0.60	610 x 605	0.272	6.14
GEOPANEL TWIN ANGLE	0.30 x 0.30 x 0.10	303 x 303 x 100	0.152	3.96
GEOPANEL INTERNAL CORNER	0.30 x 0.10 x 0.60	303 x 100 x 605	0.244	3.86
GEOPANEL EXTERNAL CORNER	0.25 x 0.60	252 x 605	0.152	2.99

LIMITLESS VERSATILITY

The Geopanel hand-held formwork panels have an almost infinite range of applications, providing best value when cranes or heavy-lifting equipment are not available.

Whether renovating an historical building in the congested centre of a capital city, building the new home of a young family, casting the foundations of an industrial estate in a developing country or shuttering shear walls in a high riser, Geopanel is the useful tool that every building company, small or large, will find infinitely useful.

WALLS, SHEAR WALLS

LINTELS AND RING BEAMS

FOUNDATIONS

BRIDGE REPAIR

RENOVATION

HEMPCRETE RAMMED EARTH BUILDINGS

ELEVATOR SHAFTS

ENCASING WALLS

BASEMENTS SAFE ROOMS AND BUNKERS

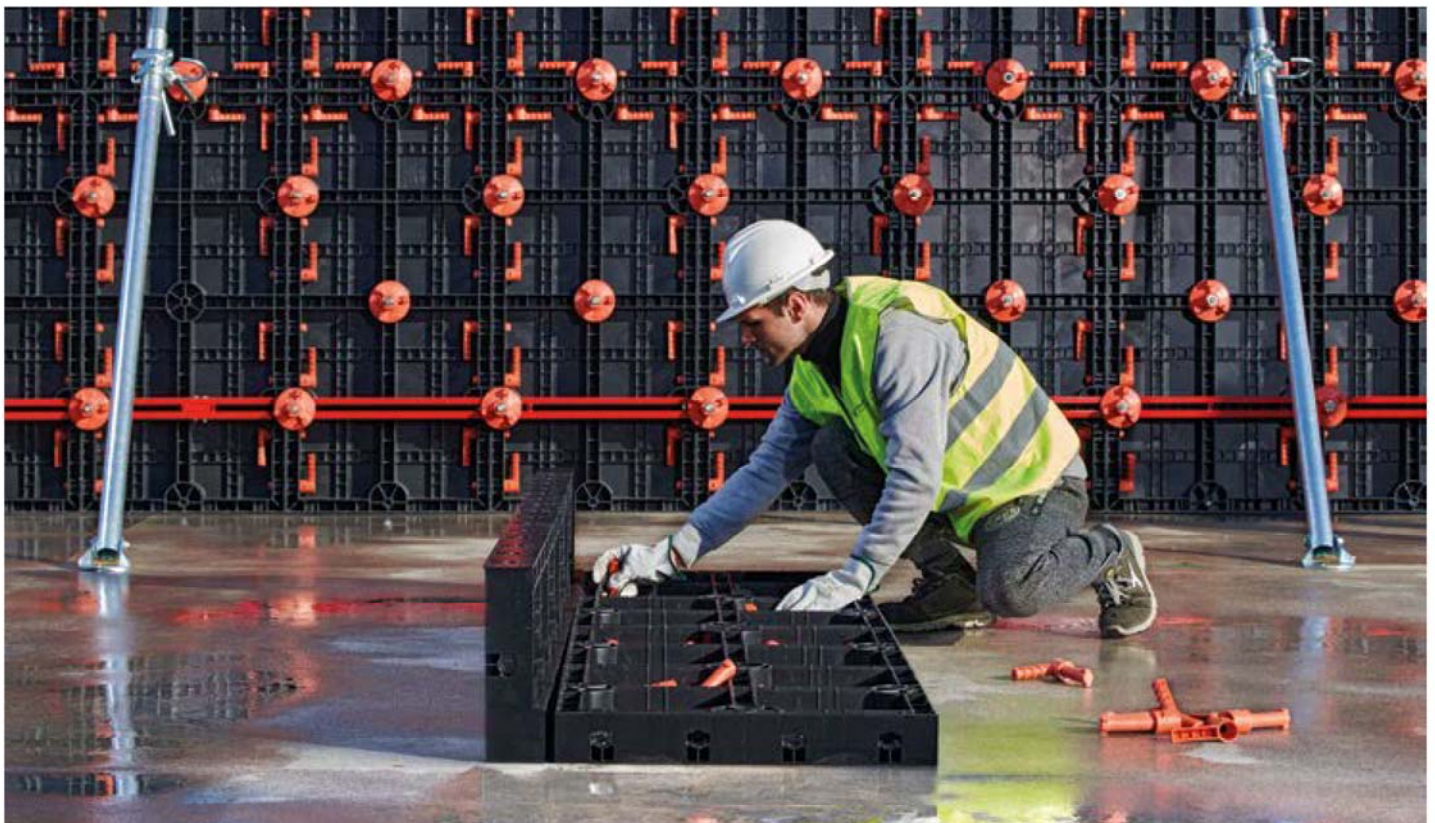
PITS AND MANHOLES

TANKS AND IRRIGATION STRUCTURES

SWIMMING POOL

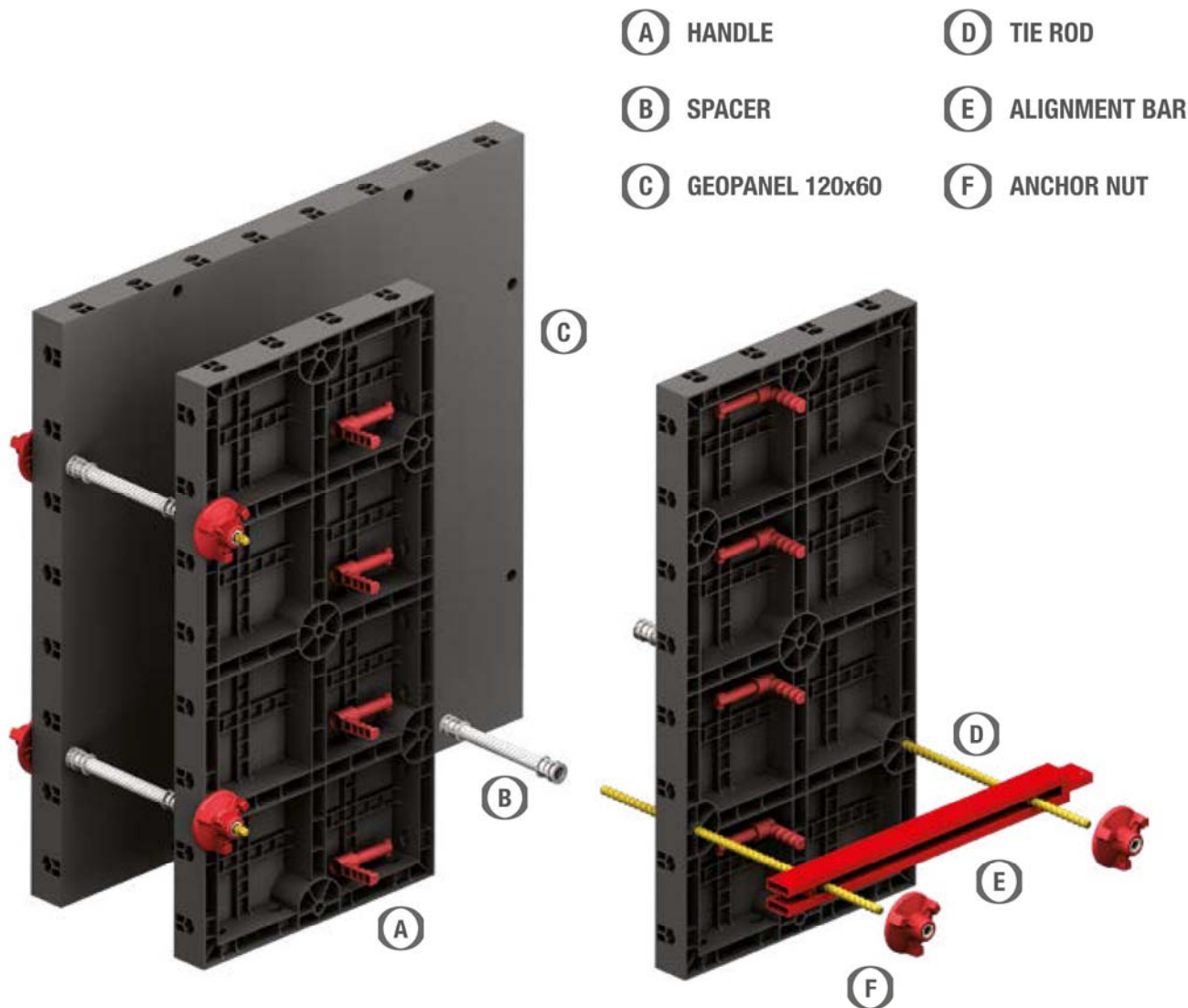
Formwork sections can be pre-assembled on the ground, as well as removed and handled without exceeding manual operation weight limits.

The same way, dismantling does not require disassembling the whole formwork but rather is done by splitting it in sections composed by multiple panels, which can be easily shifted by hand.

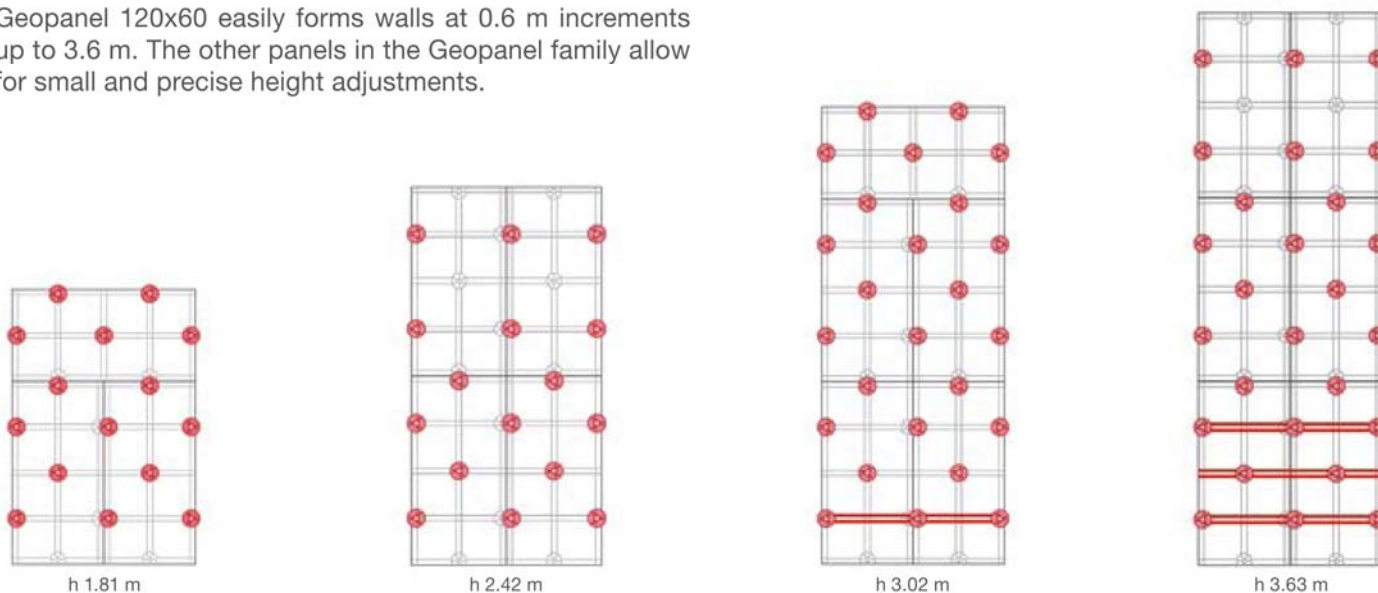


THE SIMPLE WAY GEOPANEL WORKS

Geopanel elements are connected by the universal locking handle. Opposite panels are connected using market-standard $\varnothing 15/17$ mm steel ties. Also available are lightweight, high-strength steel+PA66 anchor nuts to complete the set-up of the Geopanel hand-held formwork system.



Geopanel 120x60 easily forms walls at 0.6 m increments up to 3.6 m. The other panels in the Geopanel family allow for small and precise height adjustments.



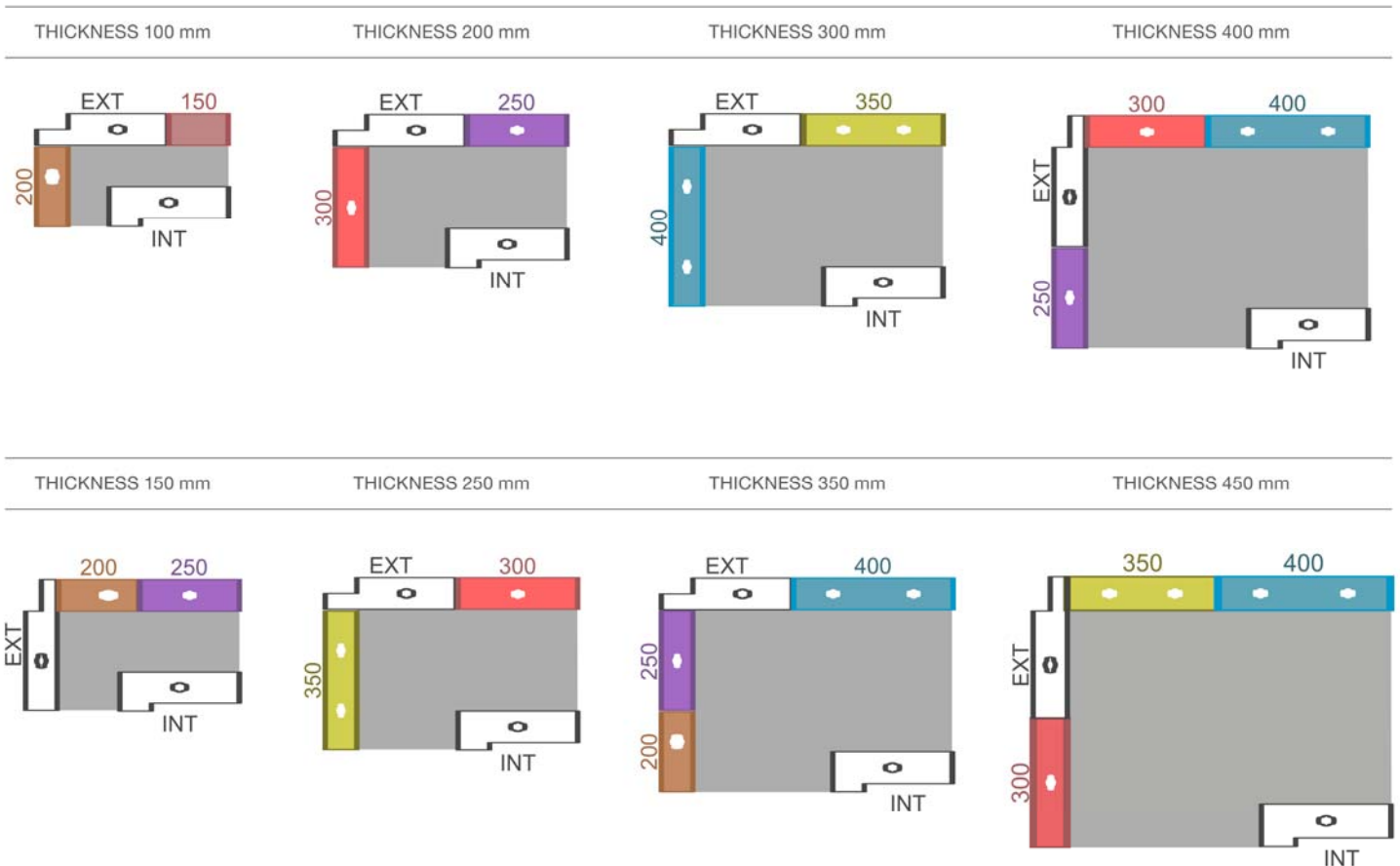
CORNER CONFIGURATION

Corners are easily formed with Geopanel as the system includes dedicated internal and external corner panels, which work together with different sized small Geopanel elements.

The standard Geopanel corner assemblies support forming of walls of thickness of 100 mm and greater, with increments of 50 mm and are available in height increments of 605 mm. Geopanel 120x60 elements - the standard building block of the formwork system - are always placed opposite one another to form walls and are aligned to allow tie-rods to pass through them.

As the relative position of the internal and external corner varies with the wall thickness of the wall, different-sized small Geopanel elements are used to fill the gap between the external corner panel and the closest Geopanel 120x60 element.

Possible combinations of wall sizes are numerous, the quick reference guide in this page is integrated by the Geopanel technical manual for more in-depth detail. Geopanel corner formwork uses alignment bars to achieve greatest strength and precision. Details about the position and amount of alignment bars are also shown in the technical manual.



T-INTERSECTIONS

Forming the intersection of two walls of any thickness is very simple and straightforward with Geopanel.

Two internal corner panels are used to define the intersecting wall, while standard Geopanel elements are used to form the opposite wall surface. The standard Geopanel T-intersection wall formwork assemblies support forming of walls of thickness 100 mm or greater, with increments of 50 mm, and are available in height increments of 605 mm.

Possible combinations of wall sizes are numerous, the quick reference guide in this page is integrated by the Geopanel technical manual for more in-depth detail. Geopanel T-intersection formwork uses alignment bars to enhance the precision of the concrete. Details about the position and amount of alignment bars are also shown in the technical manual.

In some cases corners and T-intersections may be placed close to one another with very little room for alignment bars and require tight compensations. The Geopanel accessories and compensation panels will become particularly useful to solve these cases.

GEOPANEL Internal Corner

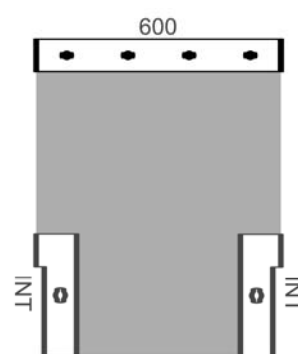
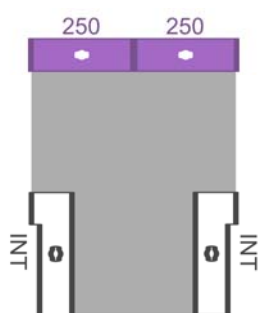
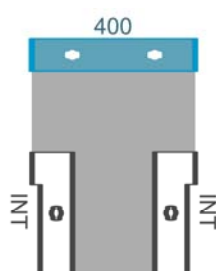
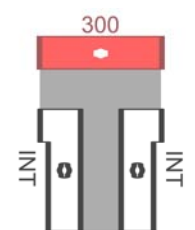


THICKNESS 100 mm

THICKNESS 200 mm

THICKNESS 300 mm

THICKNESS 400 mm

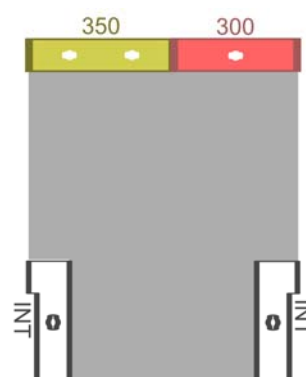
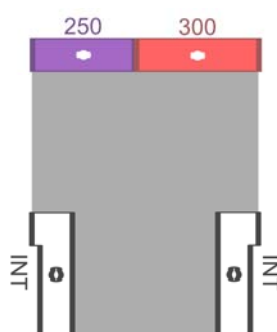
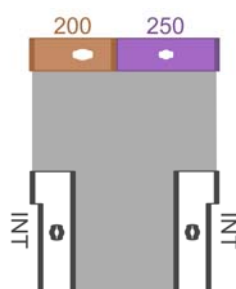
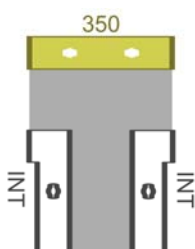


THICKNESS 150 mm

THICKNESS 250 mm

THICKNESS 350 mm

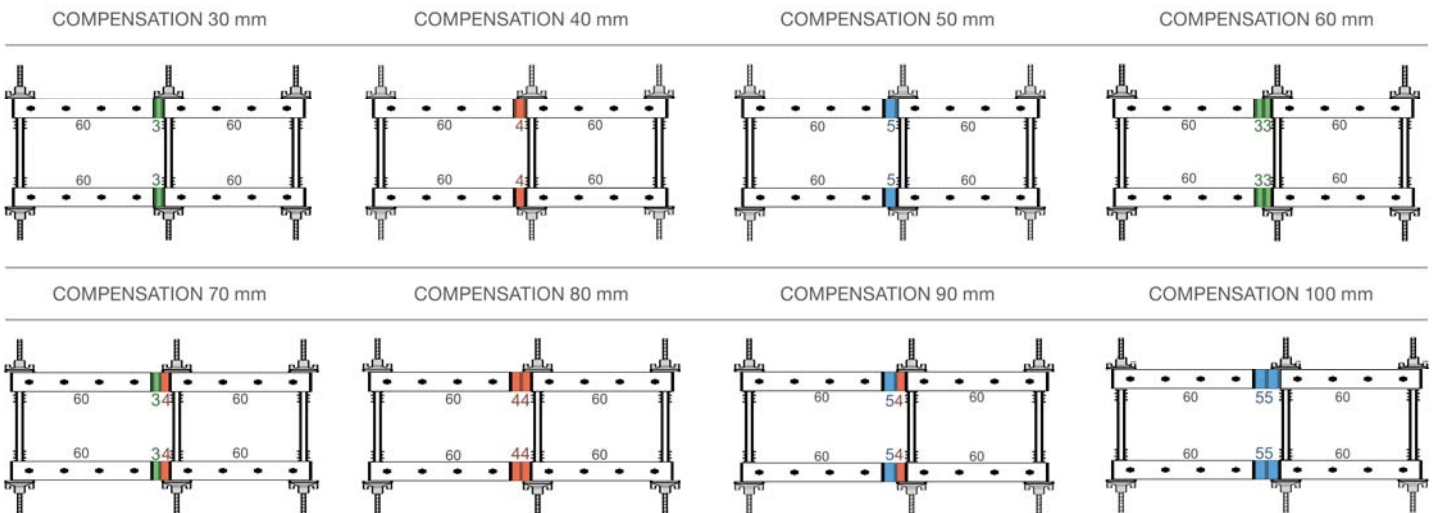
THICKNESS 450 mm



GEPANEL COMPENSATION ELEMENTS

The Geopanel Compensation Elements range adds flexibility and precision to the system, and provides the advantages of a formwork contact surface completely made of ABS.

The combination of two consecutive Compensation Elements allows to compensate between 30 mm and 100 mm with increments of 10 mm. Among the possible applications one can form corner kits for sizes that are not multiples of 50 mm. This is useful where the standard brickwork size falls outside of Geopanel's 50 mm increment matrix.

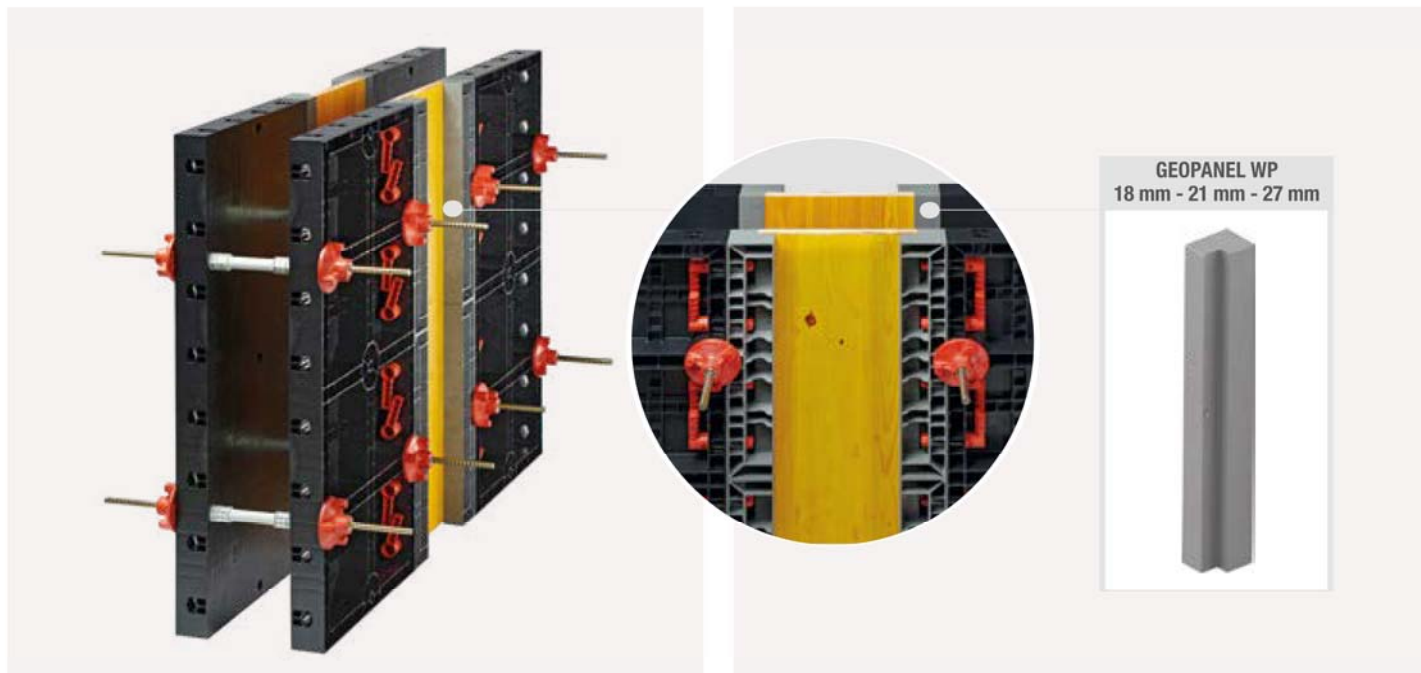


Panel sizes in drawings are in cm

GEOPANEL WP INTERFACE WITH WOOD

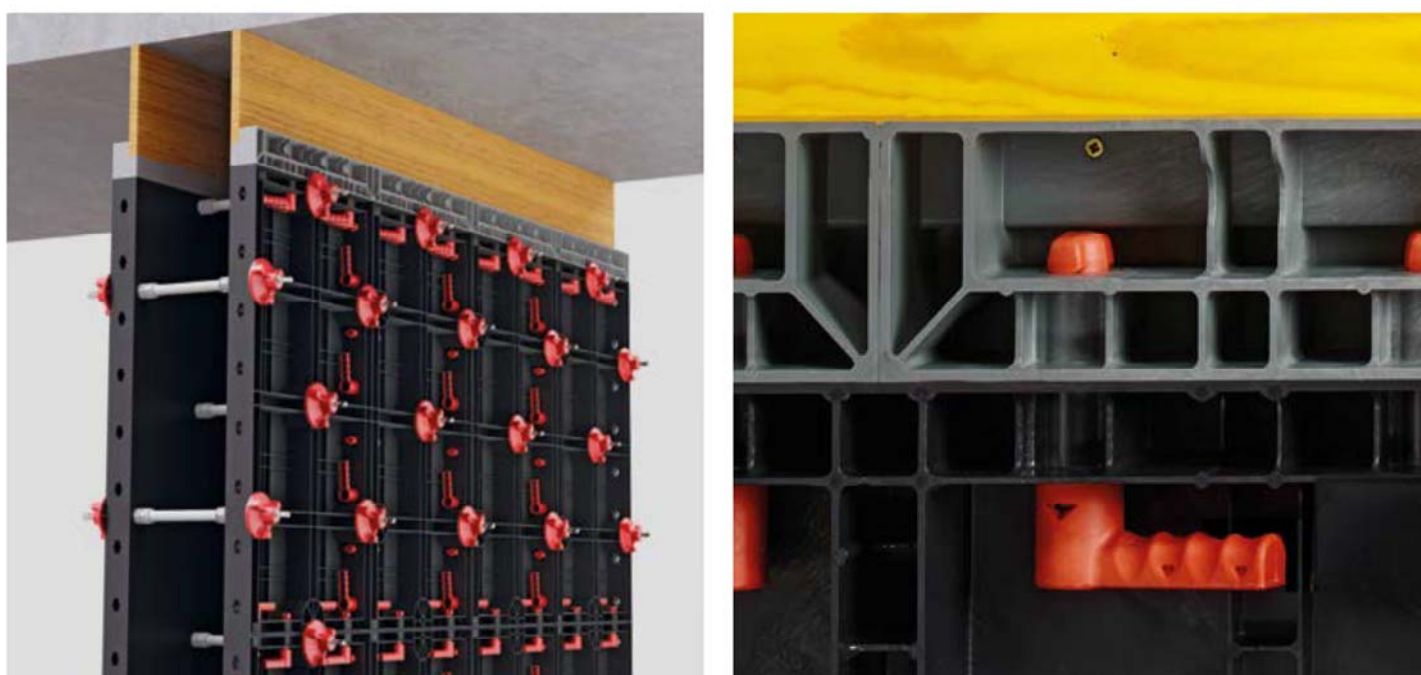
Geopanel is a fully ABS formwork that is also capable of interfacing efficiently with timber shuttering elements. Geopanel WP is an easy, no-headache interface element, available in three sizes designed to connect to 18 mm, 21 mm and 27 mm thickness plywood.

The standard locking handles are used to connect Geopanel WP to other Geopanel formwork elements, while plywood is easily joined to Geopanel WP using wood screws.



WALLS UNDER EXISTING BEAMS OR SLABS

Geopanel provides an excellent shuttering solution for concrete walls to be poured indoors, under existing beams or slabs. Its flexible set-up and low weight allow manual operation without the often complex, expensive or potentially dangerous use of lifting machines within confined spaces and no access from above.

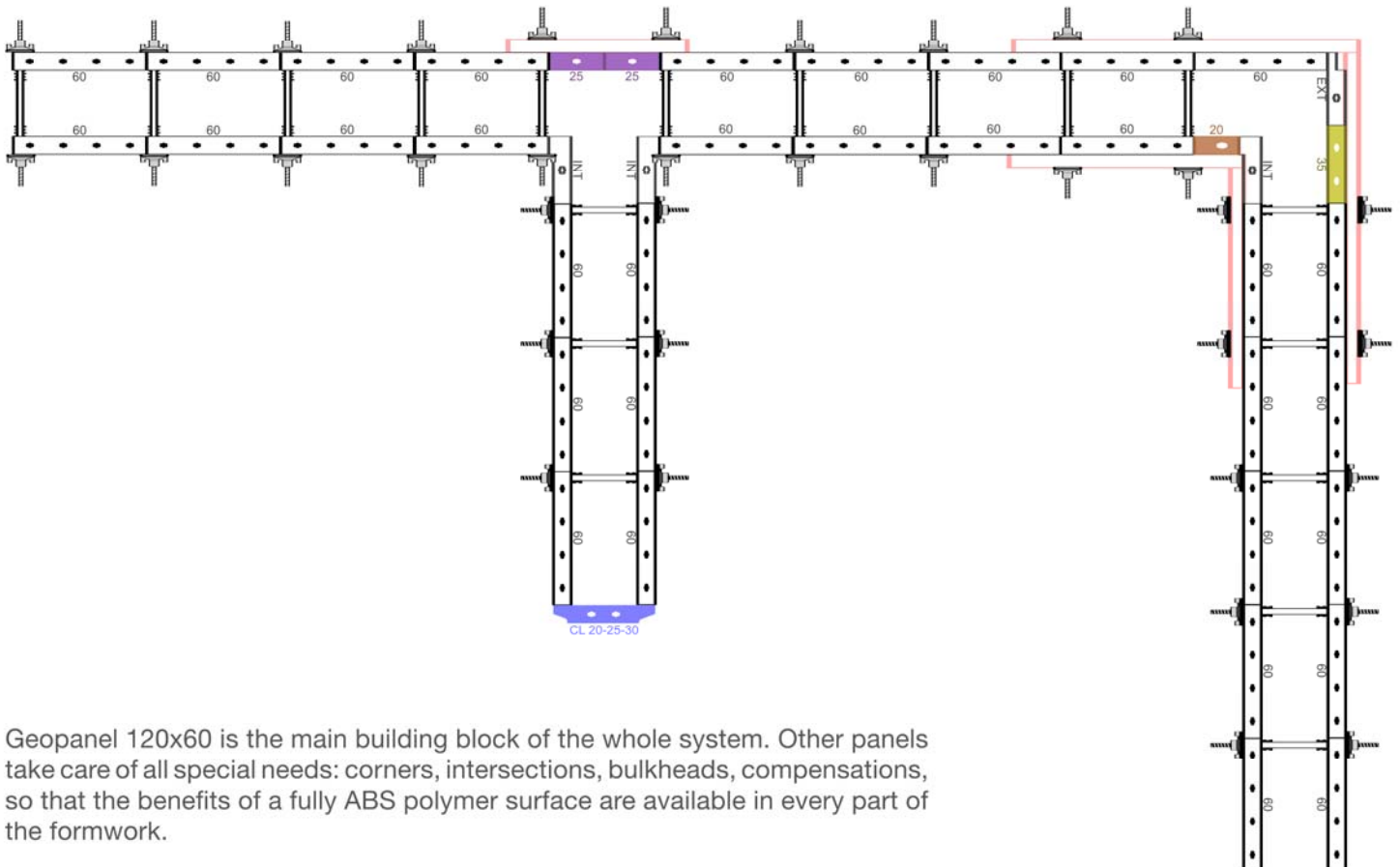


GEOPANEL WALLS



A wall formwork needs to be versatile and practical, because no wall is the same. Geopanel is a hand-held system formwork allowing a pour height of up to 3.6 m in a single lift.

Geopanel includes corners and fill-in panels that are light, practical and fast to set-up, strip and clean.



Geopanel 120x60 is the main building block of the whole system. Other panels take care of all special needs: corners, intersections, bulkheads, compensations, so that the benefits of a fully ABS polymer surface are available in every part of the formwork.

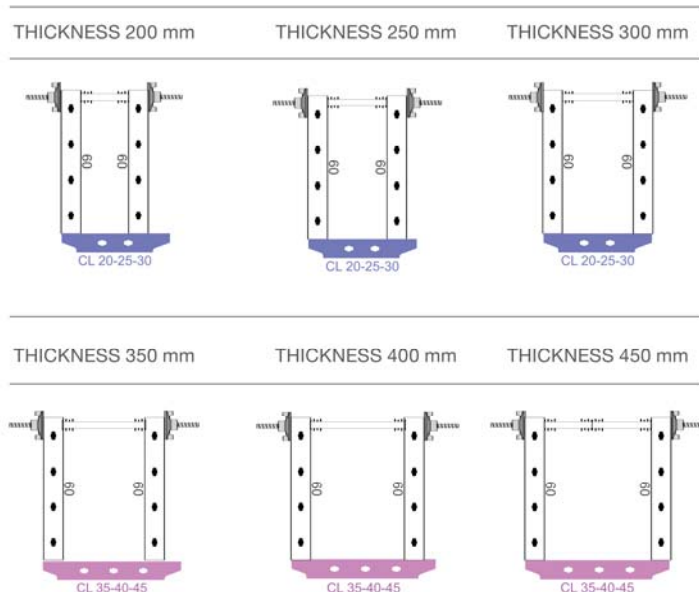
SHEAR WALLS



Shear walls are built to counter the effects of the lateral loads such as wind or earthquakes that act on structures. Geopanel makes shear wall forming an easy task: its range of sizes and ease of use add the necessary flexibility to site operations.

Geopanel CL bulkhead panels are particularly useful at the end of walls, or as short-side formwork of shear walls (or long columns) formed with Geopanel, avoiding timber and keeping all the advantages of a system formwork. In some cases they are used in combination with Geopanel internal corners to form columns protruding from a wall. Geopanel CL elements are adjustable in size to accommodate for wall thickness of 200 to 450 mm, with increments of 50 mm.

The sizes are available to cater for different wall widths are:
 Geopanel CL 20-25-30 for wall thickness 200 to 300 mm.
 Geopanel CL 35-40-45 for wall thickness 350 to 450 mm.



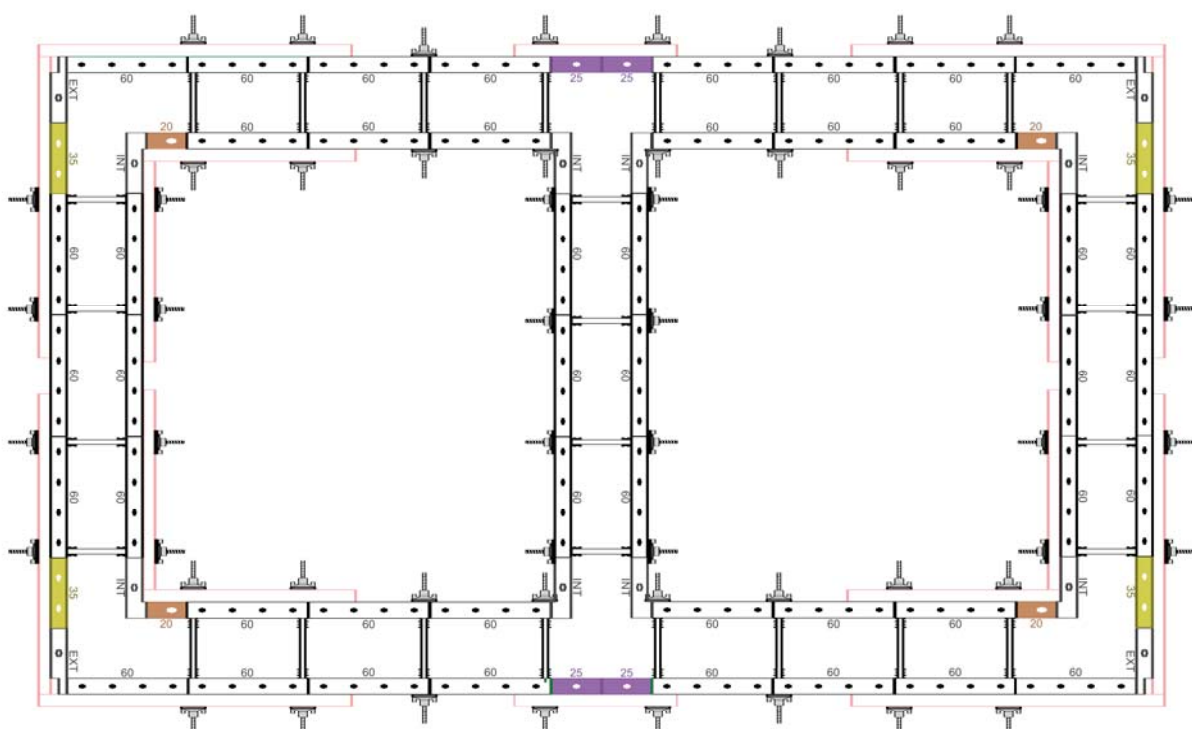
ELEVATOR SHAFTS AND STAIRWELLS

The precise dimensions of concrete achieved with Geopanel are important to make the later installation of the elevator faster and smoother. The low weight of the panels allow for safe operations, avoiding the risky handling of heavy elements by crane within confined spaces.



The Geopanel system is ideal for constructing stairwells and elevator shafts. The lightweight design of the panels allows carpenters to easily install and dismantle the formwork, giving them the option to quickly repeat the same process throughout various floors of the building.

The range of panels and accessories included in the system make it easy to form corners and wall intersections without the need of timber fill-in elements.



WALLS ENCASING EXISTING COLUMNS

Geopanel is an easy formwork to use when working to build walls incorporating or encasing pre-existing columns, may they be concrete or steel. This is particularly useful for industrial and agricultural buildings, where Geopanel becomes a simple and fast shuttering option.



DOOR AND WINDOW FRAMES

Door and window frames, box-outs and electrical boxes are placed within a Geopanel formwork using the tie-rods and the reinforcements as reference and anchoring points.

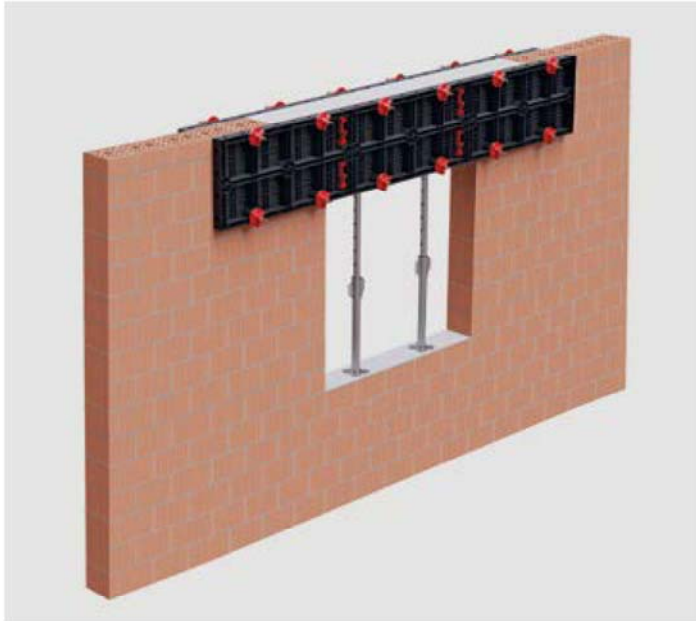
In case an element needs to be fixed to the formwork it can very simply be screwed onto the panels from the outside of the formwork. The flat and smooth surface of Geopanel means that boxes and other elements will be fastened very precisely to the panels. The objects will be perfectly flush with the concrete surface after formwork removal.



LINTELS AND RING BEAMS

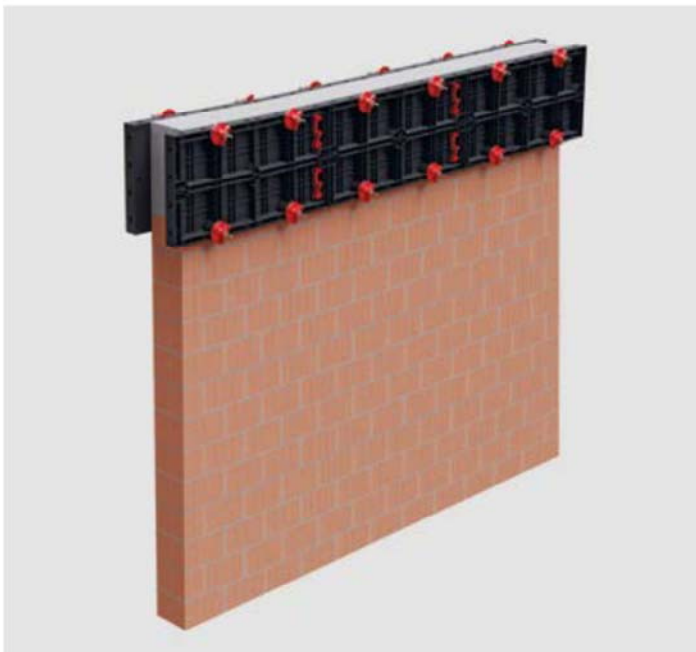
Geopanel is light and manageable. These features make it ideal for use inside buildings and in other areas of a construction site that are inaccessible to lifting devices.

Smaller job sites without any crane and limited manpower will equally benefit from Geopanel. A small team can work efficiently with Geoplast formwork without compromising either on safety or on the quality of the concrete surface.



Ring-beams and lintels are easy to form with Geopanel, especially when brickwork is concerned. The low weight of the panels makes it easy to handle and fix the formwork to the brickwork, without necessarily having to resort to complex or time-consuming propping methods.

The handy size of 1.2 x 0.6 m is ideally suited for smaller concrete objects to be cast in situ such as beam-bearing elements in brickwork.



FOUNDATIONS

Geopanel is the perfect formwork for strip footing, tie beams, pile caps and plinths. During the initial phases of a construction site no crane is available: a hand-held system formwork is ideally suited to do the job quickly and safely, with no compromise on the quality and precision of the concrete.



Geopanel is very simply a great foundation formwork: whether it's strip footings, pile caps, plinths, Geopanel will be up to the job. As ABS polymer is not affected at all by water, it's simple to set-up a Geopanel formwork even in wet and muddy conditions. The panels will not suffer any damage and will be very easy to keep clean.

A whole series of accessories provides multiple ways to support and prop the panels. Easy interface with timber is also provided for maximum flexibility on site.



BASEMENT FORMWORK

A lightweight formwork provides evident advantages when producing concrete for basements.

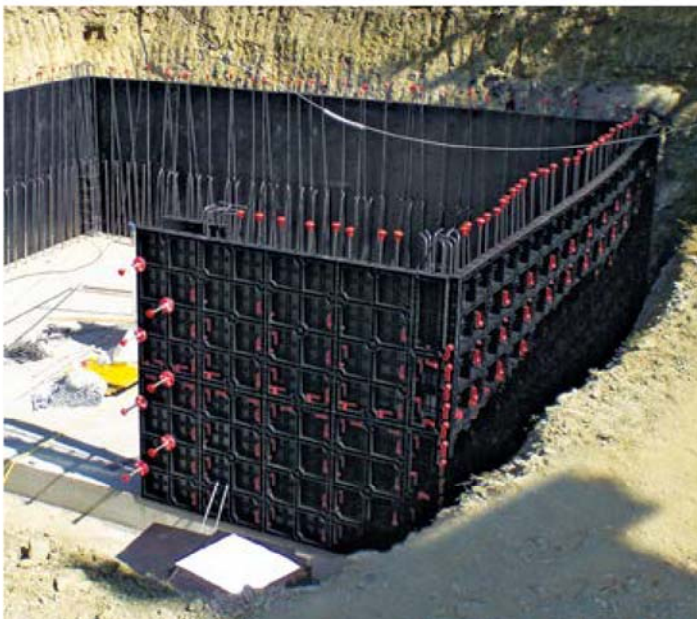
Being able to work without a crane is an advantage in every early stage of a project, and basement concrete works are no exception.

Basement specialist companies often have no access to the crane, and must work with a truck crane, or by hand: Geopanel can be easily handled in the tight spaces allowed by the excavation, and site safety is thus improved.



SHELTERS AND BUNKERS

Manual handling and ease of installation make Geopanel suitable for any requirement, whether above or below ground level. Sometimes construction of a safe room must be discreet and no crane may be used. Geopanel is the perfect formwork solution for such cases.



TANKS AND IRRIGATION STRUCTURES

Water irrigation projects and irrigation tanks for water treatment and storage are infrastructural projects often situated in rural areas, where logistics can be complicated and often expensive.

The lightness of Geopanel material, its ease of handling and assembly even in challenging situation, make it the ideal solution for water / irrigation control structures, dams, drainage pits, headwalls, culverts, stormwater tanks, and more. The flexibility in use of this modular system and the unlimited combinations it permits in future uses allow for a fast recovery of the investment made.



RENOVATION WORKS

Nimble in confined spaces, easy to handle, right-sized to fit virtually anywhere, Geopanel is the ideal formwork for renovation jobs, large or small.

Geopanel fits any situation thanks to its handy size, uncomplicated logistics and the precise execution it allows. Working with concrete around bricks and blocks with Geopanel is practical and straightforward.



PITS AND MANHOLES

The Geopanel wall ABS panels can be used to create both internal and external formwork for concrete pits, either directly in situ, or precast offsite. Being modular means you can make various shapes and sizes of pits: stormwater pits, sewage manholes, lift overrun pits, and more.

The Geopanel formwork is light-weight and easy to use, it allows fast set up in a confined space with no cranes or lifting equipment required and is reusable in many future projects thanks to its modularity and flexibility.



HANDHELD FORMWORK

Concrete jobs in remote areas require agile and flexible logistics. The compact size and low weight of Geopanel remove the complication of having to bring and operate lifting devices to site.

Geopanel 120x60 is very well suited to work in confined spaces and the availability of a number of smaller panels, as well as the WP plastic-timber interface add infinite possibilities to this system formwork.



BRIDGE REPAIR

Bridges are very often built to pass over rough terrain or other obstacles. These conditions mean that bridge maintenance and repair works are often difficult to perform due to limited access.

Geopanel is simply ideal for manual shuttering in such conditions: light enough to be handled by one person alone, suitably sized to allow easy handling even when on scaffolding, resulting in increased safety and productivity.



CONCRETE REMEDIATION

Reinforced concrete bridges are designed to last for a very long service life: during this time, they will inevitably be subject to the corrosion, erosion and vibration due to weather conditions, the environment and sometimes accidents. A good maintenance will keep a bridge functional for many decades, but the time will come when deeper repair becomes necessary. This operation can be quite complex and challenging and requires good planning, skilled professionals and the right tools in order to achieve good results and comply with the relevant standards.

Geopanel provides a simple-to-use solution to the practical formwork challenges of working on scaffolding at great heights. Modular, strong and versatile, it also produces a consistently smooth concrete finish that is better equipped to withstand weathering.

Any type of concrete may be used, although most often self-compacting concrete (SCC) will be chosen: Geopanel allows for a precise forming and will be easy to maintain and keep clean. In fact, it is possible to wash and prepare panels directly on the scaffolds rather than having to bring them back to the ground after each pour, saving a significant amount of handling time.



HEMPCRETE FORMWORK

In-situ cast hempcrete is most conveniently formed using Geopanel formwork as it is modular, lightweight and the panel sizes are ideally suited to this construction material.

In-situ cast Hempcrete is mainly used in conjunction with timber-frame. Wet hempcrete is placed in the formwork in layers of 100 to 150 mm and then compressed by tamping.

Formwork is generally removed after 24 hours and the low weight of Geopanel makes it extremely practical as it requires limited external support and is very easy to handle without lifting equipment.

As the pressure on the formwork is very low, the Geopanel elements will last indefinitely when used with hempcrete.



WHAT IS HEMPCRETE

Hempcrete (also known as Hemp-lime) is a mixture of hemp hurd and lime used as a lightweight, low-carbon construction and an insulation material. Hemp is a fast-growing plant, reaching a height of 3-4 m at harvest with no need for pesticides or herbicides after planting. While growing it absorbs CO₂ from the atmosphere, retaining carbon and releasing oxygen. In fact, up to 165 kg of carbon per cubic meter can be stored in hempcrete, making it an extremely sustainable construction material.



Hempcrete is easier to work with than traditional lime mixes, and provide exceptional thermal performance and comfort; it also very effectively manages humidity and moisture in buildings. As it is a very light material it reduces the load to the foundations and is well suited for the construction of buildings in seismic areas.

Hempcrete creates zero waste, as previously mixed material can be added in controlled quantity to new mixes, or otherwise used in landscaping.

Hemp is naturally resistant to pests, so no pesticides and fungicides are used during cultivation. This means that hempcrete does not contain any potentially harmful chemicals that may be released into the house, nor will mould grow in the wall.

RAMMED EARTH FORMWORK

Rammed earth is an ancient construction material that in recent years has been rediscovered as it is far more sustainable than conventional modern materials. The production method basically consists in filling a formwork with a layer of 100 mm to 250 mm of damp soil mixture (generally subsoil with a clay content between 5% and 15%) compressed by tamping.

Once the earth is sufficiently compressed the formwork may be removed. Power tools such as pneumatic tampers reduce the labour time during construction, and Geopanel drastically cuts the forming time compared to traditional timber formwork. The size of Geopanel makes it very easy to increase the height of the formwork incrementally, always maintaining excellent accessibility with the tamper to the earth within.



WHAT IS RAMMED EARTH

The rammed earth technique is as old as mankind and has many benefits, and it has historically been used in every continent and climate condition: it is simple to manufacture even with unskilled labour, it is relatively inexpensive, non-combustible, thermally massive, strong, and durable. Rammed earth is a very environmentally considerate material as buildings made this way usually use locally available subsoil (conserving the topsoil for agriculture); it also has low embodied energy and generates very little waste.

The high thermal mass of rammed earth is a significant benefit: as it absorbs heat during daytime and releases it during the cooler hours of the night, it moderates daily temperature variations and reduces the need for air conditioning and heating.

Unclad rammed earth walls containing clay exposed to an internal space will also effectively regulate humidity in a range between 40% and 60%. Well-cured walls accept nails and screws easily, and can be patched or repaired with the same material used to build them.

Modern engineering applied to rammed earth make it a great material which, reinforced with rebar, wood or bamboo, can resist to earthquakes or heavy storms.



SWIMMING POOLS

Using the large range of panels and accessories it is possible to create infinite custom variations of size and shape. Geopanel will work perfectly with the complex equipment of the pool. It is also possible to create sloping floors, thus creating diving areas and relax zones.



THE LOGISTIC ADVANTAGE

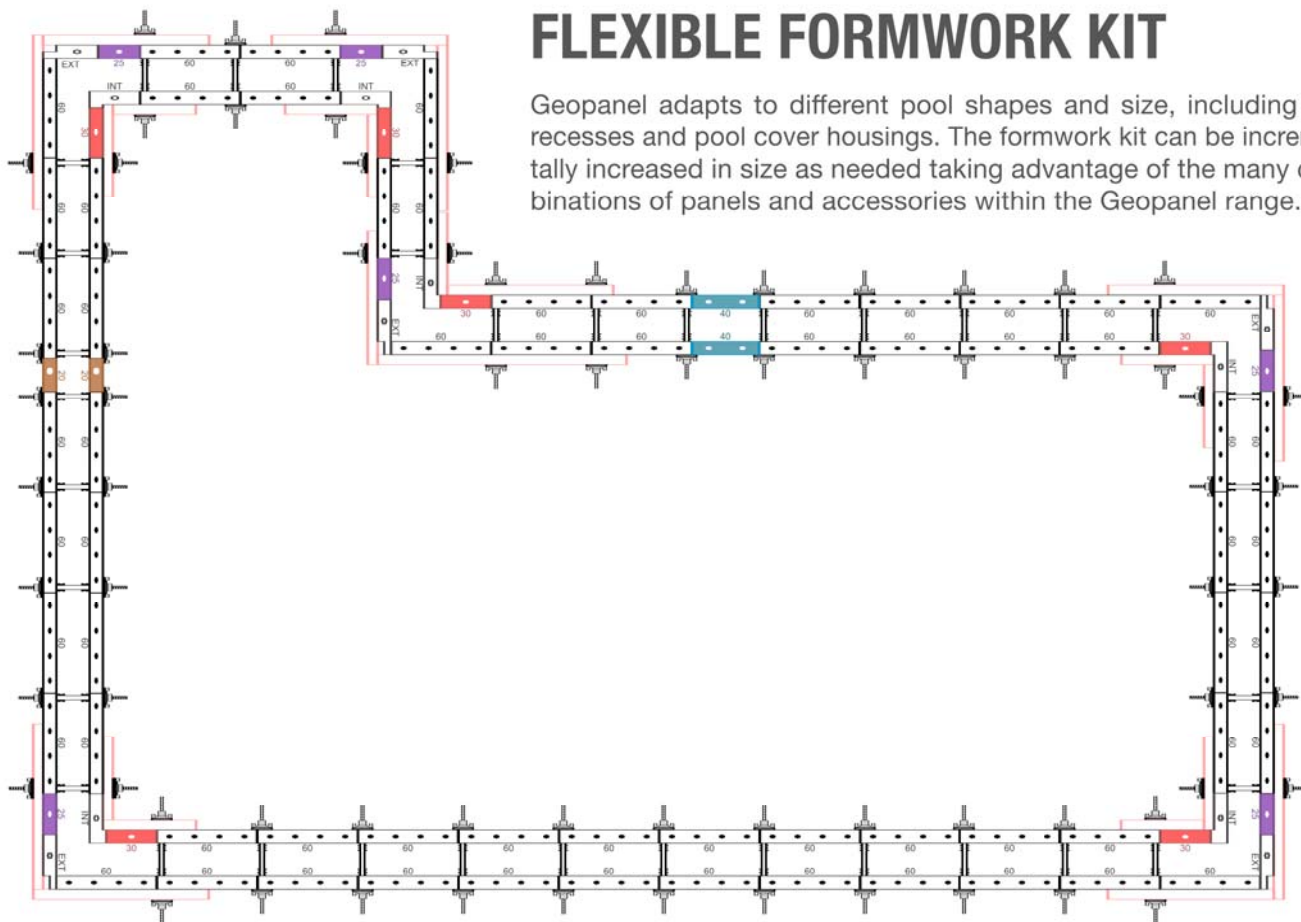
Swimming pools are often built when the house is already lived-in and using the available garden surface.

Accessibility of the future pool site is not always granted to machines, in the worst case materials and tools need to be carried through the house. A low-weight formwork solution is a great advantage in any case and absolutely essential in the most challenging situations: Geopanel ticks all the boxes.



FLEXIBLE FORMWORK KIT

Geopanel adapts to different pool shapes and size, including stair recesses and pool cover housings. The formwork kit can be incrementally increased in size as needed taking advantage of the many combinations of panels and accessories within the Geopanel range.



POOL ACCESSORY INSTALLATION

The Geopanel forms can easily be adapted to hold pool accessories such as lights and skimmers. The precise and smooth finish of the panels means for example that light boxes will always be perfectly flush with the concrete surface.

As Geopanel is a system formwork the adapted panels will place accessories in a well defined and consistently precise position, with very little room for error.

