

modular formwork



big panel system

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Patent application VI2010A000233

legnotre *industriale*

36075 Montecchio Maggiore (VI) - Via della Tecnica 29/31

Tel +39 0444 499 339 Fax +39 0444 490555

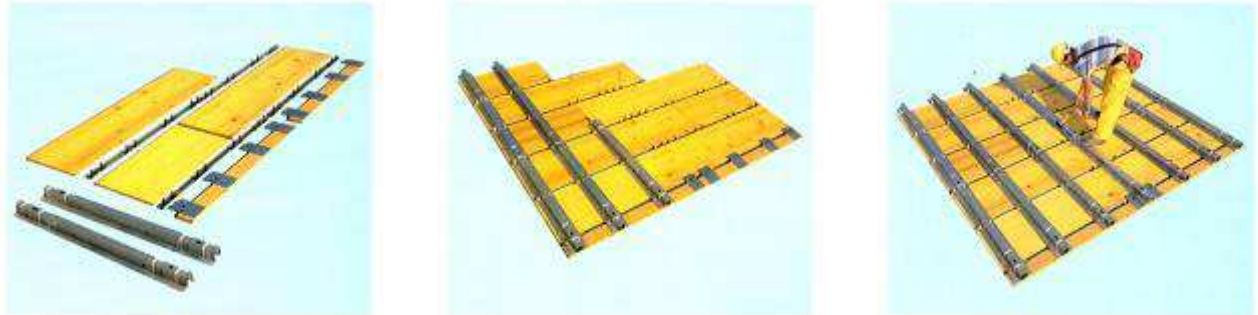
www.legnotre.com legnotre@legnotre.com

Easy assembly

The panels of the KIT system are formed from small modular elements that interlock with each other and are fixed with wedges

These single elements are assembled together with 27 mm three-layer panels to form big panels for large-area formworks

Mounting the big panels is simple and is done on the ground. All you need is a hammer!!!



Easy to use

After assembling, the big panels are lifted and installed with cranes or other lifting devices

Also, after concrete casting, the big panels can be moved, still assembled, to another location ready for a new cast



Technical characteristics

maximum thrust on the formwork	60.000 KN/m²
maximum vertical filling speed	2,50 meters/h
maximum panel width	550 cm
maximum panel height	624 cm

Lengths

By assembling the horizontal elements of 100 cm and 150 cm one after another with three-layer panels in different sizes, and combining the double "C" brackets of 100 - 150 - 200 - 250 cm, it is possible to assemble big panels in all multiple measurements of 54 cm in height and 50 cm in length.

These are the recommended sizes:



100 cm



150 cm



200 cm



250 cms



350 cm



550 cm

Heights

by overlapping several vertical Omega elements, it is possible to realize big panels of the following heights:



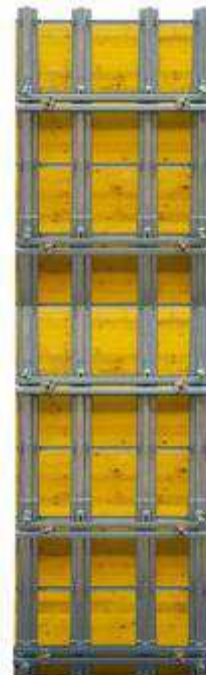
192 cm



300 cm



408 cm



516 cm



624 cm

Big panel elements

Starting board

placed at the base of big panel
lengths: 100 - 150 - 200 cm



KIT "U" irons

used horizontally between rows of panels
lengths: 100 - 150 - 200 cm



Omega

overlap and intersect each other vertically
short 108 cm (overlappable)
long 162 cm (only ends)

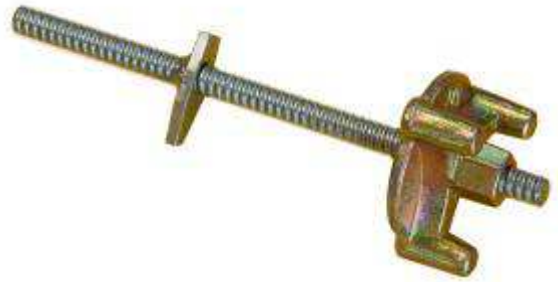


Double "C" bracket

hooked to the Omega with special connections
to support the tie rod butterfly nuts
lengths 100 - 150 - 200 - 250 cm



Connection for double "C" bracket
quick and safe hooking system between the vertical
Omega and the horizontal double "C" brackets



Omega upper cap
to cover Omega heads in the concrete casting area.
to avoid concrete falling into the Omega

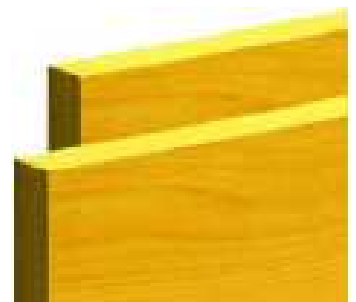


Wedges
used to lock three-layer panels,
KIT "U" irons and Omega



Wood elements

Three-layer panels
lengths 100 – 150 – 200 – 250 – 300 cm
widths 15 – 50 cm
used horizontally



Plywood 5 mm thickness
Sheet sizes 150 x 300 cm and 125 x 250 cm
use to coat the big panel surfaces to
get a smooth finish



Even after many concrete castings it is possible to change
only the 5 mm thickness plywood and the formwork
becomes new and ready to use

Big panel assembly

To begin with it is better to select a flat surface to work on

For side reference during assembly, fix a board on the ground on one side of the module to support the first element in the row

After placing starting board on the ground, assemble a row of KIT "U" irons by inserting the tongues in the specific slots of the starting boards

To correctly insert wedges, the KIT "U" irons must be placed with the long tongues pointing up on the big panel

The long tongues have a special punching that indicate the up side

After mounting the KIT "U" irons on the starting boards, assemble the first row of panels by inserting the panels between the Starting board plate and the KIT "U" irons steel blades

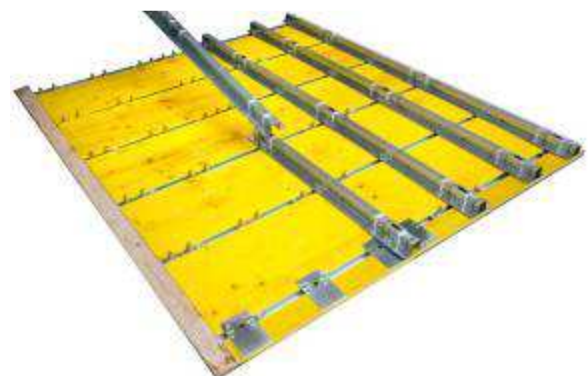
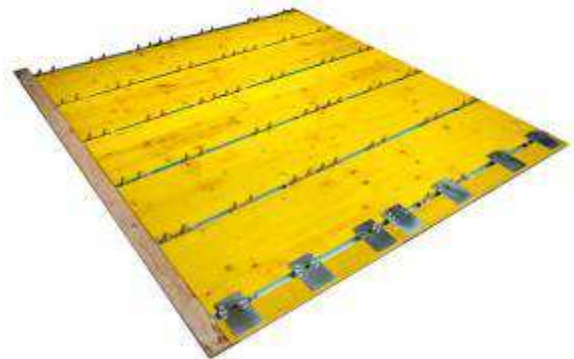
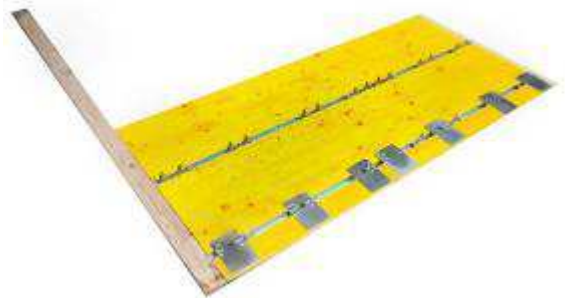
Continue by alternating a row of KIT "U" irons with a row of three-layer panels up to the desired height

When the starting boards, the KIT "U" irons and the three-layers panels are assembled, mount the Omega

KIT "U" irons tongues are inserted in the Omega holes, joining one to the other

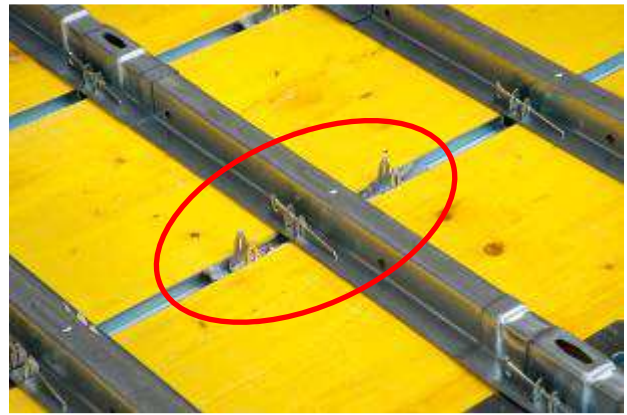
Overlapping and intersecting each other vertically

When the Omega is in position, insert the wedges in the KIT "U" iron tongue slots and lock them with a hammer blow



Even when the KIT "U" irons are placed at random, the Omega will always find a pair of flaps that can be inserted

At every horizontal connection of KIT "U" irons, the Omega connects the last KIT "U" iron tongue with next one



The first Omega is placed at 10 cm from the big panel edge

The second Omega is placed at 40 cm from the first Omega

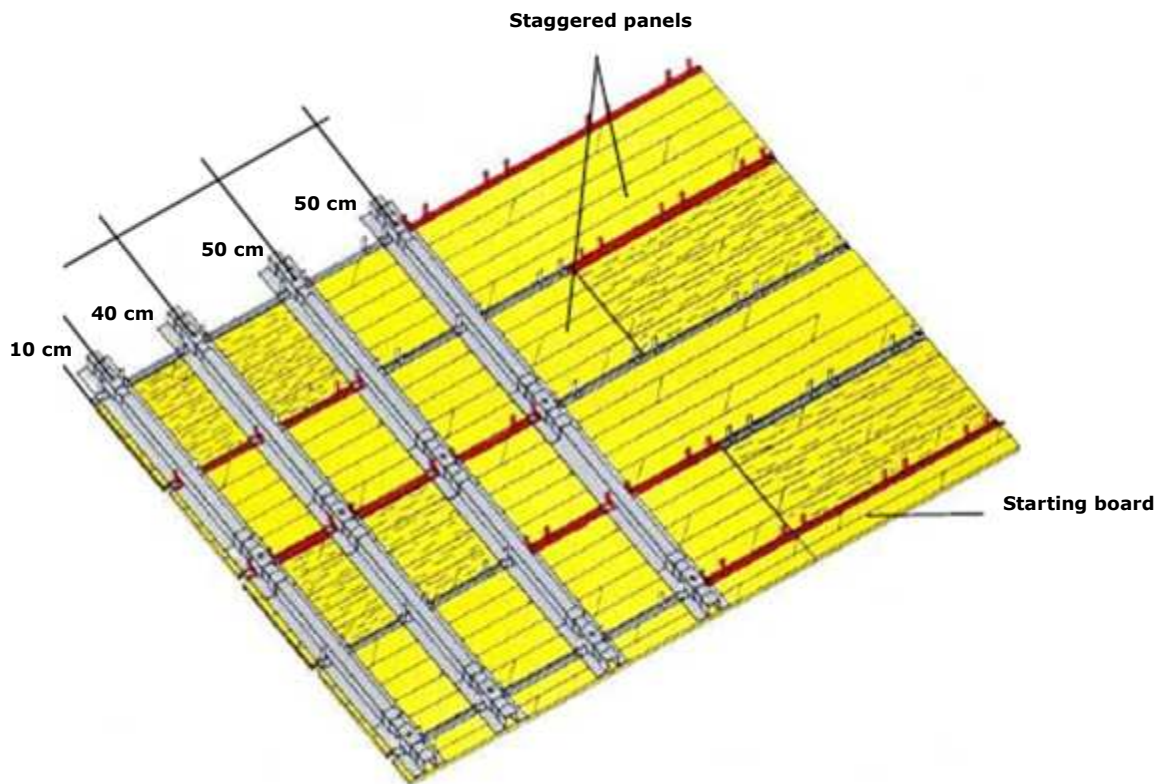
The following Omegas are placed every 50 cm until the last one

As the first, the last Omega will also be placed at 40 cm from the second last and at 10 cm from the edge

For lengths up to 2,50 meters use three-layer panels of equal length

For larger sizes, use more three-layer panels of various sizes, one after another

In this case, the three-layer panels must be staggered between rows, since the three-layer panels are providing longitudinal rigidity for the big panels



Double "C" bracket very easy assembly and disassembly

The double "C" bracket connects to the big panel only at two lateral points, so that it can be easily disassembled before stacking the big panels

The double "C" brackets can be mounted on the big panel with the panel flat on the ground or in a vertical position

To mount the double "C" brackets insert them in the appropriate attachments in the holes of the two lateral Omegas, on the right and left of the big panel



The attachments remain inserted in the Omega because of the tongues that, once inserted in the Omega, lock the attachment and keep it from rotating

At the end of the double "C" brackets there are a pair of small tubes that insert into the attachments already present on the Omega

If one double "C" bracket is used on the big panel, the small internal tubes are used

If two double "C" brackets are used for a big panel, the external tubes are used

The double "C" brackets are attached to the big panel by using a butterfly nut that screws on the attachment



At the base of the big panel the double "C" brackets are mounted near the top, with the small tubes pointing down as in the photo at the right



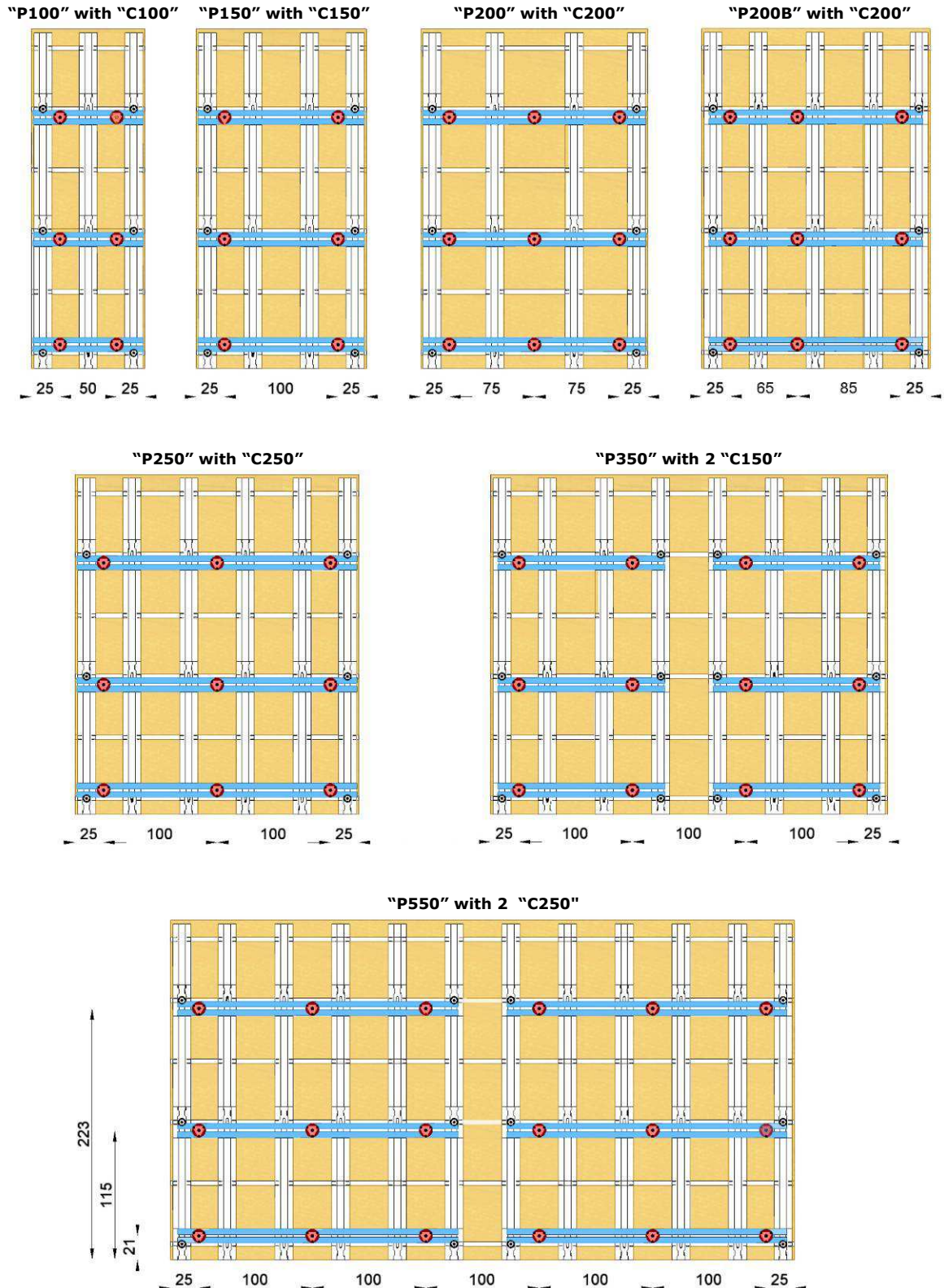
All the upper double "C" brackets are mounted near the bottom, with the small tubes pointing up as in the photo at the right



Big panel and double "C" bracket combination

The big panels "P" are matched with the double "C" brackets (blue in the drawing below)

In the big panels must be made a holes of $\varnothing 20$ to permit the insertion of the threaded tie rods
The positions of the holes are shown in the drawing, (listed in cm)



KIT system versatility – methods of use



Based on the work to be done and the equipment available on site, the KIT system can be used in two different ways



KIT H20 weight 39 Kg/m²

In KIT H20 system the butterfly nuts are used on the double "C" brackets. The threaded tie rods pass through the holes made in the three-layer panels.

Tie rods Ø 17 mm
Butterfly nuts Ø 110 mm
Wheelbase between the tie rods 100 cm



KIT light weight 29 Kg/m²

KIT can be used without the double "C" brackets, so it remains lightweight and can be moved and assembled by hand. The tie rods pass through the set holes on the Omega and KIT "U" irons.

Tie rods Ø 13 mm
Butterfly nuts Ø 70 mm
Wheelbase between the tie rods 50 cm



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