

modular formwork



base system

doc.01/03

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

base items

The Formworks KIT H 20 includes the following items:

- **big panels width 100 – 150 – 200 cm**
- **internal angle**
- **external angle**
- **compensator**
- **normal connecting clamp**
- **compensation connecting clamp**
- **lifting hook**
- **gangways**
- **oblique prop**

These few elements are sufficient in most cases

Putting these big panels of 1.00 – 1.50 – 2.00 meters together gives any length desired in multiples of 50 cm

Use the connecting clamp to compensate for intermediate lengths from 0 to 50 cm

big panels



100x300 cm



150x300 cm



200x300 cm

available heights: 192 – 300 – 408 – 516 – 624 cm

The big panels, up to 2.00 meters width, can be loaded on a truck and carried assembled from one construction site to another one or to the warehouse.

Otherwise the big panels can be disassembled, reducing the size, ideal for transport and storage.



6 big panels of about 30 m² assembled



the same big panels disassembled



Smooth concrete finish

to obtain a smooth finish concrete surface, the big panels can be covered with a 5 mm plywood



A good way to save

after many concrete castings, by changing only the 5 mm plywood, the formwork becomes a new one

Internal angle – External angle

By placing a 200-cm-wide big panel externally and a 150-cm-wide big panel internally, and connecting both with an **internal angle** and an **external angle component**, it is possible to form 90 degree angles



internal angle



external angle

Compensators

These are inserted between the big panel and the internal angle, to obtain corner walls with thickness of 15 - 20 - 25 - 30 cm

These are inserted between the big panel and the external angle, to obtain corner walls with thickness 35 - 40 - 45 - 50 cm

Can also be inserted between two big panels as compensation

5 cm compensator



If there are two very close internal angle, a compensator can be inserted between a big panel and the internal angle, to permit easy dismantling after the concrete casting



sheet compensator

Normal connecting clamp – Compensation connecting clamp

Compensation connecting clamps are used to connect big panels in length one after another.

The compensation connecting clamp is used to compensate for measures between 50 cm, inserting the compensators or the wooden elements between one big panel and the next one.



normal connecting clamp



compensation connecting clamp to 45 cm

lifting hooks

Used in pairs to lift one or more big panels connected with a connecting clamp



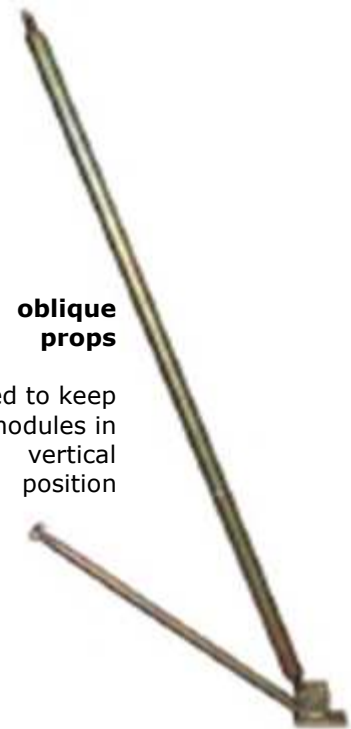
gangways

Used to assemble service gangways



oblique props

Used to keep modules in vertical position



butterfly nut

made of hot pressed steel



Threaded tie rod 100 – 120 cm

made in high-strength steel with large pitch threading to facilitate screwing



bolt and threaded nut

used to join the compensation elements with the angles



plastic pipe spacers - caps

meant to remain in the wall, they are used to insert and then remove threaded tie rods



cylinder pin – pin plugs

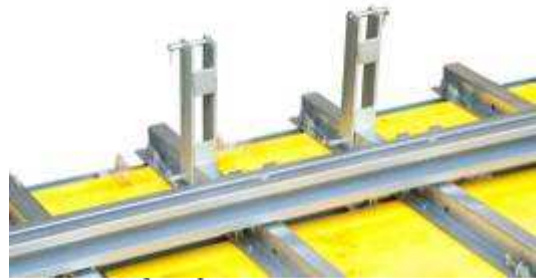
used to join the accessories with the Omega



Big panel installation

In the big panels the Omega has lateral holes every 54 cm, suitable for inserting a cylinder pin or bolt

The lifting hooks connect, with a cylinder pin and a safety pin plug, to the upper holes of the two central Omegas of the big panels



The holes below are used to assemble the service gangways as well as the oblique props

Once accessories are easily mounted on a flat surface, the big panel can be lifted and installed



To facilitate aligning the big panel, fasten a wooden board on the ground to support the rear part of the big panel (at 10 cm from the wall to be built, because the KIT base thickness is 10 cm)



After installing the big panel, place it vertically by turning the oblique prop pipe
Once the first big panel is plumb and fixed add the successive one using the connecting clamp and then proceed in the same way to the end of the wall



All the KIT "U" irons that make up the Omega have an slanted plane, welded at the lateral part

The slanted planes of these KIT "U" irons are found on each side of big panel



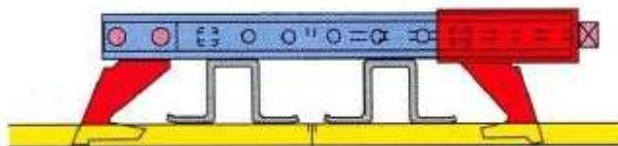
The slanted planes, in the rows of KIT "U" irons that are not used by the double "C" bracket, are used for to attach various the formwork accessories need

Place the first big panel vertically, place a second big panel next to the first and connect them together with the connecting clamp

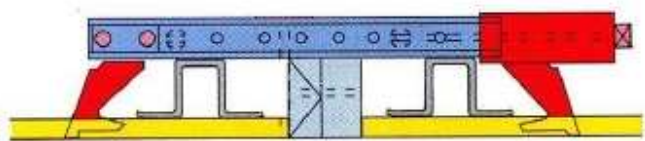


The normal connecting clamp allows a compensation up to 10 cm

This can be obtained by inserting spacers or wooden pieces between the big panels



minimum zero



maximum 10 cm

For specific measurements it may be necessary to compensate for the differences between the lengths of the wall and the big panels

Big panels lengths are multiples of 50 cm, so it is necessary to compensate only for intermediate lengths

By using the compensation connecting clamp, measures from zero up to 50 cm can be compensated for

Insert wooden spacers between two big panels
Fasten everything together with the compensation connecting clamp



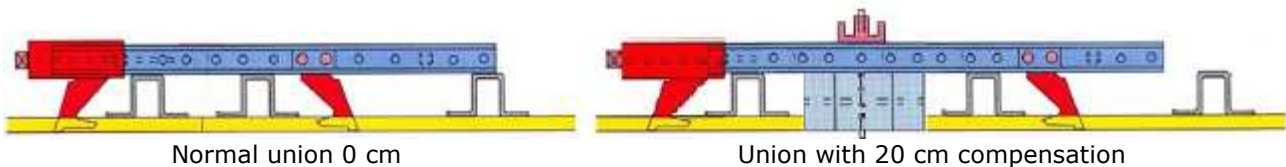
Compensation connecting clamp use

The compensation connecting clamp is supplied with two sliding hooks and a fixed hook

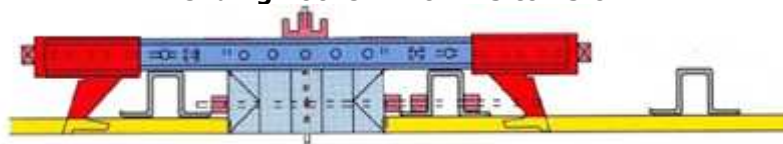
Moving the fixed hook in the various holes of the double "C" bracket and then substituting it with the second sliding hook, allows compensation for all measurements from zero to 45 cm

The compensations are reinforced with Ø70 butterfly nuts and Ø13 threaded tie rods as shown in the figures

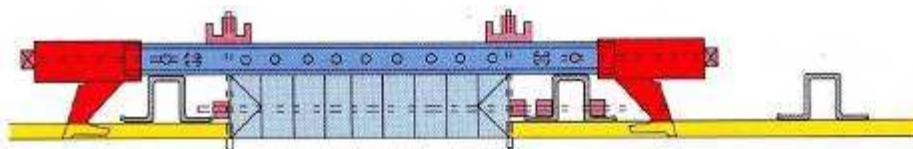
sliding hook + fixed hook = from zero up to 20 cm



2 sliding hooks = from 25 to 45 cm

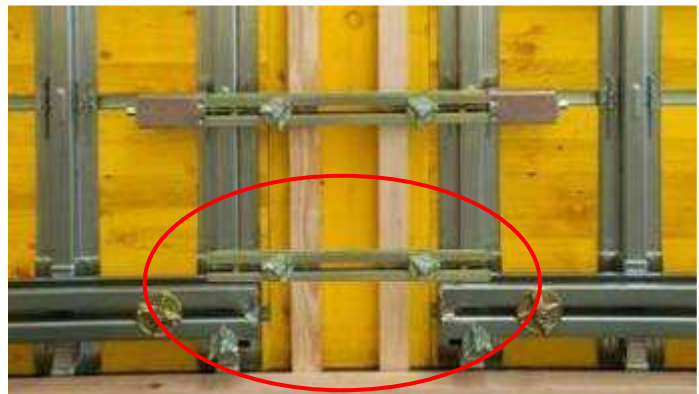


!! from 10 to 15 cm of compensation put a tie rod in the center !!

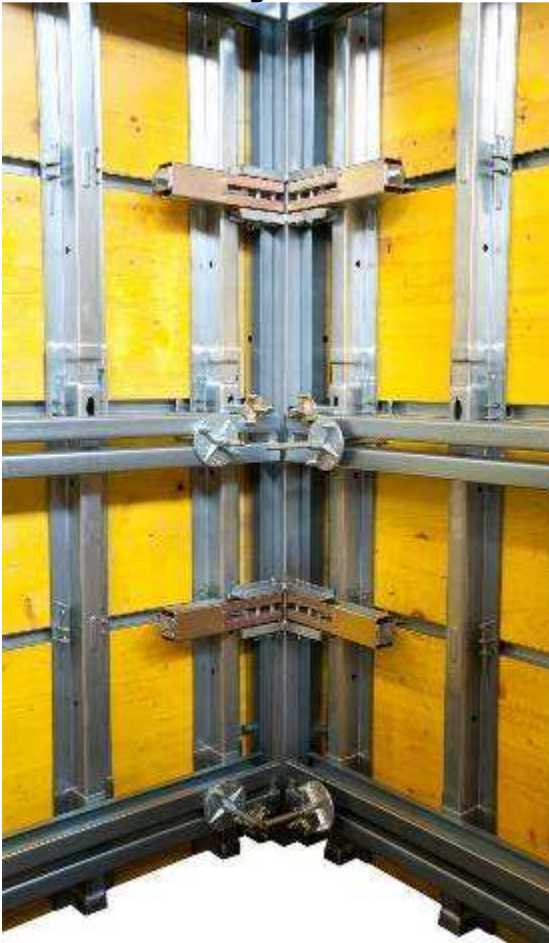


To compensate it is possible to use 3-layer panels placed vertically, reinforced with 8x8 cm beams

For over 30 cm of compensation the base must be reinforced with 2 threaded tie rods and a compensation bracket used without hooks



The internal angle is made with two big 150 cm wide panels, placed at 90 degrees, connected together with an **internal angle** element



The external angle is made with two big 200 cm wide panels, placed at 90 degrees, connected together with an **external angle** element

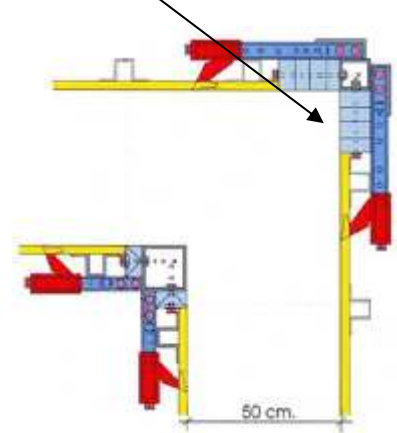
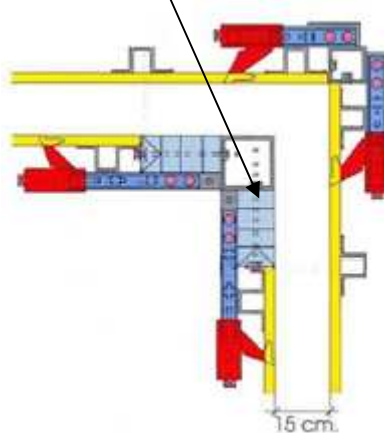
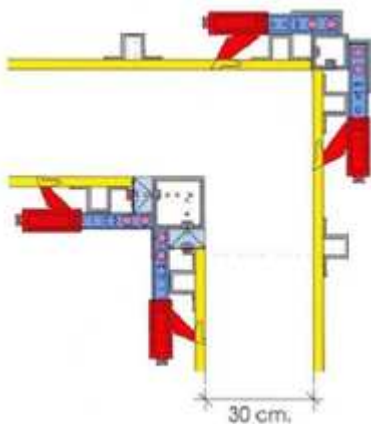


On the angles with wall greater than 30 cm thickness or 4 meters high, the base is reinforced by the external angle clamp

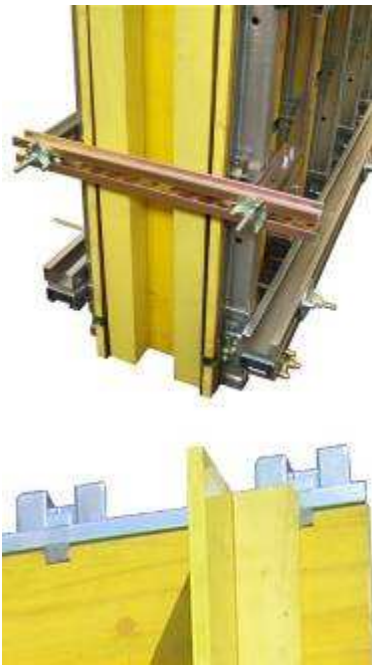
On the external part of the corner two 200 cm wide big panels must be used and in the internal part of the corner, two 150 cm wide big panels. The wall thickness shown in the picture (30 cm), is the result of the difference between the external big panel and the internal one (50 cm) minus the width of the internal angle element (20 cm)

Add one or more compensators of 5 cm between the internal angle and the 150 cm wide big panel and the wall thickness decreases. So, based on the number of compensators added, it is possible to obtain wall thickness of 15 - 20 - 25 cm

Add one or more compensators of 5 cm between the external angle and the 200 cm wide big panel and wall thickness increases. So, based on the number of compensators added, it is possible to obtain wall thickness of 35-40-45-50 cm



!!! External angles for walls over 40 cm of thickness, need to be propped on the ground !!!



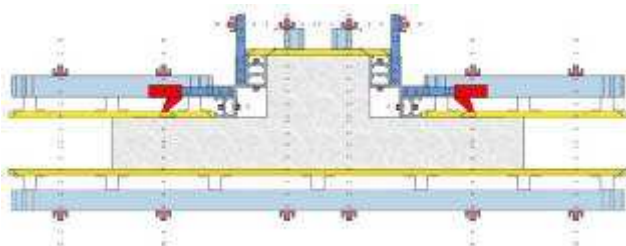
To close the pour head use the appropriate brackets

Another simple solution is to nail three-layer panels a cross board of suitable thickness
For thick walls, the head closures should be propped from the ground

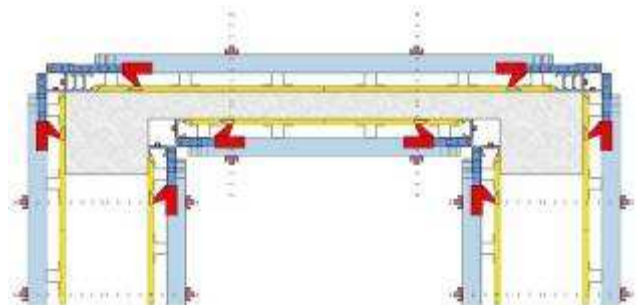


Particular cases

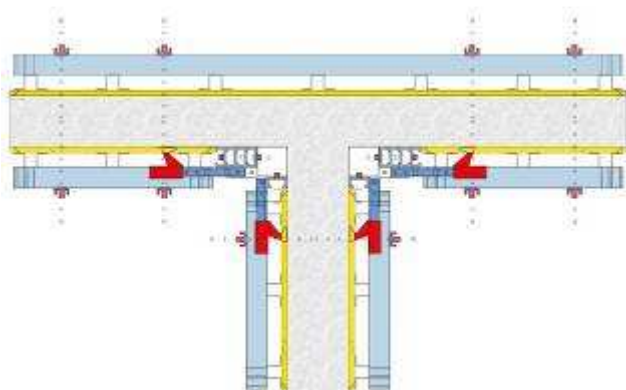
KIT is a versatile modular system, that can resolve all particular pouring form cases. Some examples:



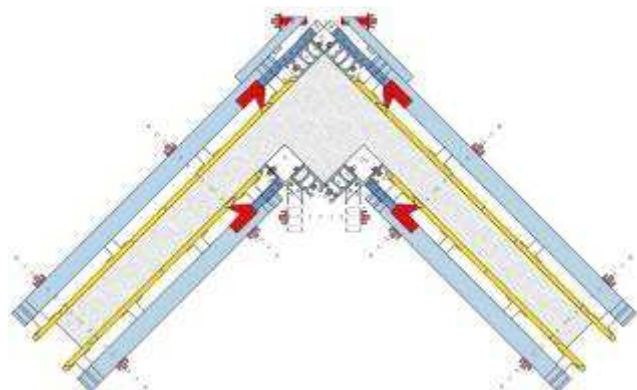
wall column



side columns



"T" Juncture



corner column

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