patented modular formwork system

KIT

made in EU

3MGA

easy to assemble

The main feature of KIT system is the simplicity and the modularity.
The following items interlocking with 3-ply shuttering panels, allow to assemble formwork elements at any desired size, multiples of 50 cm in length and 54 cm in height.

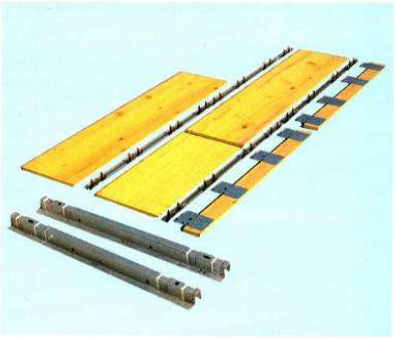
Starting board

Steel "U" profile

Vertical Omega extension

Wedges

Formworks elements are very fast to assemble, working easily on the ground, just you need an hammer.

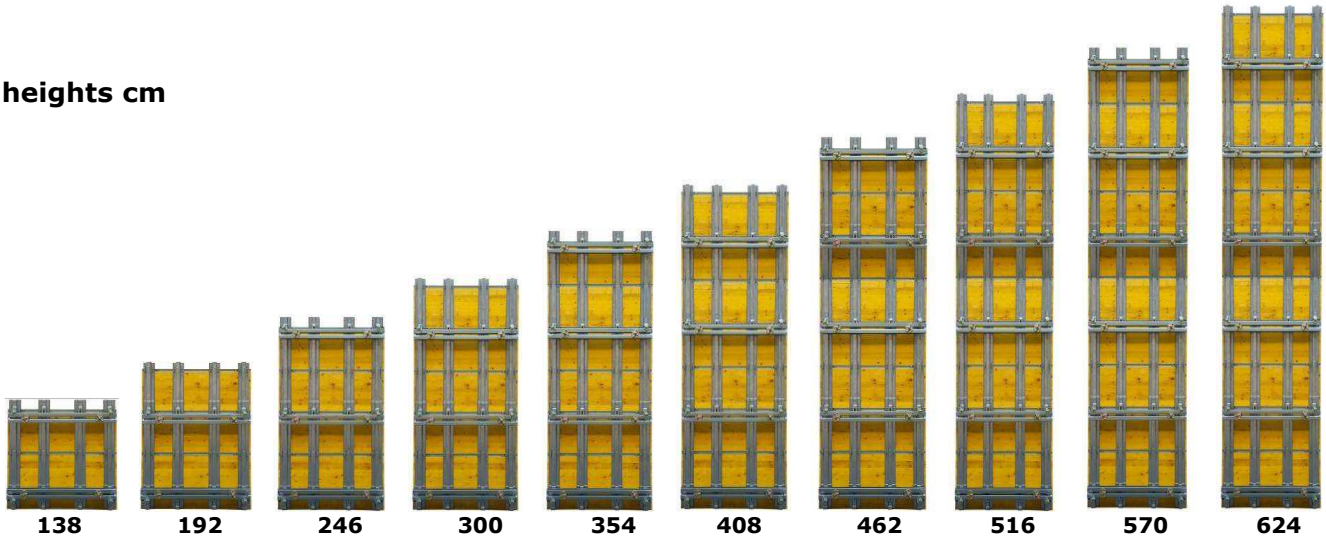


formwork elements - sizes overview *(weight ≈ 39 Kg/m2)*

lengths cm

100 **150** **200** **250** **300** **up to 600**

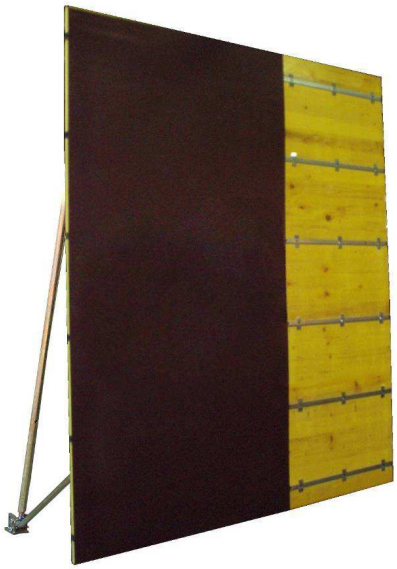
heights cm



138 **192** **246** **300** **354** **408** **462** **516** **570** **624**

smooth finish surface

KIT is a structure platform where plywood sheets are fully supported by 3-ply panels (27 mm thick).
It allows to save money, because the plywood can be very thin: 6 mm thick is enough.
Also it allows to get a fair-faced concrete.
You can nail easily the thin plywood over the 3-ply panels.
When needed, you can remove easily and substitute just the thin plywood, because 3-ply panels never get in touch with concrete.



logistic

The formwork elements, up to 2,00 meters length, can be loaded stocked on a truck to be moved from a yard to another one or to the store. Otherwise the formwork elements can be disassembled.
So the formwork elements take very little space. It's a good solution for a long distance transport.

assembled formwork elements

same formwork elements, disassembled

formworks have been designed following the DIN rules 18202 – 18218
(concrete pressure 60 Kn/m²)

formwork elements assembling

Choose a flat surface to work on.

As a side reference (during assembling and to support the first element in each row) fix a board on the ground on one element side.

Place a row of the starting boards on the ground. Assemble a row of U profiles with holes by inserting the U profiles steel tongues in the specific slots of the starting boards.
To insert correctly the wedge, the U profiles must be placed with the long steel tongues pointing up the formwork elements.
The long steel tongues have a special punched mark that indicate the up side position.

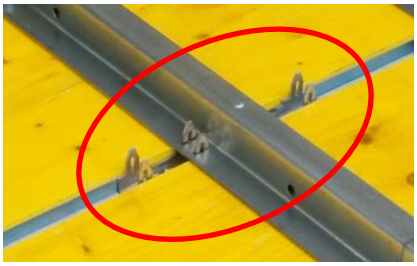
After having placed the U profiles on the starting boards, assemble the first row of 3-ply shuttering panels by inserting the panels between the starting board plate and the steel blades of the U profile.

Continue with a row of U profiles and a row of 3-ply shuttering panels, up to the desired height.

After that all U profiles and the 3-ply shuttering panels have been assembled, place the Omegas by inserting the Omega's slots on the U profiles steel tongue.
The Omegas are placed vertically.

When all the Omega have been placed vertically, insert the wedges in the slots of the U profile steel tongues.
Lock it all with a hammer blow on the wedge.

Even when the U profiles are placed at random, the Omega will find always a pair of steel tongues where to be inserted.



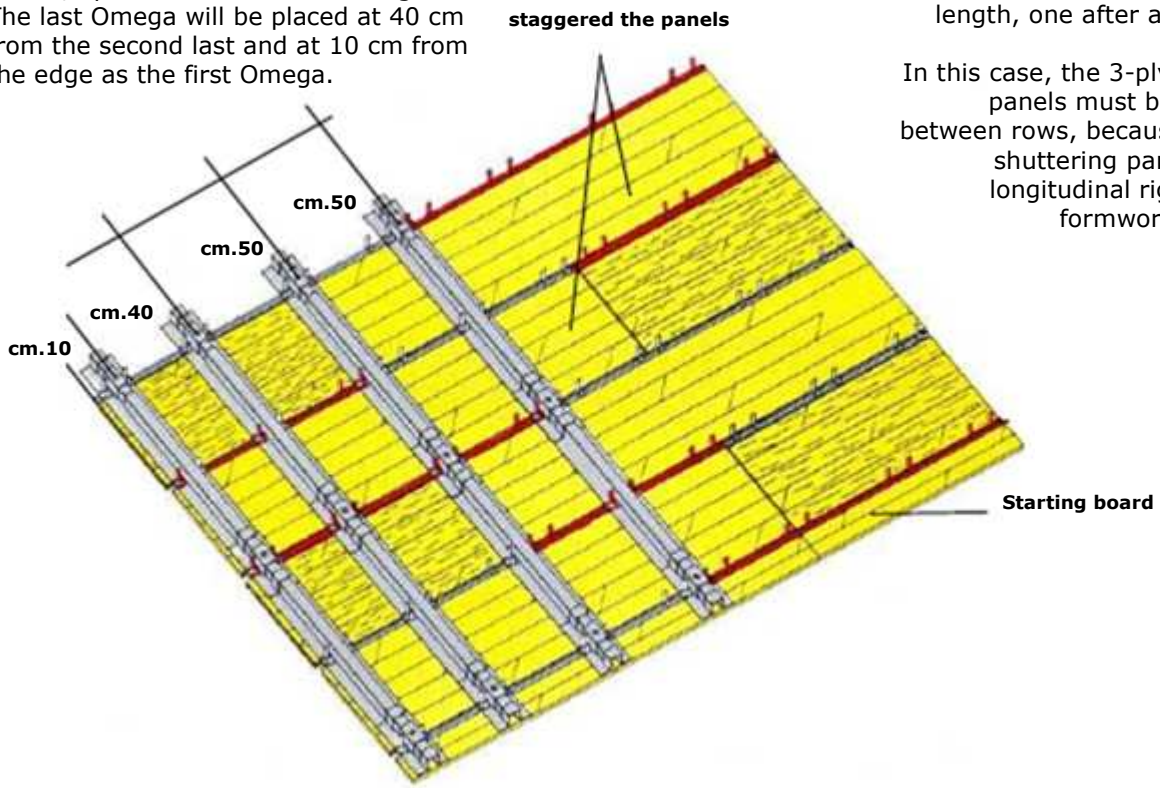
At every horizontal joint of U profiles the Omega connects the steel tongue of the final U profile, with the first steel tongue of the next U profile.

The first Omega is placed at 10 cm from the edge.
The second Omega is placed at 40 cm from the first.
The following Omegas are placed at every 50 cm, up to the second last Omega.
The last Omega will be placed at 40 cm from the second last and at 10 cm from the edge as the first Omega.

For lengths up to 3,00 meters use 3-ply shuttering panels of equal length.

For larger sizes, use 3-ply shuttering panels of various length, one after another one.

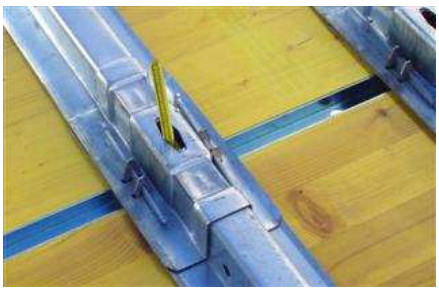
In this case, the 3-ply shuttering panels must be staggered between rows, because the 3-ply shuttering panels provide longitudinal rigidity to the formwork elements.



alignment walers: easy to assemble and disassemble

Insert the rapid hook-up bolt in the Omega oval holes.

The bolt cannot turn due to its oval tongue.



Connect walers just in two points: first point on second Omega and the second point on the penultimate Omega of the formwork element.

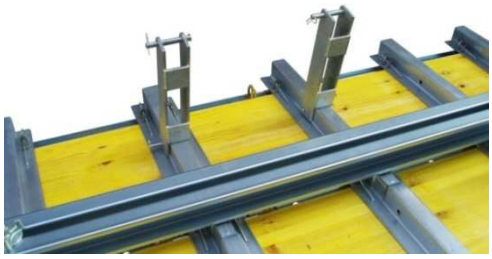
The alignment steel walers are fixed to the formwork element just by screwing a butterfly nut on the rapid hook-up bolt.

The walers can be joint on the ground or in a vertical position, so they can be easily removed before stacking the formwork elements (for storage or for transportation).

erecting

To lift the formwork elements use the lift hooks, connected at the Omega lateral holes.

Lock it with steel pin and safety spring cotter.



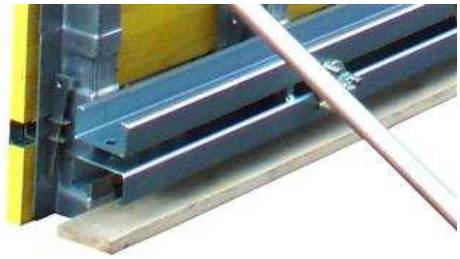
The Omegas of the formwork elements have lateral holes every 54 cm, suitable for inserting a steel pin or bolt.

Assembled the formwork elements, connect the lifting hooks with steel pin and safety spring cotter to the upper holes of the two central Omegas of formwork element.

Pay attention to connect the lifting hooks between two symmetric Omegas, so the load will be well-balanced.

Use the lower Omega holes to assemble the walkway brackets as well as the formwork element struts.

After having assembled the accessories, the formwork elements can be lifted and erected.



To facilitate aligning of the formwork element, fasten a timber on the ground and rest there the rear part of the formwork elements.

After erecting the formwork elements, plumb it by screwing the adjustable strut.

Once the first formwork element is plumbed and fixed, add the following one using the alignment walers.

Proceed in the same way up to the end of the wall. Putting in every formwork element approximately, a strut.

waler coupler

waler coupler

Join two formwork element and connect it with a waler coupler, using the conic steel pins.

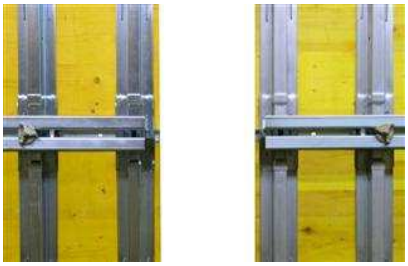
jointing with tollerance zero

jointing with tolerance +

By changing the position of the steel pins in the holes, it is possible to get a tolerance, needed in cases of foundation's irregular linear planes.

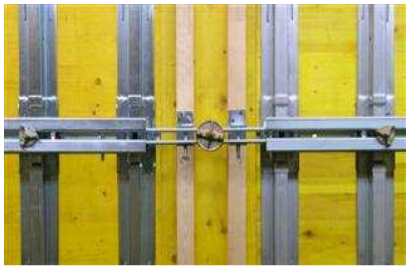
jointing with tolerance + +

adjustable waler coupler



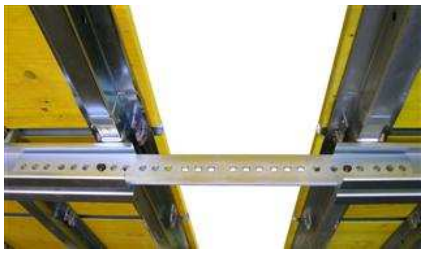
length to be adjust

The lengths of the formwork elements are multiples of 50 cm, so it could be necessary to adjust lengths.



length adjusted

how to use



Place the first steel plate above and inside the walers, seeking the suitable holes to be used.

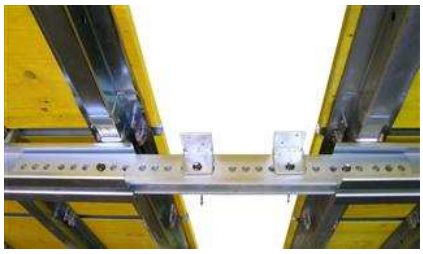
Place the second steel plate below and inside the walers

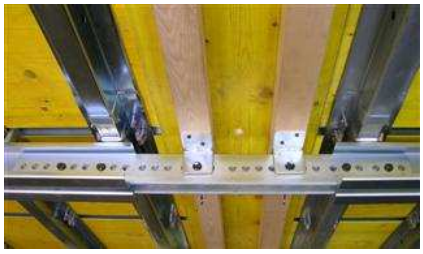
Join the steel plates with the wood connector using the steel pins.

Fix all the steel pins.

Fix the timber wood 8x8 cm on the wood connector with nails.

Between the formwork elements, fix an 3-ply panel cut to the required width.





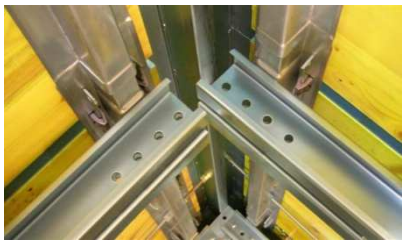
- ***tie rod must be placed into the holes of the steel U profile***
- ***the distance between tie rod not be exceed 100 cm***
- ***add a tie rod in the middle of the adjusted areas***

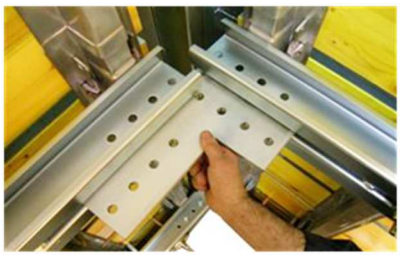
inside corner

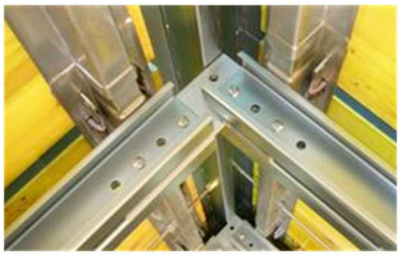
Join two formwork elements with 90 degrees.

Connect them with an inside corner coupler.

By changing the place of the steel pins, it is possible to get wall thickness from 15 up to 40 cm.







outside corner

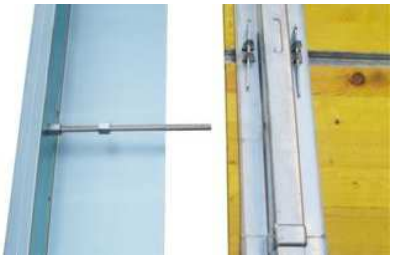
Join two formwork elements with 270 degrees.

Connect the outside corner couplers one with other using a tie rod fixed with butterfly nuts.

By changing the place of the steel pins, it is possible to get wall thick from 30 up to 40 cm.

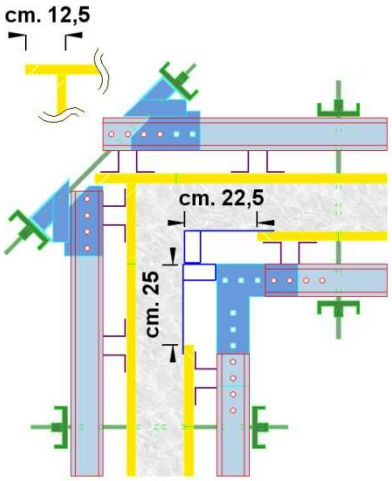
adjustable steel sheet

Before to assemble the corner, connect the adjustable steel sheet in the Omega holes using bolds and nuts.

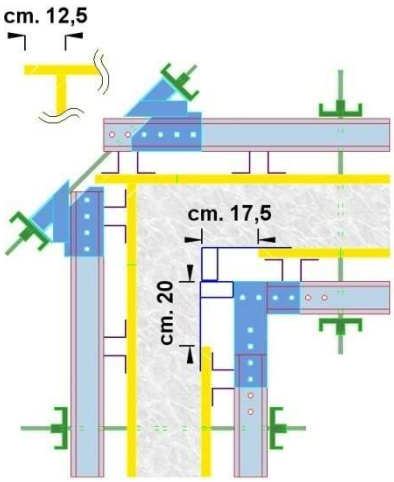


Adjustable steel sheet can be used on both sides of the formworks elements.

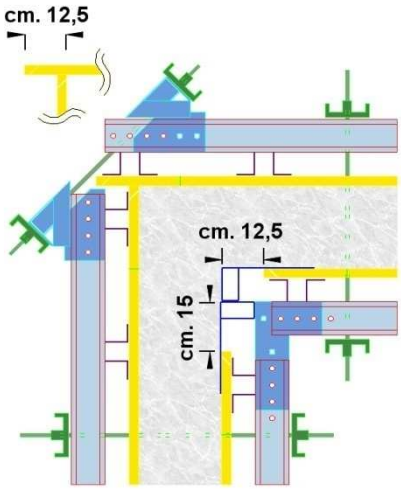
It is needed to adjust the corner at the different thickness of the wall, as show in the below pictures.



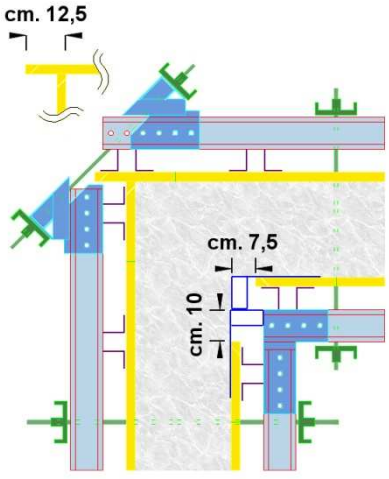
Wall of 15 cm



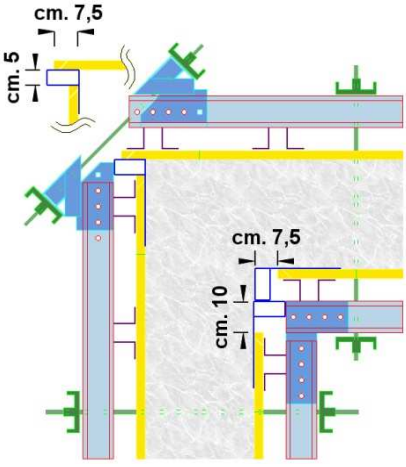
20 cm



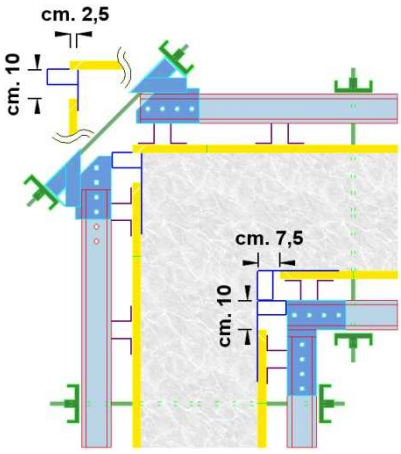
25 cm



30 cm



35 cm



40 cm

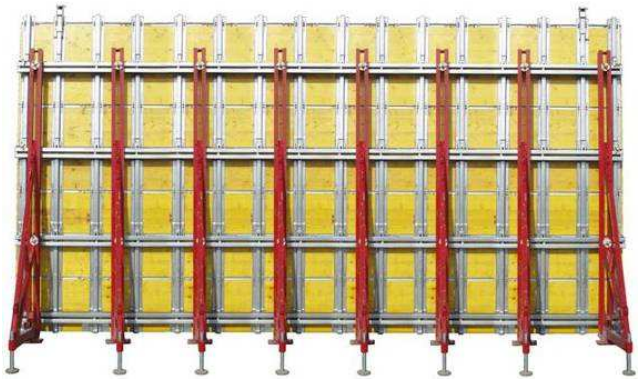
stop-end

Connect the shut coupler at the waler with pins.

Fix the end-stop waler with the butterfly nuts.

Shut the pour with timber wood, supported from by the end-stop waler.

single-sided formwork



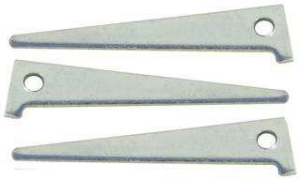
Formwork elements are connected with bolts to support strut frame.
The supporting strut frame should be placed one after another.
The span must not exceed 100 cm.
The supporting strut frame must be anchored to the foundation with a tie rod anchor.

formwork elements - components

Starting board
placed on the base of formwork elements
lengths: 100 - 150 - 200 cm

Vertical Omega extension
overlap and intersect each other vertically
short 108 cm - long 162 cm (top overlap)

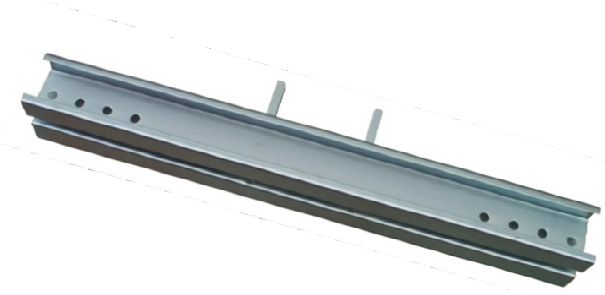
Steel "U" profile
used horizontally between rows of panels
lengths: 100 - 150 cm



Wedges
used to lock together 3-ply panels with U profiles and Omegas

Omega upper plug
for shutting Omega heads in the pouring area

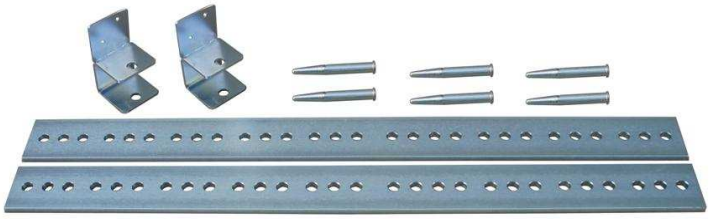
Rapid hook-up bolt
quick and safe hooking system between Omega and steel waling



Walers
hooked to the Omega with special rapid hook-up bolt that supports the butterfly nuts
lengths 100 - 150 - 200 - 250 - 300 cm

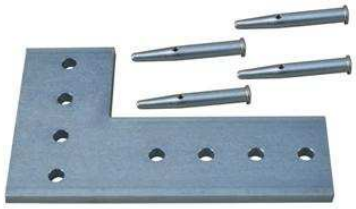
jointing elements

Normal coupler



Adjustable coupler

corner elements and shutter



Inside corner coupler

Outside corner coupler

Corner adjustable steel sheet

Shut poured coupler with steel waler

accessories

Lifting hook
Used in pairs to lift one or more formwork elements connected with alignment clamps

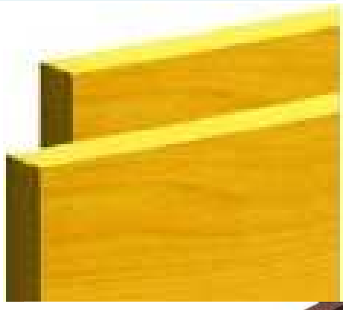
Formwork strut
Used to plumb the formwork elements

Walkway bracket
Used to assemble service walkways

Height adjuster
Used to adjust the support of the formworks elements on steep ground

wood components

3-ply shuttering panel
European Spruce
lengths 100 - 150 - 200 - 250 - 300 cm
widths 15 - 50 cm



Multiply sheet
European Birch
sizes cm 150 x 300 - 125 x 250 - 122 x 244
thickness 6 - 9 - 12 - 15 - 18 mm
used to cover the formwork element surface
to get a fair-faced concrete

fitting elements

Wing nuts
made of hot pressed steel

Tie rods 100 – 150 cm
Made of high-strength steel with large pitch threading
to facilitate screwing

Bolts and nuts
Used to join adjustable and fitting
elements

Plastic pipe spacers - plugs
Disposables, they are used to insert and then
remove tie rods

Steel pin - safety spring cotter
Used to join the accessories with the Omega
and to joint couplers and walers

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