# wall formwork

## MINI BOX

MINI BOX Formworks – perfect solution for companies which search for small-sized formworks for concrete works, especially on building sites where is no place heavy machinery.

Formworks can be easily used for wall, poles or basements concreting.

Construction of formwork board is made of steel flat bar, hot dip galvanized and covered with 12mm thick waterproof plywood.

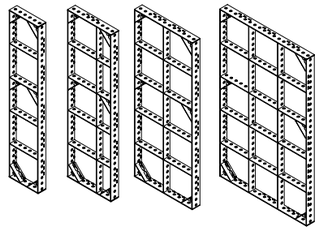
Mini Box stands out from other similar products as our frame is made of 6mm thick steel flat bar and inner frame is made of 5mm thick flat bar. Special frame construction gives additional stiffness and durability.

## 1. Boards Mini Box 150

Depending on the needs of the disc mount vertically or horizontally. in the plates is 18 holes. that allow you to optimally use the tie to take concrete pressure. plates arranged vertically one on the other allows for a wall to a height of 3m. combining the boards are on a connecting terminal (OPS- 70011). remember the reinforcement of the formwork during concreting, take care of the speed not greater than 1.2 m per hour.

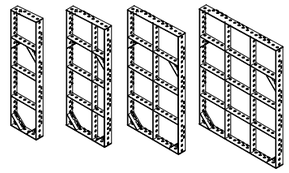
### 150

| Index | Dimensions (m) | Board surface area m² | Weight (kg) |
|---|---|---|---|
| OPS-01590 | 1,50 x 0,90 | 1,35 | 44,0 |
| OPS-01560 | 1,50 x 0,60 | 0,90 | 35,1 |
| OPS-01545 | 1,50 x 0,45 | 0,66 | 30,3 |
| OPS-01540* | 1,50 x 0,40 | 0,60 | 25,6 |
| OPS-01530 | 1,50 x 0,30 | 0,45 | 21,9 |
| OPS-01525* | 1,50 x 0,25 | 0,38 | 20,3 |



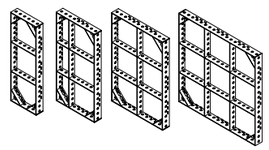
### 120

| Index | Dimensions (m) | Board surface area m² | Weight (kg) |
|---|---|---|---|
| OPS-01290 | 1,20 x 0,90 | 1,08 | 40,7 |
| OPS-01260 | 1,20 x 0,60 | 0,72 | 29,6 |
| OPS-01245 | 1,20 x 0,45 | 0,54 | 25,3 |
| OPS-01240* | 1,20 x 0,40 | 0,48 | 19,9 |
| OPS-01230 | 1,20 x 0,30 | 0,36 | 19,3 |
| OPS-01225* | 1,20 x 0,25 | 0,30 | 17,5 |



### 90

| Index | Dimensions (m) | Board surface area m² | Weight (kg) |
|---|---|---|---|
| OPS-00990 | 0,90 x 0,90 | 0,81 | 30,9 |
| OPS-00960 | 0,90 x 0,60 | 0,54 | 22,5 |
| OPS-00945 | 0,90 x 0,45 | 0,41 | 19,0 |
| OPS-00930 | 0,90 x 0,30 | 0,27 | 14,3 |



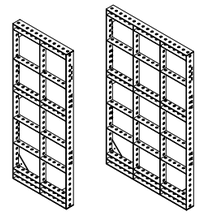
Universal boards, multifunctional, used to make poles and corners as well as simple straight walls.

## 2. Boards Mini Box 120

Pole plates are used for forming the posts and the corners. They are on the surface of the two rows of holes spaced at 5cm. so that they can be joined perpendicularly to the other boards without corners. is used for this tensioning bracket (OPS- 710,240) and nuts (OPS-70101). left-handed formwork panels allows for columns on the side of the 15- 20- 25 ...- 80 cm. (For panels VH..90) anticlockwise: 17- 22- 27 ...- 82cm. (For panels VH ... 90). Unused holes are clogged caps (OPS-72004). the plates can be used, of course, as usual formwork panels.

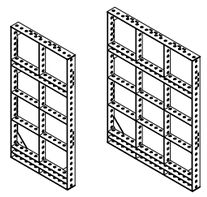
### VH150

| Index | Dimensions (m) | Board surface area m² | Weight (kg) |
|---|---|---|---|
| OPS-11590 | 1,50 x 0,90 | 1,35 | 53,0 |
| OPS-11560 | 1,50 x 0,60 | 0,90 | 40,0 |



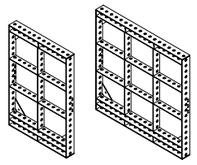
### VH120

| Index | Dimensions (m) | Board surface area m² | Weight (kg) |
|---|---|---|---|
| OPS-11290 | 1,20 x 0,90 | 1,08 | 47,0 |
| OPS-11260 | 1,20 x 0,60 | 0,72 | 32,0 |



### VH090

| Index | Dimensions (m) | Board surface area m² | Weight (kg) |
|---|---|---|---|
| OPS-10990 | 0,90 x 0,90 | 0,81 | 35,0 |
| OPS-10960 | 0,90 x 0,60 | 0,54 | 26,0 |



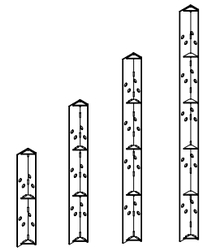
*The items made to individual order



## 3. External corner Mini Box

Used for boarding poles and outer corners.

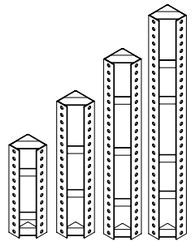
| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-41015 | 1,50 | 9,1 |
| OPS-41012 | 1,20 | 6,9 |
| OPS-41009 | 0,90 | 5,3 |
| OPS-41006* | 0,60 | 3,5 |



## 4. Internal corner

Used for boarding right inner angles. Widht of corner - 15 cm.

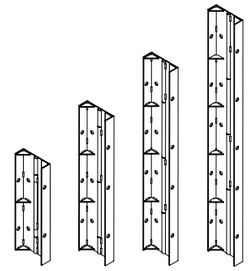
| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-42015 | 1,50 | 22,1 |
| OPS-42012 | 1,20 | 17,0 |
| OPS-42009 | 0,90 | 15,3 |
| OPS-42006* | 0,60 | 8,8 |



## 5. Universal corner

This element lets us form sharp and wide angles inside and outside.

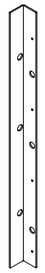
| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-43015 | 1,50 | 20,75 |
| OPS-43012 | 1,20 | 16,6 |
| OPS-43009 | 0,90 | 10,6 |
| OPS-43006* | 0,60 | 8,3 |



## 6. Special corner

This element is used to complement free spaces between boards. Installed with clamps or pin with wedge.

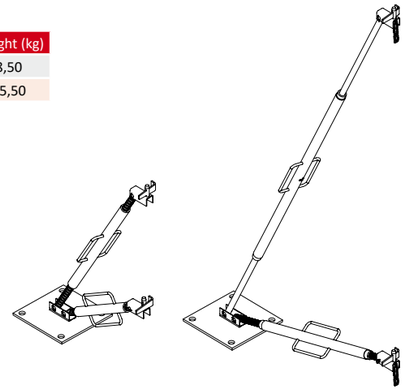
| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-43009* | 0,90 | 3,00 |



## 7. Supports

These elements are used for vertical alignment of boards 90, 120, 150. Support don't compensate strength of concrete pressure.

| Index | zakres regulacji (m) | Weight (kg) |
|---|---|---|
| OPS-61200 | 0,70 - 1,15 | 8,50 |
| OPS-62400 | 1,7 - 2,50 | 15,50 |

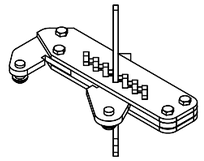


*The items made to individual order

## 8. Complementary lock

The lock has 3 functions: aligns and secures the plate, the plate is secured with the insert into 100mm, plates are fixed at the corners. Mounting rules see item 44 (page 11).

| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-70150 | 0-60 | 2,02 |
| OPS-70200 | 0-100 | 2,23 |



OPS-70200

## 9. Clamp

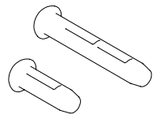
Multifunctional board connector. It aligns and stiffens boards.

| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-70011 | - | 0,45 |

## 10. Pin

Single pin is used for boards connection to each other. Double pin is used for connection between additional elements, such as removing elements, supplemental inserts and special corners.

| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-70106 | 0,06 | 0,25 |
| OPS-70110 | 0,10 | 0,28 |



## 11. Wedge

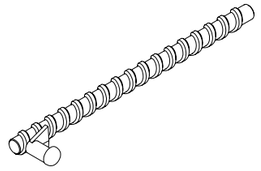
Used together with pin.

| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-70195 | 0,10 | 0,15 |

## 12. Tensor

20 cm long tie rod with welded hook. This element is used for connecting boards on corners and for installation of stiffening beam.

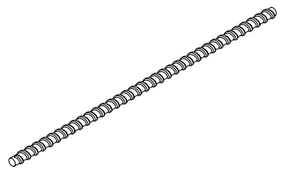
| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-71024 | 0,20 | 0,43 |



## 13. Tie rod

Tie rod, heat-threaded. Used for connect formwork boards.

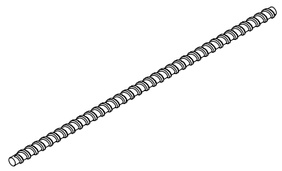
| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| SPT-15050 | 0,50 | 0,75 |
| SPT-15074 | 0,75 | 1,13 |
| SPT-15100 | 1,00 | 1,50 |
| SPT-15150 | 1,50 | 2,25 |
| SPT-15200 | 2,00 | 3,00 |
| SPT-15250 | 2,50 | 3,75 |
| SPT-15300 | 3,00 | 4,50 |



## 14. Tie weldable

Threaded rod type DYWIDAG. It is used to determine the shuttering boards. Tie material suitable for welding.

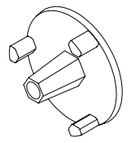
| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| SPT-15051 | 0,50 | 0,75 |
| SPT-15075 | 0,75 | 1,13 |
| SPT-15101 | 1,00 | 1,50 |
| SPT-15151 | 1,50 | 2,25 |
| SPT-15201 | 2,00 | 3,00 |
| SPT-15251 | 2,50 | 3,75 |
| SPT-15301 | 3,00 | 4,50 |



## 15. Wing nut

Used together with tie rod for stiffening and alignment of boards.

| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-70101 | ø 0,10 | 0,60 |

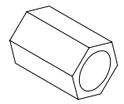




## 16. Hexagonal nut

Used together with tensor and tie rod in case when it is impossible to use wing nut.

| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-70040 | SW-40 | 0,20 |
| OPS-70050 | SW-50 | 0,26 |



## 17. Distance strut

Strut replaces tie rods on the upper edges of boarding.

| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-73680 | 0,75 | 1,95 |

## 18. Edge catch

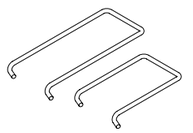
Gives opportunity to connect Mini Box boardings on external boarding edges.

| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-71012* | 0,52 | 0,5 |

## 19. Clip

Clip is used for board stiffening with H20 beams.

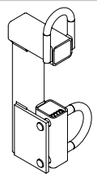
| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-73020 | 0,20 | 0,27 |
| OPS-73010 | 0,10 | 0,21 |



## 20. Transporting hook

It is used for transportation of assembled boards. Load 2,2kN.

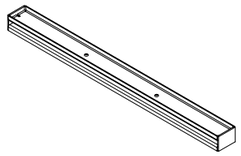
| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-74000* | 0,30 | 5,50 |



## 21. Stiffening beam

Used for stiffening and align boards.

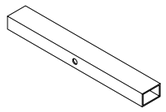
| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-75120 | 1,20 | 11,90 |
| OPS-75240* | 2,40 | 23,5 |



## 22. Profile leveling

Used for stiffening and fastening formwork panel joints with distance.

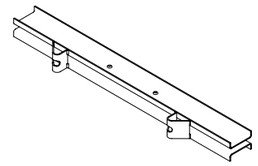
| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-75070* | 1,20 | 5,3 |



## 23. Bolt-timbering

Used for stiffening and align boards with opportunity of filling empty spaces wider than 15 cm.

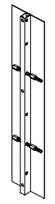
| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-75100* | 1,00 | 13,00 |



## 24. Complementary insert

Used for slight regulating of wall lenght.

| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-77120* | 1,20 | 23,50 |
| OPS-77150* | 1,50 | 28,00 |

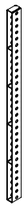


*The items made to individual order

## 25. Complementary insert 50mm

It is used to determine the distance between the contact plates.

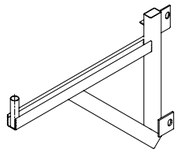
| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-79150* | 1,50 | 12,41 |
| OPS-79120* | 1,20 | 9,66 |



## 26. Bracket for working platform

Hanged on frame holes. It makes comfortable base to make working platform. Working load – 150 kg/m$^2$. Max widht between brackets 1,5m.

| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-85096* | 0,96 | 11,20 |



## 27. Working platform stand

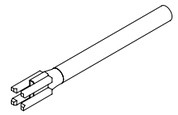
Used together with bracket. Gives opportunity to mount safety handrails.

| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-85125* | 1,25 | 4,20 |

## 28. Grip for clamps

This grip facilitates and speeds up montage and disassembly of clamps.

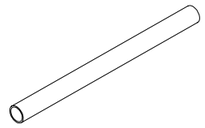
| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-74500* | 0,50 | 1,80 |



## 29. Distance PVC pipe

Serves as distance-holding element between boards and lets to remove tie rod from concreted walls. Used together with PVC cones.

| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-72200 | 2,00 | 0,40 |



## 30. Cone OPS-0081

Saves tie rods from concreting near board surface.

| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-72001 | ø54 | 0,01 |

## 31. Distance formwork

It is used to keep reinforcing the correct distance from the shuttering board.

| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-72005 | ø22 | 0,01 |

## 32. Cork

Serves to fill unused holes on the board surface.

| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-72004 | ø22 | 0,01 |

## 33. Anti-adhesive oil

Saves board surface from concrete sticking. Productivity 1kg for 20-25m$^2$.

| Index | Dimensions (m) | Weight (kg) |
|---|---|---|
| OPS-72030 | - | 30,00 |

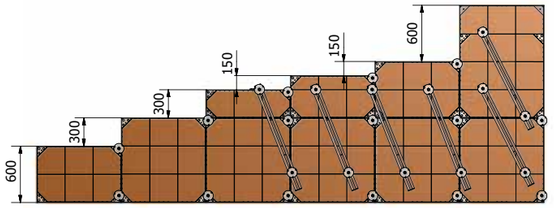
*The items made to individual order

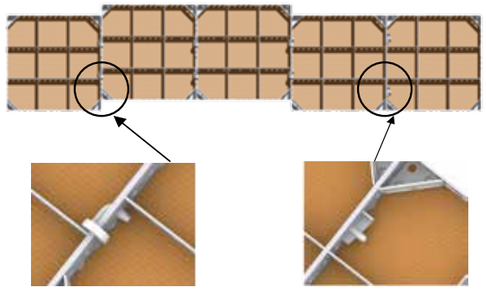


## 34. Installation rules

Board can be mounted whether in vertical or horizontal alignment. Every dimension can fit in 15 cm intervals. There is no problem to mount board one on other. In case the height is more than 1,8m there is required to install stiffening beams. The only thing we should pay attention for is concreting speed – not higher than 1,2 m per hour. Maximum pressure of concrete on boards is 50kN/m$^2$.

Mounting in vertical and horizontal alignment.

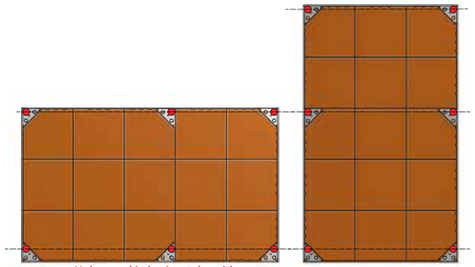


Connecting with clamp

Instead of clamp you can use pin with wedge

Thanks to frame holes, placed every 5 cm, we can connect shifted boards. We connect it with clamps. On every connection we must use not less than two clamps, which is mounted with hammer.

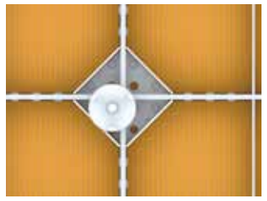



System of hole positions on board

If we need to use board in horizontal position, we must choose appropriate holes shown on the picture beside, then we avoid wing nuts from touching the ground. In vertical alignment we use similar tactic.

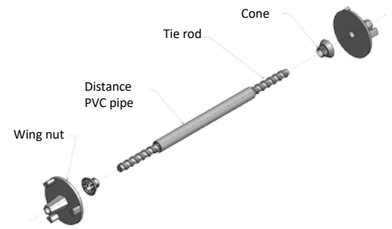
## 35. Board attraction

In every corner of board there is some holes with PVC corks. After removing it is the holes for tie rods. Position of first hole is made to use one rod for whole four board corners using wide wing nut fi 100mm.



## 36. Complete rod

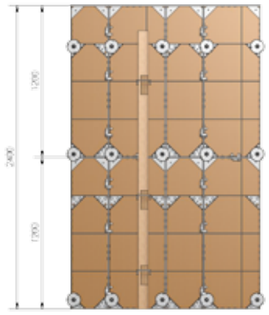
Used to connect boards placed opposite each other. It lets to form walls of any thickness.



## 37. Basement wall forming

Boards 120cm are siutable to form basement walls, garage walls and foundations higher than 1m.

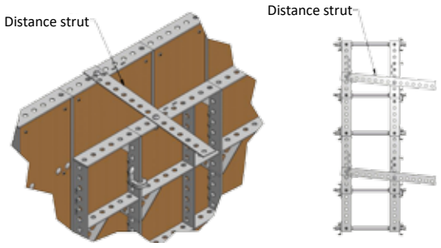
Basement wall forming




View of three rods

Instead of tie rod,
we can use distance strut

Pulling boards to each other using distance strut

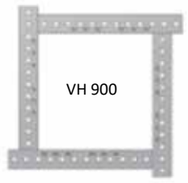




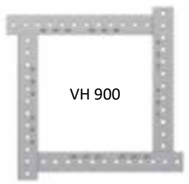


## 38. Formation of poles

Multifunctional boards 90cm wide lets us form poles with side up to 50cm. As connectors we use tensors. Right-sided mounting gives us opportunity to form poles with 5cm interval, for example: 17-22-27 cm and so on. Left-sided orientation gives us opportunity to form poles with such dimensions: 15-20-25cm and so on.

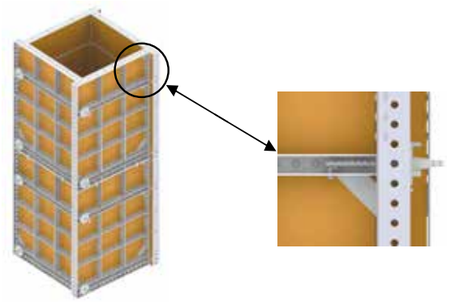



Right-sided formation

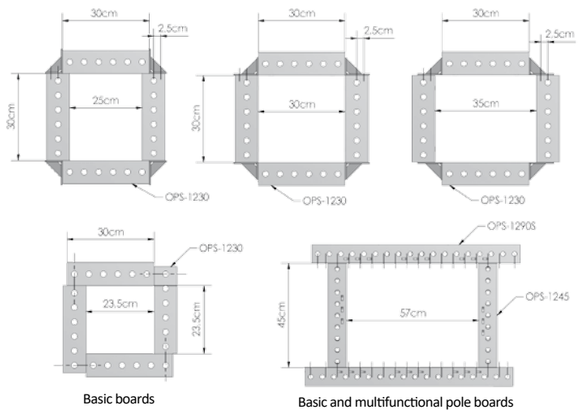



Left-sided formation

Board connection using tensors



Pole formation using boards and external corners with shift by 2,5 cm.




Basic boards

Basic and multifunctional pole boards

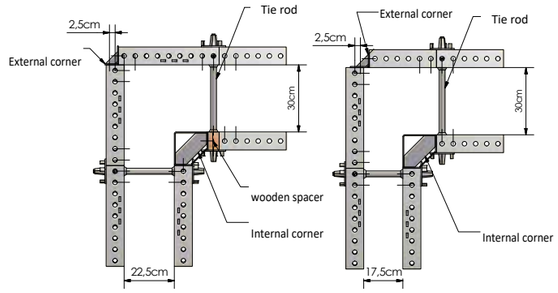
Mounting with shift



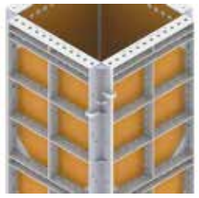
## 39. Formation using corners

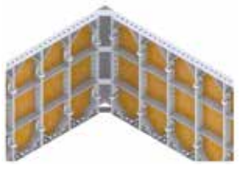
Using external and internal corners we can make external and internal corners of walls and poles. There is opportunity to fit every dimension with jump of 2,5cm. For sharp and open corners there is universal corners. It is possible, because boards can be connected whether to internal or external universal corner side. For connection it is used pin and wedge.

With jump of 2,5cm




Using external and internal corners and 5cm wide complementary insert we can form all the corners with an accuracy to 2,5 or 5cm.



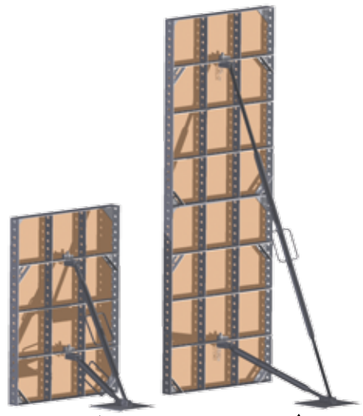


External and internal corner

Universal corner: angle of external arm between 100 and 180°.
Boards connected to internal arms makes angle between 0 and 100°.

## 40. Boarding supports

We use it for support and equalize boards to ensure stability when concreting.



OPS-1200

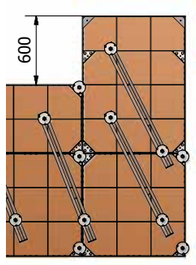
OPS-2400

Horizontal mounting
to flat bar.

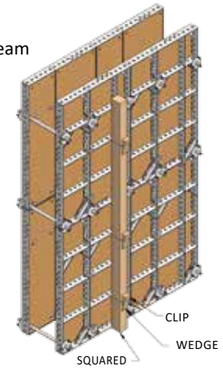
Vertical mounting
to frame of board

## 41. Installation of stiffening beam

Stiffening beam is mounted to boards using two tensors and wing nuts. Beam is used to stiffen and equalize boards in case of constructions higher than 1.8 m.

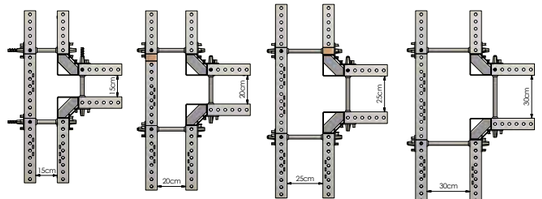



Stiffening using H20 beam or scantling.

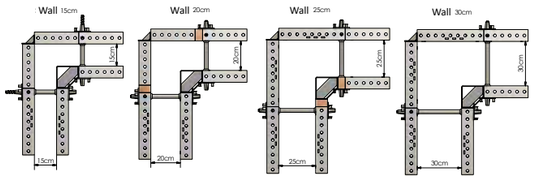



## 42. Formation of walls with different width

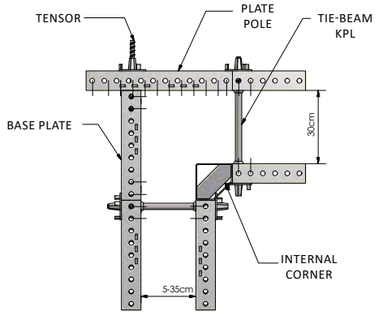
By using internal corner we can easily install T-form wall. In case of different width empty spaces must be filled with complementary inserts.




Formation of right angles

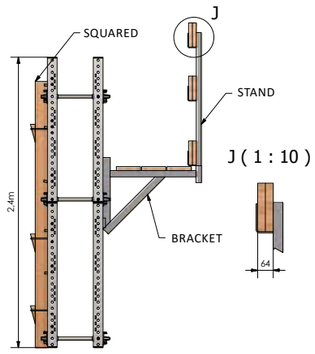



Formation of right corner with universal board. Regulation range of wall thickness is 5-35cm.




## 43. Working platform

Working platform is mounted on horizontal frame of board using pins with wedges. Max distance between two brackets is 1.5 m. When forming wall higher than 1.5 m, we must use stiffening construction with beam opposite the bracket.

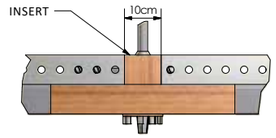


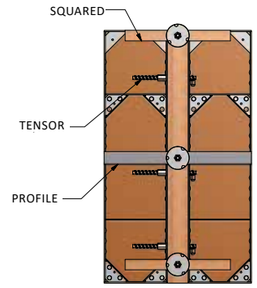


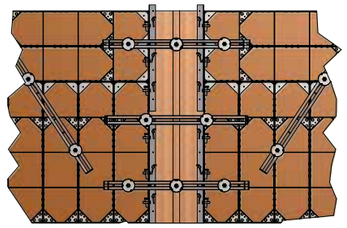

## 44. System solutions

Using formwork plywood and two special corners we can easily fill up empty spaces between boards. Such connection must be secured with stiffening beam. We can fix 21mm wide plywood with double pins with wedge.

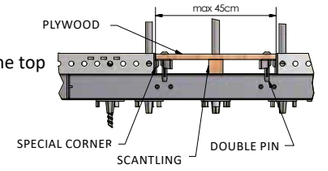
View from the top



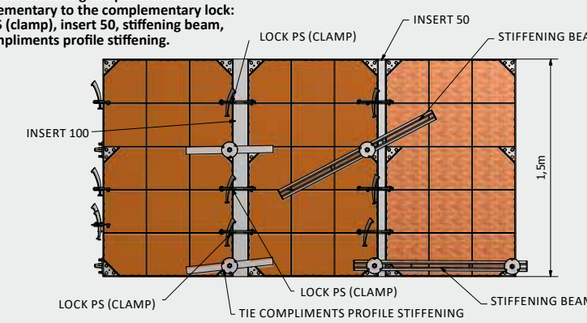
View from the top



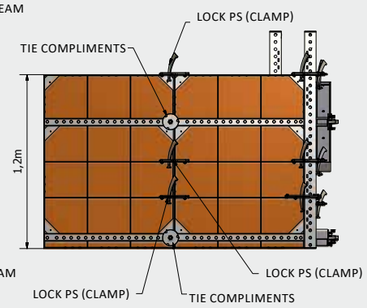

When filling spaces wider than 6cm, as the wing nut can't cover two boards, we must use together with scantling or equalizing profile.

## 45. Complementary lock

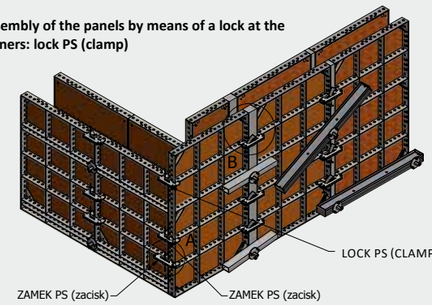
**Means for mounting the panel insert complementary to the complementary lock: lock PS (clamp), insert 50, stiffening beam, tie compliments profile stiffening.**

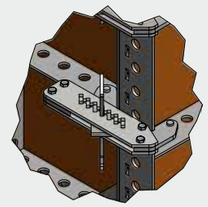



**Pole assembly of the panels by means of a lock: tie compliments, lock PS (clamp).**

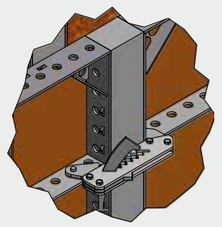



**Assembly of the panels by means of a lock at the corners: lock PS (clamp)**



A ( 1 : 4 )



B ( 1 : 5 )

## 46. Using recomendations

**USER SHOULD:**

- use stiffening beams
- observe the speed of concreting (not higher than 1,2m per hour) – max pressure of concrete on boards is 50kN/m$^2$.
- connect boards to each other using connection clamps or pins with wedges
- close all the unused open holes with corks
- secure boards with anti-adhesive oil to avoid concrete sticking
- after finishing clean all the stuck concrete from boards

**USER SHOULD NOT:**

- hammer nails in a board
- spill concrete into not oiled boards
- grind formwork boards

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02. 2017 r.