STANDARD PANEL

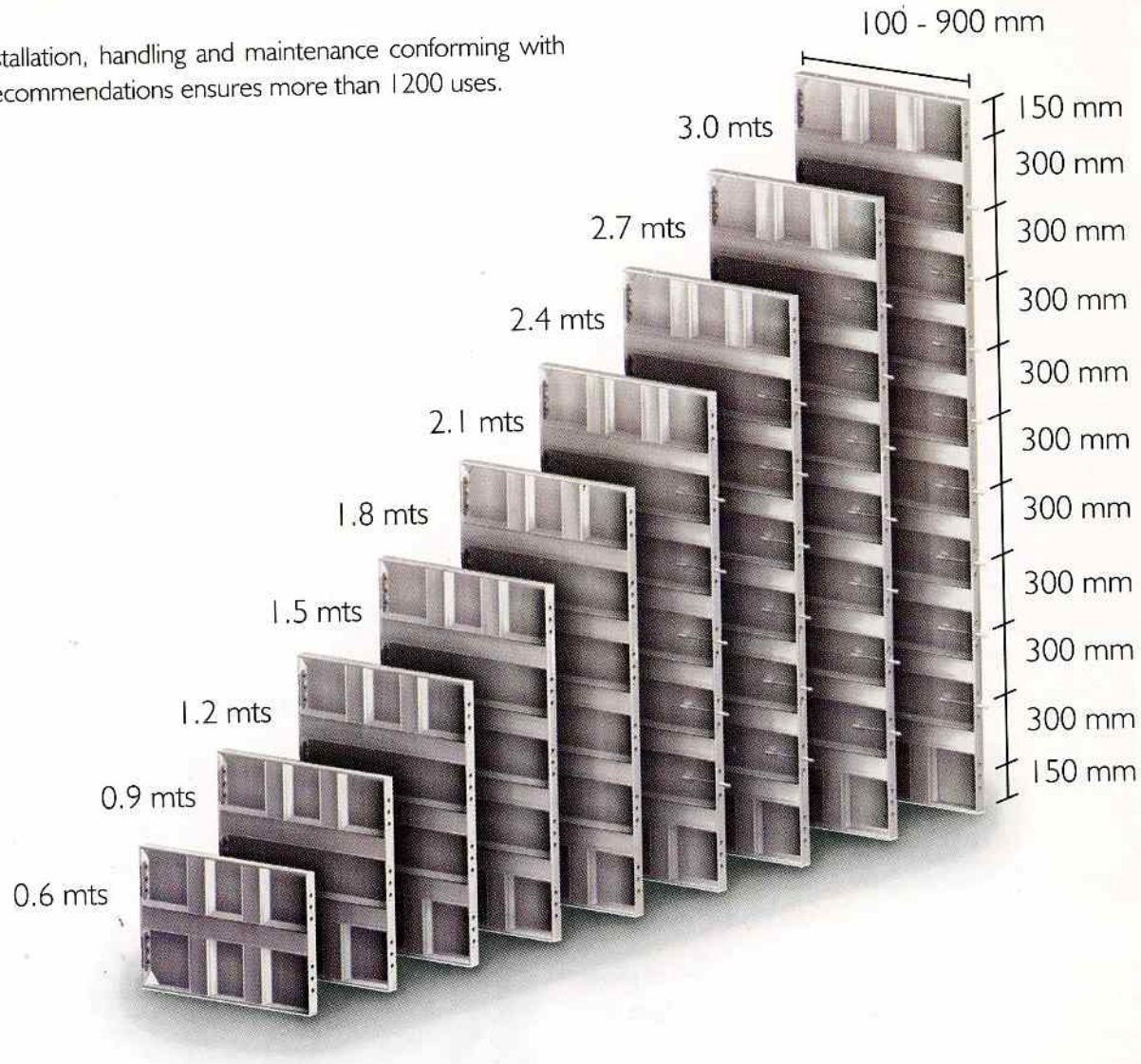
Walls

Width (cm)	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	
Height (cm) 90	5.13	5.41	5.68	5.95	6.22	7.56	8.44	9.09	10.05	10.70	11.56	12.53	13.57	14.22	15.18	15.83	16.90	Weight (kg)
120	6.84	7.20	7.55	7.91	8.27	10.06	11.02	11.88	13.17	14.03	15.11	16.39	17.64	18.51	19.79	20.65	21.94	
150	8.55	8.99	9.43	9.87	10.31	12.55	13.60	14.68	16.28	17.36	18.65	20.25	21.72	22.80	24.40	25.48	26.98	
180	10.25	10.78	11.31	11.83	12.36	15.05	16.18	17.47	19.40	20.69	22.19	24.12	25.80	27.09	29.02	30.31	32.02	
210	11.96	12.57	13.18	13.79	14.40	17.54	18.76	20.26	22.51	24.02	25.73	27.98	29.88	31.38	33.63	35.13	37.06	
240	13.67	14.36	15.06	15.75	16.45	20.04	21.34	23.06	25.63	27.34	29.27	31.84	33.95	35.67	38.24	39.96	42.10	

We handle standard panels with widths between 60 and 90 cm with heights between 210 and 240 cm. However, depending on the design required we can handle widths from 10 to 90 cm and heights from 30 to 300 cm in different combinations.

Width of the lateral frame: 54 mm
Contact face is 1/8" thickness

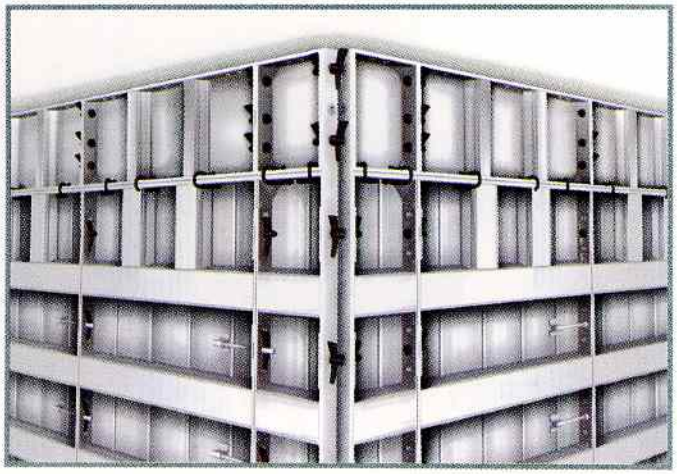
Correct installation, handling and maintenance conforming with FORSA'S recommendations ensures more than 1200 uses.

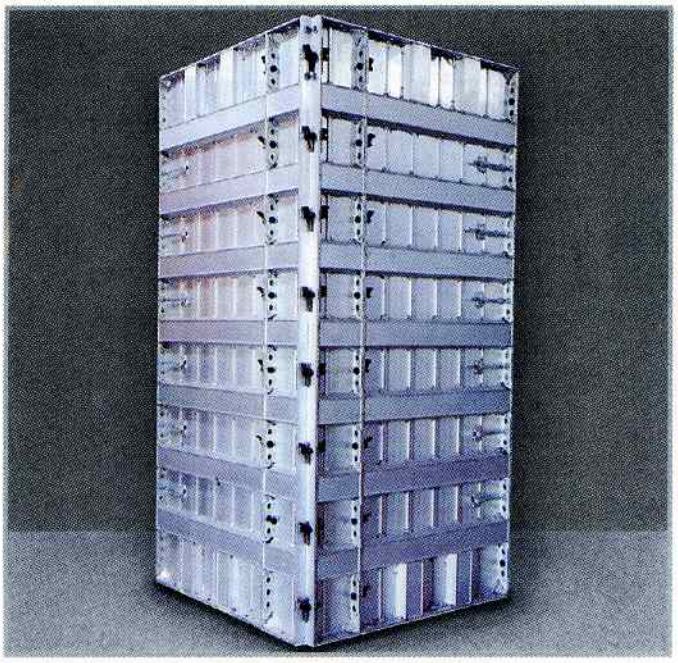


WALL SYSTEM

Exterior Angle

Aluminum profile used to make exteriors up to 90 degrees with wall panels corner for internal wall.

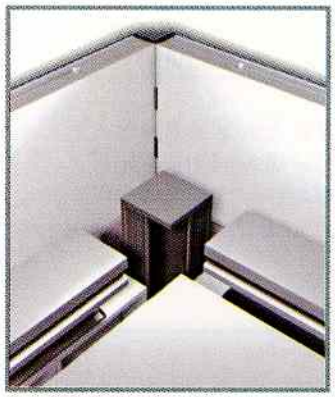


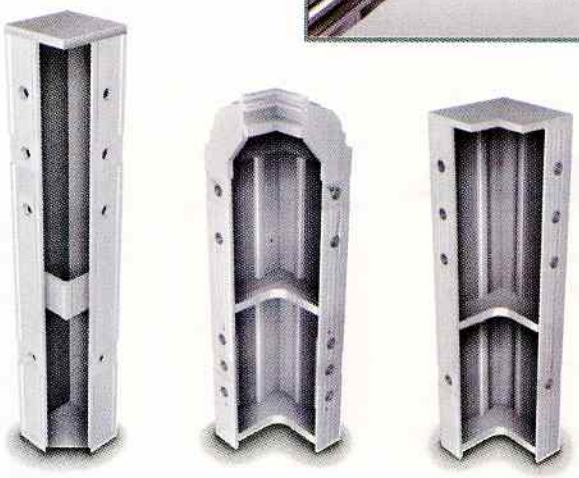


Corners for Internal Wall

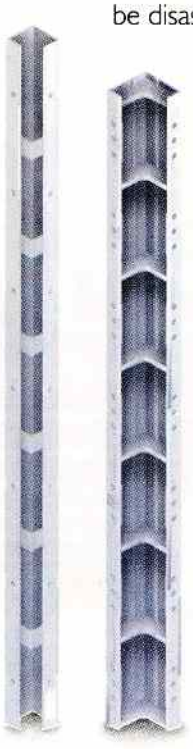
Aluminum element used to make interior corners up to 90 degrees with wall panels.

Offered in widths of 10 x10 cm and 15 X 15 cm according to the project layout.





To facilitate the disassembly of the wall panels and the juncture of the panels the total height of the corner form is divided into two sections: the panel for the lower part can be disassembly once the wall panels are removed to be used again. The higher part is taken out after removing the wall panel joint.



WALL SYSTEM

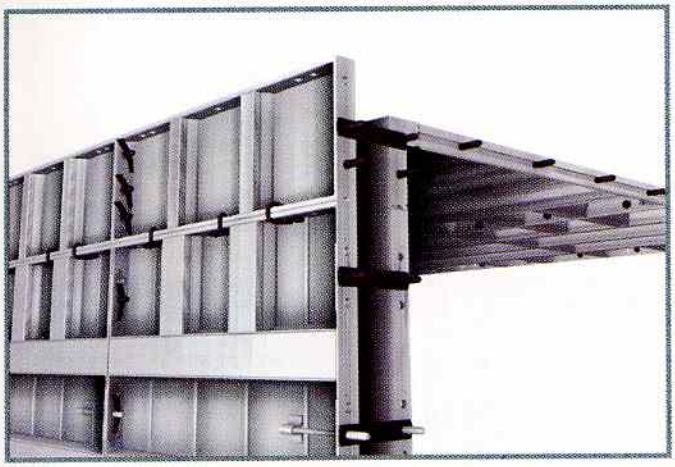
The fronts and exterior sections of housing can be made up in two options: with CAP panels plus standard wall panels or with high panels.

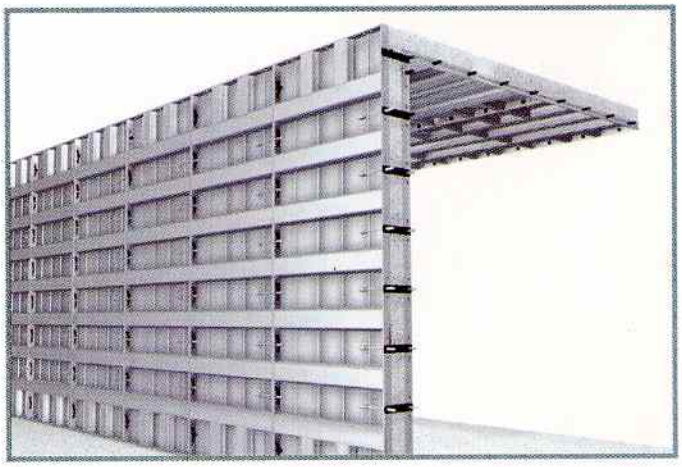
CAP Panels

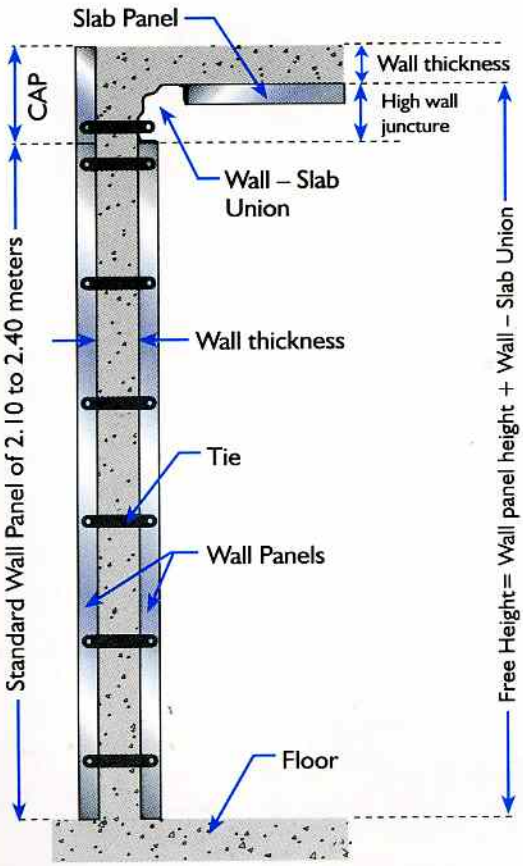
Serves to compliment the standard panels to finish the total height of the exterior wall holding the thickness of the total panel. The advantage of using this type of configuration lays in the utilization of the standard panel which can be easily adapted to future projects.

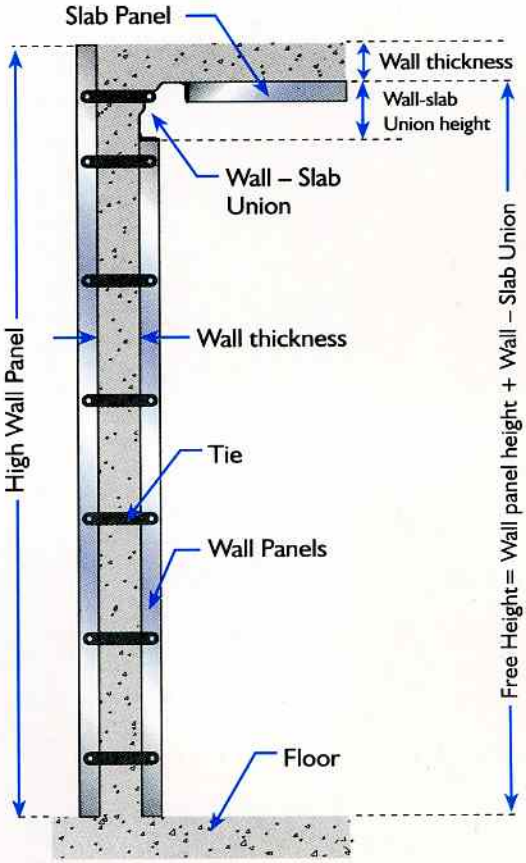
High Panels

The high panel covers the total height of the exterior wall plus the determined thickness of the total panel. Its advantage lays in that fewer number of pieces are handled compared to the CAP resulting in better performance.





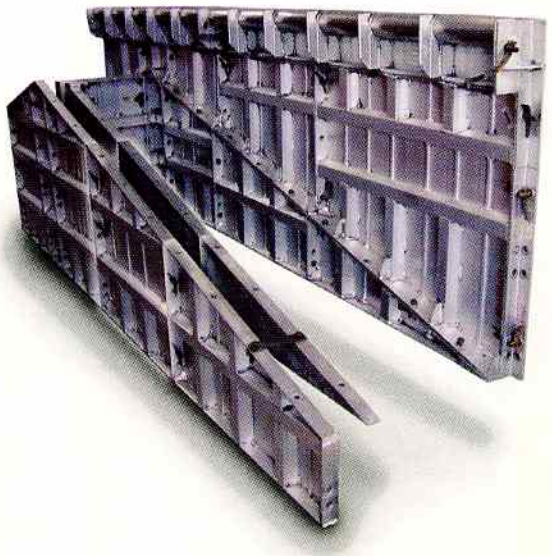




WALL SYSTEM

Panels for Back End (Culatas)

These determine the shape, height and angle of inclination of the wall. The panels for back ends are connected to wall panels with a staple pin in the lower edges and clips and stays on the lateral edges.



Wall Top

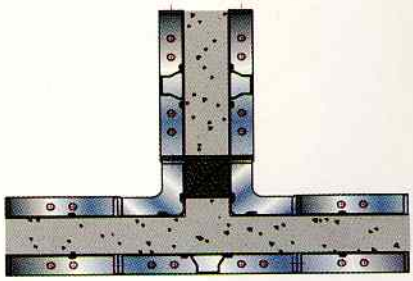
Aluminum profile of 3/8" thickness that is used to close the wall.

It is assembled the same way as the panels (with clips and stays) or at times, if the configuration is not standard, pin staples can be used.

For walls with a thickness greater than 12 cm, the wall top is re-enforced with angle profiles or a tubular profile.

When the design requires wall recesses or doorways, it is necessary to use the wall top with a mold.

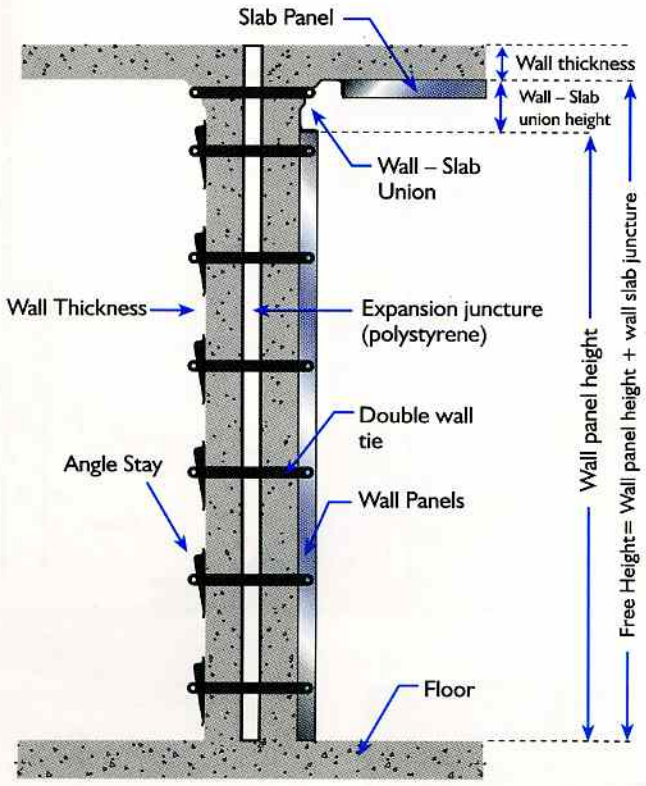
These are made with aluminum profiles 6061 and should be re-enforced and connected to the wall panels with clips and stays or when necessary pin staples.



WALL SYSTEM

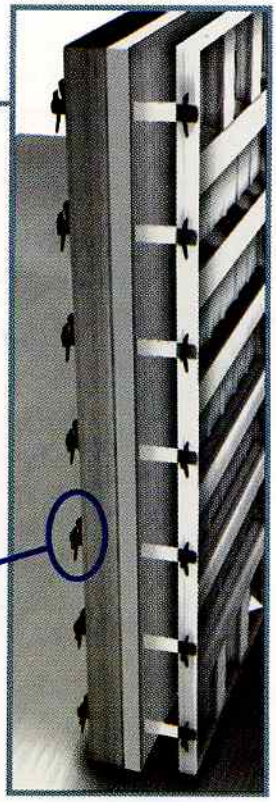
Construction in series has to be clearly defined on how to make the transition from one housing unit to another. FORSA delivers key panels and the necessary accessories to do continuous set-ups in whichever of two cases: flat foundations or in tiers.

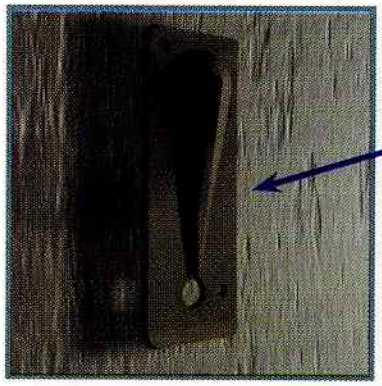
Double Wall

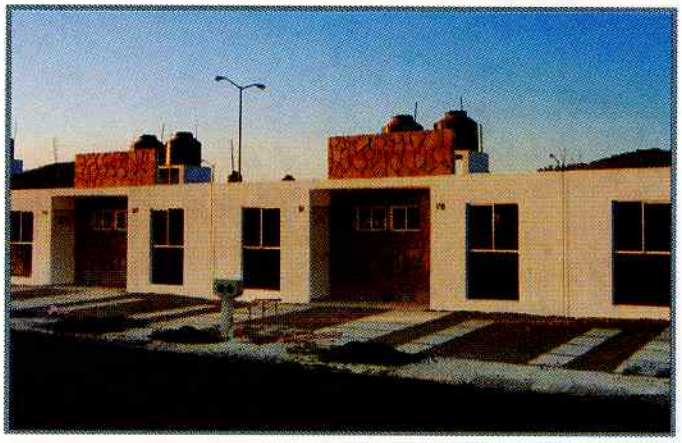


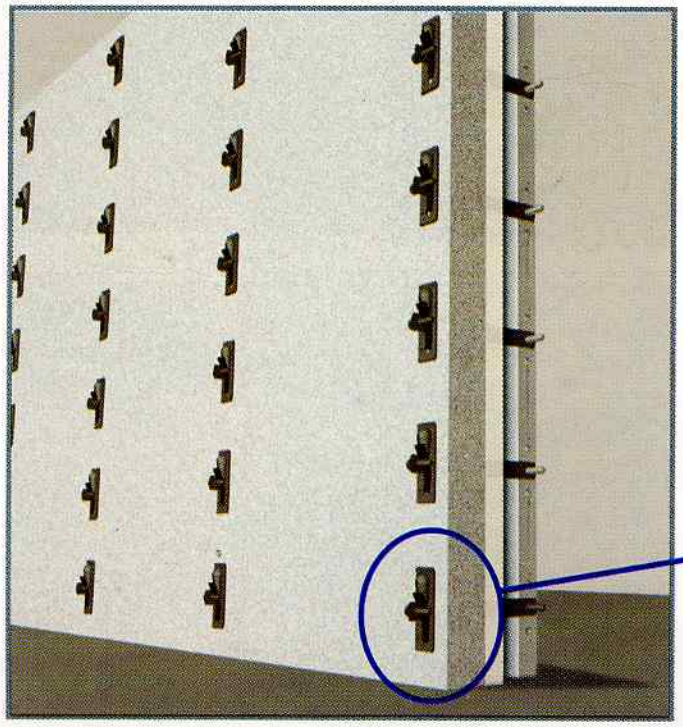
Angle Stays

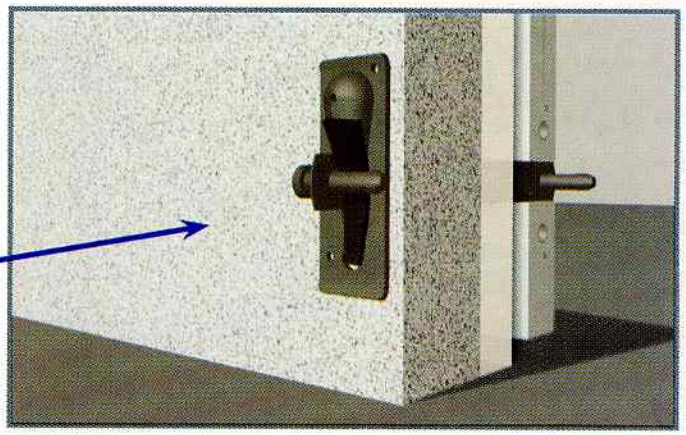
When there are enlarged double walls, special ties are used that are fastened to the wall constructed the previous day, with angle stays.







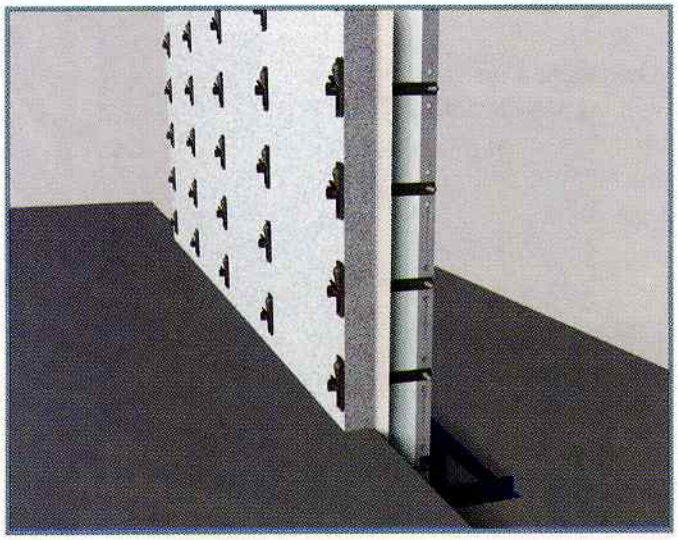


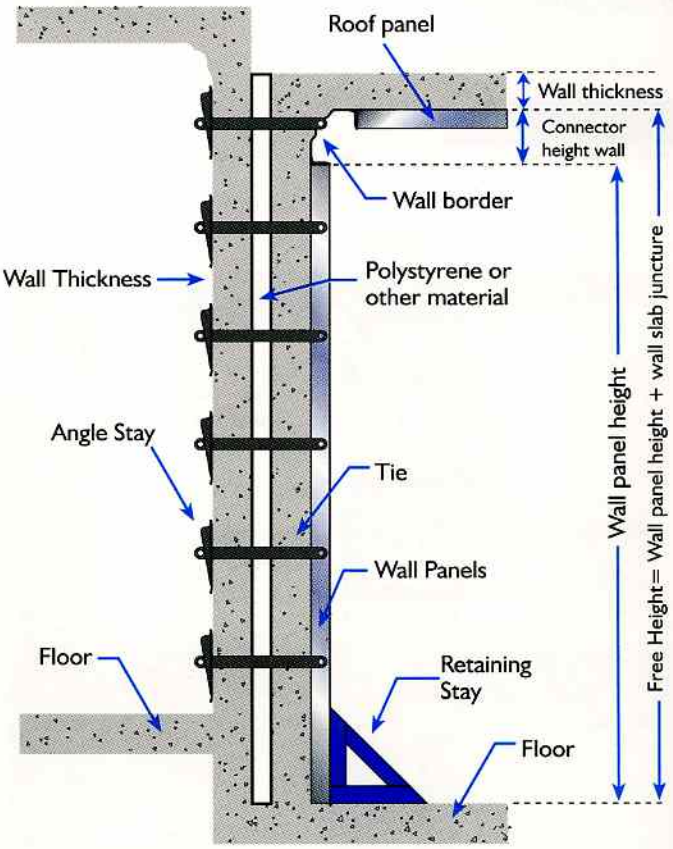


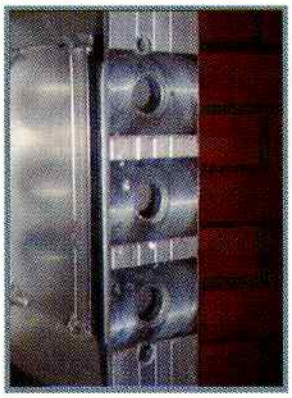
WALL SYSTEM

Enlarged Double Walls and Tiers

The FORSA wall system permits the wall panels to be used for constructing housing units in tiers which can be between one house and another or within the same housing unit.



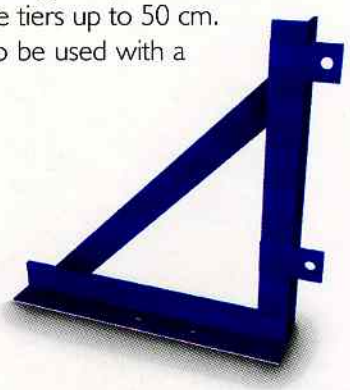




The panels have slots in three perforations of the bushing to permit their use in tiers in multiples of 5 cm, except those tiers between one housing unit and another of 15, 45, 75 and 105 cm.

Retaining Stay

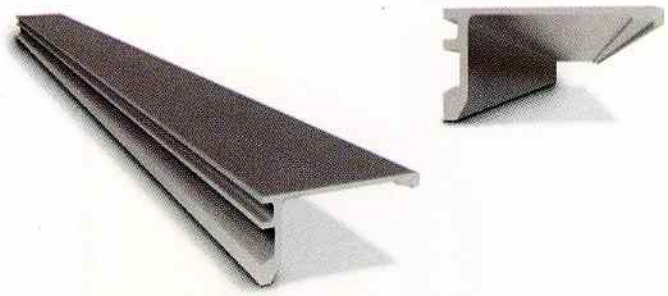
Accessory used for connecting the panel to the lower part, when there are tiers up to 50 cm. For higher tiers they are to be used with a construction jack.

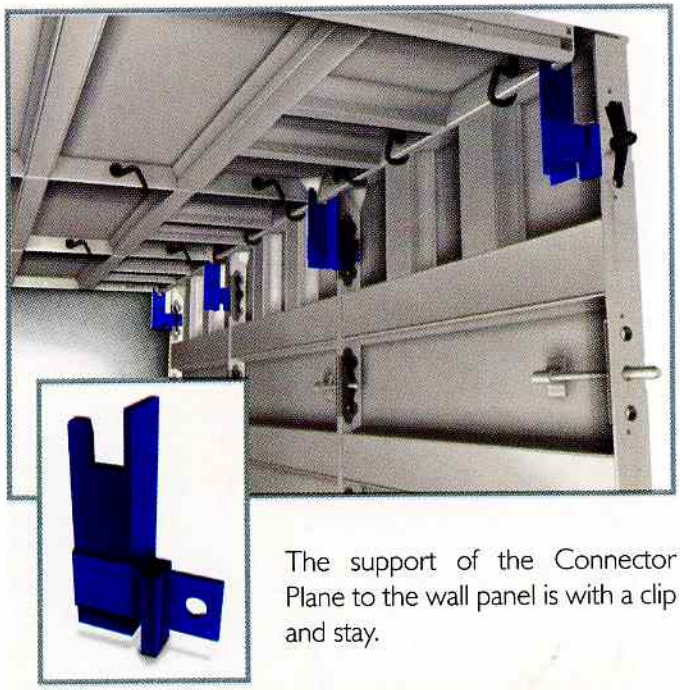


SLAB PANEL SYSTEM

Flat Wall Slab Union

The connector between walls and slab is done using the Connector Plane which is a piece of aluminum 10 or 15 cm. It supports the upper section of the wall panel. It allows a free height between the floor and slab equal to height of the panel plus the thickness of a 7 mm Flat Wall Slab Union.

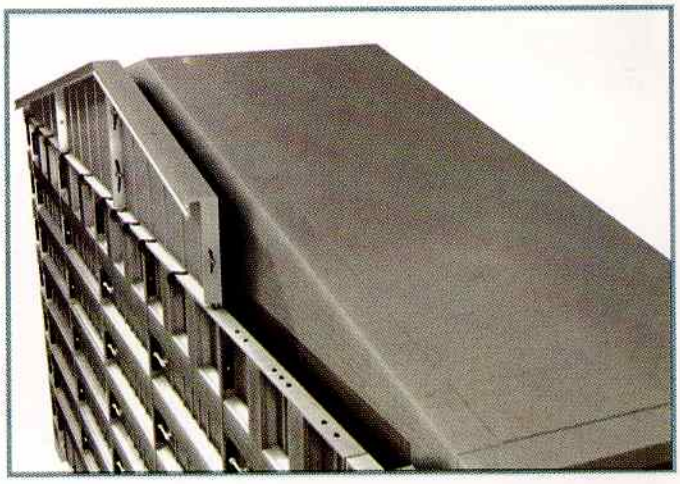




The support of the Connector Plane to the wall panel is with a clip and stay.

Slanted Connector

This piece functions as a connector between wall panels and slanted roofs. Every slanted connector is made at the required angle to form slanted surfaces.



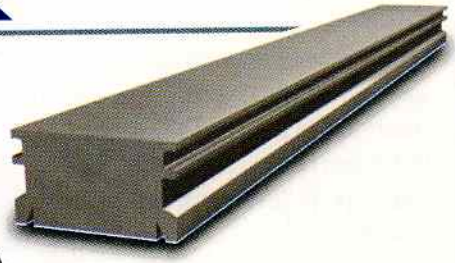
SLAB SUPPORT SYSTEM

The wall system needs for support and propping up two elements that work together for good performances of the panels during the curing time of the concrete. These elements are: an aluminum profile and a point leveler of which FORSA has two points.

'I' Beam

This first option combines the use of an 'I' beam made of aluminum and which is 13.5 cm high. It works together with the point leveler exposing a face to the panel of 20 X 10 cm. This form permits the adjustments of the 'I' beam to ensure the wall panel is level.

'U' 10 Beam



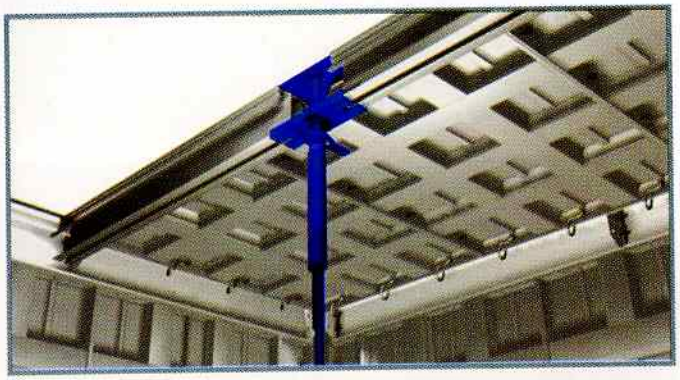
The use of the 10 cm 'U' beam that is 5.4 cm high together with the point leveler 2005 is the second FORSA option as a system for propping up the wall panels. The advantages of this combination against the 'I' beam is that it is easier to dismantle the panels and allows for a closer adjustment for a level wall in general.

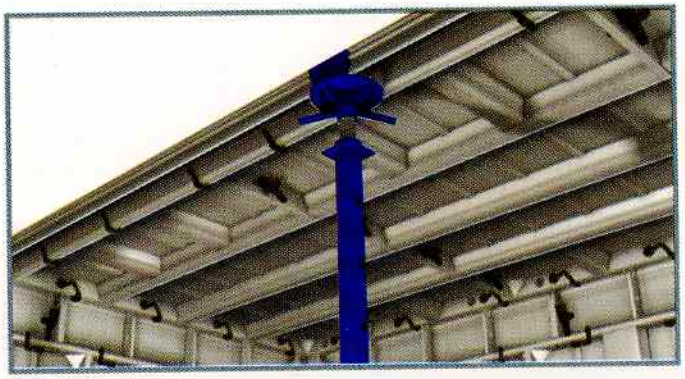
Point Leveler 2004

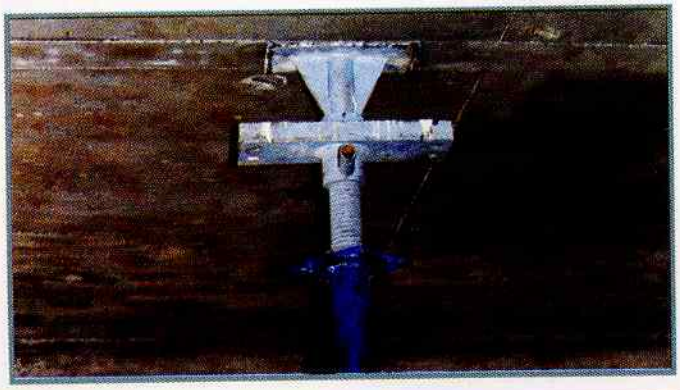
Made of high resistant steel, it serves as the connecting element for the jacks on the right side of the wall. This is to ensure that the wall panel stays propped up correctly from the first day to the dismantling two days later. FORSA delivers three sets.

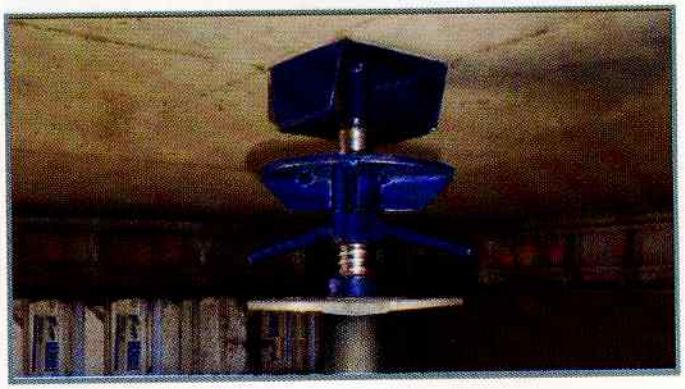
Point Leveler 2005

This is an accessory made of carbon steel and serves the same function as the point leveler 2004.





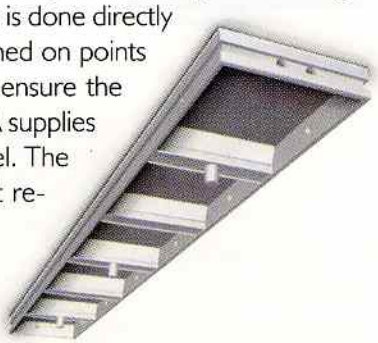




SLAB SUPPORT SYSTEM

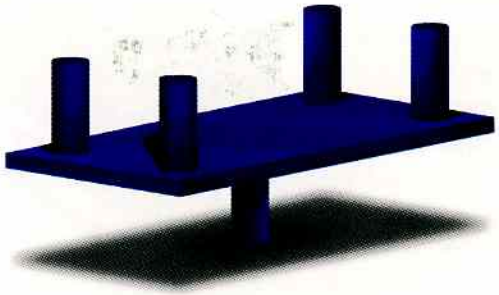
Point Panel

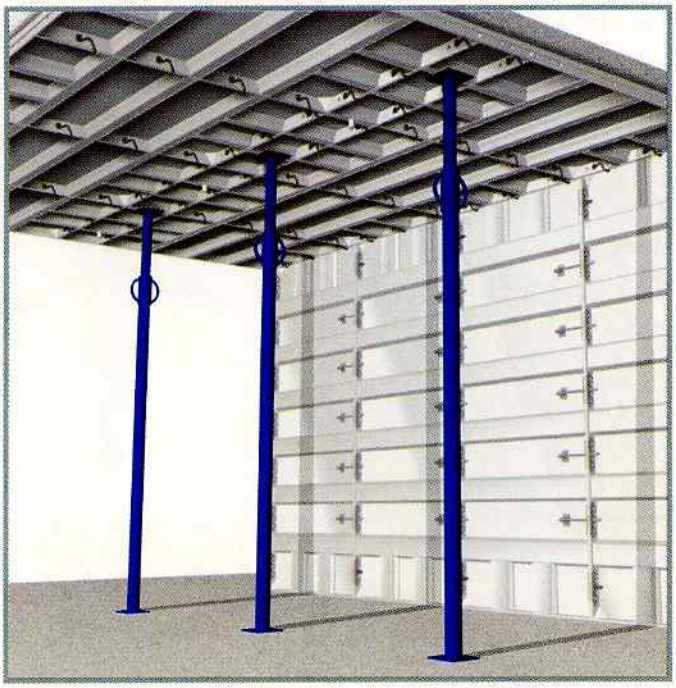
This element closes the wall panel which varies between 10 and 30 cm in width and in lengths according to the design. The placement of the jacks is done directly on the point panel positioned on points soldered to the piece. To ensure the reach to the panel, FORSA supplies three sets of the point panel. The use of point levelers is not required.

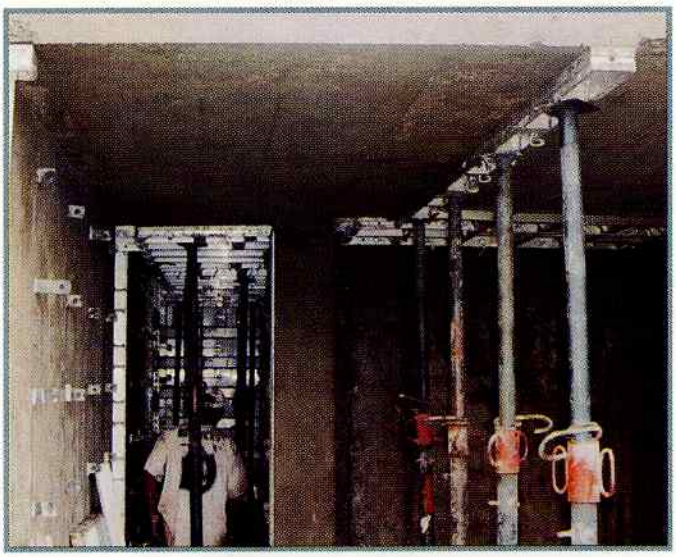


Base for the Jack

This accessory serves as a support at the juncture of four panels.

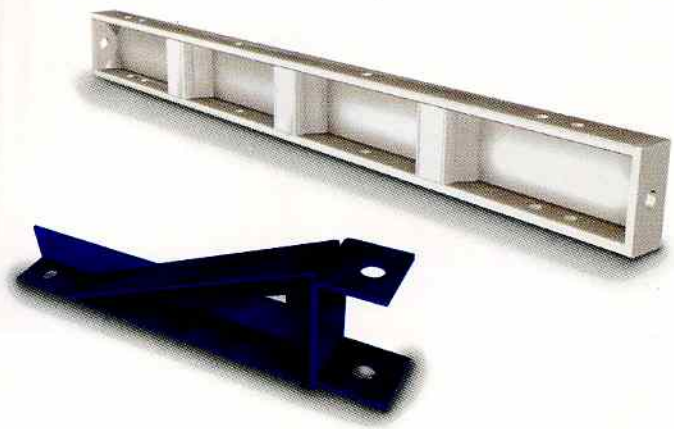


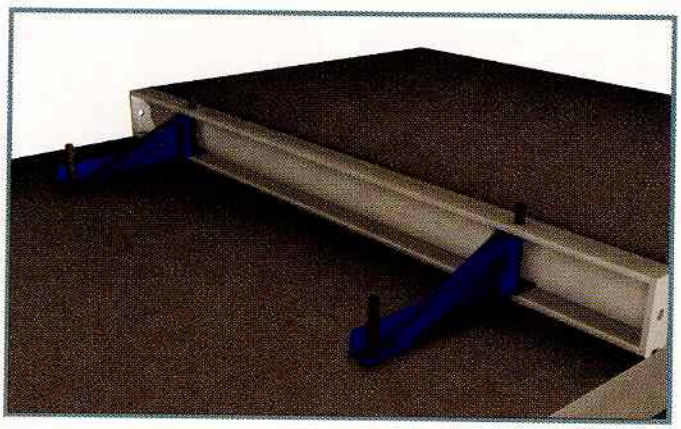




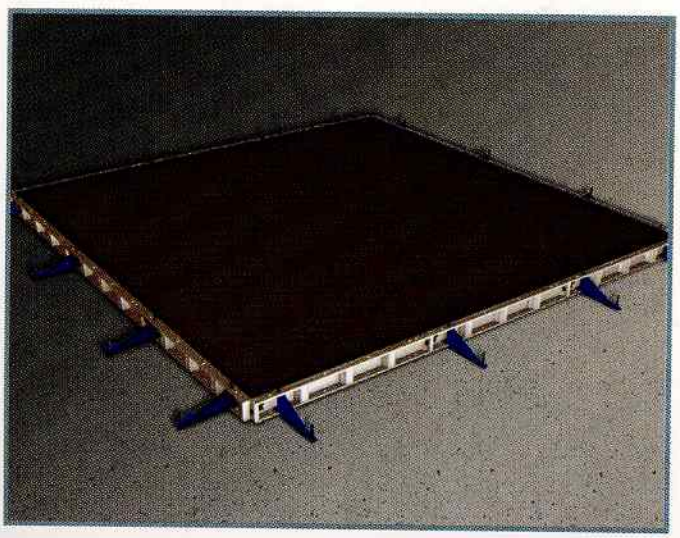
Panels for Holding the Wall Slabs

This is a combination of panels and supports to firmly hold the walls. They are made in different heights and lengths in agreement with layout and design required. They are fastened directly to the ground with construction bars 5/8" diameter.





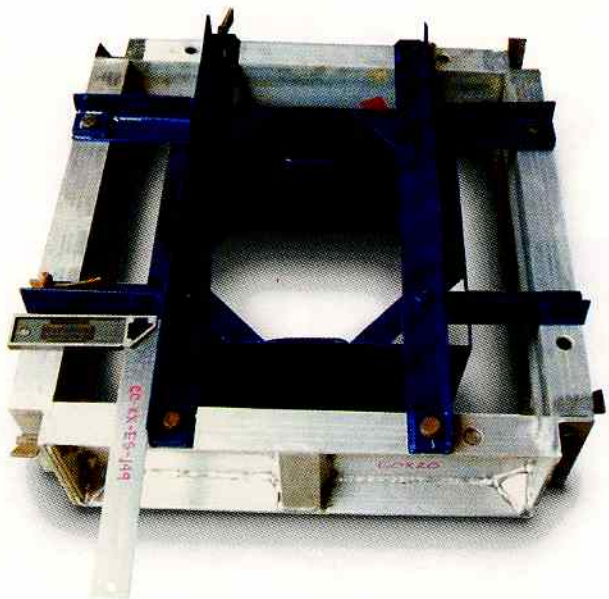
They can be made in heights of 10 cm or more. They are held by a clip and stay.



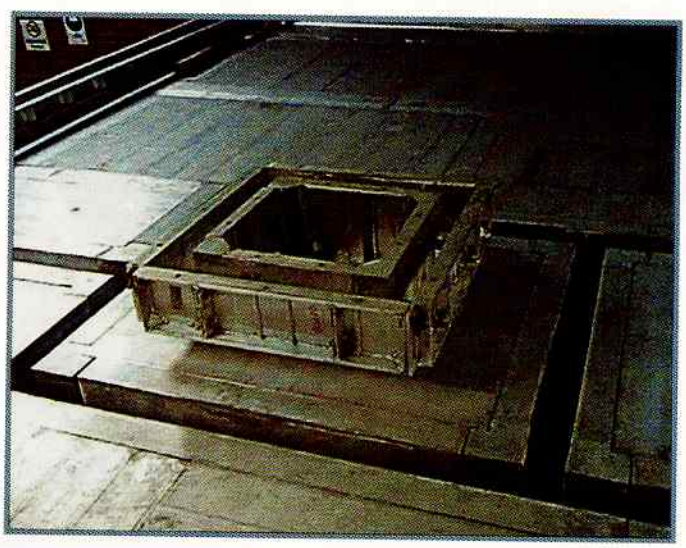
Panels for domes

The architectural designs placed over the panel are done with a combination of aluminum panels and angle corners which are strengthened with a steel angular structure.

The dome panels are designed together with an inclined angle to facilitate their dismantling.



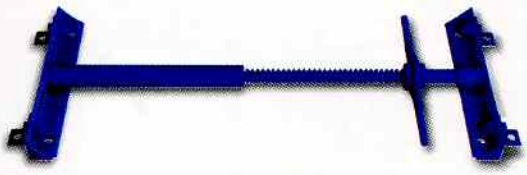
When the domes stay inserted on the panel, angle molds for dismantling are included. These are fastened with screws directly to the wall panels.

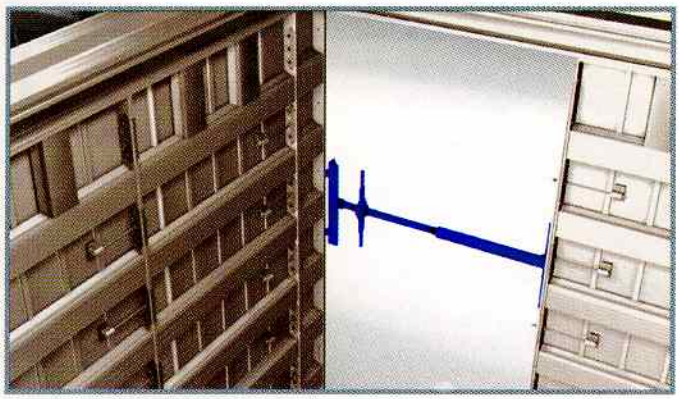


ALIGNMENT ACCESSORIES

Tensor for Doorways and Windows

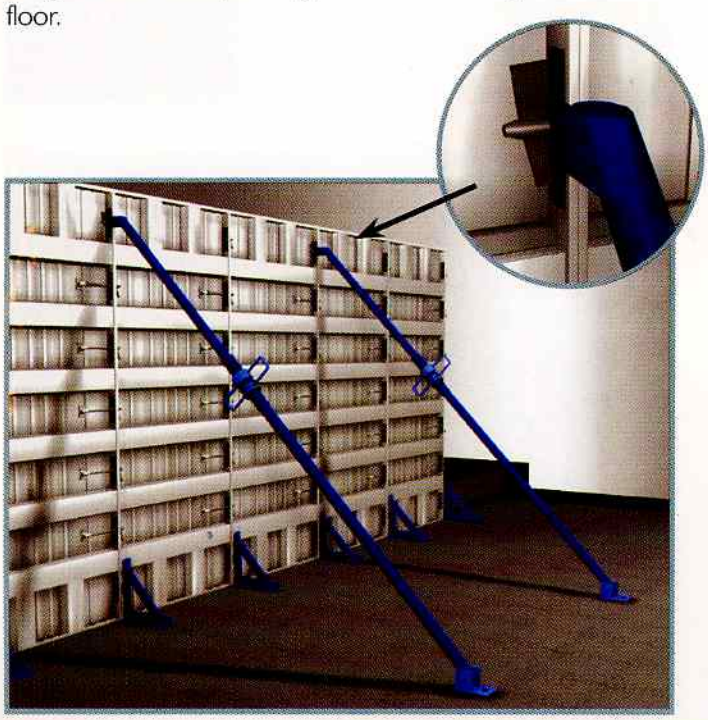
The perfect size and placement of doorways and windows is guaranteed with the use of these tensors. In the case of a doorway where there is no frame then two height tensors should be used. Its screw-and-bolt design permits the opening and closing between walls for variations up to 2 cm.





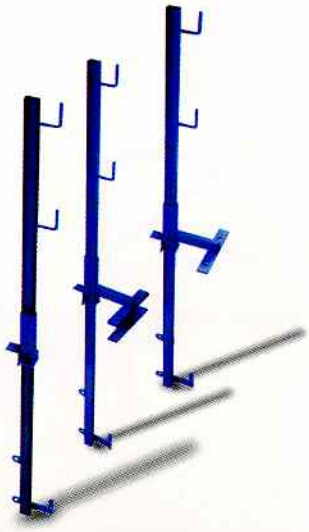
Wall Tensors

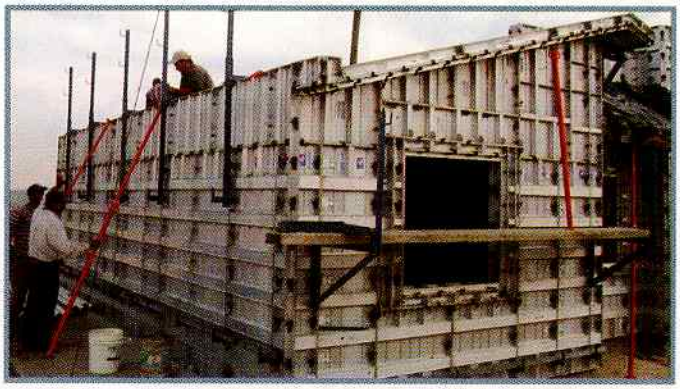
This assures the panel's angle when it is not a solid front. Its design for extreme pivoting assures the walls position to the floor.

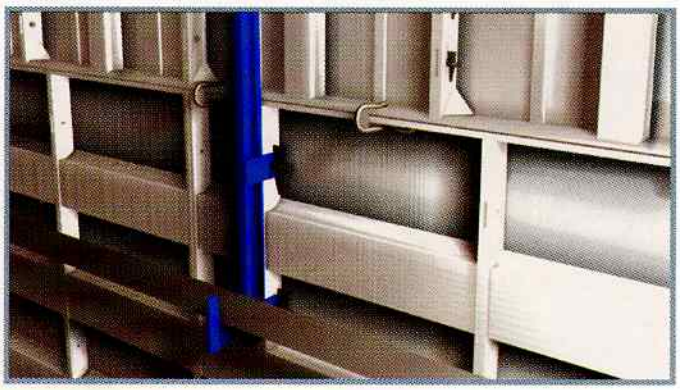


Aligners for Caps

Its function is to guarantee that the Cap is vertical and the safety of a worker using a life-line. It can be used to complement wall supports that are in tiers or not.



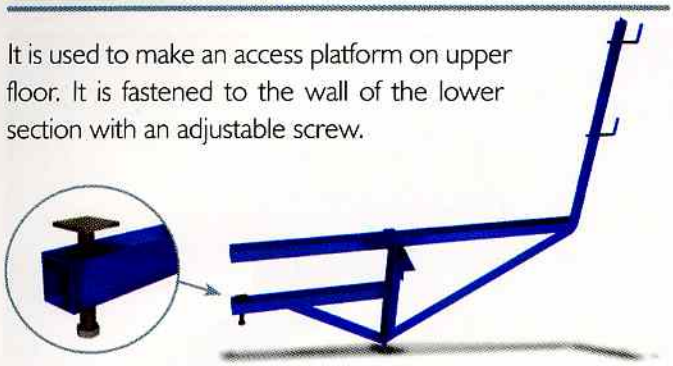




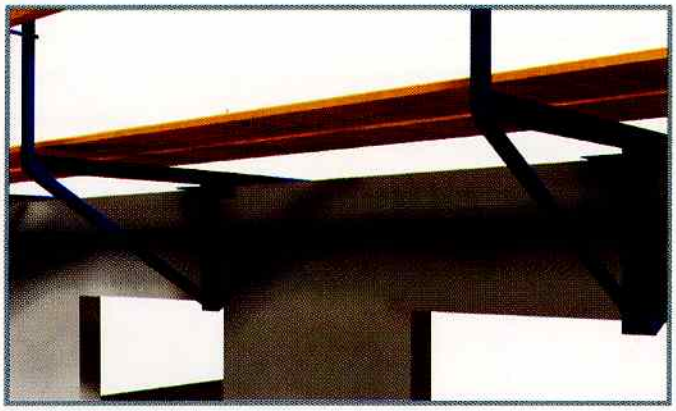
SUPPORT ACCESSORIES

Upper Scaffold

It is used to make an access platform on upper floor. It is fastened to the wall of the lower section with an adjustable screw.

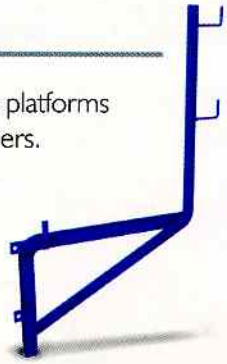


adjustable screw



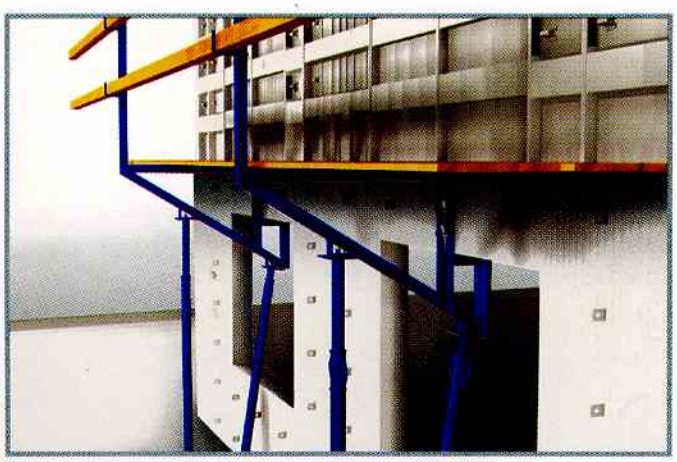
End Scaffolds

It is installed over wall panels to serve as platforms for installing upper sides, ends and borders.



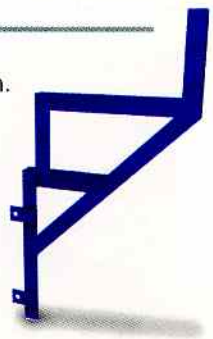
Doorway Scaffold

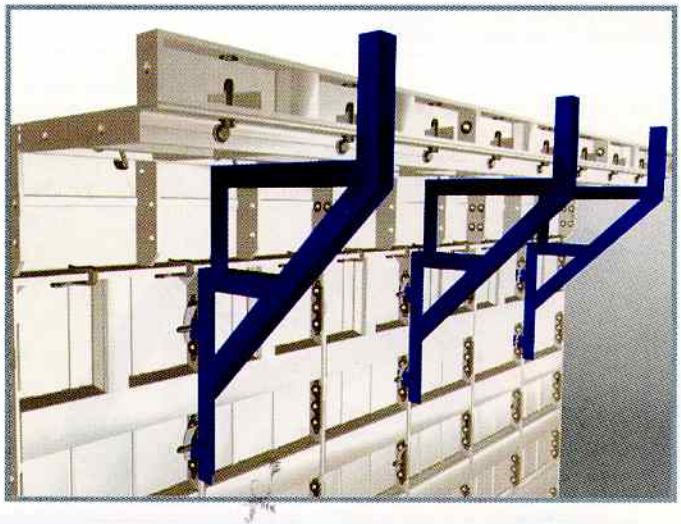
The design permits it to be installed over doorways or beams greater than 15 cm to make an exterior access platform. It is recommended that it be used for only two story constructions.



Upper support

Serves as a support element up to 60 cm.

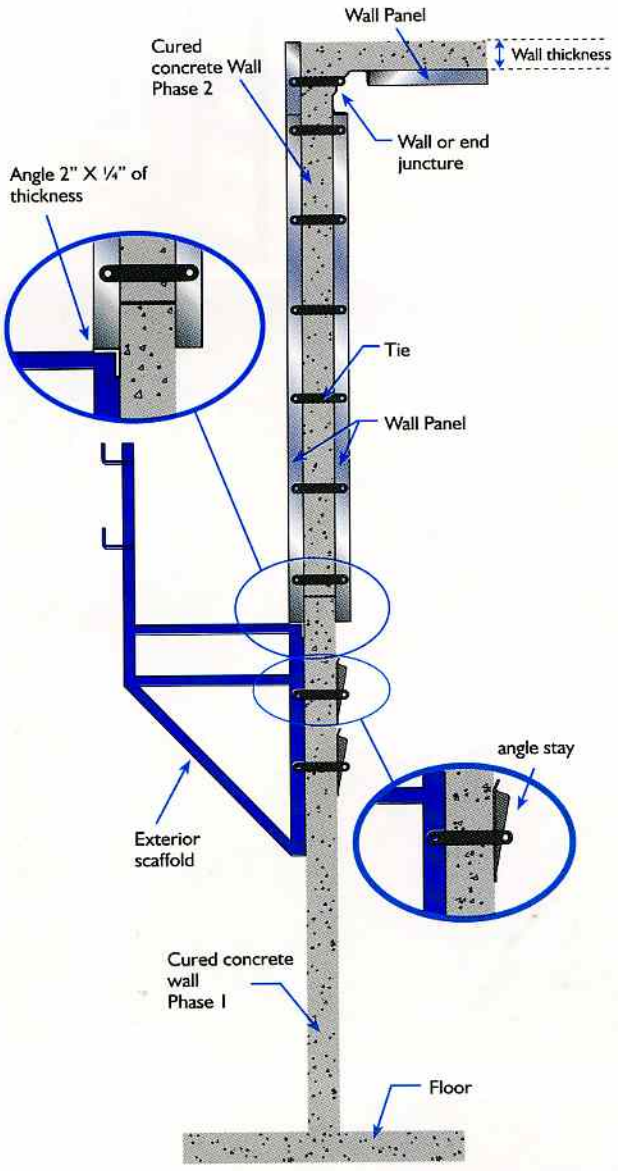




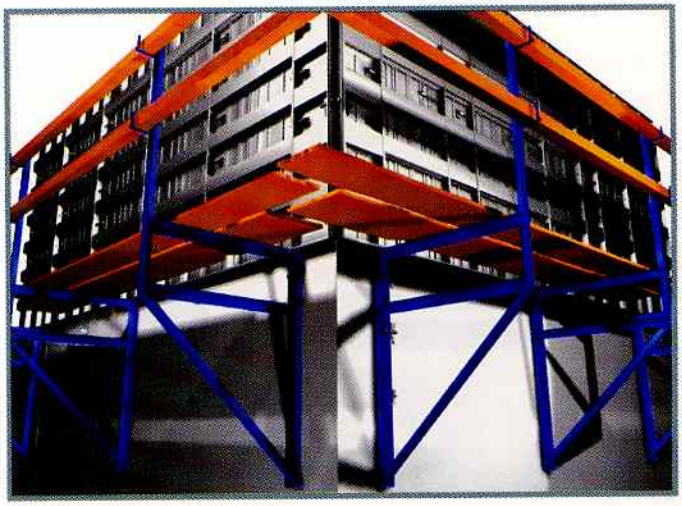
SUPPORT ACCESSORIES

Exterior Scaffold

Scaffolds are in general support accessories that besides serving as an exterior wall platform for the ladders also position and support upper floors.



The supervisor must assure the correct use of these platforms which are correctly installed over two ties with respective clips and stays. At the same time the installation of life-lines should be checked to guarantee the safety of the workers on them.



FORSA supplies 2 sets of perimeter scaffolds used for setting up the first and second day.

OTHER SYSTEMS

Thermic Isolation in Walls

FORSA uses the following system when thermic isolation is required:

STEP 1: verify the position of all re-enforced ironwork and the installation of steel mesh. Then proceed to install wire mesh with bars of 6 mm diameter towards the resistant side of the wall. This mesh will serve to support the column to be placed.

STEP 2: After placing the column, install 'U' sheetmetal of galvanized steel forming a frame for doors and windows to guarantee measurements.

The thickness of the column depends on the thermic grade.

'U' sheetmetal of galvanized steel

STEP 3: Install the separators of the mesh, the column and the 'U' of structural steel to guarantee the separation between the 2 structural wire mesh elements. Finally proceed with the installation of the panels.

Floors Over Cinderblock Walls

FORSA has designed a system for pouring concrete floors over cinderblock walls. The objective is to facilitate the whole process of construction where time is important.

This system is based on floor panels supported with transition panels where the base is supported at points around the whole perimeter.

It is very important those cinderblock walls are measured off with a lead deadweight. A perfect leveling of the upper cinderblocks is not required because they are already aligned by the poured concrete.

OTHER SYSTEMS

Columns, beams and floors

The FORSA system permits the construction of columns, beams and floors combined with the wall panels. All panels are made of aluminum profiles. Assembly accessories are made of high resistant steel that is thermically treated. Columns are formed using panels and angles.

FORSA delivers aluminum transition panels which can handle all the beam pieces. Later the floor system is installed with all its pointwork.

And the same system proceeds floor by floor.

Kinds of Columns

With aluminum panels, FORSA can fabricate all kinds of columns that are square, round or oval shaped.

Vertical and horizontal re-enforcement are placed according to the structural design.

SPECIAL DESIGNS

FORSA designs and fabricates all kinds of decorative and architectural details according to the specifications of the building plans.

We are capable of fabricating circular or square window with borders of different dimensions with or without decorative lintels.

With FORSA panels it is possible to construct streetside fronts that are curved, straight or in different configurations. Circular and straight steel molds are fastened to the front wall panels where prefabricated details can later be installed such as gargoyles.

Decorative lintels can be fabricated curved or straight according to the needs of our customers.