Detail of Mivan Shuttering

1) Deck Panel: - It forms the horizontal surface for casting of slabs. It is built for proper safety of workers.

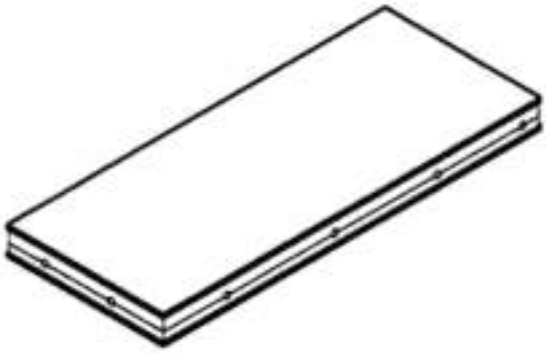


FIG 3.9: - DECK PANEL

2) Deck Prop: - It forms a V-shaped prop head. It supports the deck and bears the load coming on the deck panel.

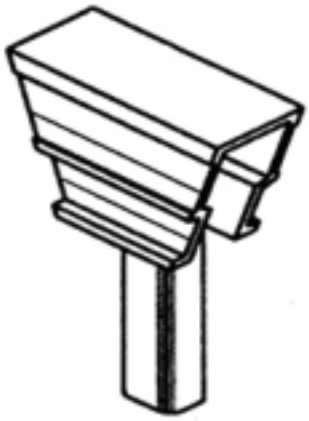


FIG 3.10: -DECK PROP

3) Prop Length: - It is the length of the prop. It depends upon the length of the slab.

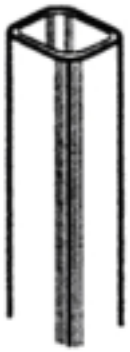


FIG 3.11: - DECK PROP LENGTH

4) Deck Mid – Beam: - It supports the middle portion of the beam. It holds the concrete.

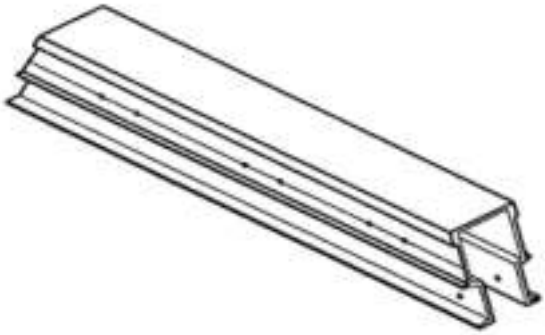


FIG 3.12: - DECK MID-BEAM

5) Soffit Length: - It provides support to the edge of the deck panels at their perimeter of the room.

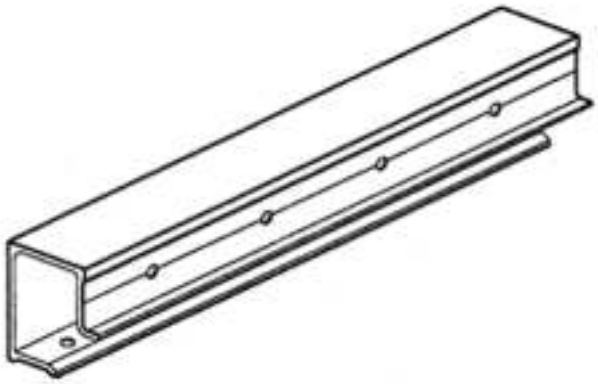


FIG 3.13: - SOFFIT LENGTH

6) Deck Beam Bar: - It is the deck for the beam. This component supports the deck and beam.

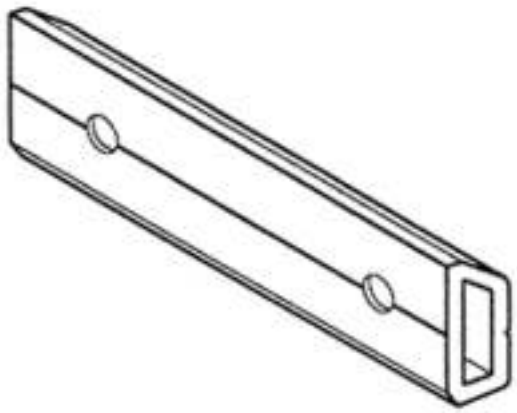


FIG 3.14: -DECK BEAM BAR

) Beam Side Panel: - It forms the side of the beams. It is a rectangular structure and is cut according to the size of the beam

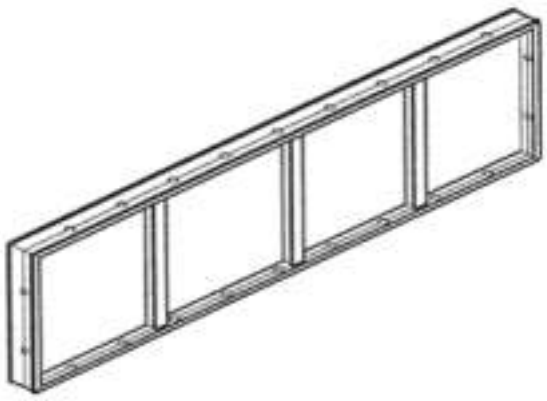


FIG 3.5: BEAM SIDE PANEL

2) Prop Head for Soffit Beam: - It forms the soffit beam. It is a V-shaped head for easy dislodging of the formwork.

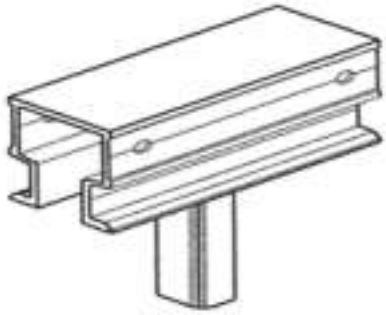


FIG 3.6: PROP HEAD FOR SOFFIT BEAM.

3) Beam Soffit Panel: - It supports the soffit beam. It is a plain rectangular structure of aluminium.

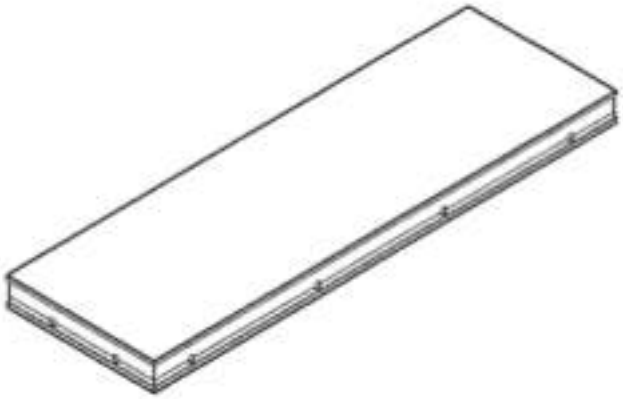


FIG 3.7: BEAM SOFFIT-PANEL

4) Beam Soffit Bulkhead: - It is the bulkhead for beam. It carries most of the bulk load.

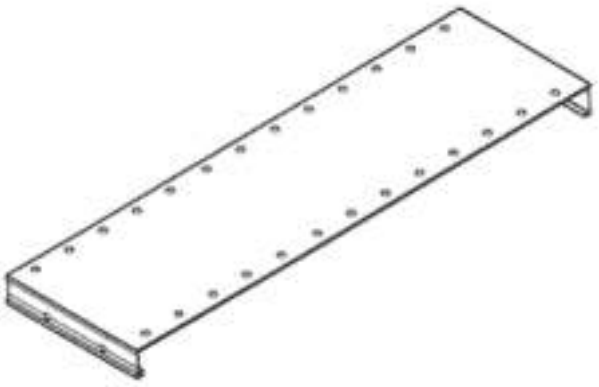


FIG 3.8: - BEAM SOFFIT BULKHEAD

1) Internal Soffit Corner: - It forms the vertical internal corner between the walls

and the beams, slabs, and the horizontal internal cornice between the walls and the beam slabs and the beam soffit.

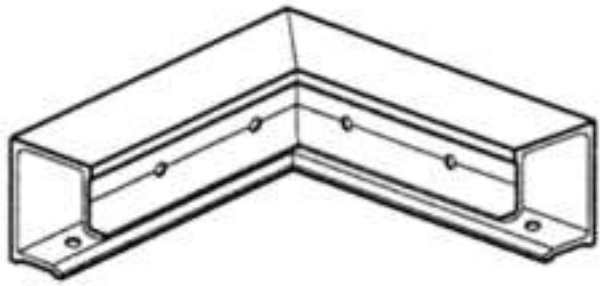


FIG 3.15: -INTERNAL SOFFIT CORNER

2) External Soffit Corner: - It forms the external corner between the components

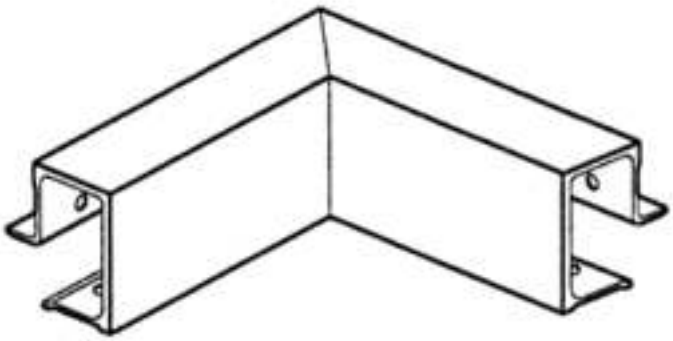


FIG 3.16: -EXTERNAL SOFFIT CORNER

3) External Corner: - It forms the external corner of the formwork system.

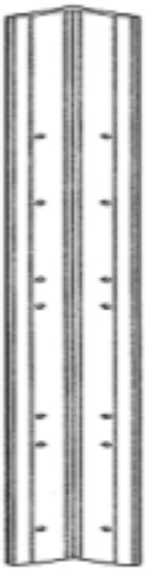


FIG 3.17: - EXTENAL CORNER

4) Internal Corner: - It connects two pieces of vertical formwork pieces at their exterior intersections. Fig 3.18

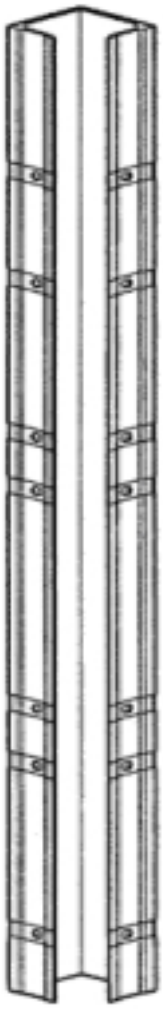


FIG 3.18: - INTERNAL CORNERS

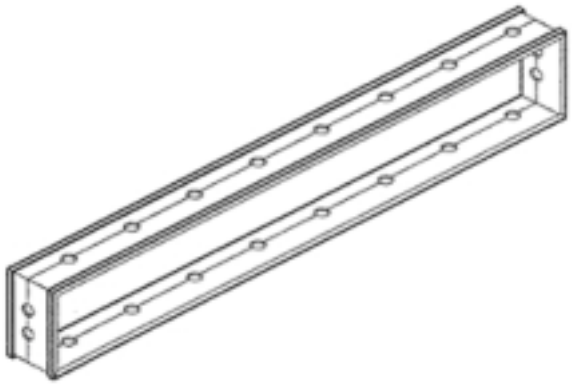
1) Wall Panel: - It forms the face of the wall. It is an Aluminium sheet properly cut to fit the exact size of the wall

WALL PANEL

2) Rocker: - It is a supporting component of wall. It is L-shaped panel having allotment holes for stub pin.

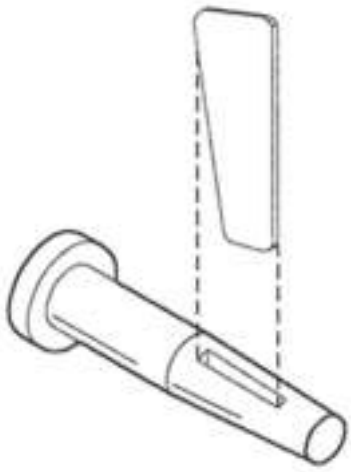
ROCKER

3) Kicker: - It forms the wall face at the top of the panels and acts as a ledge to support



KICKER

4) Stub Pin: - It helps in joining two wall panels. It helps in joining two joints

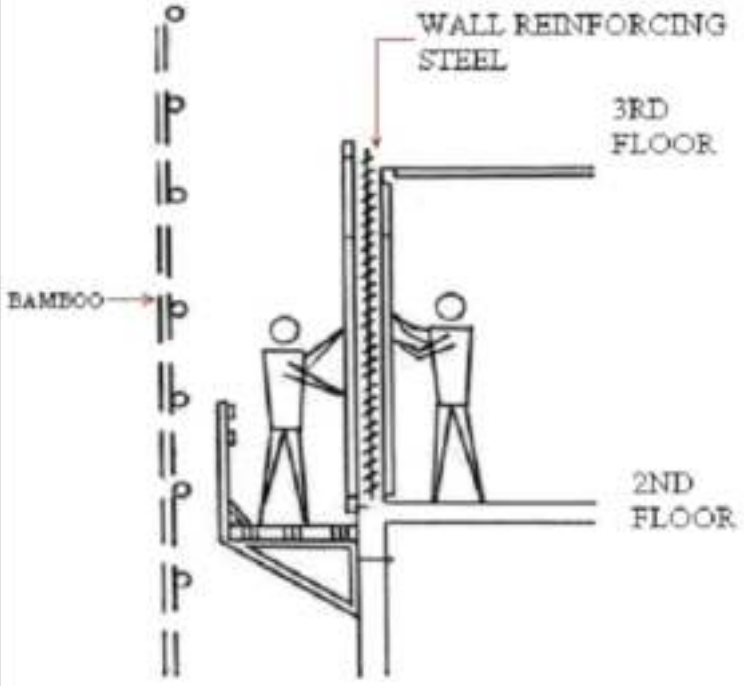


STUB PIN

Erecting formwork for Construction

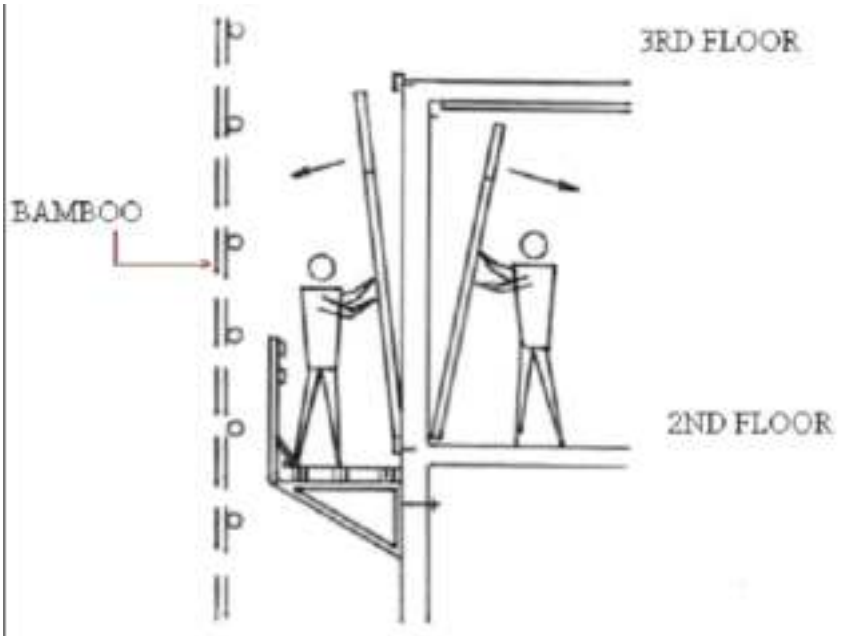
The formwork is designed using the most economical assortment of panel sizes with the help of the state-of-the art design software. The use of the software along with the experience and skill of the designers ensures an efficient construction process by incorporating the optimum assembly procedures, economical panel selection and ultimately minimizing capital and operational costs.

SEQUENCE FOR STRIKING AND ERECTING THE WALL MOUNTED ON WORKING PLATFORM



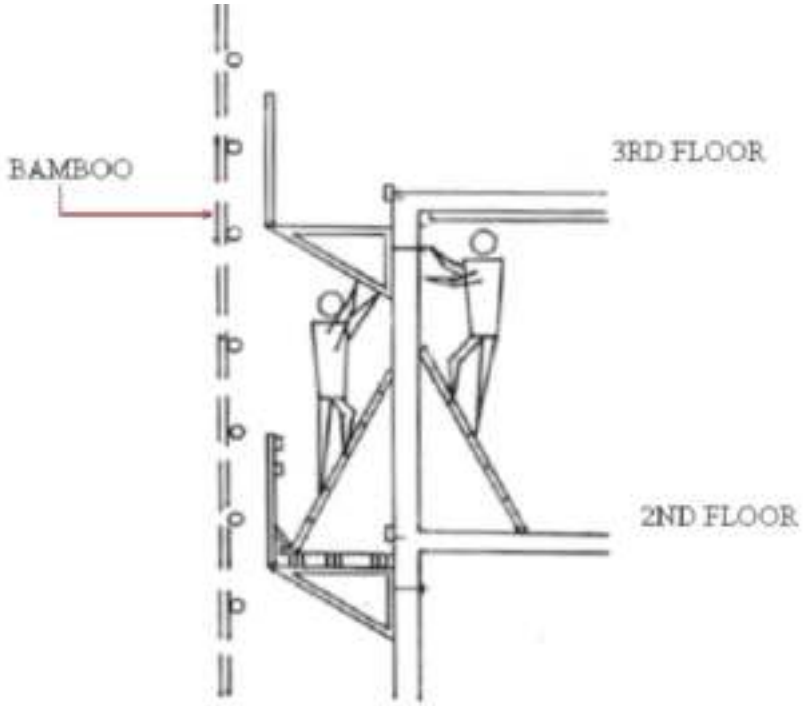
ERECTION OF PLATFORM ON 2ND FLOOR

Erection of Platform



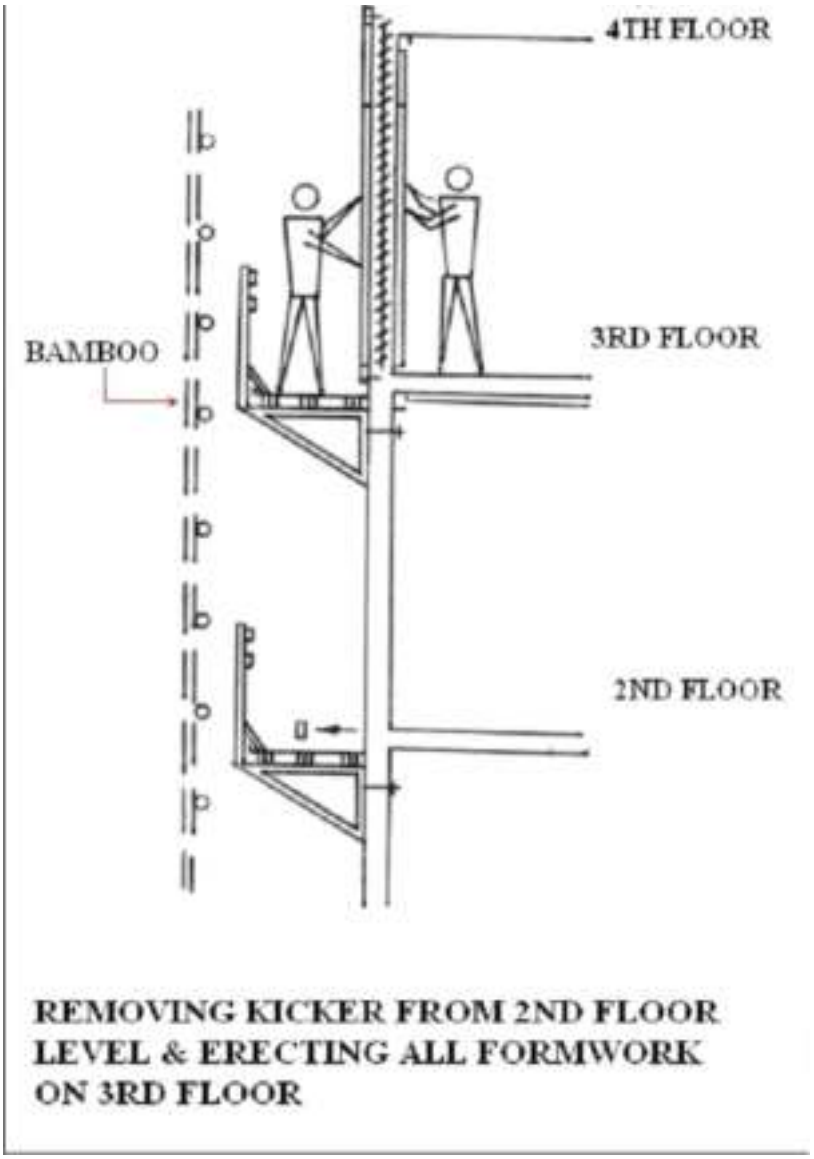
STRIKING OF ALL FORMS CAN BE DONE WITHIN 10-15 HOURS. THE ONLY TOOL REQUIRED FOR DISMANTLING IS HAMMER.

Striking of formwork



POSITONING OF WORKING PLATFORM BRACKET ON 3RD FLOOR LEVEL AND SECURING NUTS ON TIE ROD ON INSIDE THE BUILDING.

Positioning of Platform



Removal of Kicker

Innovation in Construction Technology

he traditional mode of construction for individual houses comprising load bearing walls with an appropriate roof above or reinforced concrete (RC) framed structure construction with infill masonry walls would be totally inadequate for mass housing construction industry in view of the rapid rate of construction. Further, such constructions are prone to

poor quality control even in case of contractors with substantial resources and experience.

"For undertaking mass housing works, it is necessary to have innovative technologies which are capable of fast rate construction and are able to deliver good quality and durable structure in cost effective manner"…..(Shrikande., et.al,2005)

Several systems are adopted at different places in the world; eventually the systems which are reasonably economical and easy for operation with skilled labor are useful in India. Certain systems are in vogue and more and more contractors are trying to bring in new technologies. These are essentially based on the basis of mode of construction, namely, pre-cast construction or in-situ construction.

Cast-in-Situ Construction

Pre-cast and cast-in-situ are techniques that are used for quick construction. Pre-cast includes the wall-panel units and slab units directly added to building structure. The use of aluminium also evolved as one of the technique for quick construction by use of aluminium and steel (tunnel) formwork. As a matter of fact the cost of the formwork may be up to 25% of cost of the structure in building work, and even higher in bridges, it is thus essential that the forms are properly designed to effect economy without sacrificing strength and efficiency.

Certain patented systems based on imported technologies such as "Mascon System" (Canada), "Mivan System" (Malaysia) have come on the Indian scene in recent years. In these systems traditional column and beam construction is eliminated and instead walls and slabs are cast in one operation at site by use of specially designed, easy to handle (with minimum labor and without use of any equipment) light weight pre-engineered aluminium forms. Rapid construction of multiple units of a repetitive type can be achieved with a sort of assembly line production by deployment of a few semi-skilled labors.

The entire operation essentially comprises fitting and erecting the portion of shuttering as already determined (the optimization in use is determined by appropriate planning) and then carrying out concreting of the walls and slabs. Props are so designed that they stay in position while de-shuttering of slabs and/or takes place. The dimensional accuracy of the formwork is of high order. Therefore any possibility of errors does not rise.

"3-S" SYSTEM OF PRECAST CONSTRUCTION

An engineered system of building construction, namely "3-S" system was developed by B.G.SHIRKE CONSTRUCTION TECH LTD., for achieving, speed, strength, safety and economy in construction practices. The system involves structural elements such as pre-cast hollow column shells pre-cast concrete beams, light weighed reinforced cellular autoclaved concrete slabs for floor and roofs constituting the basic structural formwork. The "3-S" system involves activities for construction of building such as:

I. Cast in-situ sub-structure including foundations, stem columns, plinth beams, plinth masonry.
II. Erection of partial pre-cast components, jointing of these components using cast in-situ concrete with appropriate reinforcement.
III. Lying of reinforced cast in-situ screed over slab panels, construction of panels, construction of walling, flooring, plastering, water proofing etc.

Achieving the "3-S" system in the MIVAN formwork is quite easy. MIVAN formwork has got the unsurpassed speed of construction due to saving time for required time in masonry and plastering. The strength of raw aluminium is very less but when alloyed with other materials prove to be strong enough to use as a formwork . To ensure safety in the site, an integrated safety/ working platform is developed which ensures labor safety during erection and striking of the formwork. Economy is also one of the main factors of any system. The MIVAN formwork proves to cost efficient as it can be used efficiently for 250 times.

Present Technologies Available in INDIA

Some of the advanced technologies of formwork catering to the speed of construction are given below:
To name a few:-

1) **The Prefabrication Technology**

The Pre-cast concrete elements in roofs, floors and in walls have become more common as these eliminate shuttering; centering & plastering labor and saves material cost.

Prefabricated Technology (Raymond, 2001)

2) Tunnel Formwork Technology

It is a technology constructing large no of housing within short time using steel forms to construct walls & slabs in one continuous pour.

Tunnel formwork (Raymond, 2001)

3) Outinard Technology

Outinard's superior engineering, the use of high quality steel and High Performance quality control result in a vastly superior Wall Form system.

Outinard Technology (Raymond, 2001)

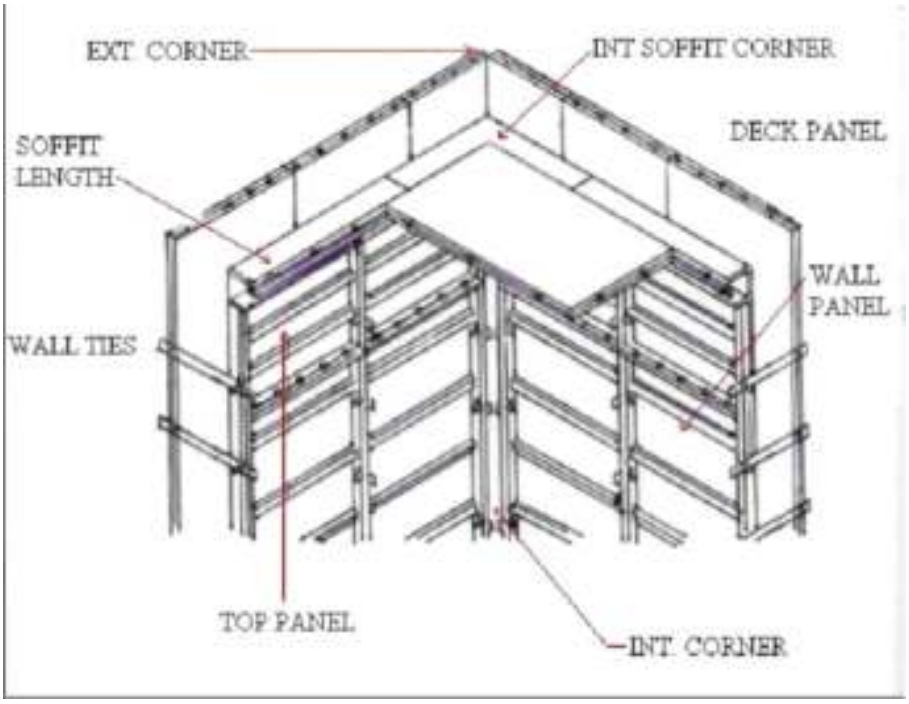
4) Mascon Technology

The Mascon Construction System is a system for forming the cast in-place concrete structure of a building. It is also a system for scheduling and controlling the work of other construction trades such as; steel reinforcement, concrete placement, and mechanical and electrical trades.

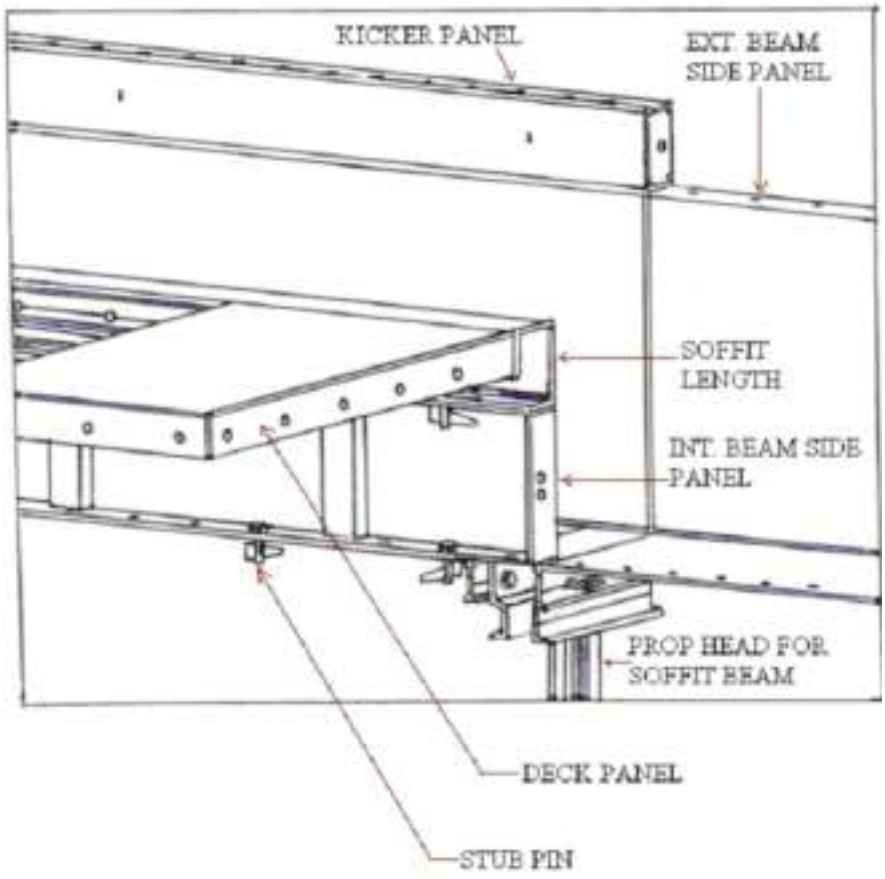
Mascon Technology. (Raymond, 2001)

Formwork Assembly

MIVAN aims in using modern construction techniques and equipment in all its projects. On leaving the MIVAN factory all panels are clearly labeled to ensure that they are easily identifiable on site and can be smoothly fitted together using the formwork modulation drawings. All formwork begins at a corner and proceeds from there.



Wall Assembly Details



BEAM ASSEMBLY DETAILS

SIMPLICITY – PIN AND WEDGE SYSTEM

The panels are held in position by a simple pin and wedge system that passes through holes in the outside rib of each panel. The panels fit precisely, simply and securely and require no bracing. Buildings can be constructed quickly and easily by unskilled labour with hammer being the only tool required. Once the panels have been numbered, measuring is not necessary. As the erection process is manually, tower cranes are not required. The result is a typical 4 to 5 day cycle for floor – to – floor construction.

EFFICIENT – QUICK STRIP PROP HEAD:

One of the principal technical features which enables this aped to be attained using a single set of formwork panel is the unique V shaped a prop head which allows the ‘quick strip’ to take place whilst leaving the propping undisturbed.

The deck panels can therefore be resumed immediately.

Construction with MIVAN

A) PRE – CONCRETE ACTIVITIES

a) Receipt of Equipment on Site – The equipments is received in the site as ordered.
b) Level Surveys – Level checking are made to maintain horizontal level check.
c) Setting Out – The setting out of the formwork is done.
d) Control / Correction of Deviation – Deviation or any correction are carried out.
e) Erect Formwork – The formwork is erected on site.
f) Erect Deck Formwork – Deck is erected for labours to work.
g) Setting Kickers – kickers are provided over the beam.

After the above activities have been completed it is necessary to check the following.

1. All formwork should be cleaned and coated with approved realize agent.
2. Ensure wall formwork is erected to the setting out lines.
3. Check all openings are of correct dimensions, not twist.
4. Check all horizontal formwork (deck soffit, and beam soffit etc.) in level.
5. Ensure deck and beam props are vertical and there is vertical movement in the prop lengths.
6. Check wall ties, pins and wedges are all in position and secure.
7. Any surplus material or items to be cleared from the area to be cast.
8. Ensure working platform brackets are securely fastened to the concrete.

B) ON CONCRETE ACTIVITIES

At least two operatives should be on stand by during concreting for checking pins, wedges and wall ties as the pour is in progress. Pins, wedges or wall ties missing could lead to a movement of the formwork and possibility of the formwork being damaged. This – effected area will then required remedial work after striking of the formwork.

Things to look for during concreting:

i. Dislodging of pins / wedges due to vibration.
ii. Beam / deck props adjacent to drop areas slipping due to vibration.
iii. Ensure all bracing at special areas slipping due to vibration.
iv. Overspill of concrete at window opening etc.

POST – CONCRETE ACTIVITIES

i) Strike Wall Form- It is required to strike down the wall form.
ii) Strike Deck Form- The deck form is then removed.
iii) Clean, Transport and stack formwork
iv) Strike Kicker Formwork – The kicker are removed.
v) Strike wall – Mounted on a Working Platform the wall are fitted on next floor.
vi) Erect Wall – Mount Working Platform and the wall is erected.

Normally all formwork can be struck after 12 hours.

The post-concreting activities includes:

CLEANING

All components should be cleaned with scrapers and wire brushes as soon as they are struck. Wire brush is to be used on side rails only.

The longer cleaning is delayed, the more difficult the task will be. It is usually best to clean panels in the area where they are struck.

TRANSPORTING

There are basic three methods recommended when transporting to the next floor:

i. The heaviest and the longest, which is a full height of wall panel, can be carried up the nearest stairway.

ii. Passes through void areas.

iii. Rose through slots specially formed in the floor slab for this purpose. Once they have served their purpose they are closed by casting in concrete filter.

STRIKING

Once cleaned and transported to the next point of erection, panels should be stacked at right place and in right order. Proper stacking is a clean sign of a wall – managed operation greatly aids the next sequence of erection as well as prevents clutters and impend other activities.

Speed of Construction

Work cycle

MIVAN is a system for scheduling & controlling the work of other connected construction trades such as steel reinforcement, concrete placements & electrical inserts. The work at site hence follows a particular sequence. The work cycle begins with the deshuttering of the panels. It takes about 12-15hrs. It is followed by positioning of the brackets & platforms on the level. It takes about 10-15hrs simultaneously.

The deshuttered panels are lifted & fixed on the floor .The activity requires 7-10 hours. Kicker & External shutters are fixed in 7 hrs. The wall shutters are erected in 6-8 hrs One of the major activity reinforcement requires 10-12 hrs. The fixing of the electrical conduits takes about 10 hrs and finally pouring of concrete takes place in these.

This is a well synchronized work cycle for a period of 7 days. A period of 10-12 hrs is left after concreting for the concrete to gain strength before the beginning of the next cycle. This work schedule has been planned for 1010-1080 sq m of formwork with 72-25cu m of concreting & approximate reinforcement.

The formwork assembling at the site is a quick & easy process. On leaving the MIVAN factory all panels are clearly labeled to ensure that they are easily identifiable on site and can be smoothly fitted together using formwork modulation drawings. All formwork begins from corners and proceeds from there.

The system usually follows a four day cycle: -

Day 1: -The first activity consists of erection of vertical reinforcement bars and one side of the vertical formwork for the entire floor or a part of one floor.

Day 2: -The second activity involves erection of the second side of the vertical formwork and formwork for the floor

Day 3: - Fixing reinforcement bars for floor slabs and casting of walls and slabs.

Day 4: -Removal of vertical form work panels after 24hours, leaving the props in place for 7 days and floor slab formwork in place for 2.5 days.

Design Aspects of MIVAN

Buildings are compared as:

i) Conventional RC columns, beams, and slab construction
(RC moment resisting framed structure)

ii) RC load-bearing walls and slabs.

In the case of RC moment-resisting framed structures, the horizontal forces due to wind or earthquake are resisted by the frames resulting in the bending moments in columns to resist bending moment and vertical loads would be more than that required to resist vertical loads without bending moment. Similarly, additional reinforcement will be required in beams at supports.

In the case of RC load-bearing walls, monolithic casting of slab along with RC walls results in a box type structure, which is very strong in resisting horizontal forces due to wind or earthquake. In view of large depth of shear walls, the resulting stresses due to bending moment and vertical loads are smaller and in many cases, concrete alone is capable of resisting these forces.

On evaluating these alternatives, it is seen that the beam column frame system in the following.

i) Performs poorly against earthquake forces compared to RCC wall and slab construction. Recent changes in the IS Codes, as well as recommended good practice demand provision of additional reinforcement comply with ductility requirements.

ii) The sizing and detailing of columns needed to be –that they are 20% stronger than beams they support.

Economics of MIVAN formwork

Table 3.8.2: - Effect of construction speed on the cost of flat.
(*Courtesy: Jogeswari Vikhroli link road, NNP Nivara Parishad,MMRDA)*

Description	*Construction Speed*			
	A	*B*	*C*	*D*
Construction speed	3 flats/day	4 flats/day	5 flats/day	6 flats/day
Period of const.	23 months	18.7 months	16.2 months	14.2 months
Forming area	741.9	989.2	1236.5	1483.8
Misc formwork	55.5	55.5	55.5	55.5
Total formwork to be ordered	797.4	1044.7	1292	1539
Cost of formwork	14353200	18804600	23256000	27707400
Two third of the loaded cost	9568800	12536400	1550400	18471600
Profit & Overhead 15%	1435320	1880460	2325600	2770740
Total Rs.	11004120	14416860	17829600	21242340
Cost per flat, Rs	9825	12872	15919	18966

Note:
Construction period is calculated as follows:
Average 22 pouring of concrete are considered per month.
About 3 months are required for mobilization and getting plinths ready.
About 3 months are required for finishing.
Cost of formwork = $ 360; dollar Exchange Rate = Rs50; No of flats = 1120
(Weight of aluminium formwork = 24 kg/m²).

Limitations of MIVAN Formwork

Even though there are so many advantages of MIVAN formwork the limitations cannot be ignored. However the limitations do not pose any serious problems. They are as follows: -

1) Because of small sizes finishing lines are seen on the concrete surfaces.

2) Concealed services become difficult due to small thickness of components.

3) It requires uniform planning as well as uniform elevations to be cost effective.

4) Modifications are not possible as all members are caste in RCC.

5) Large volume of work is necessary to be cost effective i.e. at least 200 repetitions of the forms should be possible at work.

6) The formwork requires number of spacer, wall ties etc. which are placed @ 2 feet c/c; these create problems such as seepage, leakages during monsoon.

7) Due to box-type construction shrinkage cracks are likely to appear.

8) Heat of Hydration is high due to shear walls.

Remedial Measures

In external walls, ties used in shutter connection create holes in wall after deshuttering. These may become a source of leakage if care is not taken to grout the holes. Due to box-type construction shrinkage cracks are likely to appear around door and window openings in the walls. It is possible to minimize these cracks by providing control strips in the structure which could be concreted after a delay of about 3 to 7 days after major concreting. The problem of cracking can be avoided by minimizing the heat of hydration by using flyash.

CASE STUDY: MIVAN Formwork

COMPLETED PROJECT WITH MIVAN FORMWORK

SPAGHETTI at KHARGHAR

Location:	**Navi – Mumbai.**
Country:	**India.**
Client:	**CIDCO and L&T ECC**
Scope:	**4 No. Blocks on each floor of 4, 5, 6, and 7 Storey Apts.**
Design:	**Load Bearing wall & slab.**
Cycle:	**4 days per floor.**
System formwork:	**6000 sq.mt.**
Contract Start Date:	**November 2003.**
Project Type (s):	**High rise, residential building having 16 buildings in all.**
Architect:	**Hafeez Contractor**

The building in plan made an angle of 1720, 168º and 1610 with each other. The quality of construction is maintained at the site with the use of RMC. The RMC plant has a capacity of producing 90 cubic meter of concrete of concrete per hour. The concrete used was of 25 grades. The construction from foundation up to stilt is done with conventional practice while the upper floors are constructed using 'MIVAN' technology. The construction company has imported three sets of aluminium forms. The cost is about Rs.500/- sq.ft as against Rs.650/- sq.ft using conventional methods. Thus it can be said that even though the cost of construction is little bit high it has an unmatched quality compared to the conventional method.

MIVAN formwork played a vital role in the construction of the project. The project was completed not only on stipulated period of time but also paid off with its attributes. Speedy & quality dwelling units were provided to the people of low income groups at very reasonable costs. MIVAN is a definitely future of this ever growing construction industry with lots of project still awaiting its touch of excellence.

Conclusion and Inference on the effectiveness of Mivan Formwork

The task of housing due to the rising population of the country is becoming increasingly monumental. In terms of technical capabilities to face this challenge, the potential is enormous; it only needs to be judiciously exploited.

Civil engineers not only build but also enhance the quality of life. Their creativity and technical skill help to plan, design, construct and operate the facilities essential to life. It is important for civil engineers to gain and harness the potent and versatile construction tools.

Traditionally, construction firms all over the world have been slow to adopt the innovation and changes. Contractors are a conservative lot. It is the need of time to analyze the depth of the problem and find effective solutions. MIVAN serves as a cost effective and efficient tool to solve the problems of the mega housing project all over the world. MIVAN aims to maximize the use of modern construction techniques and equipments on its entire project.

We have tried to cover each and every aspect related to aluminium (MIVAN) form construction. We thus infer that MIVAN form construction is able to provide high quality construction at unbelievable speed and at reasonable cost. This technology has great potential for application in India to provide affordable housing to its rising population.

Thus it can be concluded that quality and speed must be given due consideration with regards to economy. Good quality construction will never deter to projects speed nor will it be uneconomical. In fact time consuming repairs and modification due to poor quality work generally delay the job and cause additional financial impact on the project.

Some experts feel that housing alternatives with low maintenance requirements may be preferred even if at the slightly may preferred even if at the higher initial cost.

- Formwork for the New Age
  MIVAN Formwork, comparison of aluminum formwork technology & conventional system, reduced total cost of a ground-plus-seven building, Mivan's box type construction proves much advantageous, earthquake resistant structure
  - Introduction to Construction Industry
    A brief introduction to construction industry globally in general, and India in particular. mivan formwork is discussed in this report.
    - Housing Scenario in India
      Housing scenario in India. mivan formwork is discussed in this

report.

        - Innovation in Construction Technology
          Innovation in construction technology. Mivan formwork is discussed in this report.

    - What is a Formwork?
      What is a formwork? Why is it important? get answers to all these questions... Mivan formwork is discussed in this report.

        - Requirements of a good formwork
          What are the Requirements of a good formwork? Mivan formwork is discussed in this report.

        - Classification of Formwork
          What are the different types of formwork, and how can they be classified... Mivan formwork is discussed in this report.

        - Loads acting on Formwork
          What are the different Loads acting on Formwork? Mivan formwork is discussed in this report.

        - Aluminium Formwork

          All the information about Aluminium Formwork. Mivan formwork is discussed in this report.

        - Comparison - Aluminum Formwork VS Conventional Formwork
          Comparative Analysis and study of Aluminium Formwork. Comparison with Conventional formwork. Mivan formwork is discussed in this report.

    - What is MIVAN Formwork?
      What is MIVAN Formwork? Why is it revolutionary? History and background of MIVAN Formwork.

        - Modular Aluminium Formwork
          Modular Aluminium Formwork. Mivan formwork is discussed in this report.

        - Formwork Assembly
          MIVAN Formwork Assembly information

        - Construction with MIVAN
          How can we use MIVAN for construction?

        - Erecting formwork for Construction
          Erection of MIVAN Formwork.

- Components of MIVAN Formwork
  Different Components of MIVAN Formwork.

    - Beam Components
      Beam Components of MIVAN Formwork.

    - Deck Components
      Deck Components of MIVAN Formwork.

    - Other Components
      Other Components of MIVAN Formwork.

    - Wall Components
      Wall Components of MIVAN Formwork.

- Software Application to Formwork Design
  Software Application to Formwork Design
- Site Management
  Why is Site Management an essential component to efficient construction?
- Speed of Construction
  how does the use of MIVAN Formwork affect Speed of Construction?
- Design Aspects of MIVAN
  Design Aspects of MIVAN
- Economics of MIVAN formwork
  What makes use of MIVAN formwork more economical than conventional formwork?
- Quality Advantage of MIVAN
  How does MIVAN formwork improve quality of Construction?
- Limitations of MIVAN Formwork
  What are the Limitations of MIVAN formwork?
- CASE STUDY: MIVAN Formwork
  A CASE STUDY: MIVAN Formwork SPAGHETTI at KHARGHAR in Navi Mumbai. A design of Hafez Contractor... how the use of MIVAN improved the overall quality of the project and brought down costs, as well as speeded u construction.
- Conclusion - MIVAN Formwork
  Conclusion - Why is MIVAN Formwork superior to conventional formwork?
- References
  References in making the report- MIVAN Formwork

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Mivan Formwork System Accessories

Share:

We are offering a wide range of Mivan products which are used in varios industries as per their applications.

Standard Pin

We are offering standard pins which are known for its high tensile strength and corrosion resistance

Request for Quotation

Stub pin

Our prices compare most favorably with quotations you can get from others.

Request for Quotation

Wedge Pin

We offer high quality wedge pin.

Enlarged View

Request for Quotation

Enlarged View

Wall Tie

They are also called wall ties, which are manufactured to meet the requirement of today's various pouring methods they are made of cold rolled steel.we continually prefer quality control testing to ensure that all of our ties yield a minimun pull strength.

Request for Quotation

Enlarged View

Long Pin

We offer high quality Pins to our clients.

Request for Quotation

Industrial Fasteners

Our clients can avail from us a wide range of fasteners which is manufactured using superior quality raw material.These fasteners are highly durable and resistant to corrosion.

Enlarged View

Request for Quotation

Enlarged View

Threaded Rods

Threaded rods are used for centrel AC also used in various other industry applications. We offer threaded rods that are made using quality raw material including high strength steel. These threaded rods are also used for MALLS and construction industries for plumbing and electrical purposes

Request for Quotation

Enlarged View

Wedge Bolt

Wedge bolt is a connection device for modular concrete forms and is used to tighten adjoining and securing concrete forms in place. It is made up of high strength heat treated steel.

Request for Quotation

Enlarged View

Expansion Anchor Bolt

We offer a wide array of anchor fasteners to choose from. These fasteners are available in various designs and sizes depending on the area of application. Fasteners are mostly used in heavy machinery installation and thus need to be highly resistant to corrosion. Anchor fasteners also need high strength capabilities to facilitate the installation of heavy machinery.

Request for Quotation

Enlarged View

Welding Stud

We specialize in offering a wide range of special metal Studs that are fabricated from high graderaw material. Known for their attributes of light weight, corrosion resistance and rust-resistance, these are available in various sizes and specifications.

Request for Quotation

B-form Tie

We offer B-Form tie.

Enlarged View

Request for Quotation

B-Nut

We are offering high tensile brass nuts. Our specialized range of these nuts can be used for attaching machine's thread fastener.

Request for Quotation

Chain Roller

We offer efficient and durable range of chains roller that are used in many power transmission designs.

Enlarged View

Request for Quotation

Combo Pin

This pin passes completely through 2" aluminum fillers and connects adjoining panels with a wedge.

Request for Quotation

Flathead Pin

The **flathead pin** is used when pinning through a single rail or when placing concrete against an existing wall....

Request for Quotation

D-Conev (45mm)

Our product D-cone is used to concrete construction.

Request for Quotation

Wedge

We are instrumental in offering a wide range of wedge that is used to secure many types of timber formworks and prevent concrete blow outs. Developed with the aid of latest technology, these wedges can easily drill a hole into the slab, put a steel pin into the hole and create a well defined edge. Being sturdy in construction and dimensionally accurate, these wedges are extensively used in construction industry to lift and align steel plates and separate flanges on pipe when replacing gaskets.

Request for Quotation

D-Cone(35mm)

We are offering D-cone which is used to concrete construction....

Request for Quotation

Implosion Nut

Our range of implosion nuts are made from high quality steels.

Enlarged View

Request for Quotation

Enlarged View

Clamp & Accessories

We are offering high quality clamps & accessories.

Features:

- Very easy to operate
- Substantially cost saving and reduce the working time
- Increased working safety
- Increased work efficiency

Request for Quotation

Loading..

‹ PREVIOUS NEXT ›

Share:

Scaffolding Products

Durability and reliability are some of the features that have made our range of scaffolding in the market. Customized as per the specifications of our clients, these are appreciated for high performance.

Cuplock

We have been catering to wide requirements of our clients in the construction industry by manufacturing a wide range of cuplock scaffolding. Fabricated as per the specifications of our clients these are acclaimed for high durability and wear resistance.Cuplock Standards have cup joints welded at every 500mm or 1000mm intervals, thus offering levels for working & also for bracing the standards while using in the slab support when loaded.These scaffolding cuplock are available in the following sizes:

- 2500 mm
- 2000 mm
- 1500 mm
- 1250 mm or as required

Request for Quotation

Standards & Ledger

Durability and reliability are some of the features that have made our range of wedge scaffolding in the market. Customized as per the specifications of our clients, these are appreciated for high performance.Wedgelock Standards are made from standard scaffold tubes or heavy duty tubes depending on the loading conditions. They have V pressing welded at 495 mm centres which provides 4 way connections for the ledgers. When adjustable stirrup heads are to be used over the standards, open ended standards are used at the top of the scaffold.

Specifications :

Code No.	Effective Length (M)	
1059	3000	With spigot end
1059	2000	With spigot end
1060	2000	Open ended
1061	1500	Open ended
1062	1000	

Request for Quotation

Adjustable Jack

Adjustable base jack has a solid steel stem/hollow tube stem of 32/36/38mm diameter which has a nut restraint to ensure the stem always has a minimum engagement into the Standard of 150mm. The Adjustable base jack is capable of accepting twin 100mm. wide bearers.

Request for Quotation

Adjustable Stirrup Head

Designed to support joists. Heads can be installed in to either a prop or scaffold tube.

This unit provides up to 350mm of adjustment.

- Sizes 32mm Dia, 225 mm adj., 350 mm long
- Sizes 32mm Dia, 350 mm adj., 450 mm long
- also available in 36 mm Dia solid bar with jack nut (Lug type)

Request for Quotation

Base Plate

Specifications:

Sizes: Plate size 150 mm x 150 mm x 6 mm with spigots/pins for fixing with 40 N. B. scaffolding pipe

Request for Quotation

Cross Brace & Diagonal Brace

Cross Brace :It can be used in bracing in the width of the scaffold. The pivoting wedge lock fitting locate in the 'V' pressings on the standards. It can be used in the same plane as the transom.

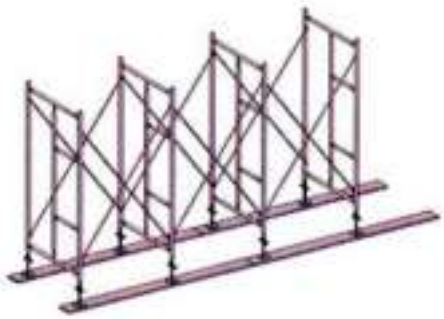
Diagonal Brace:The Diagonal Brace is used for bracing the scaffolding diagonally with the pivoting wedge lock fitting by inserting in the V pressing on standard.

Request for Quotation

Bridging & Adjustable Ledger

Scaffolding bridging item are used to provide working platform complete with necessary guardrails for vehicle passage.

Request for Quotation



Frame System

Features:

- Our Frame system are Light Weight
- These Frame sets are Flexible, easy to install and dismantle
- Frame System are Dynamic, can be extended or joined with additional units
- Frame systems Can achieve a wider roof span
- Out Frame System Has higher safety factor
- Aesthetic frame systems, due to decorative geometrical structural pattern
- Best Frame System because of Fast site installation, without any disturbances to other site jobs

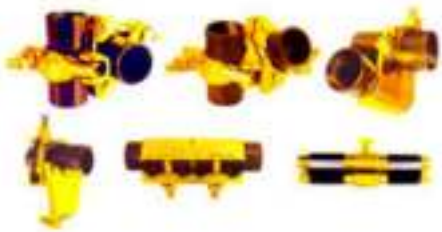
Request for Quotation

More Detailed Information

Forged Clamps

Our products are designed for fast, efficient on-site installation. Zinc-coated and chrome passivated (unless otherwise indicated on this website), for maximum corrosion prevention, they require virtually no maintenance. Additionally, all scaffold fittings are supplied with fully captive nuts. All our scaffold fittings are designed to accommodate British Standard 48.3mm O/D scaffold tube, unless otherwise stated. We operate a rigorous quality assurance policy. All products are produced in accordance with British and European standards and manufactured to the requirements of EN ISO 9001.

Request for Quotation



More Detailed Information

Pressed Steel Clamps

Our products are designed for fast, efficient on-site installation. Zinc-coated and chrome passivated (unless otherwise indicated on this website), for maximum corrosion prevention, they require virtually no maintenance. Additionally, all scaffold fittings are supplied with fully captive nuts. All our scaffold fittings are designed to accommodate British Standard 48.3mm O/D scaffold tube, unless otherwise stated. We operate a rigorous quality assurance policy. All products are produced in accordance with British and European standards and manufactured to the requirements of EN ISO 9001.

Request for Quotation

Ledger & Cantilever Frame

Ledgers have forged blade ends which fit in the cup joint on the standard. They can be used in variety of Ledger size combinations to suit required bay size.

Cantilever Frames support the formwork beyond the external periphery of the slab. The frames have blade ends for locating in the cup joint & accept adjustable jacks in three positions of 1.2m,.

Request for Quotation

Steel Platform Boards

SCAFFOLD BOARD This is manufactured in various lengths upto 12 Mtr. This has a width of 228 mm and 38 mm depth with antiskid surface on top. Can come with or without hooks to sit on the tubular or the angle transoms. Finish painted , pre-galvanised or hot dip galvanised.

Request for Quotation

One-two-three Board Bracket

This Bracket recieve 1, 2 or 3 Board of 9 inch width as per your requirement.

Request for Quotation

Beam Support Bracket

Beam Support Bracket are used to support the drop beams encountered within the regular slab support grid. This eliminates the need for the beam bottoms to be propped up from the ground. The Beam Brackets are capable of receiving adjustable jacks for reaching the beam bottom level.

Request for Quotation

Intermediate Transom

Intermediate Transom provides a safe mid-bay support for 38mm scaffold boards. They hold the ledgers in their jaw sections and prevent the central bending of the platform boards.

Request for Quotation

Adjustable Spans & Adjustable Props

Available with us is a wide range of spans and props which is fabricated using superior quality raw material. These are customized as per the specifications of our clients and are known to offer optimum performance even in rugged conditions.

Request for Quotation

Shuttering Clamp

We offer clients a wide range of shuttering clamps that are available in stainless steel finish. These are available in different dimensions including lengths like 400, 500, 600, 700, 800, 900, 1000, 1200, 1500, 1800 and 2000 mm. Further, we can also offer these in different widths and compressive strengths.

- length: 60 to 120 cms
- width: 25 to 30 mm
- thickness: 5, 6 & 8 m

Request for Quotation

Adjustable Telescopic Prop

HEAVY DUTY PROP**:**
Specifications:

Props-101
HEAVY DUTY PROP

Close Ht./ Open Ht. (Mtr.)	Wt. (Kg)
1.07/1.82	11
1.75/3.12	16.7
1.98/3.35	18.4
2.59/3.95	20.2
3.20/4.87	24.2

LIGHT DUTY PROP:
Specifications:

Props-102
LIGHT DUTY PROP

Close Ht./ Open Ht. (Mtr.)	Wt. (Kg)
0.25/0.50	3.3
0.50/0.80	4.1
0.70/1.30	5
1.00/1.80	5.9
1.60/2.90	9.7
2.00/3.60	10.7
2.50/4.50	11.7

3.00/5.00 13.4

Request for Quotation

Loading..

‹ PREVIOUS NEXT ›

Share:

Shuttering & Centering Materials

We are an authorised dealers of pragati densified shuttering plywood. Pragati manufactures a superior film faced densified shuttering plate (FFDSP) capable of a high level of performance for varied uses in the construction industry like building bridges, tunnels, heavy industries power plant, defense structures & other concrete structures.

Pragati Densified Shuttering Plywood

Pragati densified shuttering plywood is manufactured from selected veneers peeled from hardwood plantation and treated with specially manufactured phenolic resin for longer durability and better performance. The surface of Shuttering plywood is over laid with 1870 GSM Phenol Impregnated Film. The sides are resealed by acrylic paint to preserve moisture absorption and swelling. The entire process of manufacturing veneers, resins, film and densified plates is completed in-house using modern and well-equipped plant with German collaboration, shuttering plywood can be supplied in size upto 11’x5’

ADVANTAGES OF SHUTTERING PLYWOOD

Pragati FFDSP has 30% more layers of veneers resulting superior nailing, screw holding properties and load bearing capacity. The product has 300% more retention of resin then ISI grade shuttering and is therefore a better product than ISI grade plywood. Using pragati shuttering plywood results in substantial cost saving since it can be used up to 40 times for shuttering applications. It improves construction speed and reducers manpower requirements. It is the ideal framework material for precast, concrete molds since it is free from dents, non-corrosive and imparts and evenly fine finish on the concrete surface. This result in additional cost saving since no replastering or finishing is required.

USES OF SHUTTERING PLYWOOD

- In construction business for walls. Columns, slabs, beams etc.
- In chemical factories for packing.
- Truck body manufacturing

TECHNICAL PROPERTIES SHUTTERING PLYWOOD

Properties	Ref. Standard	Value
Density (gm/cc)	IS : 4990:1993	0.96
Tensile Strength (N/mm^2)		85
Along the grain		49
Across the grain		
Cross Breaking Strength	IS : 4990:	102
Along the grain	1993	67
Across the grain		
Glue Shear Strength		
Dry State		150
Along the grain	IS : 1734 part	140
Across the grain	4	140
Wet State		130
Along the grain		

Across the grain

Modulus of Elasticity (N/mm²)	LOAD (KG)	ELASTICITY
200 mm span	470	10669
300 mm span	155	11875
400 mm span	70	12712
500 mm span	40	14188

Request for Quotation

Silver Wood

It is most commonly used shuttering wood for slab. Various sizes available such as: 3" x 1.5" / 4" x 1.5" / 3" x 2" / 4" x 3" and 1.5" thick planks.

Request for Quotation

Pine Wood

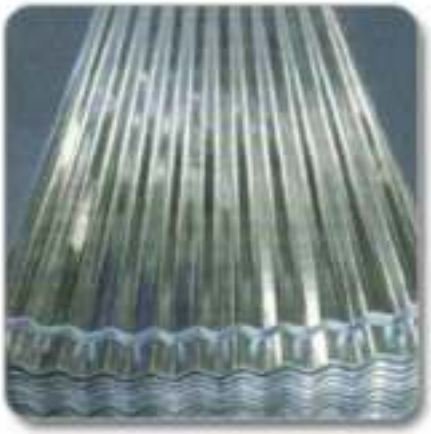
Imported from Newzealand, this shuttering timber comes with minimum tolerance in size unlike silver wood and exact length viz 8'/10'/12'.

Request for Quotation

Assam Bamboos

At present, Bamboo is replacing timber, plastic, and metals in different industries that is an ideal solution to save the earth from global warming. Assam has a standing crop of strong bamboo.

Request for Quotation



GI Corrugated Sheet

AES Inc. is a renowned suppliers of galvanized corrugated sheets/ plain sheets. The wide array of our products are in accordance to Indian, ASTM, JIS, Euro, Ethiopian standards. We supply our broad product range as stretch leveled and skin passed in variety of grades like deep drawing and ordinary. The diverse product offering of our company has raised the growth chart of our company.

Our products can be availed in the following features:

- Thickness 0.14 mm to 0.80 mm
- Width: Plain 400 mm to 1080 mm
- Corrugated 665 to 1000 mm
- Length 1600 to 4500 mm
- Zinc Coating 80 to 275 GSM
- Coil weight 5 MT max
- Coil ID 508 mm

Request for Quotation

Galvanized Steel Coils / Plain Sheet (gp)

AES Inc. supplies high quality products like galvanized sheet coils that are supplied in the form of stretch leveled and skin passed in different grades like deep drawing and ordinary. The products as they are specifically developed in accordance to various international and domestic quality standards like Indian, ASTM, JIS, Euro, Ethiopian etc.

The array of our galvanized plain & corrugated sheets/coils has the following features:

- Thickness 0.14mm to 0.80mm
- Width: Plain 19mm to 1000mm
- Zinc Coating 80 to 275 GSM
- Coil weight 5 MT max.
- Coil ID 508

Request for Quotation

Loading..

‹ PREVIOUS NEXT ›