



# ALUMINUM FORMWORK AND ALUMINUM BEAM



GLOBAL SCAFFOLDING AND FORMWORK MANUFACTURING CENTER



**HUBEI ADTO ALUMINIUM FORMWORK MANUFACTURING CO.,LTD**

Hubei ADTO Aluminium Formwork Manufacturing Co.,Ltd

**Factort Address:**

GROUP 6, YINSHAN VILLAGE, GUANGQIAO TOWN, JIAYU  
COUNTY, XIANNING CITY, HUBEI PROVINCE, CHINA

**Headquarters:**

11F,16F,18F,MINGCHENG INTL BLDG,CHANGSHA CITY,CHINA

**TEL:**86-731-88660581/88660584

**FAX:** 86-731-88660576

[www.adtomall.com/aluminium-formwork](http://www.adtomall.com/aluminium-formwork)

E-mail:[info@adtomall.com](mailto:info@adtomall.com)



SERVICE PROVIDER OF INTEGRATED ENGINEERING MATERIALS  
ENGINEERING SUPPLIES ONE-STOP SERVICE





## COMPANY INTRODUCTION

Hubei ADTO Aluminum Formwork Manufacturing Co.,Ltd is one of the best servicer who form the industry chain of design, production, installation, technical service.

The industrial park is located in Jiayu County, Hubei province, with a total investment of 3 billion, covers an area of 2000000 square meter, the output value of more than 10 billion, aluminum alloy template production capacity of more than 10 million square meters, is planned to be completed within six years, then into a world-class aluminium alloy production base. First phase investment of 350 million, covers an area of 2000000 square meter, the production value of 1 billion. We have the first-class technology research and development institutions, relying on the abundant technical research and development strength and brand influence, services more than 50 countries and regions in the world, with the United States, Mexico, Brazil, Singapore, Malaysia, India, China and other countries excellent engineering construction enterprises to establish long-term strategic cooperative relations.

ADTO is aim to create global leading brand aluminum formwork, eagerly anticipates the construction technology of the low carbon environmental protection, continue to improve the popularity of green building construction technology in China, in order to promote the future buildings more low carbon, safer, more economic, more environmental protection.

## ALUMINUM FORMWORK SYSTEM

In Building Construction, the costs of aluminum formwork has account 20%-30% for the total costs, when removed the aluminum formwork, it account 5-50% total time. Compare with the traditional formwork, the aluminum formwork have obvious advantages.

### EASY:

It is about 22-25kg/m<sup>2</sup>, light weight means only a single worker could move the Aluminum Formwork easily.

### EFFICIENT:

The Aluminum Formwork System is jointed by the pin, it is two times fast than wood formwork to install and dismantle, so it could save more work and work time.

### SAVING:

The Aluminum Formwork System supports early-dismantling application, the construction working cycle is 4-5 days per floor, it is effective for cost saving in human resource and construction management The Aluminum Formwork can be re-used more than 300 times, the economic cost is very low of every time using.

### SAFETY:

The Aluminum Formwork system adopts the integrative design, it could load 60KN/ m<sup>2</sup>, which could reduce the safety loophole led by the construction and materials.

### HIGH QUALITY OF CONSTRUCTION:

The aluminum formwork is made by extrusion process, it makes the concrete surface flat, smooth. No need heavy backing plaster, effectively for plaster cost saving.

### ENVIRONMENT FRIENDLY:

The aluminum material of the formwork could also be recovered after seless, it avoids the waste.

### CLEAN:

Different with the wood formwork, there is no wood panel, fragment and other waste in the construction area using the aluminum formwork.

### WIDELY SCOPE OF APPLICATION:

The Aluminum Formwork System is suited for application of walls, beams, floors, windows, columns, etc.

### VALUE MAINTAIN:

The aluminum scrap can be recycled. The recycled price can be 90% of the aluminum ingot.





## COMPARISON OF ALUMINUM FORMWORK

| THE COMPARISON OF DIFFERENT FORMWORK |                            |                                 |                             |  |                                    |                                |
|--------------------------------------|----------------------------|---------------------------------|-----------------------------|--|------------------------------------|--------------------------------|
| Items                                | Plywood formwork           | small steel formwork            | big steel formwork          | Heavy steel frame plywood formwork                       | Light steel frame plywood formwork | Aluminum formwork              |
| Material                             | 12-18mm thickness plywood  | 2.3-2.5mm thickness steel plate | 5-6mm thickness steel plate | 18mm thickness plywood                                   | 15mm thickness plywood             | 4mm thickness aluminum profile |
| Thickness                            | 12-18                      | 55                              | 86                          | 120  | 120                                | 65                             |
| Weight                               | 10.5                       | 35-40                           | 80-85                       | 56-68  | 40-42                              | 18-22                          |
| Loading (KN/m²)                      | 30                         | 30                              | 60                          | 60   | 50                                 | 60                             |
| Cycle times                          | 5                          | 100                             | 250                         | 200  | 150                                | 300                            |
| Execution                            | easier                     | easy                            | difficult                   | difficult  | easier                             | easier                         |
| Mending fee                          | lower                      | low                             | high                        | high   | high                               | low                            |
| Effectiveness                        | low                        | low                             | high                        | low  | high                               | higher                         |
| Application                          | Wall, column, beam, bridge | Base, wall, column,beam, slab   | Wall                        | Wall, column, beam, bridge                               |                                    |                                |
| Quality of concrete surface          | Rough surface              | Rough surface, low accuracy     | Smooth surface, fair-faced  | Smooth surface, can reach facing and ornament fair-faced |                                    |                                |
| Recycle value                        | low                        | middle                          | middle                      | low  | low                                | high                           |
| must using liftingtower or not       |                            | no                              | yes                         | yes  | yes                                | no                             |

## ALUMINUM FORMWORK SPECIALTIES

### OUR ALUMINUM FORMWORK

|                    |                       |
|--------------------|-----------------------|
| Material           | 6061-T6aluminum alloy |
| Panel thickness    | 4mm                   |
| Template thickness | 65mm                  |
| Template weight    | 22-25kg/m2            |
| Carrying capacity  | 60KN/m2               |

### CHEMICAL COMPOSITION

| Element   |     | Si    | Fe   | Cu    | Mn    | Mg    | Cr    | Zn    | Ti    | other | Al      |
|-----------|-----|-------|------|-------|-------|-------|-------|-------|-------|-------|---------|
| Request   | Min | 0. 4  | /    | 0.15  | /     | 0.8   | 0. 04 | /     | /     | /     | balance |
|           | Max | 0. 8  | 0. 7 | 0. 4  | 0. 15 | 1.2   | 0. 35 | 0. 25 | 0. 15 | 0. 05 | balance |
| Result(%) |     | 0. 62 | 0. 4 | 0. 19 | 0. 06 | 0. 89 | 0. 08 | 0. 07 | 0. 01 | 0. 02 | 97. 65  |

### MECHANICAL PROPERTIES

| Properties | Tensile strength (N/M²) | Yield strength (N/M²) | Elongation (%) | Hardness |        |
|------------|-------------------------|-----------------------|----------------|----------|--------|
|            |                         |                       |                | vickers  | barcol |
| Request    | 285                     | 265                   | 10             | 13       | /      |
| Result     | 285                     | 276                   | 10             | 13       | /      |



## RAW MATERIAL MANUFACTURING



Metlting& Casting



Moulding



Extrusion



Aluminum Profile.

## ALUMINUM FORMWORK ADTO-CONVENTIONAL ALUMINUM FORMWORK SYSTEM



Assembling wall panel



Assembling column



Assembling end beam panels



Assembling slab panels



Assembling staircase



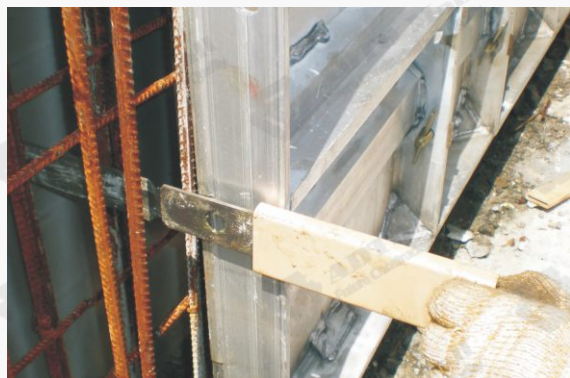
Binding rebars and  
assembling wire&pipes



# ALUMINUM FORMWORK ADTO-11-TIEPLATE SYSTEM



Assembling tie plate



Assembling sleeve pipe



Fixed tie plate



Assembling inner  
& outer wall panels



Reinforce the bottom



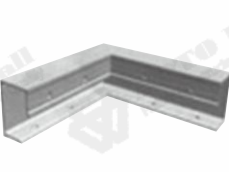
Remove the tie plate

# ALUMINUM FORMWORK COMPONENTS



WALL PANEL

Wall panel and Cylinder panel Components. Standard wall panel and non-standard wall panel are both used.



INNER CORNER

Main component which connect the panel of inner corner.



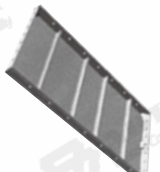
BEAM PANEL

Connect the wall panel and the top wall panel.



END OF WALL PANEL  
PANEL COVER

Shape like WEP and it was set on the beam.



WALL PANEL

Use for top wall and have both standard and non-standard type.



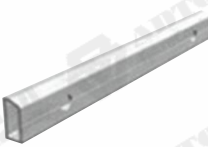
BEAM SLAB ARCH

Connect the wall panel and tower panel



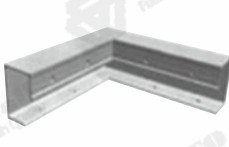
MIDDLE BEAM

It's a beam for floor building and it was used for connect the wall panel when install the floor.



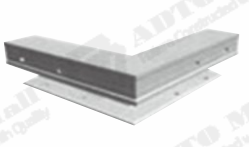
JOIN BAR

Supporting materials when using MB and EB for install the floor with props.



FLOOR INNER  
CORNER

Inner component for connect the wall panel and top floor panel.



FLOOR OUTER  
CORNER

Outer component for connect the wall panel and top floor panel.



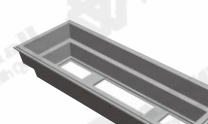
WALL END PANEL

Component for the end of the wall panel. Forming the wall panel to different type by pressing one side or two as different angle. Such as: end panel with eage, end panel without eage, connect from the left hand, connect from the right hand and so on. It must be consistent with the floor panel when installing.



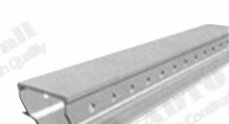
FLOOR ANGLE  
PANEL

Connect the wall panel and helpful discharge the wall panel. It can be fastened with nut when installing.



PRE- EMBEDDED BOX

Used for reserving hole which can transfer the panels in two floor buildings.



END BEAM

Connect the wall panel when installing it. It's the component for wall panel structure. It was installed at the end of the floor panel.



PROP HEAD

Connect the join beam when installing the floor panel. It's a beam panel for floor structure. It was installed between two floor panels. And it can unloading load for floor panel.

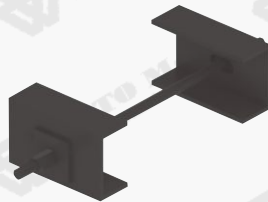


## | ACCESSORIES



**ROUND PIN AND WEDGE PIN**

Connect the floor panel and wall panel.



**BUCKLE PANEL**

Use for fix level of the junction between two square panel.



**FLAT STEEL**

It's a material for maintain some space(wall thickness) between panel.



**TIE ROD AND NUT**

This accessory is used fixing inside and outside wall panel, in case any wall distortion.

## | TOOLS



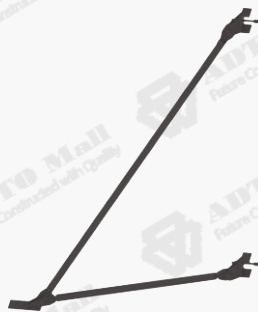
**HOLE BARI**

Used for adjusting the distance between holes



**PANEL PULLER**

Remove the formwork



**DIAGONAL PROP**

Used for adjusting the verticality and horizontality.



**PROP**

Supporting the weight of floor panel during the concrete construction.



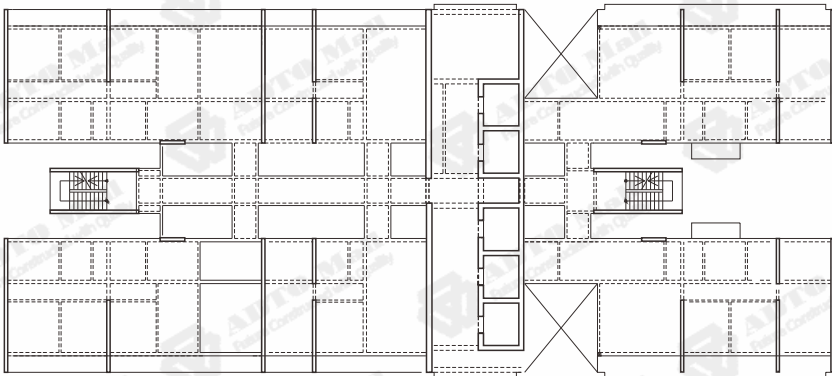
**SLEEVE REMOVER**

Used for removing the PVC sleeve

## | THE DESIGN AND TECHNICAL RESEARCH DESPARTMENT

we have professional designer and engineer with many ye ars experiences on this feild.

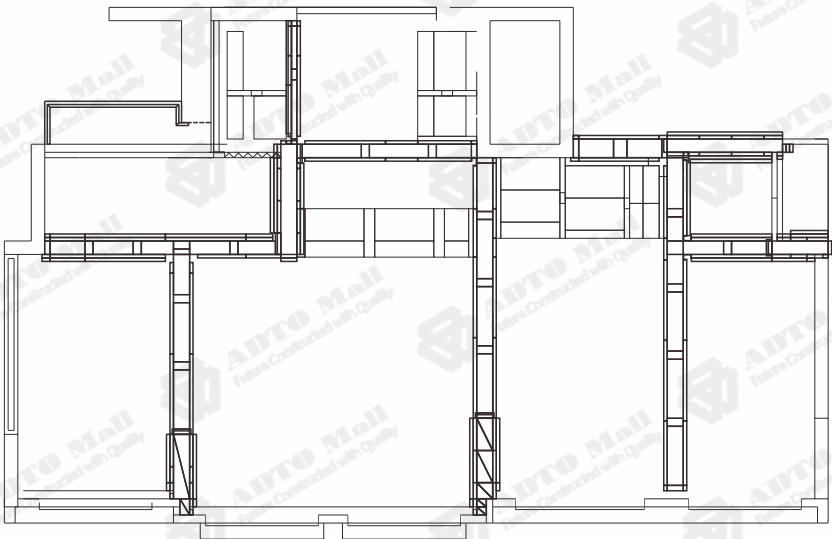
And we spend a mount of funds on technical develop and research to make our products constant updating according to market and customer real requirement .



**ANALYSIS OF ENGINEERING DRAWINGS**

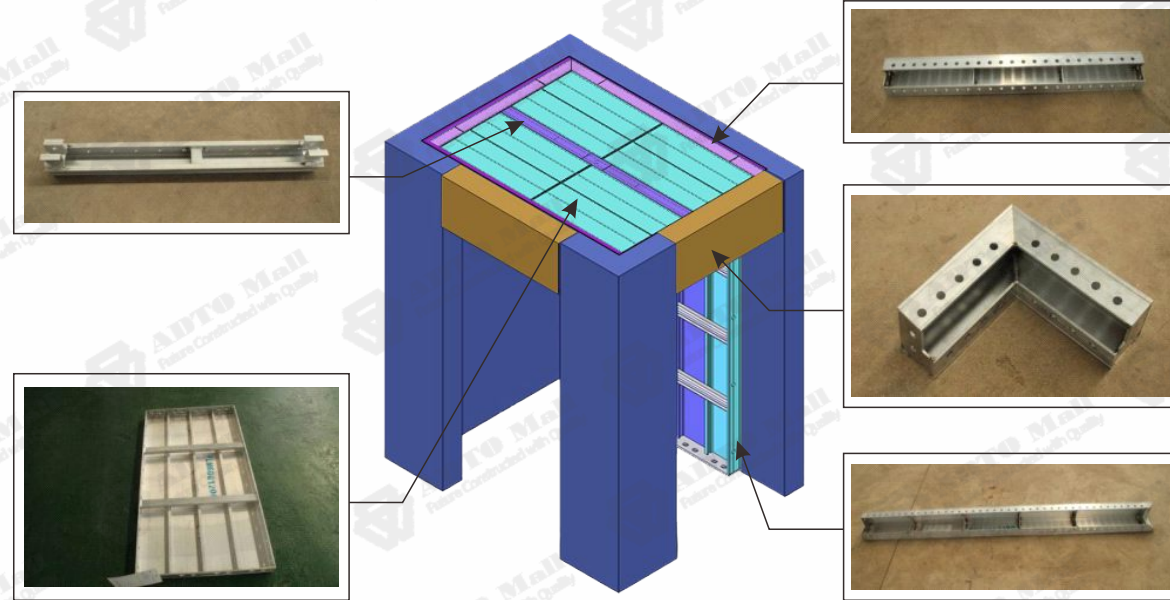


**MAKE PRODUCTION AS DESIGNING**



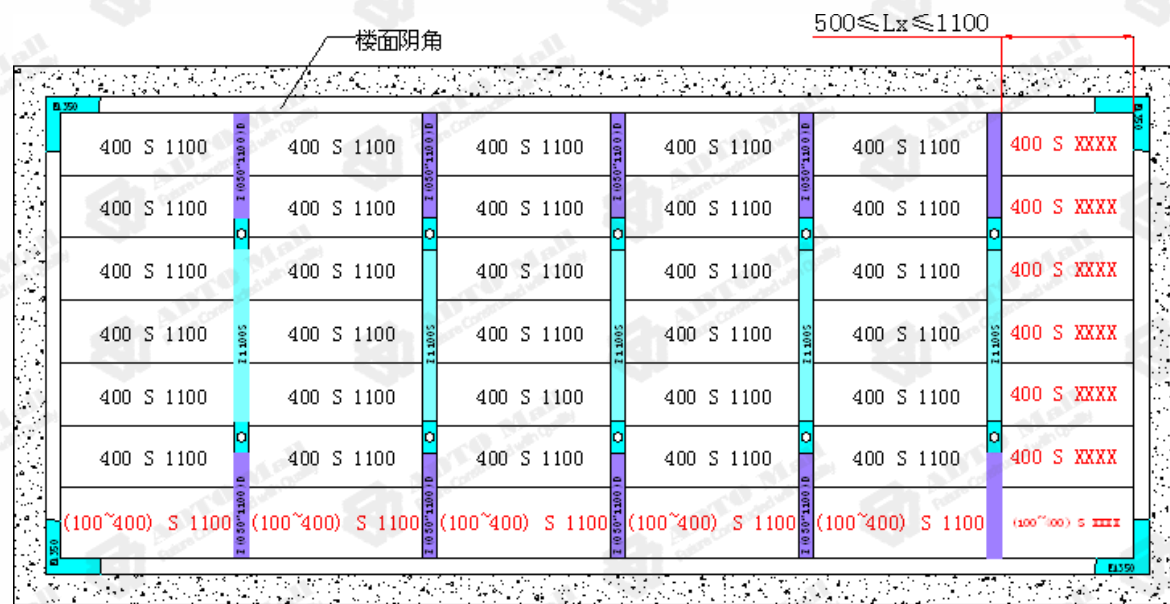
**FORMWORK ARRANGEMENT DRAWING**

CUSTOMER CONFIRM  
THE DESIGNED DRAWING



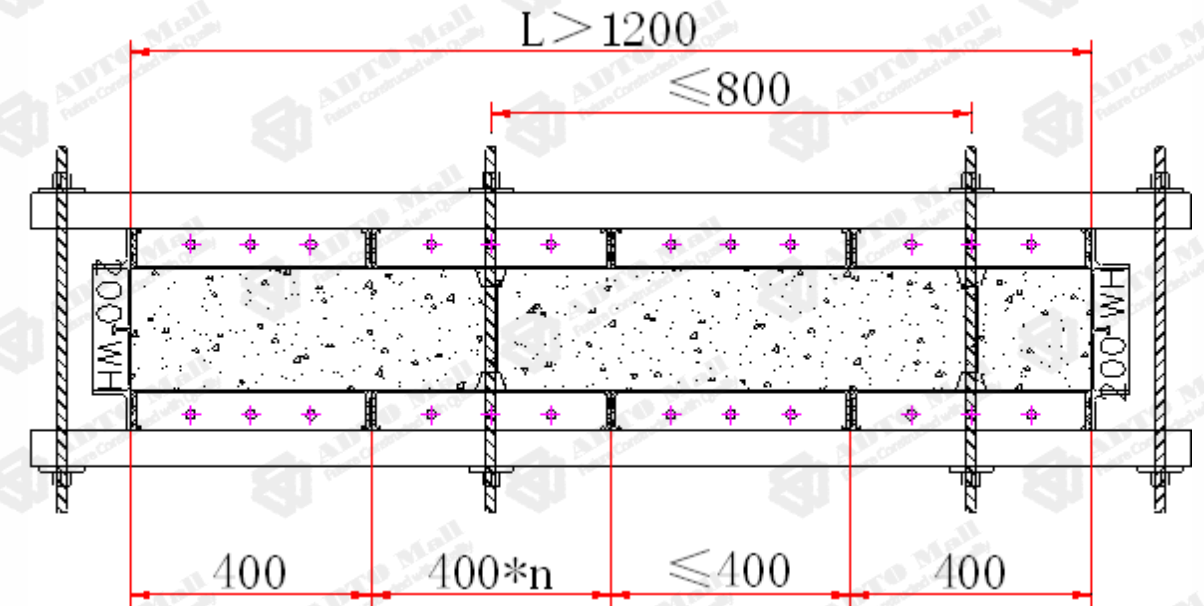
## MATCHING ALUMINUM FORMWORK

### MATCHING THE SLAB PANEL

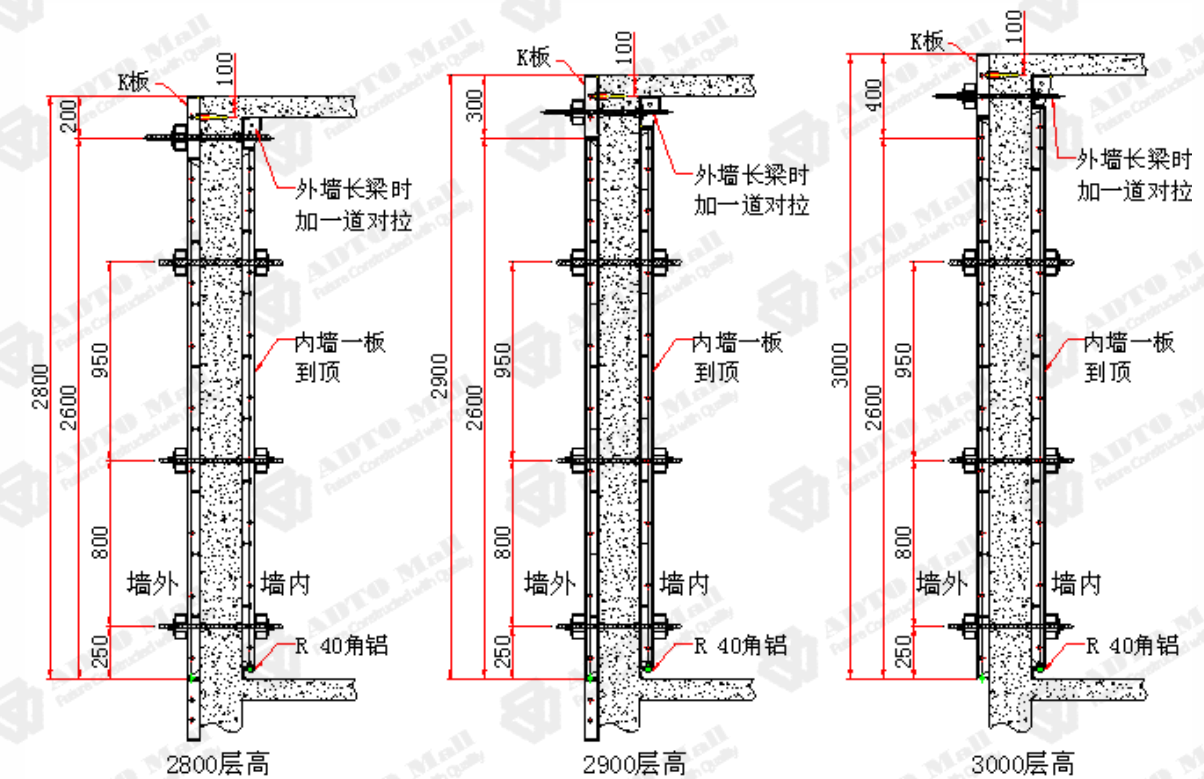


1. Slab panel adopt 1100mm long 400mm width for main panel.
2. Between two steel prop, the distance should be less than 1200mm.

### MATCHING THE WALL PANEL



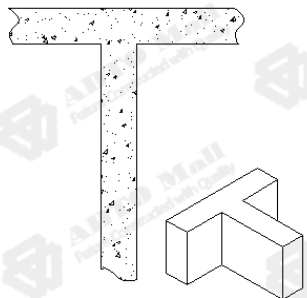
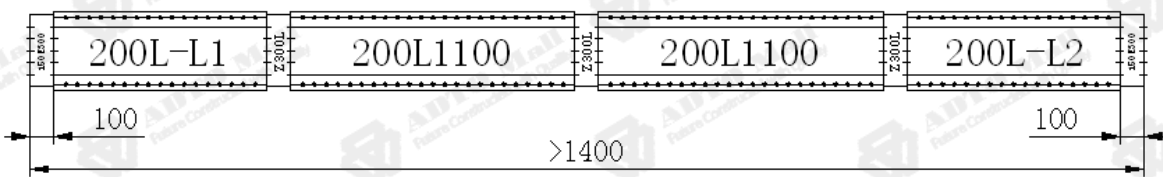
Between two tie rod, the distance should be less than 800mm



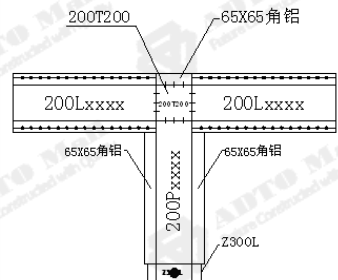
Out wall uses four waler to strengthen.



MATCHING THE BOTTOM BEAM

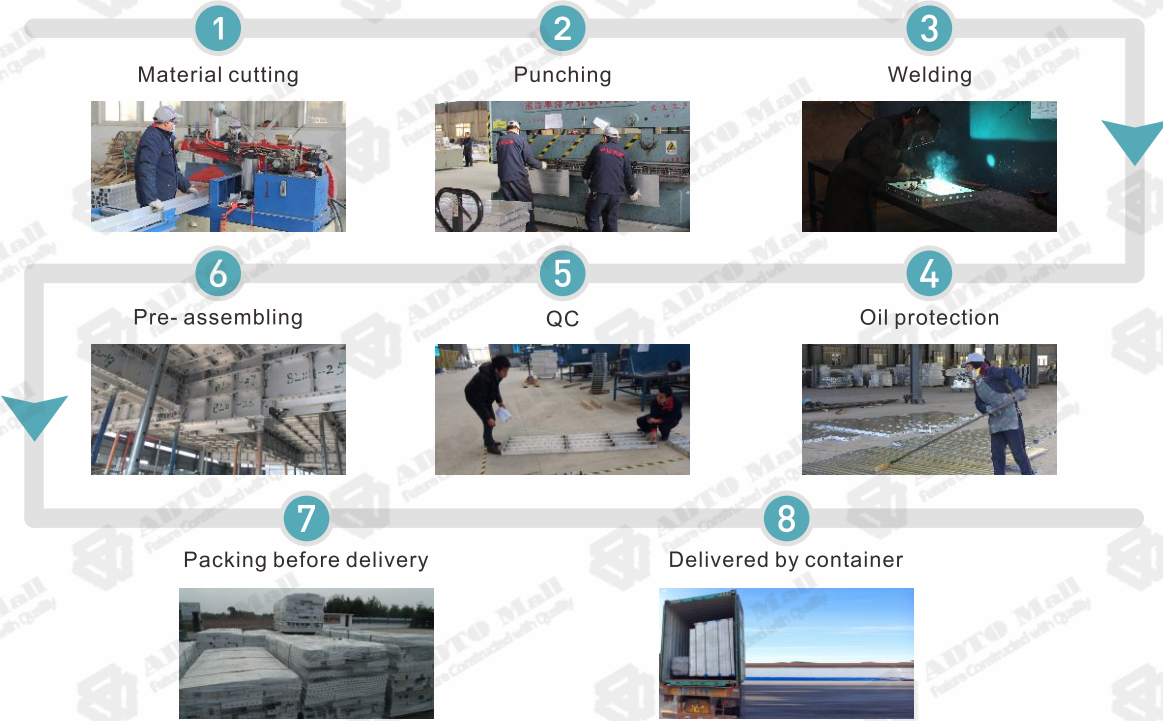


丁字梁(十字梁)



- 1.The standard panel for bottom beam is 1100mm
- 2.Cross beam used prop head to support

THE PRODUCTION LINE

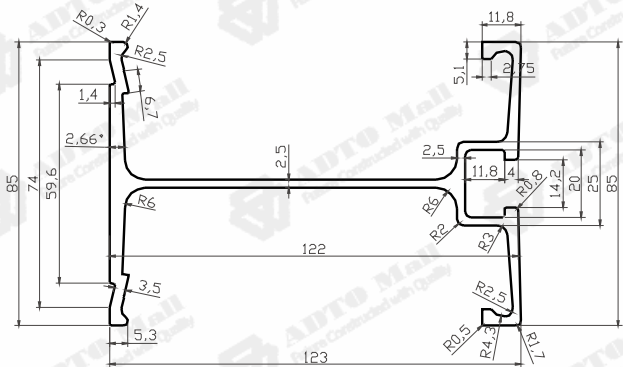


ALUMINUM BEAMS

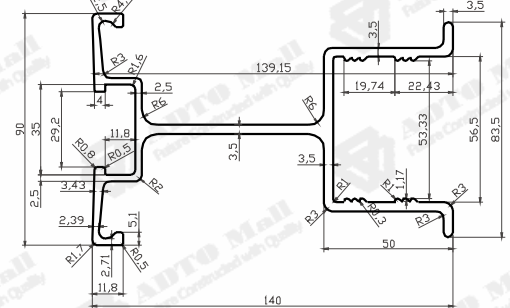
ADVANTAGES:

- 1. Light weight
- 2. High strength
- 3. Corrosion resistance
- 4. High turnover frequency
- 5. Residual high
- 6. Average cost low

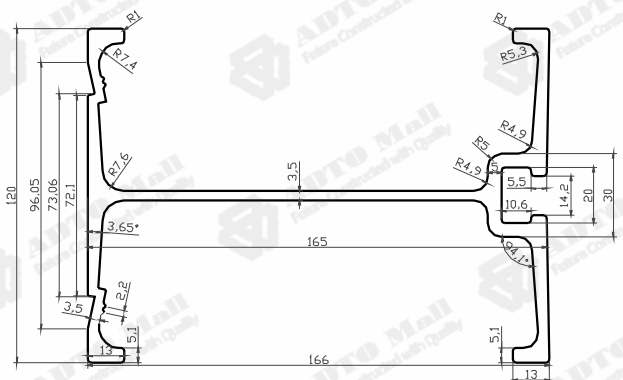
BELOWING MAIN SIZES WE DO



123\*85mm



140\*90mm



120\*166mm





The aluminum beam has been the workhorse of the industry for decades. It’s strength and lightweight properties provide an optimal combination for the contractor. Aluminum minimize the number of total horizontal and vertical members required on the job compared to wood. Since it’s light weight compared to steel, the contractor realized labor productivity through ease of use.

WHY USE ALUMINUM?

- ▶ Aluminum can be made into any shape we want; it is more difficult to shape wood.
- ▶ Aluminum is isotropic: it has the same properties in all directions. Wood performs better along the grain than across the grain.
- ▶ Wood can rot and can be attacked by insects

| TYPICAL CHEMICAL PROPERTIES |      |
|-----------------------------|------|
| Silicon, Max %              | 0.8  |
| Iron, Max %                 | 0.7  |
| Copper, Max %               | 0.4  |
| Manganese, Max %            | 0.15 |
| Magnesium, Max %            | 1.2  |
| Chromium, Max %             | 0.35 |
| Zinc, Max %                 | 0.25 |
| Titanium, Max %             | 0.15 |

| TYPICAL CHEMICAL PROPERTIES |     |
|-----------------------------|-----|
| Tensile Strength ksi        | 180 |
| Yield 0.2% Offset ksi       | 110 |
| Elongation                  | 14  |

ADJUSTABLE STEEL PROP

ADTO steel prop is kind of vertical supporting system that can be fit for any shuttering. Surface:Electro-galvanized,Pre-galvanized,Hot Dipped Galvanized,Painted,Powder-coating.

- Advantage:
- \* Simple structure,simple erection
  - \* High efficiency with strong loading capacity
  - \* With galvanized surface(endurable)
  - \* Widely applied in proping system such as construction,plants

HEAVY DUTY PROP-MIDDLE EAST OR GERMAN PROP

| Min  | Max  | Internal Tube | External Tube |
|------|------|---------------|---------------|
| 1.4m | 2.7m | 48*2.0mm      | 60*2.0mm      |
| 2.0m | 3.6m | 48*2.0mm      | 60*2.0mm      |
| 2.2m | 4.0m | 48*2.0mm      | 60*2.0mm      |
| 3.0m | 5.0m | 48*2.0mm      | 60*2.0mm      |

LIGHT DUTY PROP-SPANISH PROP

| Min  | Max  | Internal Tube | External Tube |
|------|------|---------------|---------------|
| 0.8m | 1.4m | 40*1.8mm      | 48*1.8mm      |
| 2.0m | 3.6m | 40*1.8mm      | 48*1.8mm      |
| 2.2m | 4.0m | 40*1.8mm      | 48*1.8mm      |
| 3.0m | 5.0m | 40*1.8mm      | 48*1.8mm      |

LIGHT DUTY PROP--ITALIAN PROP

| Min  | Max  | Internal Tube | External Tube |
|------|------|---------------|---------------|
| 1.6m | 2.9m | 48*2.0mm      | 56*2.0mm      |
| 1.8m | 3.1m | 48*2.0mm      | 56*2.0mm      |
| 2.0m | 3.6m | 48*2.0mm      | 56*2.0mm      |
| 2.2m | 4.0m | 48*2.0mm      | 56*2.0mm      |

PUSH-PULL PROP

| Min  | Max  | Internal Tube | External Tube |
|------|------|---------------|---------------|
| 2.2m | 4.1m | 48*2.0mm      | 60*2.0mm      |
| 2.5m | 4.5m | 48*2.0mm      | 60*2.0mm      |
| 3.0m | 5.0m | 48*2.0mm      | 60*2.0mm      |



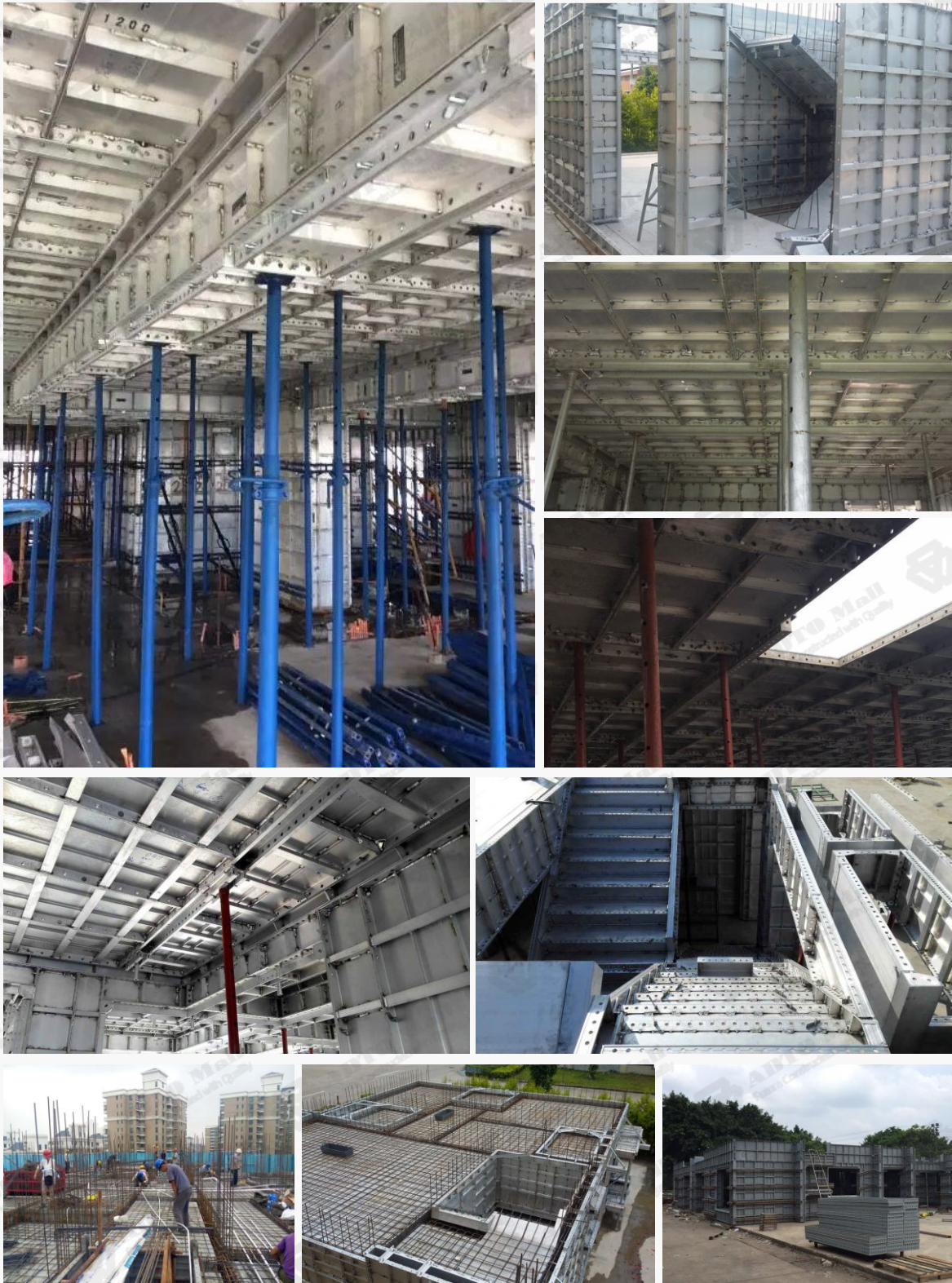
HEAVY DUTY PROP AUSTRALIA -PROP

| Standard | Closed Length | Open Length | Inner Tubes | Outer Tubes |
|----------|---------------|-------------|-------------|-------------|
| As3610mm | 1080mm        | 1830mm      | 48.3*3.0mm  | 60.3*3.0mm  |
| As3610mm | 1830mm        | 3035mm      | 48.3*3.0mm  | 60.3*3.0mm  |
| As3610mm | 1985mm        | 3285mm      | 48.3*3.0mm  | 60.3*3.0mm  |
| As3610mm | 2600mm        | 3955mm      | 48.3*3.0mm  | 60.3*3.0mm  |





# | CONSTRNCTION SITE

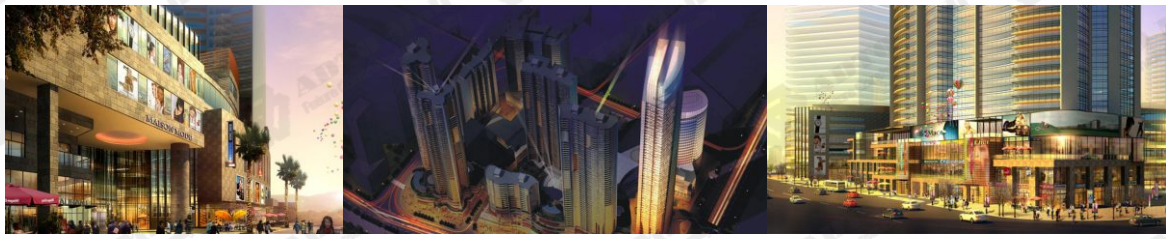


# | ONSITE VIEW

Singapore Jurong Plaza    Philipine City Center    Vanke Country Garden  
Sinohydro Group    Beijing Urban Construction Group    CNPC&SINOPEC



Hengyang—Dong Country Garden



Beijing—Hua Yuanhua Center



Changsha—Vanke Mexi County