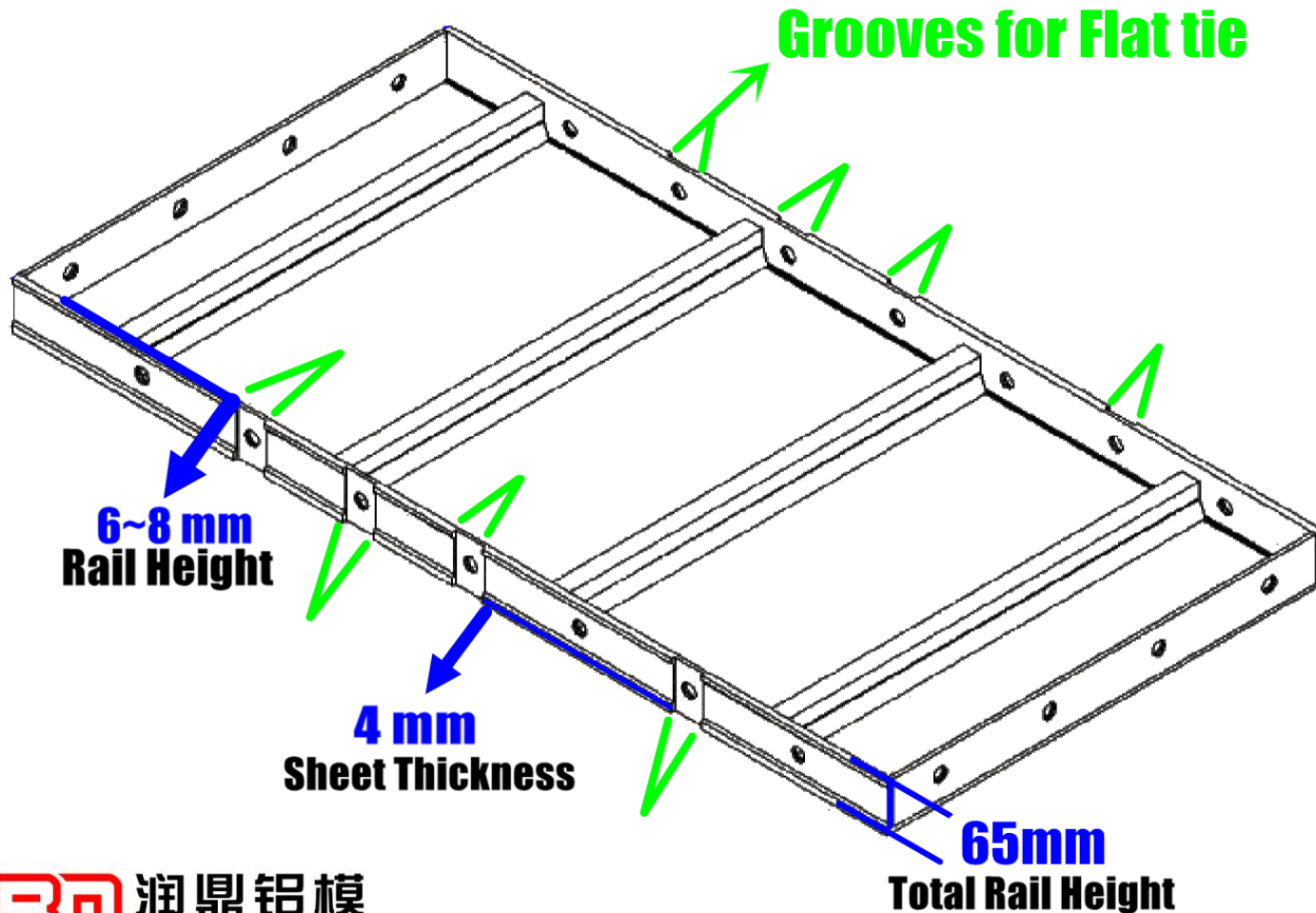




Flat Tie Fasten System Introduction

Special Aluminum Formwork -Flat Tie Fasten System

If use Flat tie fasten system to al-formwork system, the Aluminum formwork panels have to made the grooves on the side sealing panels, used to fixed in Flat tie plate. There are the Special Al-formwork for using Flat tie system.

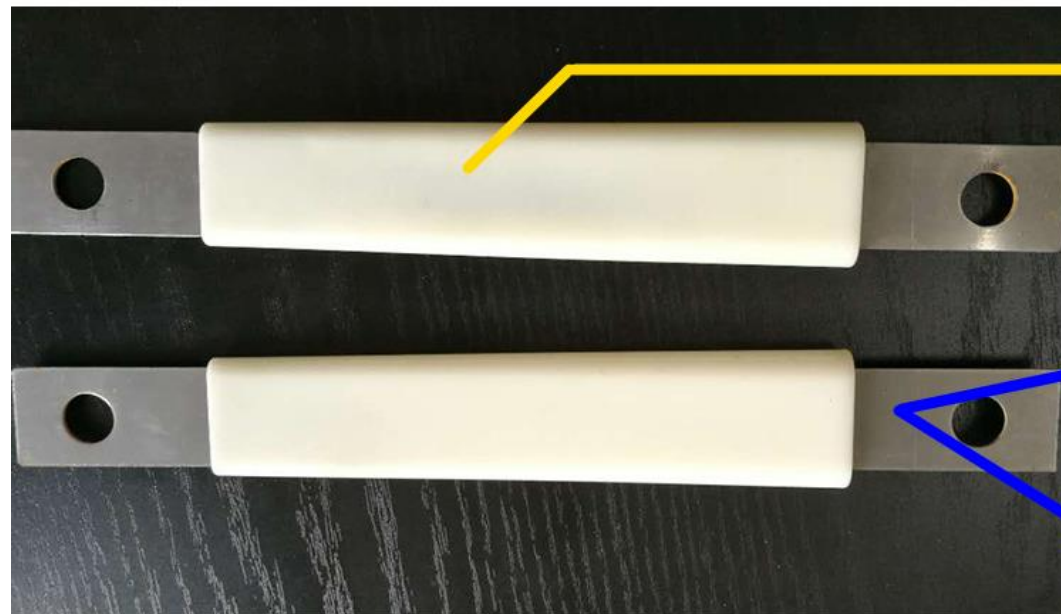
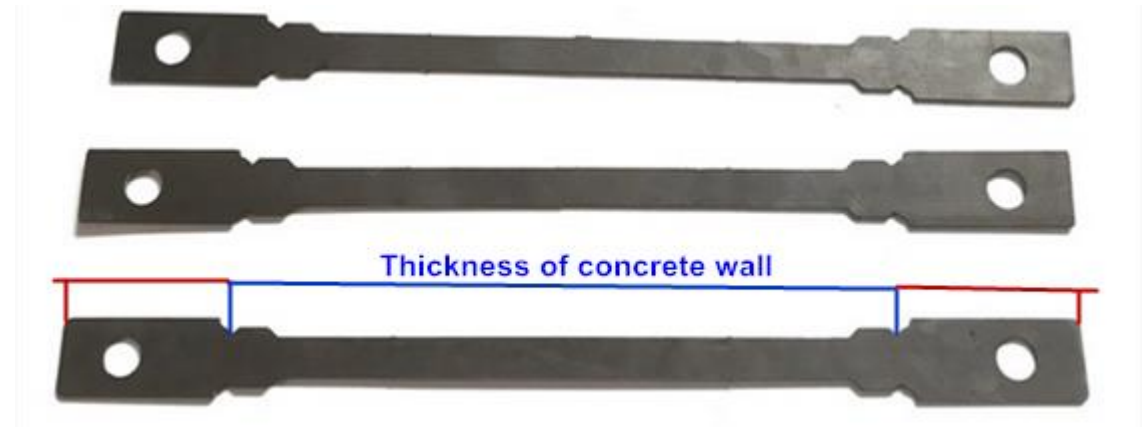


Component of flat plate - Flat Tie Fasten System

There are two kinds of Flat plates, Reusable and Disposable.

Reusable flat plate without cuts on it and fixed into the PVC sleeve. The length of PVC sleeves depend on the thickness of wall.

Disposable flat plate have cuts on it and they could be broken while concrete casting finished. Distance of two cuts refer to the thickness of wall.



PVC Sleeves



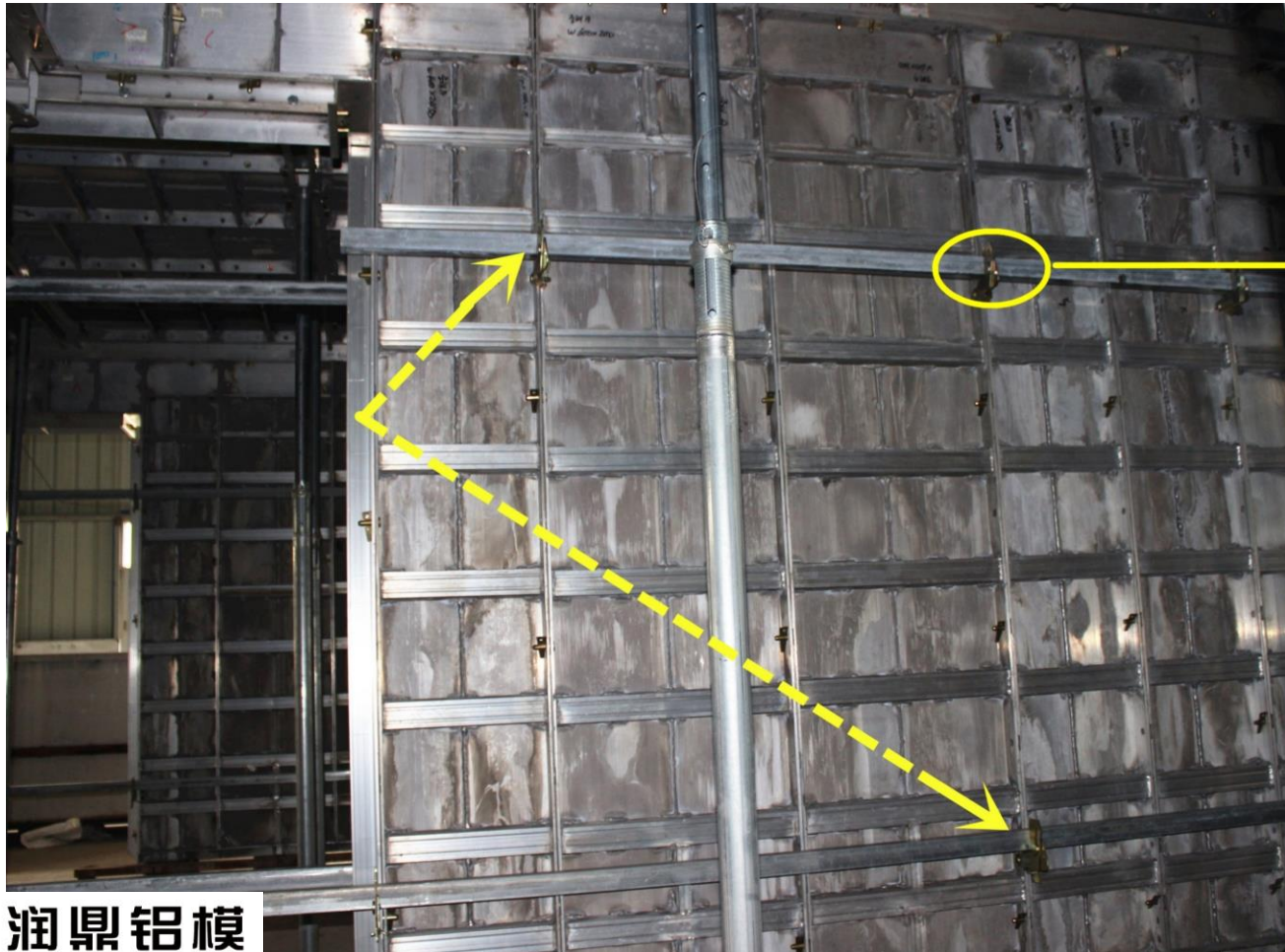
Disposable Flat Tie



Reusable Flat Tie

Component of Reinforce Walers - Flat Tie Fasten System

Hooks and Square tubes as the fasten walers for the AL-formwork system. The hooks with pins and could be locked with the holes on side sealing panels by wedge pins. Just put the suitable length of square tubes on the hooks.



Square tubes



Hooks

Advantages -Flat Tie Fasten System

Advantages of Flat Tie fasten system

1. Application to any special joint points and any different kinds of wall structures.
2. Not need to drill the holes on the aluminum formwork panels. Fixed them with the special Al-formwork directly.
3. Malposition installed to the long wall structures are available.
4. They are smaller, lighter and more convenient than using rod tie fasten system.
5. To preserve heat for the external walls of the north area of China and the cold areas, Flat Tie system could be combined with thermal-insulation board.

It is effective prevention the formwork become expanded when pouring concrete as the same time.



**Flat tie
Fasten system**



**Rob tie
Fasten system**



Insulation board

Comparison with Rod Tie system - Flat Tie Fasten System

This kind of steel back arris are heavier than Flat tie system, increasing the labor intensity. And they often are customized by suppliers.

Average weight 10-35kg/ piece

When installing this kind of steel back arris, it should take care of the worker's safety at worksite.

Rod Tie fasten system

Back arris
Weight :10~35kg



VS



Flat Tie fasten system

Rectangle Tube
Weight: 3~10kg



Hooks are small and the average weight of square tubes just 3-10kg/ piece, and easy to be carried by a worker, it can lighten the labor intensity.

Even working in the high-rise buildings, a worker could pass and hold the square tubes conveniently.

Reusable -Flat Tie Fasten System

Rod tie system installation sequence more complicate than Flat tie system. Except the PVC tubes of screws stayed in concrete, the other accessories of Rod tie system could be recycled and they dismantled by spanner. While used reusable flat tie system, it must use PVC ejector and flat tie puller to dismantle. Actually, Flat tie system spend the dismantle time is more than screw rod system.

Diameter of Screw holes are 16-18mm and the Flat tie holes just 5-7mm, they need to filled cement to the screw holes.



PVC Sleeve Ejector



Flat Tie Puller



Actul photo from the site



穿墙螺杆体系

对拉片体系

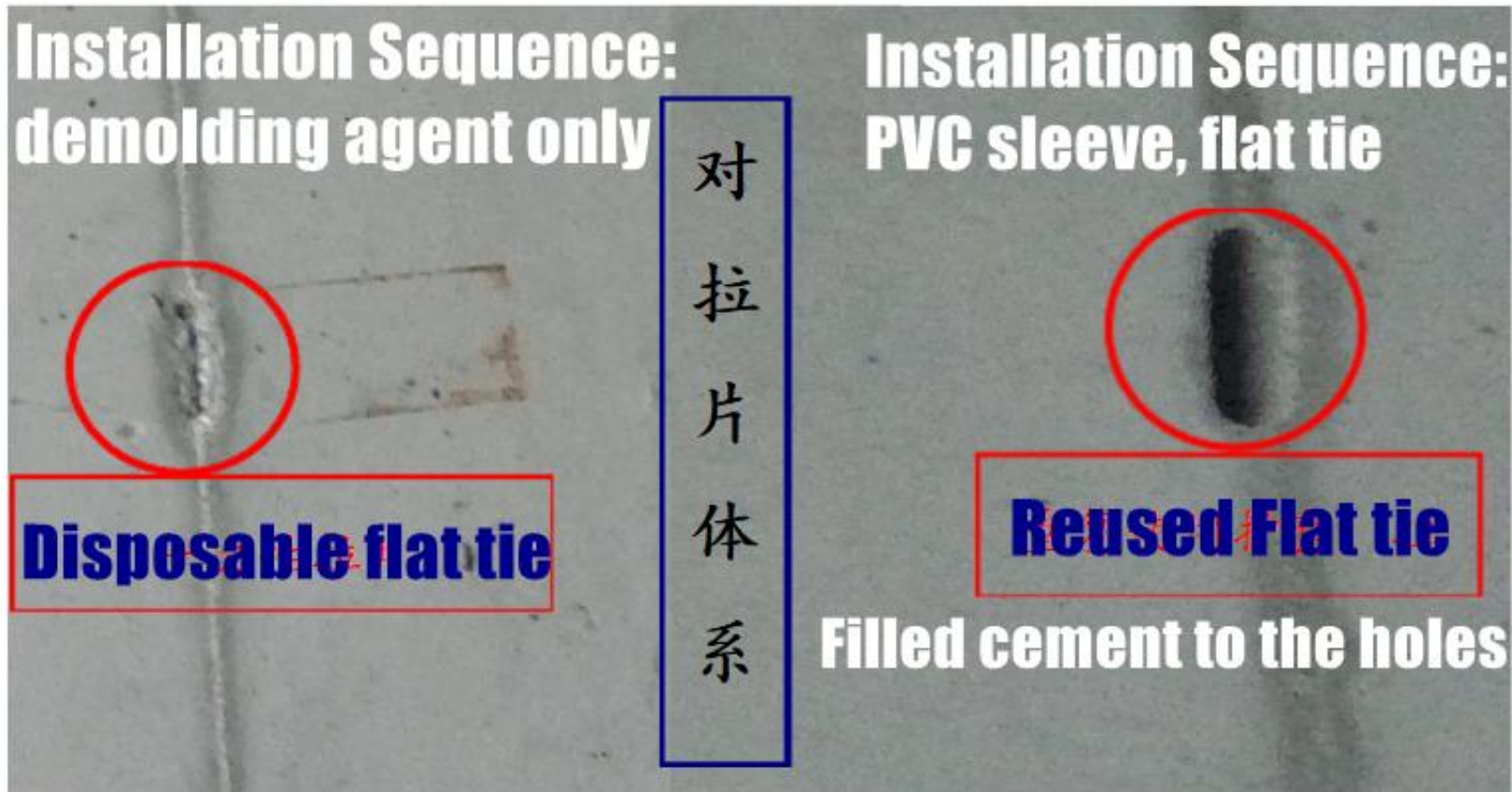
Rob Tie fasten system

Flat Tie fasten system

Disposable -Flat Tie Fasten System

Installed disposable flat plate to the formwork panel directly without PVC sleeves. After concrete solidification, workers should break the tails of flat plates by hammer or cutting machine and the middle part of flat plate will stay in the concrete. That means there are no holes to refill cement inside.

Two kinds of Flat Tie Fasten System

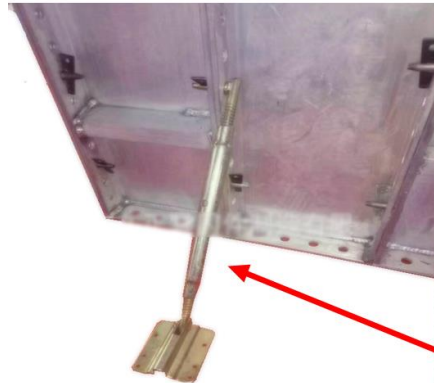


Little Sway Brace -Flat Tie Fasten System

Using new design sway brace with Flat tie system together is a good idea.

This sway brace is adjustable and small for carrying. Used to be installed under the flat tie of the first bottom line.

**New design Sway Brace
mainly in be used to Flat Tie Fasten System.**



Tradition Sway brace

Advantages:

**Lightweight, convenient carrying,
flexible use, good efficiency,
not influence M&E and plumbing installation.**

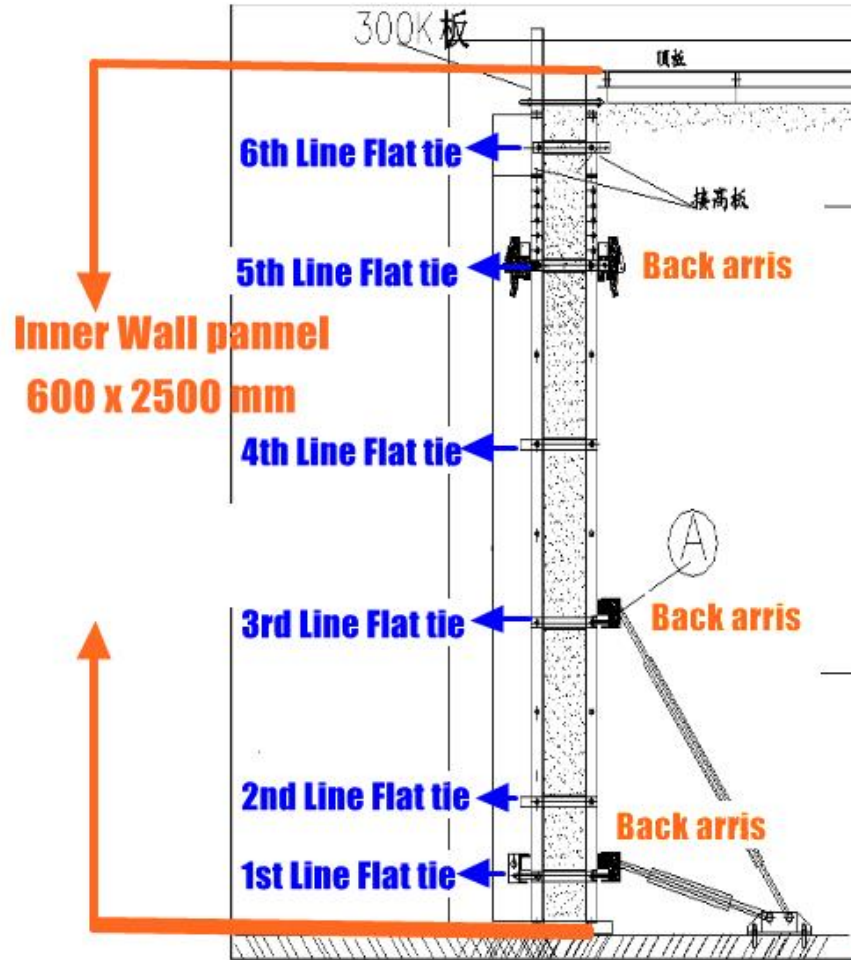


Tradition Sway Brace-Flat Tie Fasten System

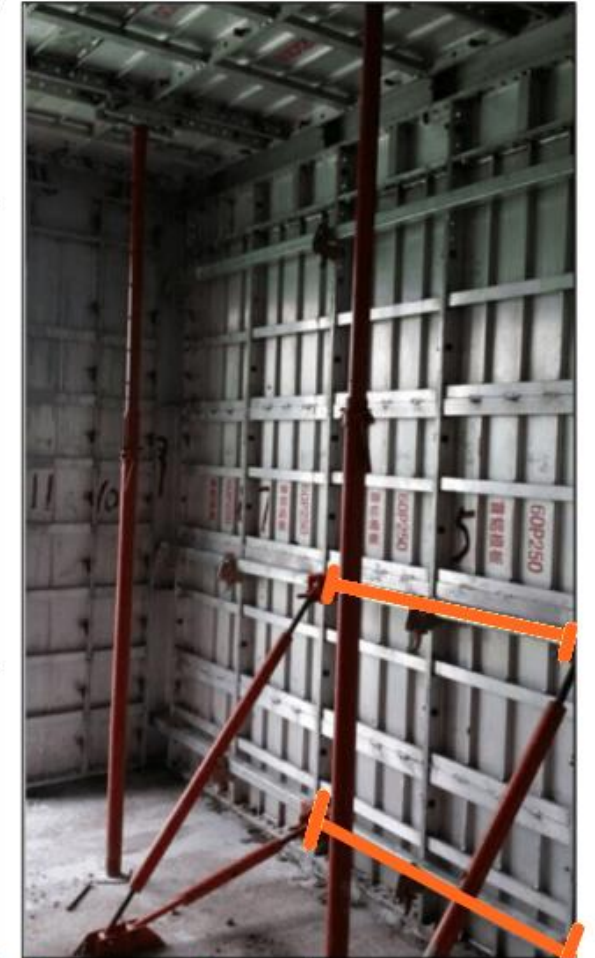
Typical floor height: Less than 3 meters

Example 1:

Standard sizes for external wall are 600mm (W) x 2500mm (H) + 200mm. Installed 3 lines of back arris for the typical floor less than 3 meters. (Suitable for 10 levels of typical floor, because the formwork would come out micro-deforming, add one more back arris.) For keeping the vertical straight of wall, the traditional adjustable sway brace would be fixed with the 1st and 2nd line of walers. The space of each adjustable sway brace are depended on the length of walls, distance not beyond 2400mm.



**Tradition Sway Brace
Wall formwork design drawing**



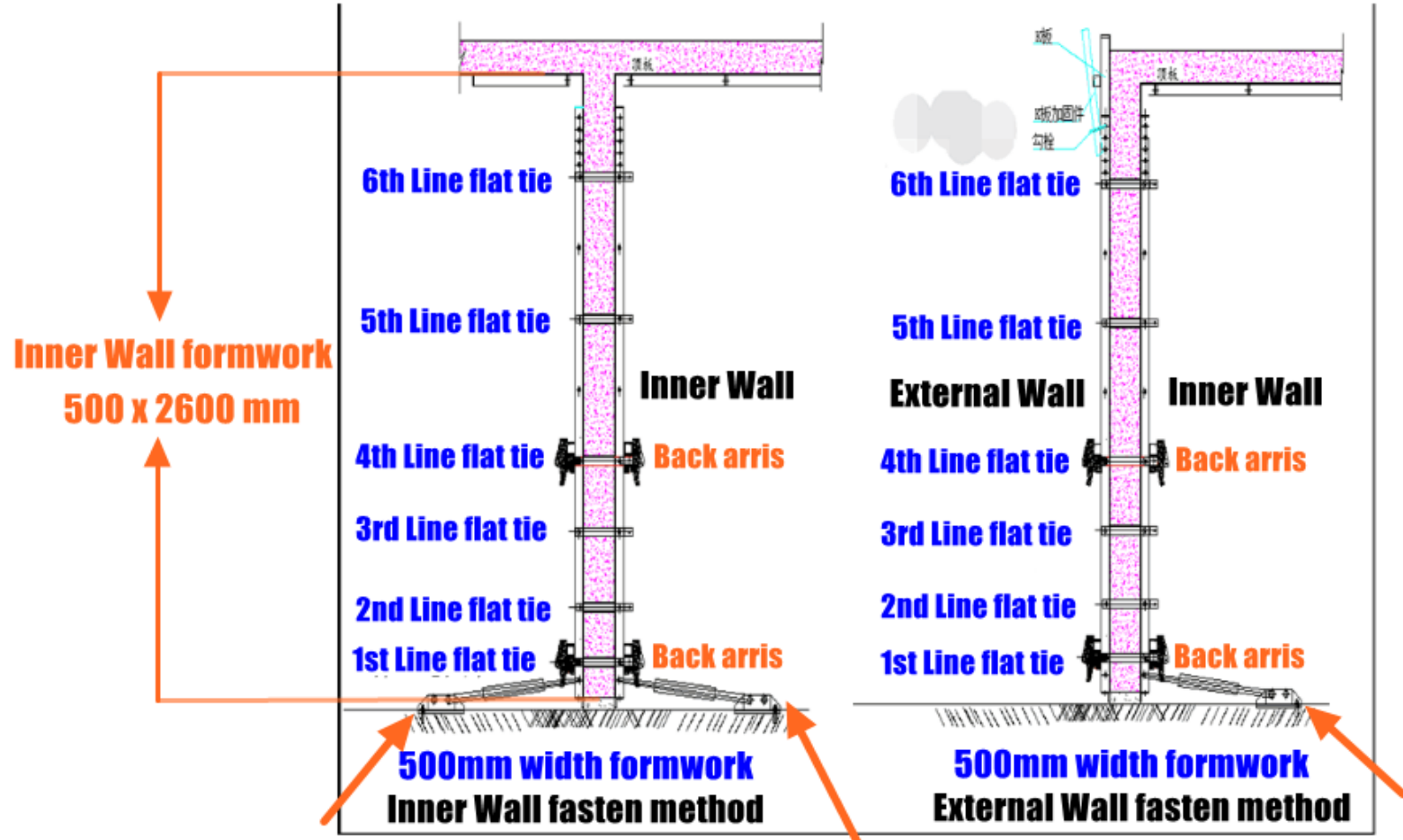
**Each space of sway brace ≤ 2400 mm
Actual photo at site**

Little Sway Brace -Flat Tie Fasten System

Typical floor height: Less than 3 meters

Example 2:

Standard sizes for internal wall are 500mm (W) x 2600mm (H) (or use 2500mm +100mm as Height)+ Footing panels. Installed 2 lines of back arris for the typical floor less than 3 meters and fix the new design sway brace under the flat tie of the first bottom line, to prevent the movement of the bottom wall panel. The space of each adjustable little sway brace are depended on the length of walls, distance not beyond 1500mm.



New Sway Brace Design drawing

Each space of new Sway brace ≤ 1500 mm

Summary

Each types of fasten system have their own advantages, and no matter what kinds of fasten system you used, also should be combined with standing props and push-pull props. Little sway brace just as the auxiliary supporting tool for the Flat Tie system, but they cannot replace the function of push-pull props completely.

Even if Flat tie fasten system is lighter, smaller and easy to be carried than Rod Tie fasten system, the purchasing numbers of accessories of flat tie more than Rod tie system. The using quantities of Flat tie accessories also more than Rod tie system in the same structure. Because of flat tie system is light, they are easy to be deformed if the workers didn't maintenance in good situation.

Rod tie fasten system come out earlier than Flat tie fasten system, the workers have enough mature experience of using Rod tie fasten system, regardless of steel formwork system, plywood formwork system, plastic formwork system and aluminum formwork system. That's a reason why we often use Rod tie system in lots of domestic project cases.

Finally, we intensely suggest that please chooses the most suitable fasten system for your building project as your worker's using habit.



Thanks for reading

