鼎维固
Wenma

Fineshore™ M60

Shoring System

User Manual

Quality

Quality

The Fineshore M60 Shoring System (there after as Fineshore M60) is manufactured to the highest possible standards thereby ensuring the quality of each item. Fineshore M60 is tested and designed in line with the ISO 9001 series of quality management systems. Furthermore, it offers compliance with the BSEN 12810 & 12811 series, namely:

- BS EN 12810 Part 1 – 'Facade Scaffolds Made of Prefabricated Components: Product Specifications'
- BS EN 12810 Part 2 – 'Facade Scaffolds Made of Prefabricated Components: Particular Methods of Structural Design'
- BS EN 12811 Part 1 – 'Scaffolds – Performance Requirements & General Design'
- BS EN 12811 Part 2 – 'Information on Materials'
- BS EN 12811 Part 3 – 'Temporary Works Equipment – Part 3: Load Testing'
- BS EN 39 Part 1 – 'Metal Scaffolding, Couplers and Special Couplers in steel'
- BS EN 74 – 'Couplers for Use in Scaffolding'

Designation of Fineshore M60

The Designation of Fineshore M60 is in accordance with BS EN 12810-1:2003 and reference should be made to The Fineshore M60 Shoring System Technical Manual for further information.

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System Overview

The Fineshore M60 Shoring System (hereinafter referred to as "Fineshore M60") is not a simple collection of components, but a high-performance modular support solution designed for concrete construction scenarios (e.g., floor slabs, beams, large-span structures). It integrates three core functions: load-bearing, stability, and safety protection. Through breakthroughs in materials, processes, and design, and integrating the latest technological achievements in the industry, it meets the diverse and stringent needs of construction and infrastructure projects. Its performance far exceeds that of traditional support solutions, ensuring safe, reliable, and efficient operations in various construction environments.

Core Technical Highlights

1.Material Innovations

With strength, durability, and lightweight as core material selection criteria, high-quality high-strength steel alloys are used to reduce the overall weight of the system while achieving excellent load-bearing performance. The surface of components is treated with top-tier anti-corrosion coatings to significantly extend service life, maintaining stable performance even in harsh environments. It also reduces maintenance costs and environmental impact, combining economy and sustainability.

2.Process Innovations

Cutting-edge manufacturing processes are adopted to ensure quality and precision: computer-aided design (CAD) and computer numerical control (CNC) machining technologies are used to achieve strict control of component tolerances; automated assembly lines equipped with robotic welding and intelligent quality control systems ensure the consistency and reliability of component connections. It not only enhances the structural integrity of the system but also enables the production of complex customized components to meet the personalized needs of projects.

3.Design Innovations

An intelligent modular design is adopted, featuring high flexibility and ease of use: components support quick assembly for rapid on-site deployment; intuitive locking mechanisms ensure firm connections, reducing the time and labor costs of installation and disassembly. The system can be flexibly configured into various shapes and sizes to adapt to scenarios ranging from small construction projects to large-scale infrastructure development. The modular feature also simplifies transportation and storage, optimizing logistics efficiency and reducing costs.

4.Safety Enhancements

With safety as the core design concept, multiple safety guarantees are provided: anti-slip surfaces of platforms and walkways offer stable footholds, guardrails and safety nets effectively prevent falls; integrated load monitoring devices can real-time detect overloads and trigger alarms for timely corrective actions. The system design meets and exceeds international standards such as ISO 9001 Quality Management System, BS EN 12810/12811/12812, and NASC SG4 safety guidelines, fully ensuring operational safety.

5.Efficiency & Customization

Rich customization options are provided, with adjustable height and width to accurately adapt to different on-site conditions; it supports the addition of accessories such as specialized brackets, braces, and connectors to enhance functional adaptability in specific task scenarios; it is also compatible with other construction equipment to further improve workflow efficiency. With high customization and versatility, it optimizes project resources, shortens construction periods, and reduces costs.

Core Advantages

1.High Load-Bearing Capacity

Vertical standards are made of thick-walled high-strength steel, with a rated axial load-bearing capacity of 10 tons; the joint strength of ledgers and diagonal braces has passed strict load verification, which can meet the load requirements of mass concrete pouring for slabs with thickness ≥ 1000mm, and a 2-times safety factor is reserved to fully ensure the structural safety of construction.

2.Modular & Efficient Assembly/Disassembly

All components adopt a "rosette + wedge" quick-connection design, requiring no complex tools and allowing single-person assembly and disassembly; components are compact in structure, facilitating on-site handling and storage. Compared with traditional steel tube and coupler supports, the assembly/disassembly efficiency is improved by more than 50%, significantly shortening the construction period.

3.Strong Safety Compliance

It is fully compliant with BS EN series standards and NASC SG4 fall prevention requirements, and can be equipped with safety protection facilities such as double-layer guardrails and toe boards; the rosette joint design of vertical standards and ledgers is compatible with the lanyard requirements of Personal Fall Protection Equipment (PFPE), fully covering high-altitude operation safety scenarios.

4.Wide Scene Adaptability

With a wide range of component specifications, it can be combined into support systems with heights from 2m to over 50m and spans from 1m to over 30m, suitable for concrete construction such as residential floor slabs, large-span beams in commercial complexes, and bridge cap beams; it is compatible with steel/wood joists and formwork of different thicknesses, requiring no additional customized adaptation components, thus reducing construction costs.

01 Fineshore M60 Shoring System

Core Components

Component Name	Function & Feature
Vertical Standard	The main load-bearing component of the system, made of high-strength steel, with a rosette design for flexible connection to ledgers and diagonal braces; multi-directional component connection is achieved through rosette joints to ensure stable transmission of vertical loads to the foundation.
Ledger	A horizontal connecting component that is quickly locked to the rosette of vertical standards via a wedge to form a horizontal load-bearing frame; available in various lengths to be flexibly selected according to construction spans, ensuring the overall horizontal stability and load dispersion capacity of the system.
Diagonal Brace	The core component for the systems lateral displacement resistance, which must be installed at the designed spacing (especially for tall supports or scenarios with large horizontal loads); with dedicated connecting joints at both ends, it can be firmly engaged with the rosettes of vertical standards, effectively resisting horizontal forces such as concrete lateral pressure and wind loads to prevent system overturning.
Adjustable Base Jack / U-head Jack	The adjustable base jack is used to adjust the height of vertical standards and level the foundation; the U-head Jack has a U-shaped groove at the top, which is used to support primary and secondary joists and allows fine adjustment of elevation to ensure the flatness of the formwork.

Applicable Scenarios

- **Civil Construction:** Support for concrete pouring of floor slabs, balconies, and stair platforms in multi-story and high-rise residential buildings and apartments, suitable for small to medium-span construction needs.
- **Commercial & Public Construction:** Support for large-span floor slabs and stand structures in shopping malls, exhibition centers, and gymnasiums; construction of regular-span areas such as corridors and classrooms in hospitals and schools, balancing load-bearing stability and construction flexibility.
- **Infrastructure:** Support for internal formwork of bridge cap beams and box girders; concrete construction of top slabs and side walls in underground garages and utility tunnels, adapting to load and space requirements under complex working conditions.
- **Special Scenarios:** Temporary support for floor slab reinforcement in existing building renovation; support for equipment foundation pouring in industrial plants (subject to special load verification), meeting safety and load-bearing requirements of unconventional construction scenarios.

Compliance Standards

- **Quality Management System:** ISO 9001
- **European Scaffolding & Formwork Standards:** BS EN 12810 (Prefabricated Frame Scaffolds), BS EN 12811 (Scaffolding Performance & Design), BS EN 12812 (Formwork)
- **UK Safety Guidelines:** NASC SG4 Preventing Falls in Scaffolding & Falsework (prioritizing provisions for "Falsework")
- **Chinese Industry Specifications:** Technical Standard for Safety of Disk Lock Steel Tubular Scaffold in Construction (JGJ231) (applicable to domestic projects)
- **US-related Standards:** ANSI/ASSP A10.8《Scaffolding Safety Requirements》、OSHA Standard 29 CFR 1926.451《Scaffolds》
- **Australian-related Standards:** AS 1576《Metal tube and coupler scaffolds》、AS/NZS 1576.1《Scaffolding systems, equipment and scaffolds - Design and operational requirements》、AS 4576《Guidelines for scaffolding》
- **Japanese-related Standards:** JIS A8951《Tubular steel scaffolds》、JIS G3444《Scaffolding Pipe》
- **Malaysian-related Standards:** MS 1462 Series《Metal scaffolding》、Construction Industry Standard (CIS) 22 & CIS 23

02 General Safety Guidelines

Safety must always come first!

Safety is everyones responsibility. Everyones safety depends upon the design of formwork support systems by a Qualified Person, erection and dismantling of formwork support systems by Trained Erectors under the direct supervision of a Competent Person, and use of formwork support systems by properly trained workers. Inspect your formwork support system before each use to see that the assembly has not been altered and is safe for your use.

The Fineshore M60 Shoring System is meticulously designed and manufactured with the users needs and safety in mind. Nonetheless, the inherent safety built into each component cannot compensate for carelessness on the part of the erector or the user. To prevent harm to those utilizing the Fineshore M60, adhere strictly to the following safety guidelines. Formwork support system designs must incorporate load-bearing member analyses (including concrete pouring loads, material stacking loads) conducted by suitably qualified personnel. Information regarding the load capacity and weight of Fineshore M60 components can be found in our Technical Manual. Formwork support system assembly, usage, relocation, and dismantling must solely be executed under the supervision of Competent Persons. Should you have any queries, please do not hesitate to contact us for assistance.

Competence of Formwork Support Operatives

Work at Height Regulations 2005 refers to a set of regulations in the United Kingdom that were introduced to reduce the risk of injury from falls when working at height. These regulations apply to all work where there is a risk of a fall that could cause personal injury, including formwork support system erection, inspection, and maintenance, and they encompass a wide range of industries and activities. Competence of individuals working at height (especially those engaged in formwork support-related operations) is now a direct requirement of the Work at Height Regulations 2005. Consequently, employers of erectors have a duty to ensure that individuals involved in the erection, modification, or dismantling of formwork support systems have received the necessary training (including load calculation awareness, anti-overturning measures) to enable them to execute their work in a safe manner.

Wenma Scaffolding and Solutions is currently collaborating with the UKs Construction Industry Scaffolders Record Scheme (CISRS), to ensure that its Fineshore M60 product line (for formwork support scenarios) and associated training courses meet CISRS audit standards. As the globally leading accreditation system for operatives competency in scaffolding and formwork support, CISRS specifically provides tailored training for Fineshore M60 (covering scenario-specific operations such as concrete pouring load control, support system stability checks), thereby guaranteeing that formwork support operatives attain the required skill set. This specialized training program, known as the System Scaffold Product Training Scheme (SSPTS), is accessible through our approved training partners. For further details, please visit our official website or contact us directly.

Work at Height/Fall Prevention

As with competence, the Work at Height Regulations 2005 place a duty on employers to protect individuals from harm. The Fineshore M60 Shoring System (as a formwork support system) inevitably carries dual risks of falls from height and structural collapse due to excessive loads (e.g., concrete accumulation, eccentric loading). Consequently, it is of paramount importance that a safe work system—covering both fall prevention and load control—be adopted during any system operation (erection, use, dismantling).

The Fineshore M60 Shoring System is fully compatible with the National Access & Scaffolding Confederation (NASC) safety guidance note SG4 – Preventing Falls in Scaffolding & Falsework, with specific alignment to the "Falsework (formwork support category)" provisions within the guidance. It can be safely used with many of the collective fall protection systems required by the latest revision of SG4 for falsework scenarios, including Advanced Guardrails and Scaffolders Steps.

Note: It is strongly recommended that any erection, dismantling, or modification of the Fineshore M60 Shoring System be carried out in strict accordance with the latest edition of the SG4 guidance note (with focus on the "Falsework" relevant provisions). Additionally, prior to operation, verify that the system’s load-bearing capacity (e.g., foundation bearing capacity, vertical standard spacing) meets the design requirements, and ensure all personnel wear the necessary fall arrest equipment.

02 General Safety Guidelines

Necessity and Core Positioning of PFPE

The collective protection facilities such as working platforms and guardrails cannot completely replace the role of Personal Fall Protection Equipment (PFPE) in formwork support operations. All personnel engaged in high-altitude operations of formwork supports (e.g., joist laying, formwork installation, beam-bottom inspection) must wear and correctly use PFPE (such as full-body harnesses) in accordance with training requirements.

Formwork support operations have inherent fall risks (including falls due to human operational errors and falls caused by frame collapse from excessive loads), which cannot be completely eliminated. PFPE is designed to "arrest a fall" rather than "prevent a fall from occurring"; although it cannot completely avoid fall injuries, it may be the most suitable or even the only risk control method in specific scenarios such as top-layer joist adjustment and beam-bottom formwork inspection.

Usage Objectives and Key Requirements of PFPE

Core Usage Objective:

For most formwork support operations such as joist installation, formwork inspection, and concrete pouring assistance, the core objective of using PFPE is to arrest a fall in a timely manner when it occurs, preventing operatives from hitting the ground or underlying frame structures (e.g., bottom-layer horizontal ledgers, adjustable base jacks).

Load-Bearing and Compatibility Requirements:

PFPE and supporting anchorage points must have sufficient load-bearing capacity to withstand the impact force generated during a fall; at the same time, they must be compatible with the load transmission characteristics of the frame to reduce the impact force to a safe range.

Fall Distance and Rescue Considerations:

Minimize the potential fall distance of operatives, especially avoiding lower load-bearing components (e.g., primary joists);

Assess the consequences of a fall in advance, ensuring that operatives suspended by harnesses can be rescued conveniently without touching the load-bearing support points of the frame during rescue.

Classification and Usage Specifications of Personal Fall Arrest Systems

System Classification and Characteristics:

Personal fall arrest systems are classified as "Active Protection", which only takes effect when used correctly (e.g., a fall arrest harness and lanyard system require a secure anchorage point and a minimum clearance distance to arrest a fall); they are different from "Collective Protection (also called Passive Protection)"—the latter provides continuous protection without relying on personal operation.

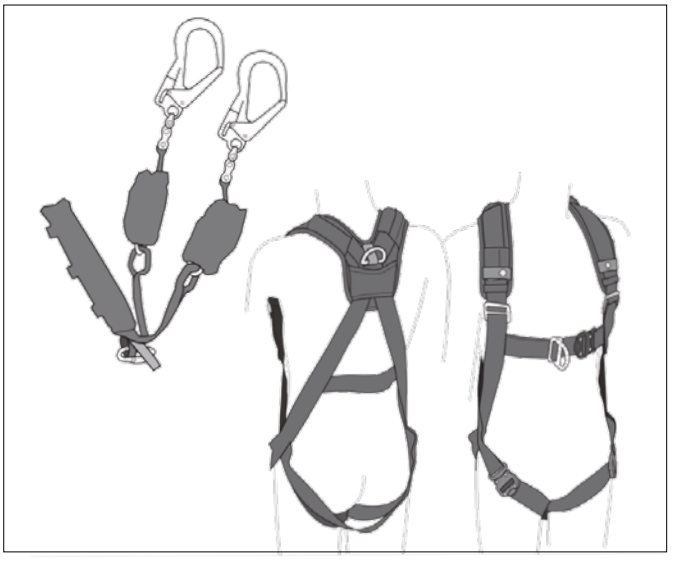
Usage Requirements for Personal Fall Arrest Systems:

When in use, two core requirements must be met simultaneously: first, reducing the potential fall distance; second, assessing the consequences of the fall; among which, the key is to ensure the convenient rescue of suspended personnel (refer to the specification of "Rescue of Suspended Casualties" for details).

Requirements for Supporting Personal Protective Equipment (PPE):

In formwork support operations, suitable PPE must be worn according to the scenario: in high-altitude operation areas (e.g., joist installation layers, formwork inspection platforms) or low-light environments (e.g., dark indoor areas, night operations), additional High-Visibility (Hi-Vis) clothing must be worn to ensure operatives are clearly visible to surrounding personnel, reducing the risk of collisions during concurrent operations.

Always wear appropriate PPE with Hi-Vis where required.



High Specification Personal Fall Protection Equipment

02 General Safety Guidelines

Safety Harness Connection Point

The following guidelines are provided to help you select the most appropriate locations for attaching a harness to Finelock M48 System Scaffold. The guidelines presented in this document do not replace established Health and Safety guidelines. Refer to the Work at Height Regulations and Safety Guidance Notes provided by the NASC where necessary.

Connection To A Standard

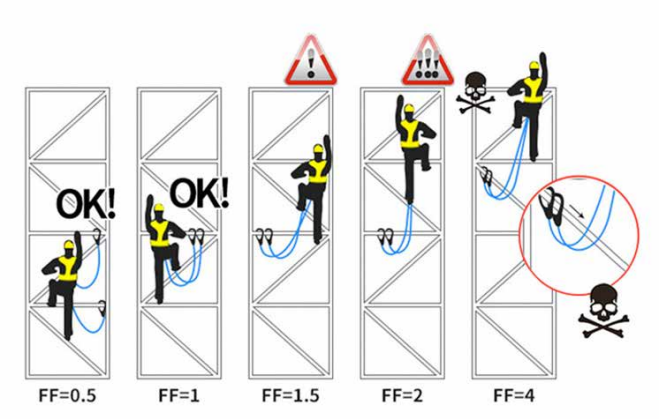
To ensure a positive connection is created it is recommended that joints between Standards are pinned together (ensure site/local regulations and current Legislation are followed). A Scaffolder can connect to any rosette up to the second rosette above the Ledgers.

1. The rosette on a Standard is a proper connection point for the Scaffold Hook attached to a Lanyard. The Standard must be continuous to the base plate. No more than one person per 2.0m lift can be attached to a single Standard.
2. The Scaffold Hook attached to a Lanyard must only be connected to the large trapezoidal holes to provide a suitable anchor point for the appropriate safety harness.
3. DO NOT attach the safety harness lanyard to itself around a Standard because the edge of the rosette may cut the fabric or it may slip over the rosette to the next lower rosette increasing the fall distance.

Connection To A Ledger

1. The Ledger is a proper connection point for the Scaffold Hook attached to a Lanyard. It is recommended that no more than one worker be attached to any Ledger at the same time.
2. Both Ledger ends must be attached with tightened wedges to a Standard that is supported by two or more Ledgers attached to the same rosette. To ensure a positive connection is created, it is recommended that joints between Standards are pinned together (ensure site/local regulations and current Legislation are followed).

General Safety Requirements

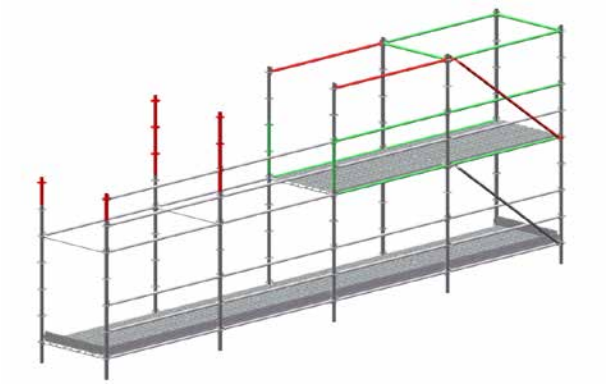


- Diagonal braces must be installed as per Fineshore M60 recommendations and/or engineering design and they must be installed as the shoring system is erected. Diagonal braces may not be used as harness connection points.
- Free fall distance should be limited to 2.0m or less in accordance with current Safety Guidelines for the specific conditions of the fall hazard. In addition, the shoring-specific fall protection plan should ensure that all fall zones are clear and unobstructed and that an effective worker rescue plan has been developed that can be mobilized quickly in the event that an arrested fall incident occurs.
- All persons using fall protection systems must be trained in the proper installation and safe use of fall protection equipment, as required by SG4 – Preventing Falls in Scaffolding & Falsework and/or OSHA Work at Height Regulations.
- Contractors and their employees must comply with the Work at Height Regulations 2005 and/or the OSHA Work at Height Regulations.
- Workers should use an appropriate full-body (five-point) safety harness at all times such that the individual stays fully protected from falling when working at heights above that required by fall protection regulations.
- Workers should hook on immediately after stepping off a ladder or other means of access. It is recommended to use a properly installed Davit Arm and retractable lanyard to ensure that workers are tied-off while climbing exterior vertical shoring ladders.
- When it is necessary to reach below the single guardrail (e.g., fixing bracing or handling other materials), clip the harness to:
  - Available and adequate steelwork;
  - Standards, but refer to Safety Harness Attachment Guidelines.

  Do not clip to:
  - × Bay Braces;
  - × Standards not supported by two or more Ledgers attached to the same rosette;
  - × Puncheons or cantilevered components;
  - × Pipework, plant guardrails, cable racks, etc.
- Refer to the Safety Harness Connection Guide for suitable/appropriate harness locations.
- Anchor points should always be as high as possible. However, this is not always practical in a shoring system which is usually built from the ground up. Our recommendation is that where no higher anchor point is available, you should clip to the Ledger immediately below your feet. There is sufficient space between the Ledger and the platform to clip on with a safety harness carabiner.

02 General Safety Guidelines

Where To Attach Your Shock Absorbing Lanyard



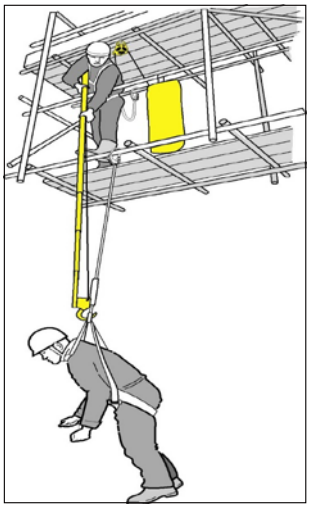
Here are some examples to show the correct connecting points where to attach your shock absorbing lanyard:

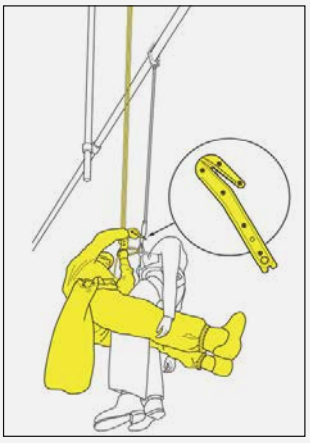
- Connection locations shown in **Red** are not suitable for fixing to.
- The anchorage points shown in **Green** are to support Shock Absorbing Lanyard fall arrest equipment.

Rescue of Suspended Casualties

- While the Work at Height Regulations 2005 requires that work at height be carried out safely, they also require that contingency plans be made for the eventuality that something goes wrong and this extends to making plans to rescue personnel suspended by fall arrest equipment.
- Details relating to rescue and what should be considered can be found in the latest editions of the NASC guidance notes SG4 & SG19 (SG19– 'A Guide to Formulating Rescue Plans').
- In any eventuality provision should be made to ensure that personnel are fully trained to use any equipment that may be required to execute a rescue of any suspended casualties.
- Rescue kits are available that can be deployed quickly by trained operators to facilitate a remote rescue using specialist equipment, without exposing the rescuers to unnecessary risk. These remote rescue kits enable rescuers to attach the equipment to the harness of the suspended scaffolder, release their primary fall protection equipment and either raise them to a safe platform or lower them to the base.

Equipment and techniques can be used that requires a rescuer to descend (or abseil) down to the suspended scaffolder, attach the casualty to the rescuer and then release the scaffolder' s primary fall arrest device (e.g. lanyard). The rescuer may then either raise or lower the casualty to safety (depending upon the equipment used). This type of equipment and technique places a rescuer at greater risk and should only be considered as a last resort.





Fully assisted rescue situation.

The rescuer has attached the casualty to themself and is cutting the lanyard webbing using a special cutting device that reduces the risk of accidentally cutting the rescue equipment.

General Rules for Safety

Always:

- ✓ Always ensure all risk assessments and method statements have been carried out, communicated to those concerned and are understood.
- ✓ Always ensure that there is adequate storage for the materials.
- ✓ Always ensure that there is clear access to the work area.
- ✓ Always ensure all who erect, adapt, and dismantle the scaffold are trained and competent to do so.
- ✓ Always work to current SG4 and/or OSHA guidelines.
- ✓ Always ensure that the ground is level and suitable to accept the scaffold.
- ✓ Always ensure that there are adequate tying points.
- ✓ Always ensure loads are evenly distributed.
- ✓ Always ensure scaffold inspections are carried out and recorded as per current legal requirements.
- ✓ Always ensure that defects are notified to the site management immediately they are found.

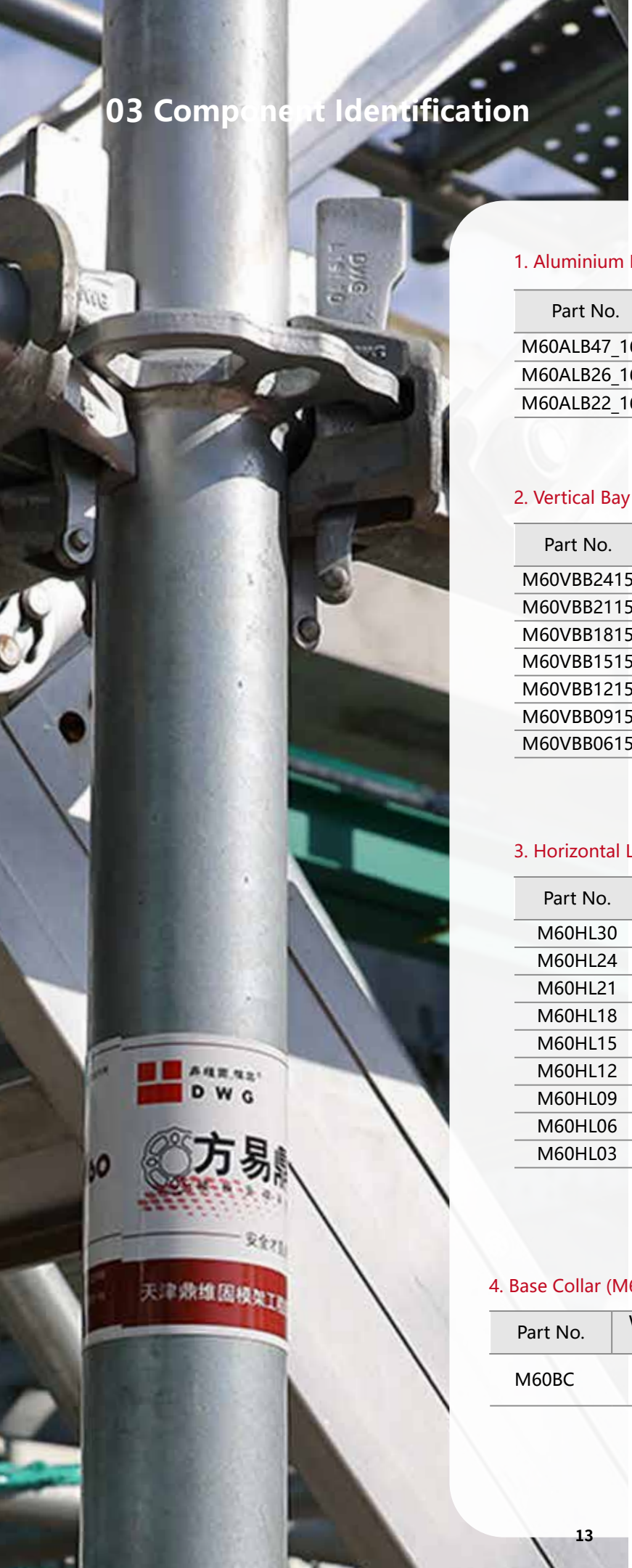
Never:

- × Never remove guardrails, toe boards or brick guards.
- × Never remove ties.
- × Never create gaps in platforms by removing scaffold boards.
- × Never remove warning signs from the scaffold.
- × Never undermine the scaffold by digging trenches under or near to the base.
- × Never overload a scaffolding.
- × Never load directly on to the access scaffold working platform (always use a loading tower).
- × Never add sheeting or netting without prior approval.
- × Never let untrained persons erect, adapt, or dismantle a scaffold.
- × Never use damaged materials.

REMEMBER

SAFETY IS NO ACCIDENT DON'T RISK IT
IF IN DOUBT – ASK!

The information given in this User Guide relates solely to Fineshore M60 equipment supplied by Wenma Scaffolding Solutions Co., Ltd



03 Component Identification

1. Aluminium Beam (H165)

Part No.	Weight (kg)	Product Description
M60ALB47_165	18.14	(H)165mm, 6082-T6
M60ALB26_165	10.04	
M60ALB22_165	8.49	

2. Vertical Bay Brace

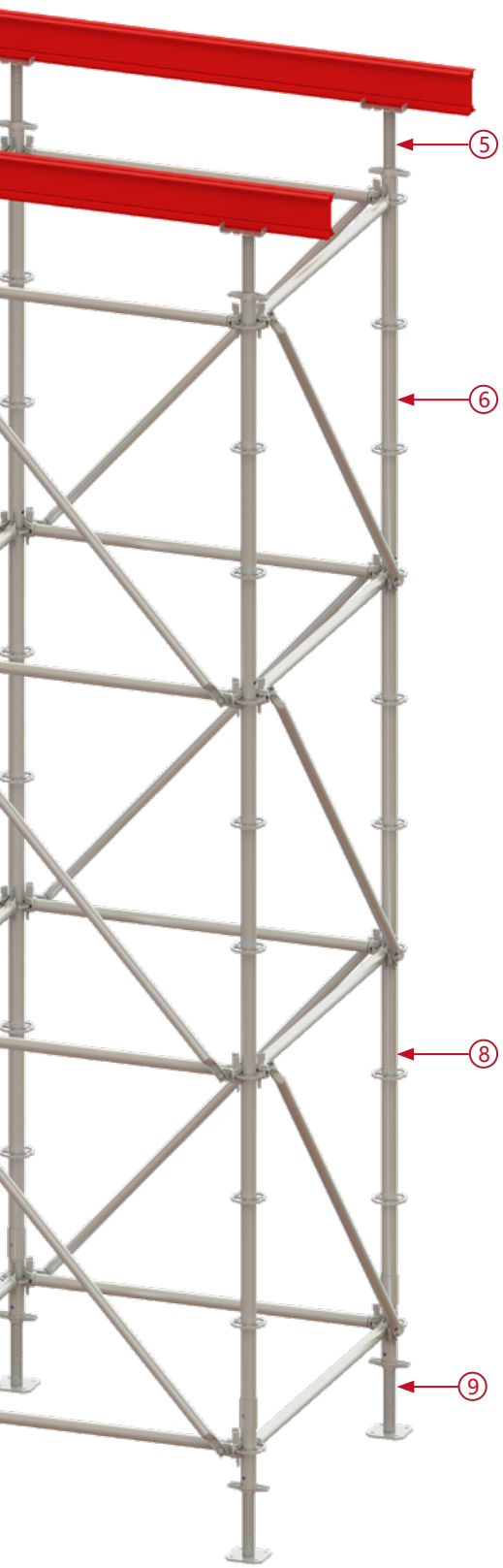
Part No.	Weight (kg)	Product Description
M60VBB2415	8.56	Hot-Dipped Galvanized, 42.8mm OD, 2.50mm Wall, S235JR
M60VBB2115	7.85	
M60VBB1815	7.16	
M60VBB1515	6.58	
M60VBB1215	6.26	
M60VBB0915	5.76	
M60VBB0615	5.56	

3. Horizontal Ledger

Part No.	Weight (kg)	Product Description
M60HL30	10.12	Hot-Dipped Galvanized, 48.3mm OD, 2.75mm Wall, S355JR
M60HL24	8.24	
M60HL21	7.30	
M60HL18	6.36	
M60HL15	5.42	
M60HL12	4.48	
M60HL09	3.54	
M60HL06	2.60	
M60HL03	1.66	

4. Base Collar (M60)

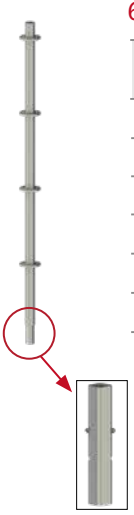
Part No.	Weight (kg)	Product Description
M60BC	2.52	Hot-Dipped Galvanized, S355JR



5. U-Head Jack (M60)

Part No.	Weight (kg)	Product Description
M60AUH	5.46	Multi-functional, Hot-Dipped Galvanized, #20 Seemless Steel Tube, 1500mm L, 48.0mm OD, Plate 6.0mm, S235JR
M60AUH_H	6.18	Hot-Dipped Galvanized, #20 Seemless Steel Tube, 550mm L, 48.0mm OD, Plate 8.0mm, S235JR

6. Vertical Standard (M60) w/Spigot



Part No.	Weight (kg)	Product Description
M60VS300S	18.25	Hot-Dipped Galvanized, 60.3mm OD, 3.2mm Wall, S355JR
M60VS250S	15.44	
M60VS200S	12.63	
M60VS150S	9.57	
M60VS100S	6.73	
M60VS50S	3.89	

7. Spigot (M60)

Part No.	Weight (kg)	Product Description
M60S	1.05	Hot-Dipped Galvanized, S235JR

8. Vertical Standard (M60)

Part No.	Weight (kg)	Product Description
M60VS300	17.20	Hot-Dipped Galvanized, 60.3mm OD, 3.2mm Wall, S355JR
M60VS250	14.39	
M60VS200	11.58	
M60VS150	8.52	
M60VS100	5.68	
M60VS50	2.84	

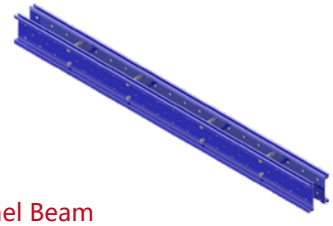
9. Base Jack (M60)

Part No.	Weight (kg)	Product Description
M60ABJ	4.52	Hot-Dipped Galvanized, #20 Seemless Steel Tube, 500mm L, 48.0mm OD, Plate 6.0mm, S235JR
M60ABJ_H	4.38	Hot-Dipped Galvanized, #20 Seemless Steel Tube, 500mm L, 48.0mm OD, Plate 8.0mm, S235JR

03 Component Identification

10. Vertical Standard (M60)

Part No.	Weight (kg)	Product Description
M60AVS100SC	8.10	Hot-Dipped Galvanized, 60.3mm OD, 3.75mm Wall, S355JR



11. Double C-Channel Beam

Part No.	Weight (kg)	Product Description
M60ADCB18	17.56	6082-T6
M60ADCB15	14.26	

12. Double C-Channel Beam

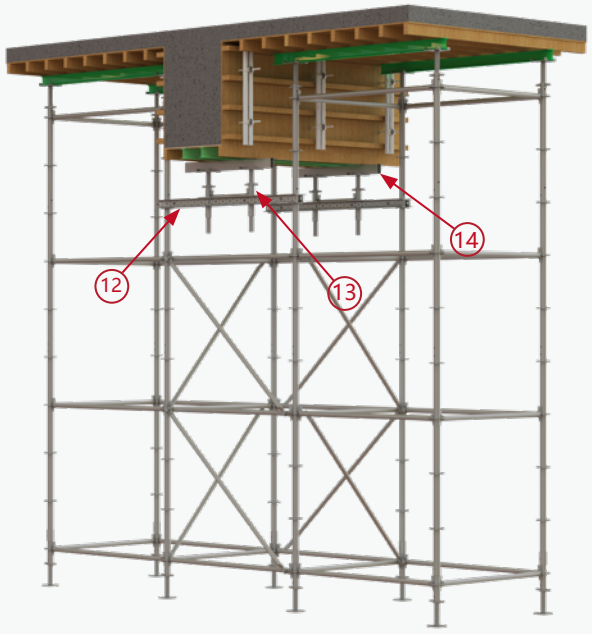
Part No.	Weight (kg)	Product Description
M60SDCB15	25.60	Hot-Dipped Galvanized, S355JR
M60SDCB12	20.80	

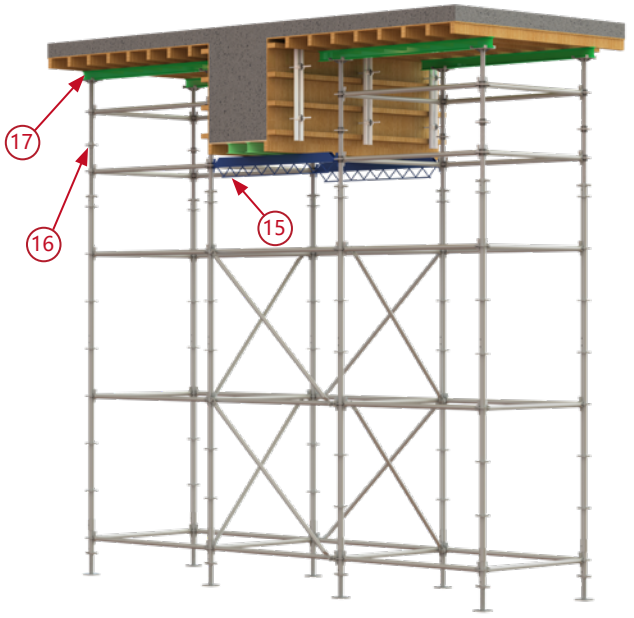
13. Jack Support

Part No.	Weight (kg)	Product Description
M60JS	2.58	Hot-Dipped Galvanized

14. Square Steel Tube Beam

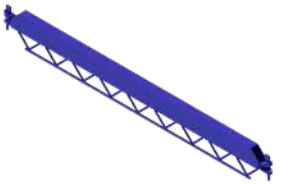
Part No.	Weight (kg)	Product Description
M60STB470	31.87	50x100x3.0mm RHS, Hot-Dipped Galvanized, S235JR
M60STB300	20.34	
M60STB240	16.28	
M60STB210	14.24	
M60STB200	13.56	
M60STB180	12.21	
M60STB120	8.14	
M60STB086	5.83	





15. Heavy Duty Ledger

Part No.	Weight (kg)	Product Description
M60HDL18	14.86	Hot-Dipped Galvanized, S355JR
M60HDL15	12.28	
M60HDL12	8.10	

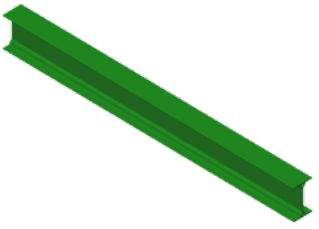


16. U-Head Jack, Multi-functional (M60)

Part No.	Weight (kg)	Product Description
M60MHJ	13.28	Multi-functional, Hot-Dipped Galvanized, #20 Seemless Steel Tube, 1500mm L, 48.0mm OD, Plate 6.0mm, S235JR

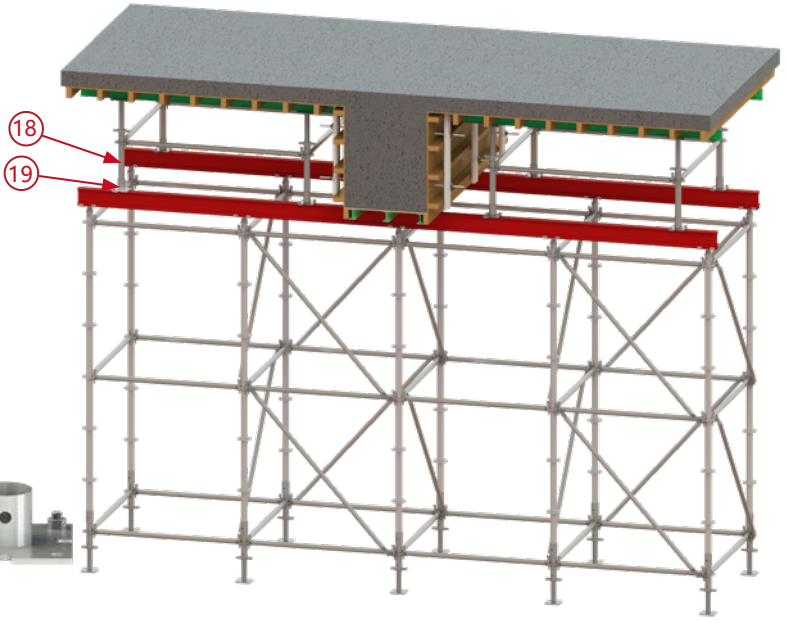
17. Aluminium Beam (H100)

Part No.	Weight (kg)	Product Description
M60ALB47_100	11.66	(H)100mm, 6082-T6
M60ALB22_100	5.46	
M60ALB40_100	9.92	



18. Vertical Standard (M60) w/ Collar

Part No.	Weight (kg)	Product Description
M60VS50C	3.36	Hot-Dipped Galvanized, 60.3mm OD, 3.2mm Wall, S355JR
M60VS25C	2.16	



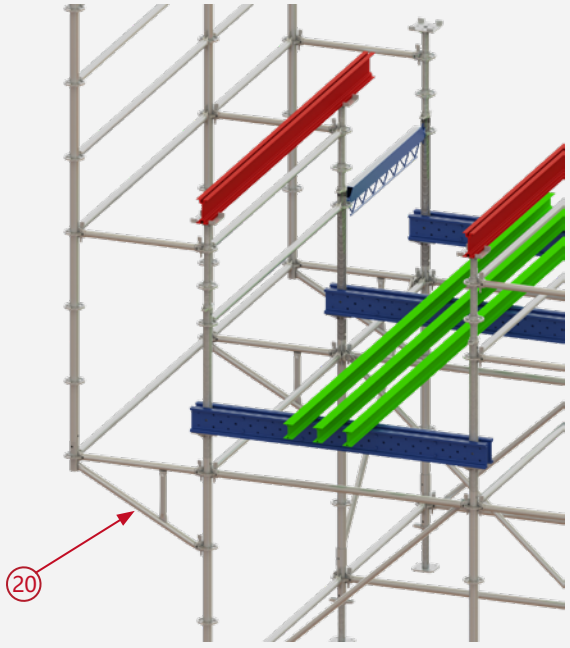
19. Beam Anchoring Clamp

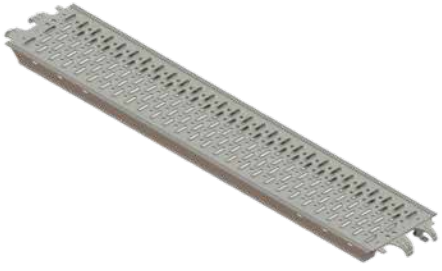
Part No.	Weight (kg)	Product Description
M60BAC	1.36	Hot-Dipped Galvanized

03 Component Identification

20. Side Bracket (M60)

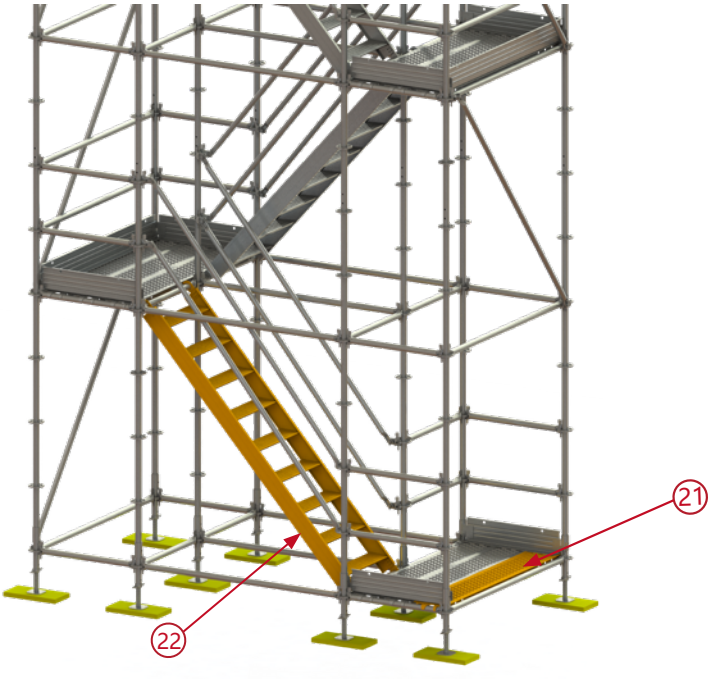
Part No.	Weight (kg)	Product Description
M60SB12	11.78	Hot-Dipped Galvanized
M60SB09	8.80	
M60SB06	6.34	
M60SB03	3.95	





21. Steel WalkBoard

Part No.	Weight (kg)	Product Description
M48SWB_30	19.42	W 276mm, Zinc Aluminum-Magnesium Coated Steel, S235JR
M48SWB_24	15.73	
M48SWB_21	13.88	
M48SWB_18	12.03	
M48SWB_15	10.19	
M48SWB_12	8.34	
M48SWB_09	6.50	
M48SWB_06	4.64	



22. Stairway Aluminum

Part No.	Weight (kg)	Product Description
M60SW2420_AL650	22.60	6082-T6
M60SW2120_AL650	22.10	
M60SW1820_AL650	21.33	
M60SW1515_AL1050	20.40	

23. Platform Stairway Aluminum

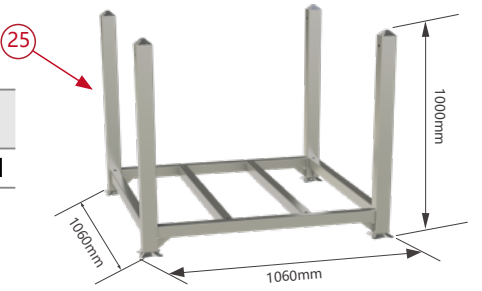
Part No.	Weight (kg)	Product Description
M48PSW3020_AL750	29.80	W 750mm, 6082-T6
M48PSW2420_AL750	26.95	

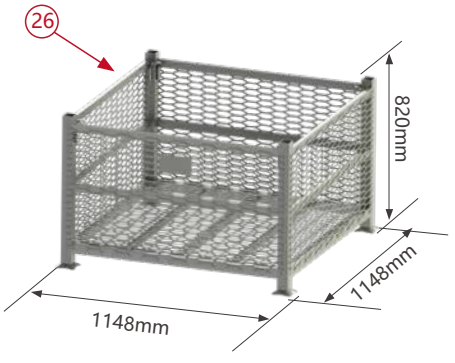
24. Aluminum Scaffolders Step

Part No.	Weight (kg)	Product Description
M48ASS	5.94	6061-T6

25. Scaffold Rack

Part No.	Weight (kg)	Product Description
SR	48.10	Hot-Dipped Galvanized





26. Scaffold Rack Bin

Part No.	Weight (kg)	Product Description
SRB	84.50	Hot-Dipped Galvanized

The Importance of Proper Installation Steps for Scaffolding

The correct installation of scaffolding is crucial for ensuring worker safety, structural stability, and the overall efficiency of any construction or maintenance project. Here are the key reasons highlighting the significance of adhering to proper installation steps:

1. Worker Safety:
Incorrect installation can result in scaffold collapse, leading to severe injuries or fatalities among workers. Following the right procedures ensures that every component is securely fastened, minimizing the risk of accidents.

2. Structural Stability:
Each component of a scaffolding system is designed to bear specific loads. Proper installation guarantees that the structure can withstand the intended loads, including the weight of workers, materials, and environmental forces like wind.

3. Compliance with Regulations:
Local and national regulations often impose strict guidelines for scaffolding setup. Non-compliance can lead to legal liabilities, fines, or work stoppages. Correct installation procedures help meet these standards.

4. Efficiency and Productivity:
Well-installed scaffolding enables a smooth workflow, providing easy access to all areas of the work site. This, in turn, increases productivity and reduces downtime caused by safety concerns or rework.

5. Project Timelines:
Mistakes during installation can cause delays in the project schedule, as correcting errors or dealing with accidents consumes time and resources. Accurate initial installation helps maintain project timelines.

6. Cost Effectiveness:
While proper installation requires careful planning and execution, it ultimately saves costs by preventing accidents, minimizing material waste, and avoiding potential legal and insurance claims.

7. Public and Site Safety:
In addition to protecting workers, correct installation also safeguards the public and the surrounding property from potential hazards such as falling debris or scaffold collapse.

In summary, the importance of correct scaffolding installation steps lies in safeguarding lives, maintaining structural integrity, complying with legal requirements, enhancing work efficiency, preserving project timelines, and optimizing financial outcomes. It is a fundamental aspect of any responsible construction practice.

Fineshore M60 Formwork Support System Construction Process

1. Construction Preparation Stage

- **Technical Disclosure:** Before construction, the technical supervisor shall explain the construction plan of the Fineshore M60 Formwork Support System to construction personnel in detail, including design intent, technical requirements, quality standards, and safety precautions, to ensure that construction personnel are familiar with the construction process and specifications.
- **Surveying and Setting Out:** According to the construction drawings, use surveying instruments to accurately measure and mark the position, axis, and elevation of the formwork support, and conduct re-measurement to ensure the measurement accuracy meets requirements.

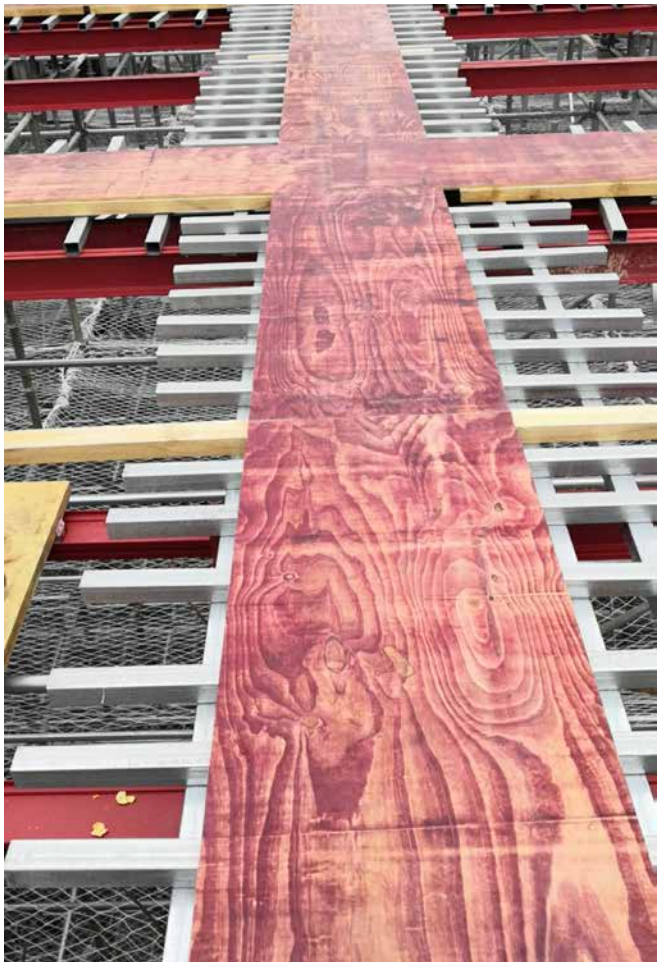
2. Support Erection Stage

- **Foundation Treatment :** Treat the support foundation in accordance with the ground preparation requirements specified in the General Instructions for Installation Preparation, to ensure the foundation bearing capacity meets design requirements. Lay sole pads or base plates on the foundation surface; the pads or base plates shall be laid smoothly and firmly, with good contact with the foundation surface.
- **Layer-by-layer Erection:** Start from the base units and erect the support layer by layer in accordance with the design plan and the manufacturer’ s technical manual. After erecting each layer, promptly check the verticality of vertical poles, the levelness of horizontal bars, and the tightness of connections between components; deviations shall be controlled within the allowable range.
- **Installation of Bracing and Ties:** Install bracing and tie devices at specified intervals and in specified ways to enhance the overall stability of the support. The bracing and ties shall be reliably connected to the building structure, and the connection methods and connection points shall meet design requirements.

04 Installation Steps for Scaffolding

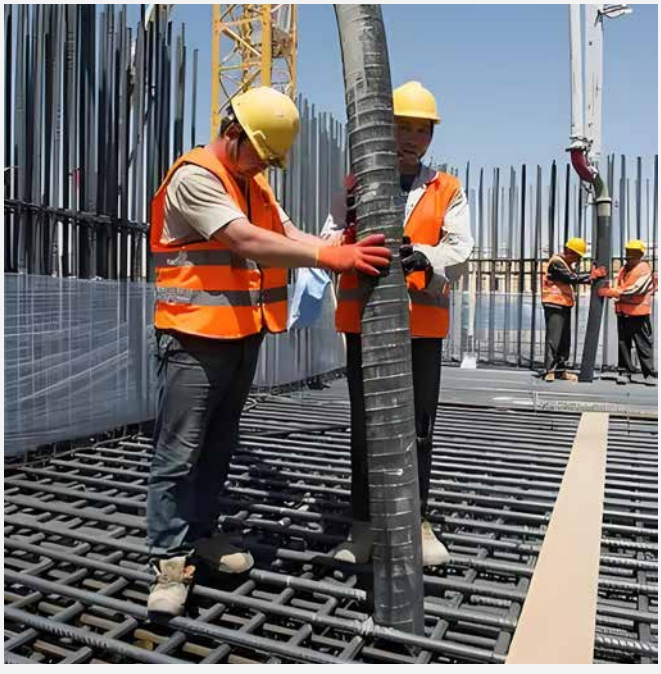
3. Formwork Installation Stage

- **Formwork Selection and Inspection:** Select appropriate formwork types and specifications based on the characteristics of the engineering structure and construction requirements. Before installation, conduct a comprehensive inspection of the formwork to ensure the formwork surface is flat and smooth, free from defects such as deformation and cracks, and the formwork joints are tight.
- **Formwork Installation:** Install the formwork on the support in accordance with the design position and sequence, and use connectors to fix the formwork firmly to ensure the flatness and verticality of the formwork meet requirements. During the installation process, pay attention to reserving the positions of construction joints, embedded parts, and reserved holes.



4. Concrete Pouring Stage

- **Pre-pouring Inspection:** Before concrete pouring, conduct a comprehensive inspection of the formwork support, including the stability of the support, the tightness of connections, the condition of formwork joints and support, to ensure compliance with pouring requirements. At the same time, clean up debris inside the formwork and moisten the formwork surface.
- **Pouring Process Control:** During concrete pouring, carry out layered and symmetrical pouring in strict accordance with the construction plan, control the pouring speed and height, and avoid excessive impact and eccentric pressure of concrete on the formwork support. Strengthen the monitoring of the formwork support; if any abnormal situation is found, stop pouring immediately and take corresponding treatment measures.



5. Support Dismantling Stage

- **Dismantling Condition Confirmation:** After the concrete strength reaches the designed dismantling strength, and upon confirmation by the technical supervisor and completion of the dismantling approval procedure, the support can be dismantled. Before dismantling, conduct safety technical disclosure to construction personnel, clarifying the dismantling sequence and safety precautions.
- **Layer-by-layer Dismantling:** Dismantle the support layer by layer and section by section in accordance with the principle of "last erected, first dismantled; first erected, last dismantled". During the dismantling process, simultaneous operation from top to bottom is strictly prohibited. The dismantled components shall be cleaned up in a timely manner, stacked by category, and throwing is strictly prohibited.

6. Construction Quality Control

- **Material Quality Control:** Strictly control the material quality of the Fineshore M60 Formwork Support System. All materials entering the construction site must be accompanied by quality certification documents and undergo sampling inspection in accordance with regulations. Unqualified materials shall be resolutely removed from the site and their use is strictly prohibited.
- **Process Quality Inspection:** During the construction process, strengthen quality inspection of each construction link and establish a quality inspection ledger. For quality problems found during inspection, issue rectification notices in a timely manner, require the construction team to rectify within the specified time limit, and conduct follow-up re-inspection to ensure effective resolution of quality problems.
- **Finished Product Quality Acceptance:** After the completion of formwork support construction, conduct finished product quality acceptance in accordance with relevant acceptance standards and specifications. Only after passing the acceptance can the construction of the next process proceed.

7. Construction Safety Management

- **Implementation of Safety System:** Establish and improve the construction safety management system, clarify the safety responsibilities of personnel at all levels, and ensure the effective implementation of the safety system during construction. Regularly organize safety training and safety education activities to improve the safety awareness and operational skills of construction personnel.
- **Setting of Safety Protection Facilities:** Set up obvious safety warning signs in the formwork support construction area, and erect safety protection facilities such as guardrails and safety nets as required to provide a safe working environment for construction personnel.
- **Safety Monitoring and Early Warning:** During key construction stages such as concrete pouring, conduct real-time safety monitoring of the formwork support. The monitoring content includes the deformation, displacement, and settlement of the support. When the monitoring data exceeds the early warning value, immediately activate the emergency plan and take corresponding safety measures.

8. Emergency Plan

- **Emergency Organization:** Establish an emergency rescue leading group, clarify the responsibilities and division of labor of each member, and be responsible for the organization, command, and coordination of emergency rescue work.
- **Emergency Material Reserve:** Equip with sufficient emergency rescue materials and equipment, such as first-aid medicines, stretchers, and lifting equipment, and conduct regular inspections and maintenance to ensure the emergency materials are in good condition.
- **Emergency Response Procedure:** Formulate a detailed emergency response procedure, clarifying the reporting process, emergency disposal measures, and rescue methods after an accident occurs. Once an accident occurs, immediately activate the emergency response procedure, quickly organize rescue, and reduce accident losses.

By strictly following the above construction process, quality control, safety management, and emergency plan, the systematic advantages of the Fineshore M60 Formwork Support System can be fully utilized to ensure the safe, efficient, and high-quality completion of formwork support construction.

04 Installation Steps for Scaffolding

Important Note

This content is for demonstration purposes only, illustrating the basic functions of each component. Actual operations shall be carried out under the supervision of a Competent Person and professional engineers to ensure that all work at height complies with OSHA, SG4, TG20:21, and relevant safety regulations and standards. It is strongly recommended that all scaffolding operatives must undergo training and obtain qualification through the Fineshore M60 CISRS System Scaffold Product Training Scheme (SSPTS).

Shoring Tower

Technical Overview of Construction Method

Fineshore M60 Shoring Tower is a core formwork support method in the Fineshore M60 Shoring System, specifically designed for concrete formwork support scenarios, especially suitable for construction needs such as floor slabs, beams, and large-span structures. As a typical independent load-bearing unit in the system, it takes "4 vertical standards" as its core feature and foundation, and adopts an independent tower-shaped structure design: the 4 vertical standards are distributed in a rectangular shape, connected with horizontal ledgers and diagonal braces to form a stable quadrilateral support frame, with a simple overall structure and balanced mechanical force, which can effectively transmit loads and resist lateral displacement.

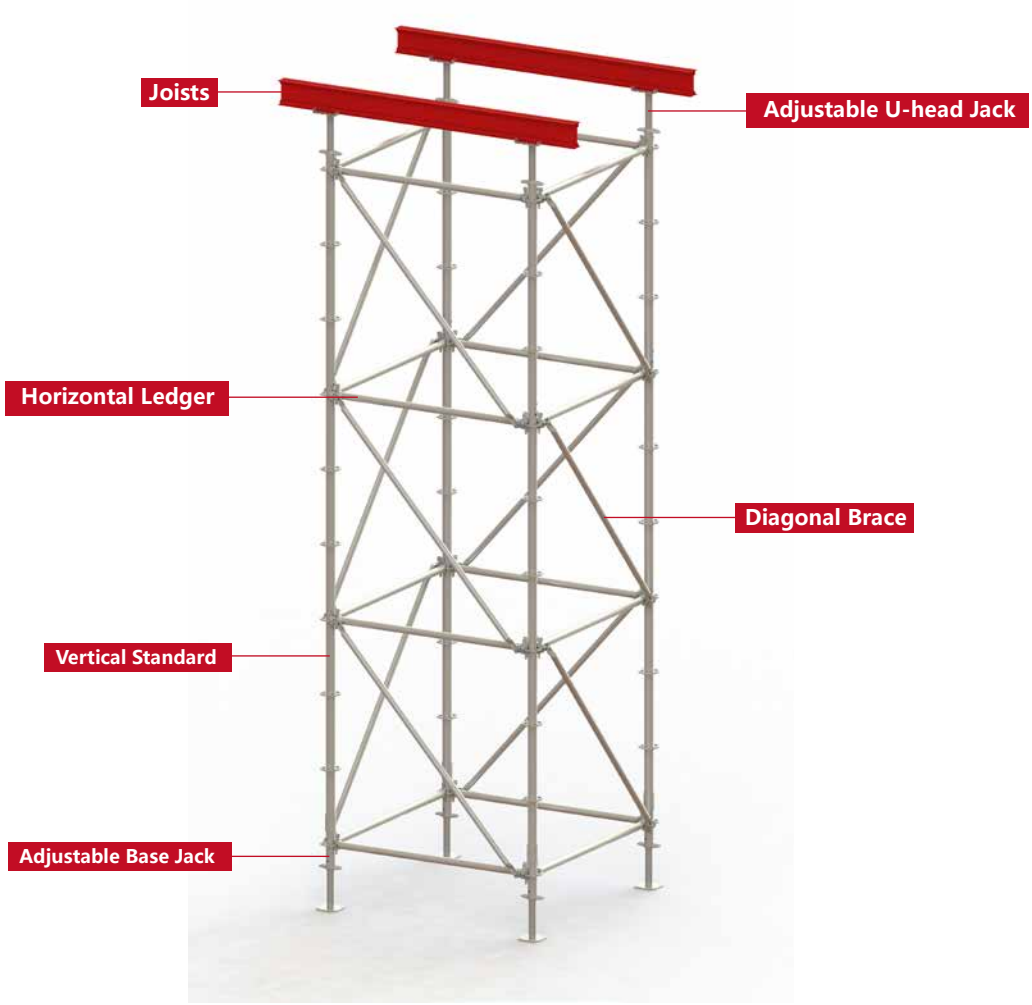
Through the scientific combination of standardized components, this shoring tower can achieve safe, stable, efficient and convenient high-altitude formwork support operations, making the high-altitude operation experience comparable to ground operations and providing a reliable temporary load-bearing solution for construction and infrastructure projects.

As a support unit of the Fineshore M60 Shoring System, the height of Fineshore M60 Shoring Tower can be flexibly adjusted according to overall construction needs, with a conventional erection range of 2 meters to over 20 meters: the overall height can be adjusted by increasing or decreasing vertical standard sections, and the elevation can also be finely adjusted through adjustable base jacks and adjustable U-head jacks. It accurately adapts to different support height needs from small building floor slabs to large infrastructure beams, and at the same time forms a coordinated cooperation with other components in the system to ensure the stability and adaptability of the overall support system.

Core Component Composition

Fineshore M60 Shoring Tower is a formwork support system composed of various functional components, including:

- **Adjustable Base Jack:** Used to level the foundation and adjust the initial height of vertical standards, with an anti-slip pad at the bottom to enhance friction with the ground and ensure the stability of the tower base;
- **Vertical Standard:** The core vertical load-bearing component, made of thick-walled high-strength steel, which is the main path for load transmission, usually forming an independent support unit with 4 pieces as a group;
- **Horizontal Ledger:** Horizontally connects vertical standards to form a stable frame structure, disperses horizontal loads, and provides a support foundation for the working platform;
- **Diagonal Brace:** Resists lateral displacement loads (such as wind loads, concrete lateral pressure), prevents the tower from overturning, and enhances the overall structural anti-deformation ability;
- **Adjustable U-head Jack:** With a U-shaped groove at the top, it is used to support primary and secondary joists, and can fine-tune the elevation to ensure the flatness of the formwork, accurately adapting to construction precision requirements;
- **Primary & Secondary Joists:** Bear the formwork load and evenly transmit the upper load to the adjustable U-head jack, which is a key force transmission component between the formwork and the shoring tower.



Step 1

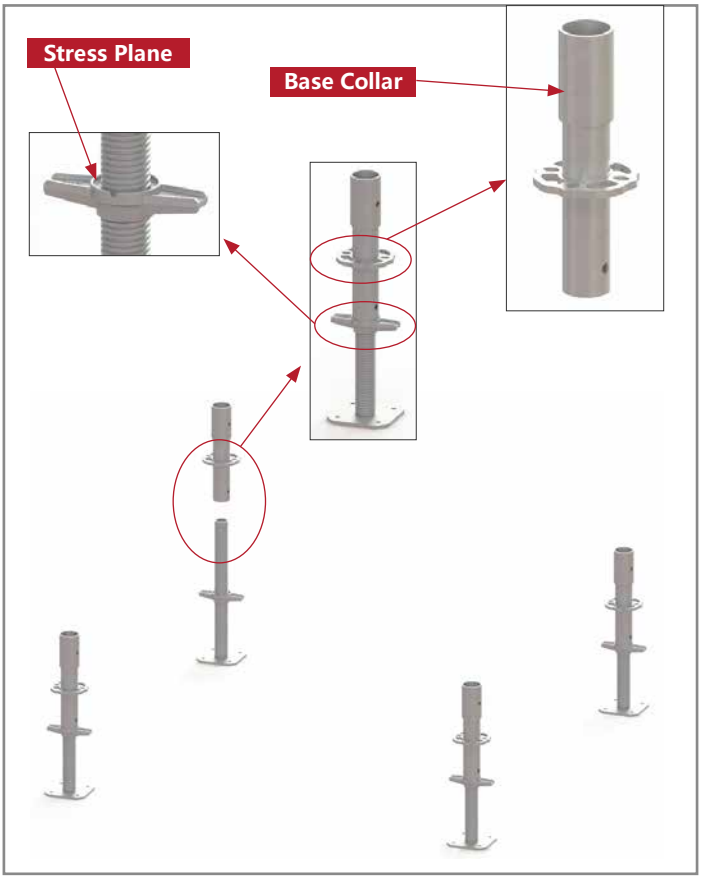
- **Positioning, Layout and Placement of Base Jacks**

  First, clean the erection site to remove debris and standing water, ensuring the ground is level; then mark the vertical standard positioning points according to the construction drawings, with the longitudinal and transverse spacing deviation ≤ ±10mm. Place the Base Jacks at the marked positions, adjust the base adjustment nuts so that the top surfaces of all base nuts are on the same horizontal plane, and control the elevation error within ±5mm. This step is a key link in the shoring tower foundation, and the ground bearing capacity must be checked simultaneously.

Step 2

- **Placement of Base Collars**

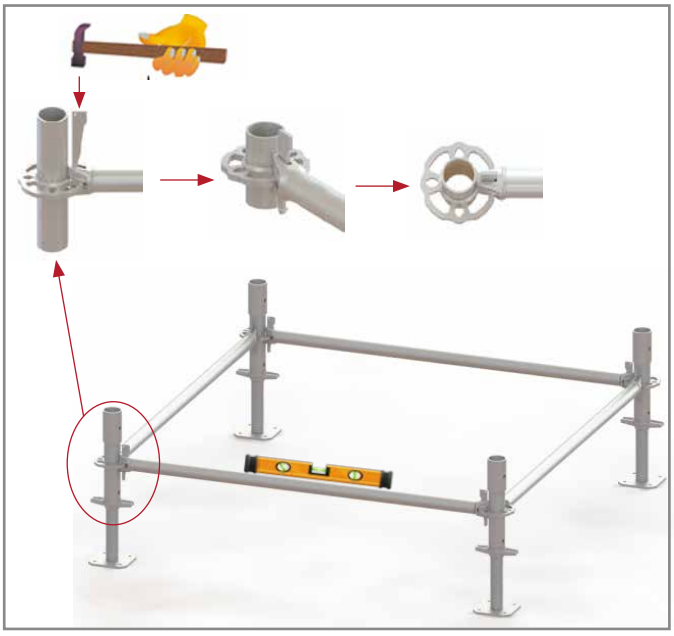
  Vertically sleeve the Base Collars into the connecting column on top of the adjustable base, ensuring the inner hole of the collar is fully fitted with the base nut without looseness.



Step 3

- **Installation of the First-Layer Horizontal Ledgers**

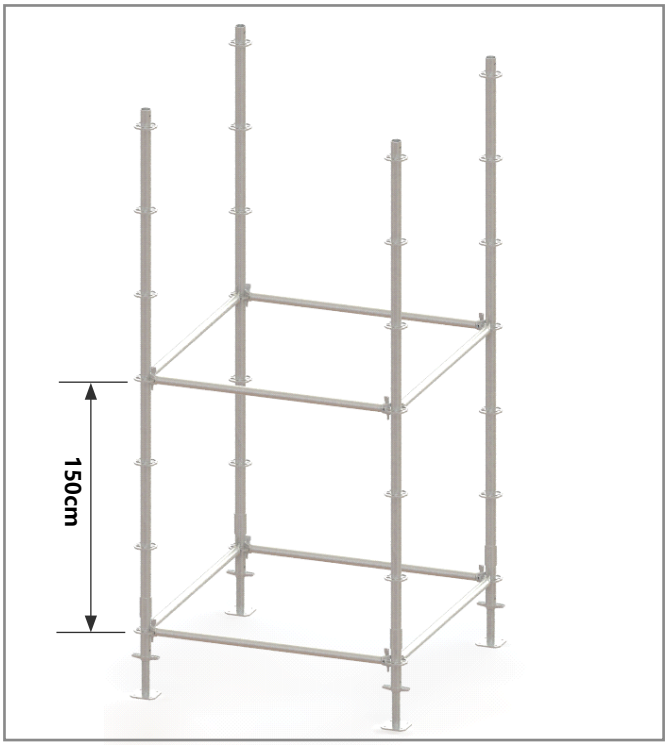
Align the plugs at both ends of the first-layer Horizontal Ledgers with the small holes of the Rosette on the vertical standard base, push them in parallel until the root of the plug is fitted with the Rosette, ensuring no gap between the contact surface of the ledger and the Rosette. Then use a level to calibrate the levelness; if there is a deviation, correct it by rotating the adjustable base nut until the ledger is level. After calibration, use a hammer to tighten the Wedges on the Rosette to ensure no looseness of the Wedges (it is qualified if the settlement amount of two consecutive strikes is less than 3mm).



Step 4

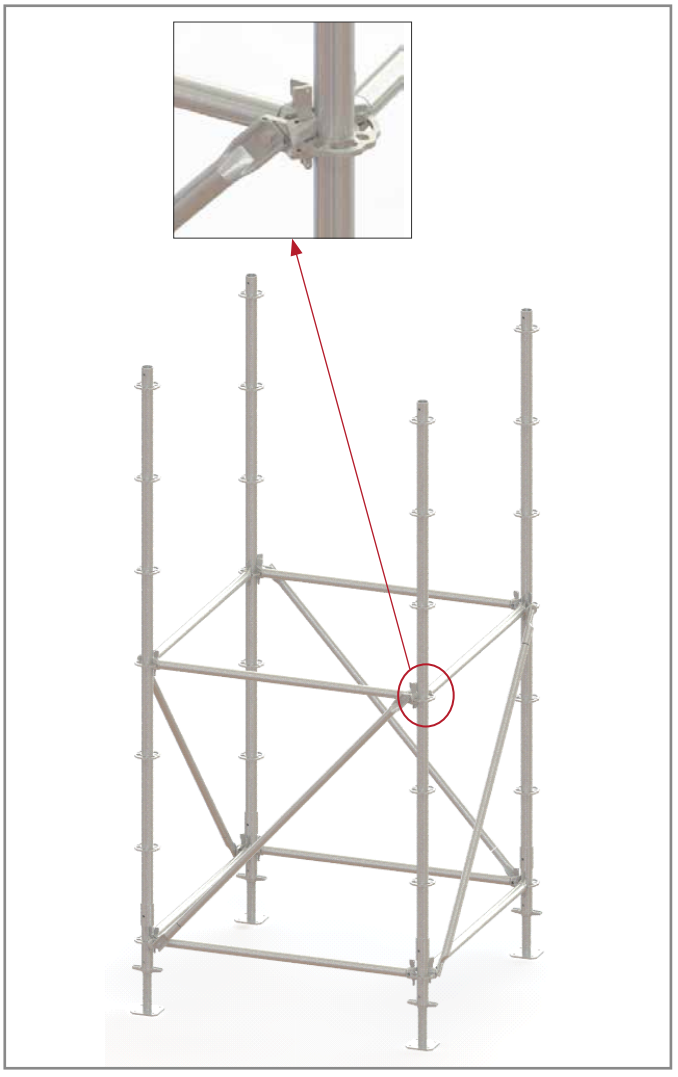
- **Installation of the First-Layer Vertical Standards**

Erect the first-layer Vertical Standards vertically, align the bottom interface with the top slot of the Base Collar, insert slowly until the bottom of the vertical standard is fully fitted with the top of the inner tube of the base, ensuring the coaxiality deviation between the vertical standard and the base is ≤ 2mm. After insertion, attach a level (accuracy ±1mm) to the surface of the vertical standard, and detect the verticality from two perpendicular directions (longitudinal and transverse). The verticality deviation of a single vertical standard is ≤ 3mm (when the height is ≤ 3m); if the deviation exceeds the limit, slightly adjust the position of the vertical standard, and forced bending of the vertical standard is prohibited.



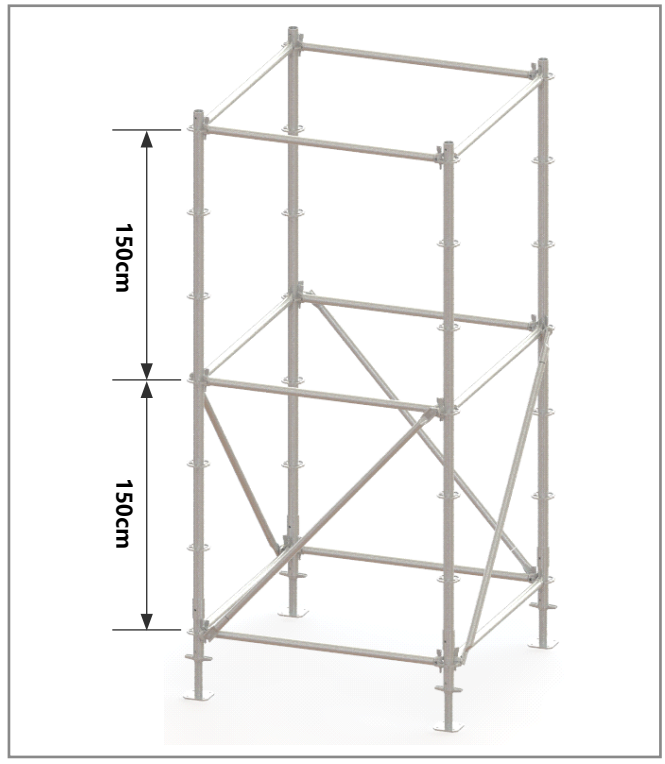
Step 5

- **Installation of the Second-Layer Horizontal Ledgers**
  Install the second-layer ledger at the position of the third disk above the first-layer ledger, ensuring the height from the first-layer ledger is 1.5m. Insert the plugs at both ends of the second-layer Horizontal Ledgers into the small holes of the Rosette on the vertical standard, using the same installation method as the first layer. After connection, use a hammer to tighten the Wedge Pins.



Step 6

- **Installation of the First-Layer Vertical Bay Braces**
  Within the step distance (height 1.5m) formed by the first-layer and second-layer ledgers, install Vertical Bay Braces along the corners and middle areas of the tower in the longitudinal and transverse directions in accordance with the plan and specifications. Insert the plugs at both ends of the diagonal brace into the large hole of the Rosette on the vertical standard, then use a hammer to tighten the pin for fixation.



Step 7

- **Installation of the Third-Layer Horizontal Ledgers**
  Refer to the operation standard of Step 5, mark the position of the third-layer ledger on the second-layer vertical standard, ensuring the spacing from the second-layer ledger is 1.5m. Connect the third-layer Horizontal Ledgers to the Rosette on the vertical standard, and tighten the Wedge Pins.

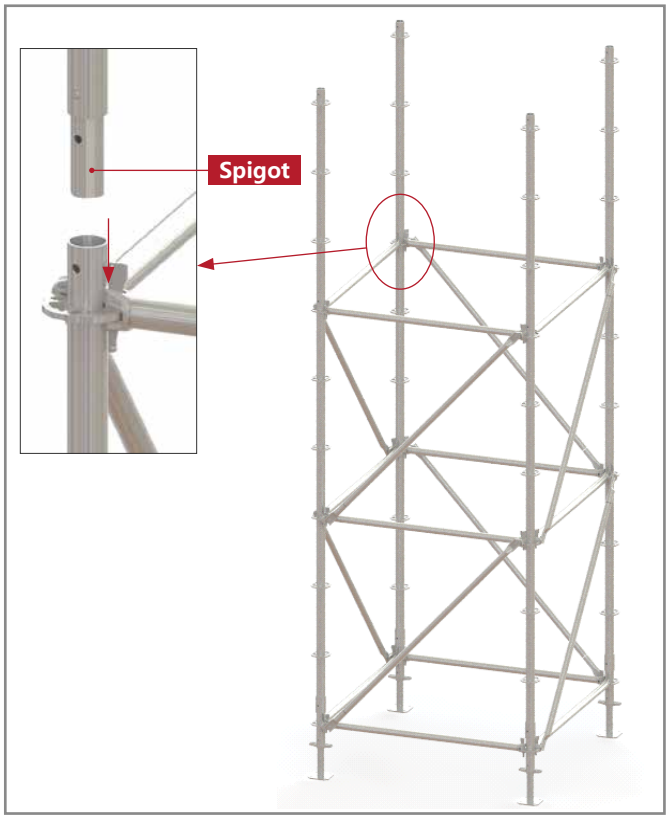
Step 8

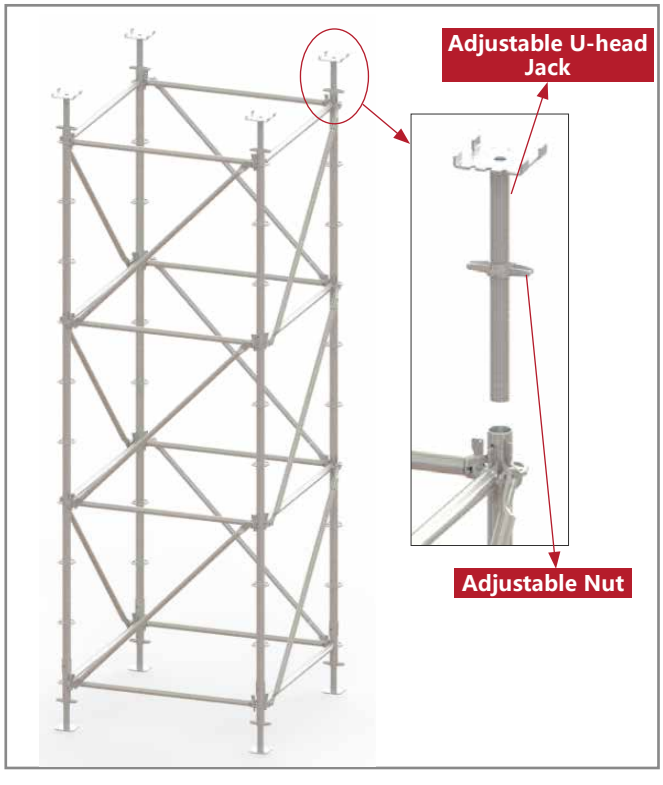
- **Assembly of the Second-Layer Vertical Bay Braces**
  In accordance with the installation direction of the first-layer Vertical Bay Braces (keeping parallel to the first-layer diagonal braces), install the second-layer Vertical Bay Braces within the step distance between the second-layer and third-layer ledgers. During installation, ensure the plugs at both ends of the diagonal brace are fully inserted into the large hole of the Rosette.

Step 9

- **Erection of Vertical Standards**

  When it is necessary to further increase the tower height, align the Spigot at the bottom of the upper-layer Vertical Standards with the interface at the top of the lower-layer Vertical Standards, insert slowly to ensure the Spigot is fully inserted and there is no gap between the upper and lower vertical standards. During insertion, use a plumb bob to detect the concentricity of the upper and lower vertical standards from two perpendicular directions, with the concentricity deviation ≤ 2mm to avoid bending of the vertical standards due to eccentric force. For every 3 extended vertical standards, recheck the verticality of the installed vertical standards as a whole, with the cumulative verticality deviation ≤ 10mm (when the height is ≤ 10m). Repeat this step until the height of the vertical standards meets the design requirements, and a minimum adjustment height of 200mm shall be reserved at the top of the last-layer vertical standard for the subsequent installation of Adjustable Top Jacks.





Step 10

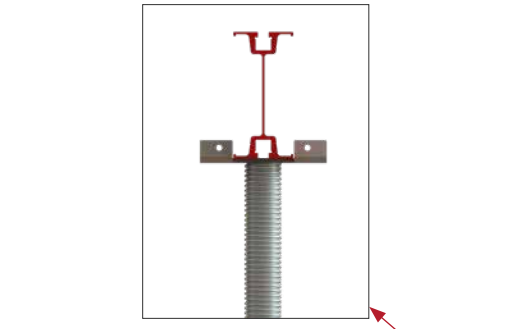
- **Installation of Adjustable Top Jacks**

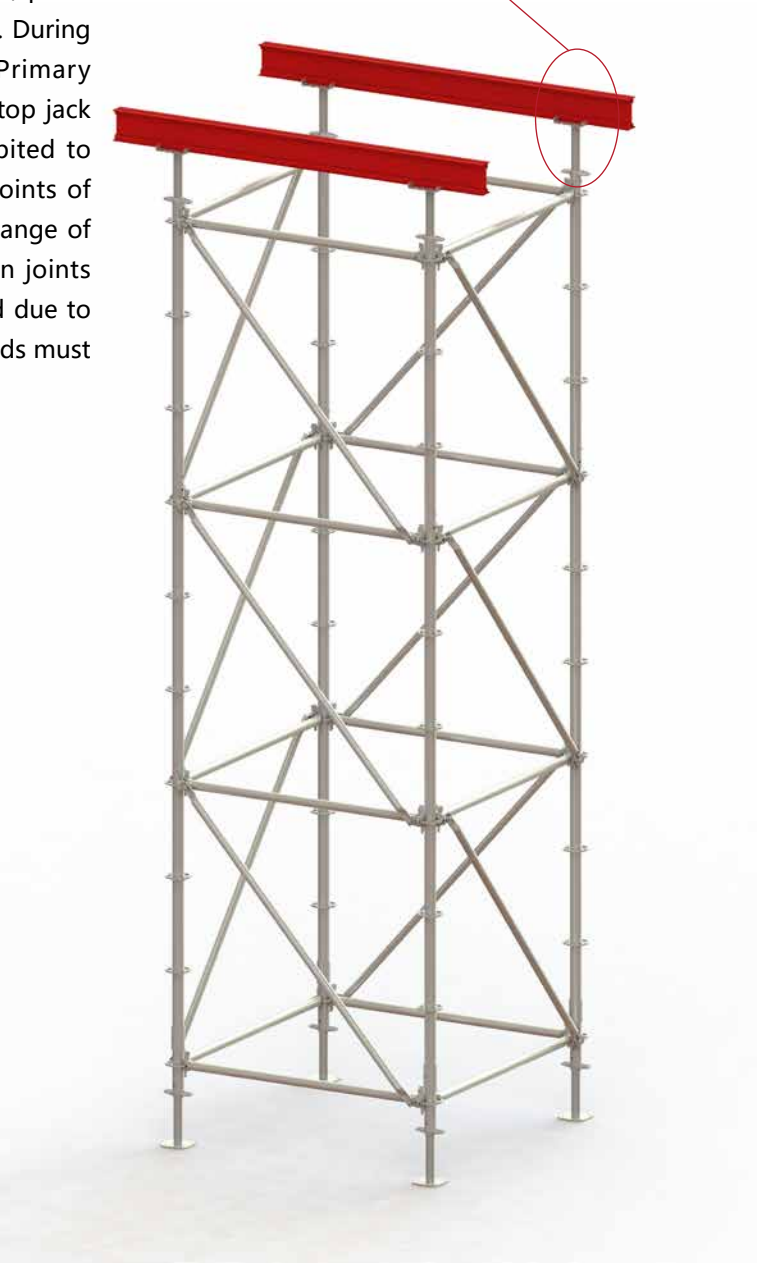
  When the height of the vertical standard reaches the predetermined value, vertically insert the threaded end of the U-Head Jack (Adjustable Top Jack) into the top of the top-layer vertical standard, ensuring the top jack is coaxial with the vertical standard . Calibrate the levelness of all top jack plates, adjust the height by rotating the top jack adjustment nut so that the top surfaces of the plates are on the same horizontal plane, with an elevation error ≤ ±3mm. The length of the top jack extending out of the vertical standard must be strictly controlled within ≤ 400mm (the extended length is measured from the top surface of the vertical standard).

Step 11

- **Installation of Primary Bearers**

  According to the formwork support plan, select the corresponding type of Primary Bearers (such as 100×50mm square tube beams, aluminum alloy beams, etc.). After checking that the appearance of the bearers has no deformation or cracks, place them stably on the adjustable top jack plates. During placement, ensure the center line of the Primary Bearer is aligned with the center line of the top jack plate (eccentric installation is strictly prohibited to prevent uneven force on the bearers). The joints of the Primary Bearers must be set within the range of the adjustable top jack plates, and mid-span joints are prohibited; if mid-span joints are required due to span limitations, reliable reinforcement methods must be adopted.





Construction Method for Beam - Slab Co - support (Double C - channel Beam as Joist + Jack Support as Rooting Component)

Technical Overview of Construction Method

The beam-support construction method is a specialized support solution for frame beam and waffle beam construction in the Fineshore M60 formwork support system. It is specifically designed for frame beams and waffle beams with a cross-sectional size of less than 1 ㎡, especially suitable for the simultaneous construction of small and medium cross-sectional beams and floor slabs in residential buildings, commercial complexes, office buildings, etc.

Core Principle

1.Core Logic: Erect support beams using the rosettes of vertical standards to provide height-adjustable support points for the construction of upper beam structures, while the vertical standards simultaneously meet the support needs of floor slab loads.

2.Load Transmission: Use double C-channel beams to centrally transmit the beam load to the vertical standards on both sides of the beam, replacing the traditional practice of "setting up independent vertical standards under the beam". Finally, it achieves an integrated support effect of "shared support for beam and slab loads", optimizing the support layout while ensuring structural stability.

04 Installation Steps for Scaffolding

Core Advantages

1. Material Saving & Cost Reduction

There is no need to set up independent vertical standards under the beam; the beam load is borne by the coordinated support of the vertical standards on both sides of the beam and the double C-channel beam. Compared with traditional support solutions, it can reduce the usage of vertical standards by 30%-50%, and at the same time save the horizontal ledgers, diagonal braces and connectors supporting the vertical standards under the beam, significantly reducing the material cost and procurement investment of the formwork support.

2. Layout Simplification & Efficiency Improvement

It realizes the integrated support of "shared support for beam and slab", reduces the occupation of construction space by vertical standards under the beam, and facilitates on-site material transportation and personnel passage; at the same time, it reduces the number of processes for erecting and dismantling vertical standards, and combined with the "quick assembly and disassembly" feature of Fineshore M60 components, it can shorten the formwork support construction time by 20%-30%.

3. Clear Load & Safety Reliability

The beam load is directly transmitted to the vertical standards on both sides of the beam through the double C-channel beam, and the floor slab load is simultaneously borne by the vertical standards. The load transmission path is clear, avoiding the force confusion caused by the cross transmission of beam and slab loads in traditional solutions; relying on the "10-ton rated axial load-bearing capacity" of Fineshore M60 vertical standards and the high-strength characteristics of the double C-channel beam, the safety factor of the support system can reach 2 times, meeting the safety needs of small and medium cross-sectional beam construction.

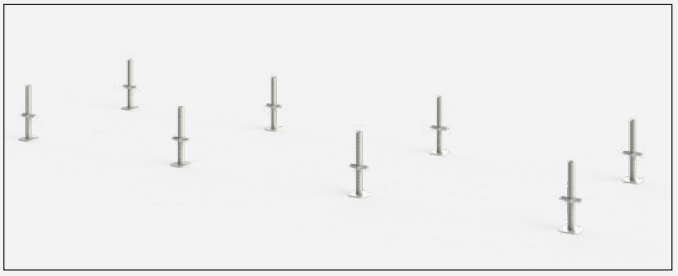
4. Strong Adaptability & High Flexibility

The installation height of the support beam on the rosette of the vertical standard can be adjusted to adapt to different beam height requirements (conventionally adapting to beam heights of 300mm-1200mm); at the same time, it is seamlessly compatible with other components of the Fineshore M60 support system (such as adjustable base jacks, primary and secondary joists), no additional customized special components are required, and it can quickly respond to changes in beam and slab construction parameters of different projects.

— Preliminary Preparation and Foundation Construction (Steps 1-2)

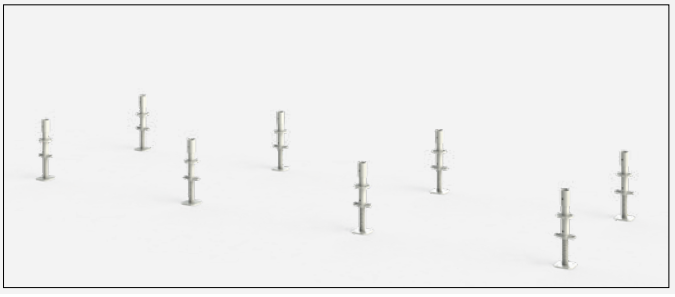
Step 1: Positioning, Layout and Adjustable Base Jack

- **Site Survey and Positioning:** First, clear the erection site to ensure the ground is flat, free of debris, and its bearing capacity meets the design requirements (if the ground is soft, pre-lay steel plates or gravel cushions in advance).
- **Setting Out and Layout:** Mark the positions of Vertical Standards using a chalk line reel or total station according to the construction drawings, ensuring the longitudinal and transverse spacing complies with design and specifications.
- **Adjustable Base Jack Placement:** Align the adjustable base jacks with the marked points, adjust the height of the base adjustment nuts so that the top surfaces of the nuts are on the same horizontal plane, with an error controlled within ±5mm, laying the foundation for subsequent Vertical Standard installation.



Step 2: Vertical Standard Base Collar Installation

- Vertically sleeve the Vertical Standard base collars over the top of the adjustable base jacks, ensuring tight connection between the base collars and the base jacks without looseness. As the initial vertical support of the scaffold, the verticality deviation of the base collars shall be ≤ 1 ‰ to avoid subsequent structural inclination.

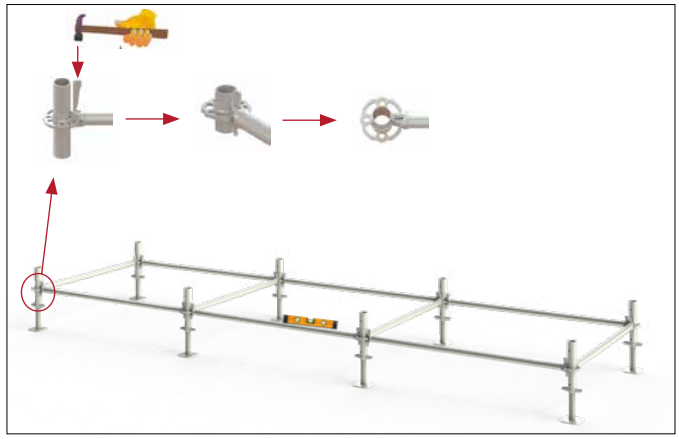


04 Installation Steps for Scaffolding

二 Bottom Frame Construction (Steps 3-4)

Step 3: Installation of the First Layer Horizontal Ledgers

- **Ledger Connection:** Insert the plugs at both ends of the first-layer Horizontal Ledgers into the reserved small holes of the rosettes on the Vertical Standard base collars, ensuring the ledgers fit tightly with the rosettes without gaps.
- **Horizontal Calibration:** Check the levelness of the Horizontal Ledgers using a straightedge or level. If there is a deviation, correct it by adjusting the nuts of the adjustable base jacks until the entire bottom ledger frame is completely horizontal.
- **Fixing and Wedging:** After horizontal calibration, hammer the wedges on the rosettes tightly to ensure the wedges are fully embedded in the jacks, preventing the Horizontal Ledgers from loosening or falling off.



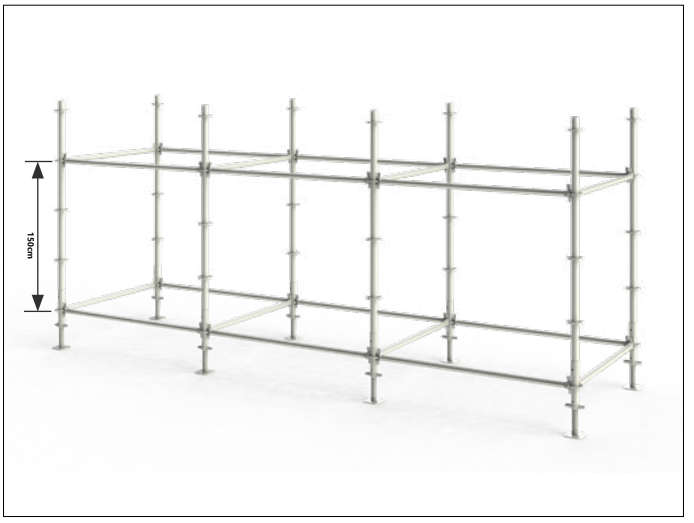
Step 4: Installation of the First Layer Vertical Standards

- **Vertical Standard Erection:** Vertically insert the first-layer Vertical Standards into the reserved interfaces of the Vertical Standard base collars, ensuring the Vertical Standards are coaxial with the base collars without deviation.
- **Verticality Inspection:** Check the verticality of the Vertical Standards using a plumb bob or theodolite.

Middle-Layer Structure Erection (Steps 5-8)

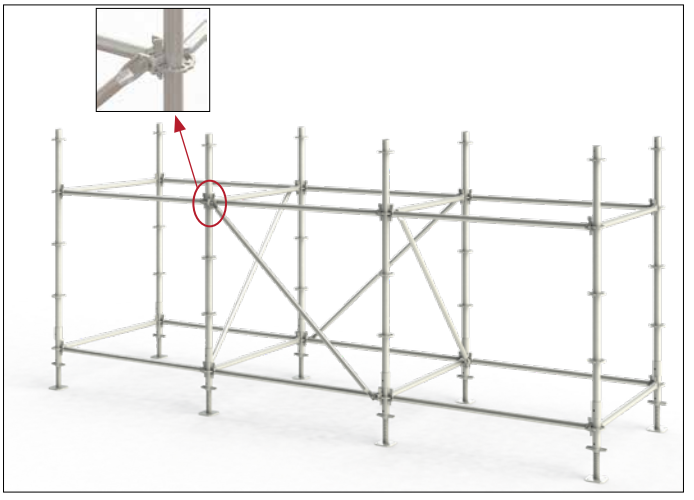
Step 5: Installation of the Second Layer Horizontal Ledgers

- **Height Positioning:** Mark the installation positions of the second-layer Horizontal Ledgers on the first-layer Vertical Standards according to design requirements, ensuring the height above the first-layer Horizontal Ledgers is 1.5m . If there are special requirements in the plan, follow the plan.
- **Ledger Installation and Fixing:** Connect the second-layer Horizontal Ledgers to the rosettes on the Vertical Standards using the same method as the first layer. After connection, hammer the wedge pins tightly to ensure the Horizontal Ledgers are firmly fixed to the Vertical Standards without shaking.



Step 6: Installation of the First Layer Vertical Bay Braces

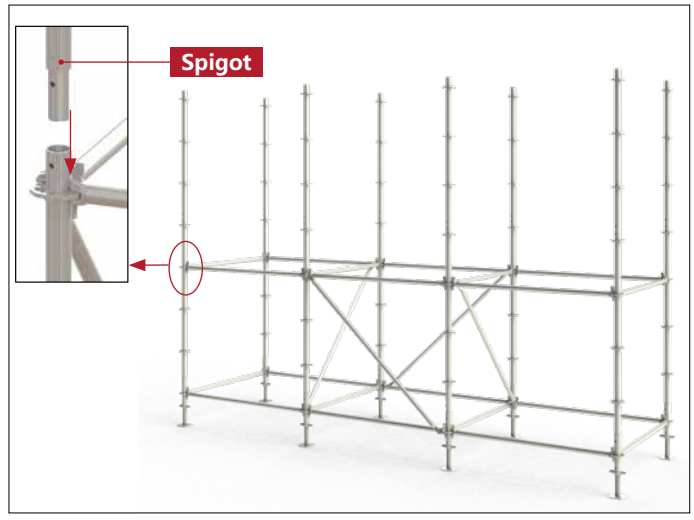
- **Vertical Bay Brace Position Selection:** Install Vertical Bay Braces along the longitudinal and transverse directions within the first step of the scaffold (i.e., the space between the first and second layers of Horizontal Ledgers). The Vertical Bay Braces form a triangular stable structure with the Vertical Standards and Horizontal Ledgers.
- **Vertical Bay Brace Connection:** Insert the plugs at both ends of the Vertical Bay Braces into the large holes of the rosettes on the Vertical Standards, then hammer the pins tightly for fixation.



04 Installation Steps for Scaffolding

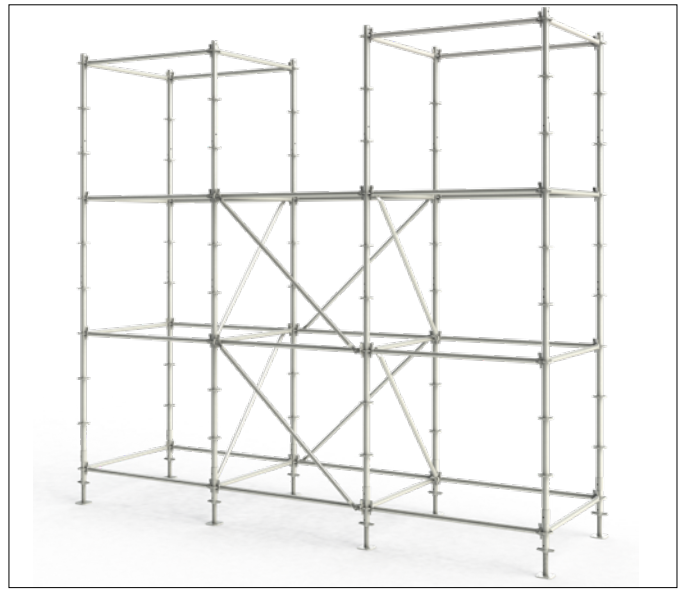
Step 7: Vertical Standard Splicing

- **Splicing Preparation:** When a higher scaffold is required, align the spigots of the upper Vertical Standards with the top interfaces of the lower Vertical Standards, ensuring the spigots are fully inserted into the lower Vertical Standards.
- **Concentricity Control:** During installation, check the concentricity of the upper and lower Vertical Standards using a plumb bob to ensure concentric force bearing and avoid Vertical Standard bending caused by eccentric loads.
- **Splicing Fixing:** Some Vertical Standards (at tension positions) are equipped with positioning pins or bolts at the splicing positions. Install fasteners as required to ensure the upper and lower Vertical Standards are firmly connected without relative sliding.



Step 8: Cyclic Installation of High-Layer Horizontal Ledgers and Vertical Bay Braces

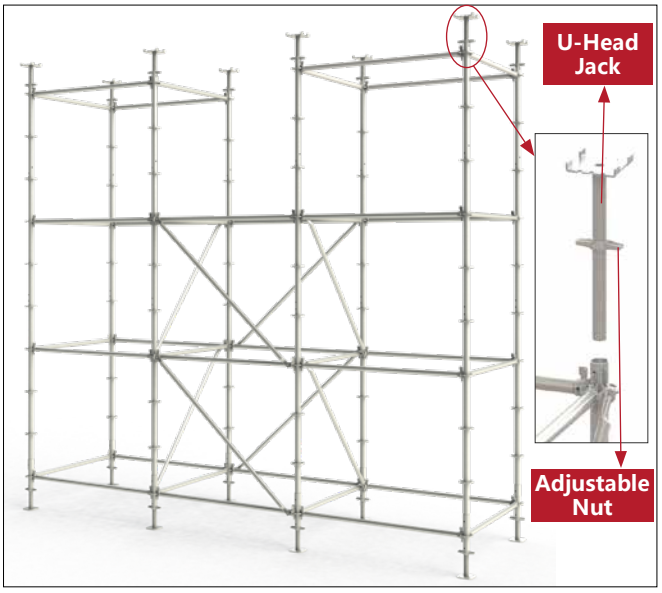
- Cyclically install higher-layer Horizontal Ledgers and Vertical Bay Braces in accordance with the operation standards of Step 5 (ledger installation) and Step 6 (Vertical Bay Brace installation) until the scaffold height meets the design requirements. For every 3 layers erected, conduct an overall inspection of the scaffold's verticality and levelness, correct deviations in a timely manner, and check whether the pins are loose; re-hammer them tightly if necessary.



四 Top-Layer Structure and Formwork Installation (Steps 9-14)

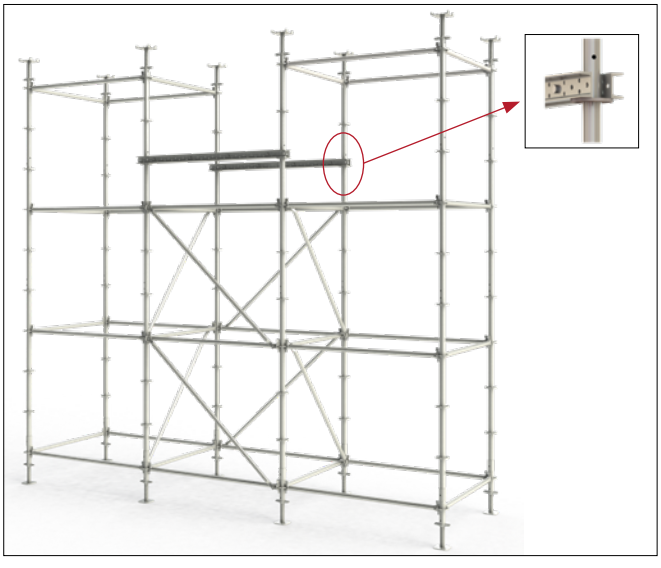
Step 9: Installation of Adjustable U-Head Jacks for Slab Bottom

- When the scaffold reaches the predetermined height, install adjustable U-head jacks for the slab bottom on the top of the top-layer Vertical Standards. Adjust the height of the U-head jacks so that their top surfaces are on the same horizontal plane with an error ≤ ±3mm, which is used to fine-tune the top height of the support frame and ensure the subsequent bearers and formwork are installed smoothly. The length of the U-head jacks extending out of the Vertical Standards shall be ≤ 400mm to avoid unstable force bearing due to excessive length.



Step 10: Installation of Double C-Channel Beams

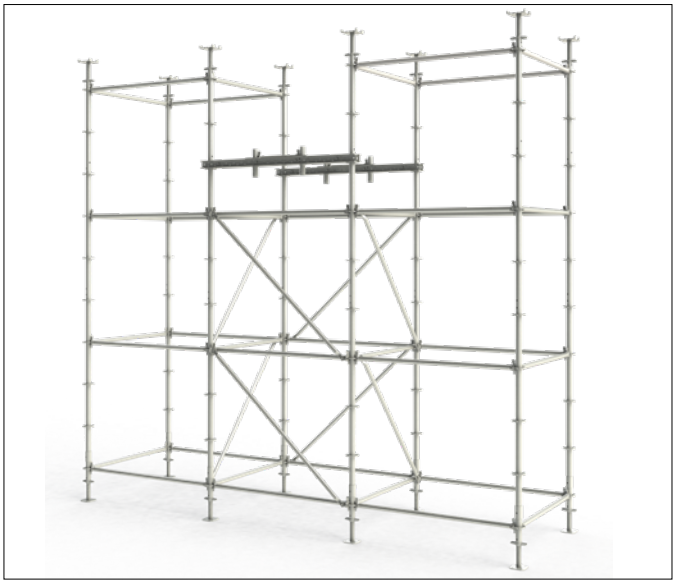
- Horizontally install Double C-Channel Beams on the rosettes of the two top-layer Vertical Standards corresponding to both sides of the beam. Both ends of the Double C-Channel Beams shall be tightly connected to the rosettes, and the Double C-Channel Beams shall be installed in the center to ensure both ends extend outside the Vertical Standards. The model of the Double C-Channel Beams shall meet the design requirements, and their bearing capacity shall meet the load of formwork and concrete pouring.



04 Installation Steps for Scaffolding

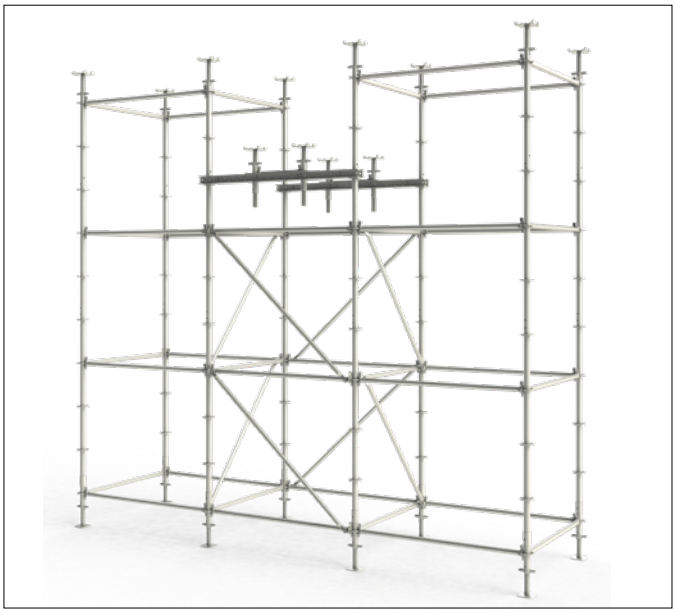
Step 11: Installation of Jack Supports (Anchoring Parts)

- Install jack supports (anchoring parts) on the Double C-Channel Beams. Insert the jack supports into the gap between the double C-channels, and ensure the supporting plates of the jack supports are stably placed on the Double C-Channel Beams. Adjust the spacing of the jack supports according to the plan. The jack supports shall fit tightly with the Double C-Channel Beams without gaps to avoid sliding under force.



Step 12: Installation of Adjustable U-Head Jacks for Beam Bottom

- Insert the adjustable U-head jacks into the jack supports. Adjust the height of the U-head jacks so that their top surfaces are consistent with the designed elevation of the bottom surface of the primary bearers (beam bottom), with an error ≤ ±2mm, providing accurate support for the installation of the primary bearers (beam bottom). The length of the U-head jacks extending out of the Vertical Standards shall be ≤ 400mm to avoid unstable force bearing due to excessive length.



Step 13: Installation of Primary Bearers

- Place the primary bearers (slab bottom and beam bottom) of the corresponding model on the adjustable U-head jacks according to the construction plan. Ensure the primary bearers are tightly connected to the U-head jacks. The primary bearers shall be spliced and extended at the position of the adjustable U-head jacks; splicing in the mid-span position is avoided unless reliable connection measures are adopted.

Step 14: Installation of Secondary Bearers and Formwork

- **Secondary Bearers Installation:** Lay the secondary bearers vertically above the primary bearers, with the spacing of the secondary bearers implemented according to the plan requirements.
- **Formwork Laying:** Lay the formwork (e.g., wooden formwork, steel formwork) on the secondary bearers. The joints between the formwork shall be tight with a gap ≤ 2mm. If the gap is too large, seal it with sealant or tape to prevent grout leakage during concrete pouring. After formwork laying, check the flatness of the formwork surface, with an error ≤ 3mm/2m.

五 Acceptance and Concrete Pouring (Step 15)

Step 15: Acceptance and Concrete Pouring

- **Comprehensive Acceptance:** After the formwork and support frame are fully erected, organize a joint acceptance inspection involving the technical, quality, and safety departments. The inspection items include: scaffold verticality, levelness of Horizontal Ledgers, firmness of joint connections, spacing of bearers, formwork joints, and fixing status of Jack Supports (Anchoring Parts). After passing the acceptance, sign the acceptance record.
- **Concrete Pouring:** After passing the acceptance, carry out the pouring operation in accordance with the concrete pouring plan. During the pouring process, assign special personnel to observe the deformation of the scaffold and formwork. If problems such as bending of Vertical Standards, loosening of Horizontal Ledgers, or sinking of formwork are found, stop pouring immediately and continue construction only after taking reinforcement measures.
- **Post-Maintenance:** After the concrete pouring is completed, the formwork and support frame can be removed only when the concrete strength meets the design requirements (usually reaching 75% of the design strength). The removal sequence must follow the principle of "remove the first-supported parts last and the later-supported parts first", and unauthorized removal is strictly prohibited.

Construction Method for Beam - Slab Co - support (Multi-functional U-Head Jack + Heavy Duty Ledger as Joist)

Technical Overview of Construction Method

The Multi-functional U-Head Jack construction method is a patented new beam-slab co-support method of WENMA. Its core is to integrate and fix support nodes and connection nodes on the screw rod of the height-adjustable U-head jack, which not only provides precise and stable support height for structural construction, but also forms a stable system with coordinated force with the surrounding frame through the connection nodes, realizing the integrated support of beam and slab loads.

Core Principle

1.Integrated Node Design

Both support nodes and connection nodes are set on the screw rod of the adjustable U-head jack. The support nodes are used to bear beam and slab loads and precisely adjust the height; the connection nodes can be flexibly adjusted in height according to the requirements of the disc buckle step distance, and connected with the surrounding frame through horizontal rods and diagonal rods to form a spatially stable structure.

2.Optimized Vertical Standard Force

Through the rigid connection between the connection node and the surrounding frame, the height of the free end of the vertical standard is effectively reduced, the slenderness ratio of the vertical standard is reduced, the overall bearing capacity and stability of the frame are improved, and the safety requirements of large-span and heavy-load construction scenarios are met.

3.Component Synergy

The heavy duty ledger as joist and the multi-functional long U-head jack are connected by pins to form an integral force-bearing unit, which strengthens the stability of the top support structure; eliminates scattered accessories such as adjustable U-head jacks and rooting parts scattered at the beam bottom in traditional technology, and simplifies the composition of the support system.

04 Installation Steps for Scaffolding

Core Advantages

1.Reduction in Components

Reduce the number of scattered accessories such as adjustable U-head jacks and rooting parts at the beam bottom, reduce material procurement and management costs, and reduce losses during transportation and storage of components.

2.Improved Construction Efficiency

The integrated node design and pin connection simplify the installation process, reduce the amount of high-altitude operation for workers, and combined with the feature of reduced number of components, can shorten the formwork support erection time by more than 30%.

3.Enhanced Construction Safety

The reduction of scattered accessories reduces the risk of falling objects from heights; the improvement of the overall stability of the frame and the optimization of the force state of the vertical standards reduce the hidden danger of frame instability and collapse, and comprehensively improve the safety factor of the construction site.

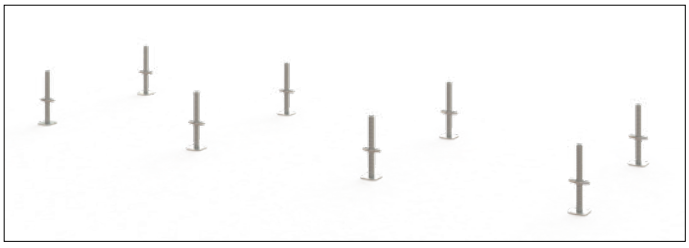
4.Wide Adaptability

According to the construction requirements of different beam heights and slab thicknesses, by adjusting the height of the multi-functional long U-head jack and the position of the connection node, it can adapt to various concrete structure construction scenarios, and has strong compatibility with other components of the Fineshore M60 formwork support system.

一 Preliminary Preparation and Foundation Construction (Steps 1-2)

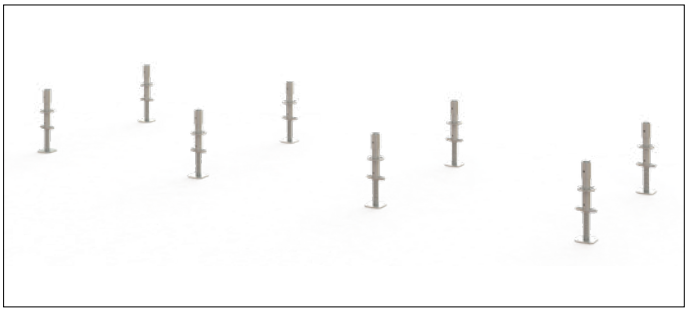
Step 1: Positioning, Layout and Adjustable Base Jack Installation

- **Site Survey and Positioning:** Clear the erection site to remove debris and standing water, ensuring the ground is flat and its bearing capacity meets design requirements (pre-lay steel plates or gravel cushions for soft ground).
- **Setting Out and Layout:** Mark the positions of Vertical Standards with a chalk line reel or total station according to construction drawings, with longitudinal and transverse spacing deviation ≤ ±10mm to meet design and specification requirements.
- **Adjustable Base Jack Placement:** Align the adjustable base jacks with the marked points, adjust the height of the base adjustment nuts so that the top surfaces of the nuts are on the same horizontal plane, with an error controlled within ±5mm, laying the foundation for subsequent Vertical Standard installation.



Step 2: Vertical Standard Base Collar Installation

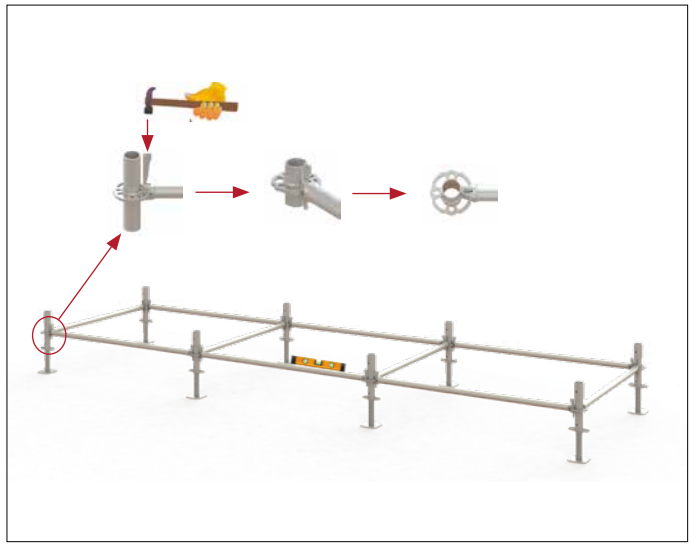
- Vertically sleeve the Vertical Standard base collars over the top of the adjustable base jacks, ensuring tight connection between the base collars and the base jacks without looseness. As the initial vertical support of the scaffold, the verticality deviation of the base collars shall be ≤ 1 ‰ to avoid subsequent structural inclination.



二 Bottom Frame Construction (Steps 3-4)

Step 3: Installation of the First Layer Horizontal Ledgers

- **Ledger Connection:** Insert the plugs at both ends of the first-layer Horizontal Ledgers into the reserved small holes of Rosettes on Base Collars, ensuring the ledgers fit tightly with Rosettes without gaps.
- **Horizontal Calibration:** Check the levelness of Horizontal Ledgers with a straightedge or level; if there is a deviation, correct it by rotating the nuts of Adjustable Base Jacks until the entire bottom ledger frame is completely horizontal.
- **Fixing and Wedging:** After horizontal calibration, hammer the Wedges on Rosettes tightly to ensure the Wedges are fully embedded in the jacks, preventing Horizontal Ledgers from loosening or falling off.



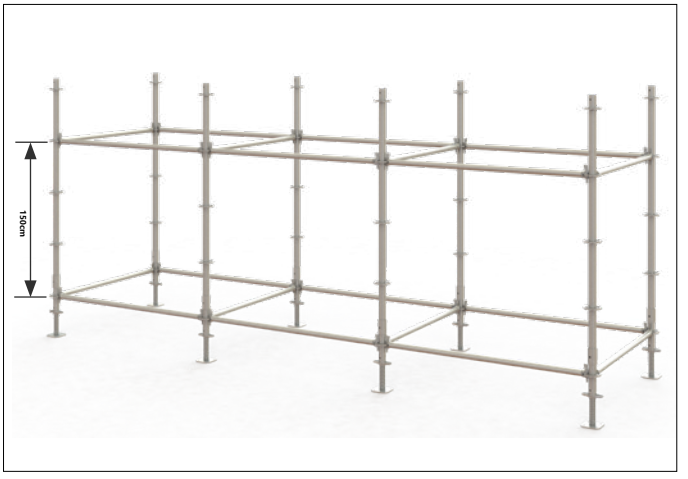
Step 4: Installation of the First Layer Vertical Standards

- **Vertical Standard Erection:** Vertically insert the first-layer Vertical Standards into the reserved interfaces of Base Collars, ensuring the standards are coaxial with the collars without deviation, and the bottom of the standards is fully fitted with the top of the inner tube of Base Collars.
- **Verticality Inspection:** Check the verticality of Vertical Standards from two perpendicular directions (longitudinal and transverse) with a plumb bob (accuracy ±1mm) or level; the verticality deviation of a single standard (when height ≤ 3m) shall be ≤ 3mm.

三 Middle-Layer Structure Erection (Steps 5-8)

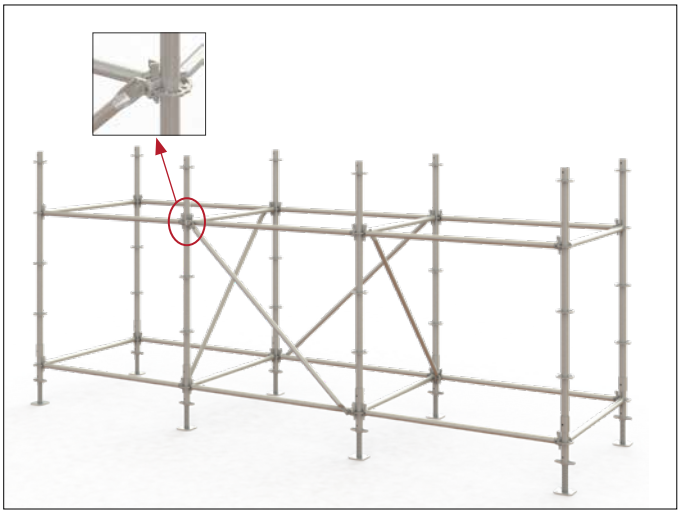
Step 5: Installation of the Second Layer Horizontal Ledgers

- **Height Positioning:** Mark the position of the second-layer Horizontal Ledgers on the first-layer Vertical Standards, ensuring the height above the first-layer ledgers is 1.5m; follow the plan if there are special requirements.
- **Ledger Installation and Fixing:** Connect the second-layer Horizontal Ledgers to the Rosettes on Vertical Standards using the same method as the first layer; after connection, hammer the Wedge Pins tightly to ensure the ledgers are firmly fixed to the standards without shaking.



Step 6: Installation of the First Layer Vertical Bay Braces

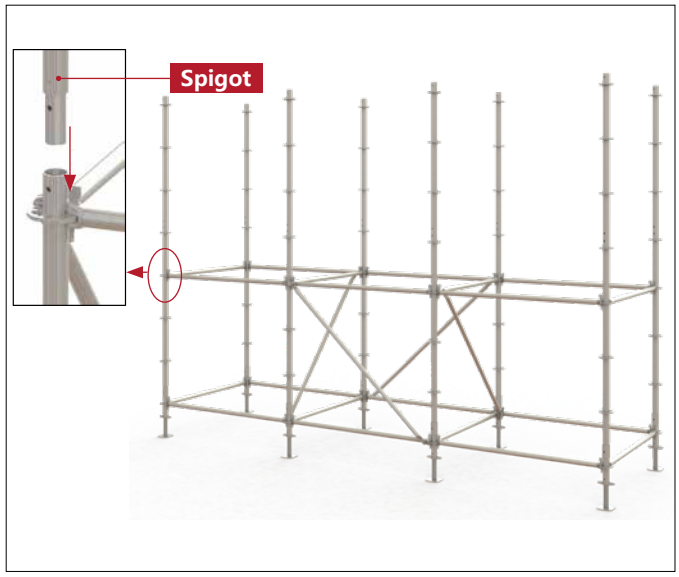
- **Vertical Bay Brace Position Selection:** Install Vertical Bay Braces along the corners and middle areas of the tower in longitudinal and transverse directions within the step distance (height 1.5m) formed by the first and second layers of ledgers; the braces form a triangular stable structure with Vertical Standards and Horizontal Ledgers.
- **Vertical Bay Brace Connection:** Insert the plugs at both ends of Vertical Bay Braces into the large holes of Rosettes on Vertical Standards, and hammer the pins tightly for fixation to ensure the braces are firmly installed.



04 Installation Steps for Scaffolding

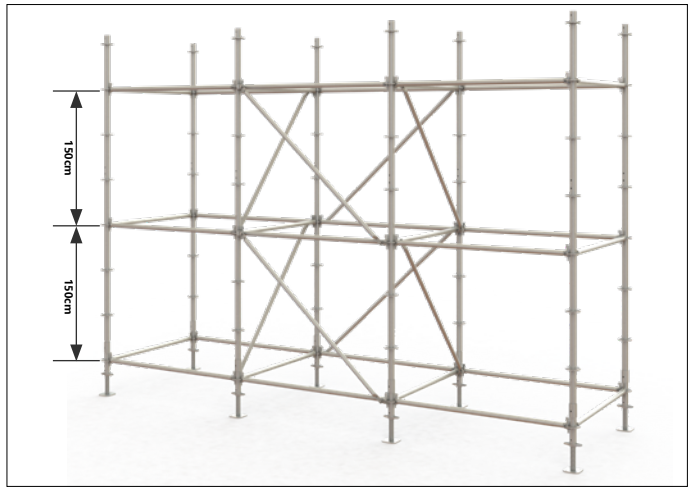
Step 7: Vertical Standard Splicing

- **Splicing Preparation:** When a higher layer is required, align the Spigots of upper Vertical Standards with the top interfaces of lower Vertical Standards, insert slowly to ensure the Spigots are fully inserted and there is no gap between upper and lower standards.
- **Concentricity Control:** Check the concentricity of upper and lower Vertical Standards with a plumb bob, with concentricity deviation ≤ 2mm to avoid bending of standards due to eccentric loads.
- **Splicing Fixing:** Vertical Standards at tension positions are equipped with positioning pins or bolts at splicing points; install fasteners as required to ensure upper and lower standards are firmly connected without relative sliding.



Step 8: Cyclic Installation of High-Layer Horizontal Ledgers and Vertical Bay Braces

- Cyclically install higher-layer Horizontal Ledgers and Vertical Bay Braces in accordance with the standards of Step 5 (ledger installation) and Step 6 (Vertical Bay Brace installation) until the design height is reached. For every 3 layers erected, conduct an overall inspection of the scaffold's verticality and levelness, correct deviations in a timely manner, check if pins are loose, and re-hammer tightly if necessary.



四 Top-Layer Structure and Formwork Installation (Steps 9-14)

Step 9: Installation of Multi-functional U-Head Jacks

- When the scaffold reaches the predetermined height, install Multi-functional U-Head Jacks on top of the top-layer Vertical Standards. Each jack includes 3 Rosette Nuts and 1 Adjustment Nut, with functions and operations as follows:

1.Adjustment Nut:

① Adjust the height of the jack plate to fine-tune the slab bottom elevation;

② Control the insertion length of the jack into the Vertical Standard, which shall be > 150mm.

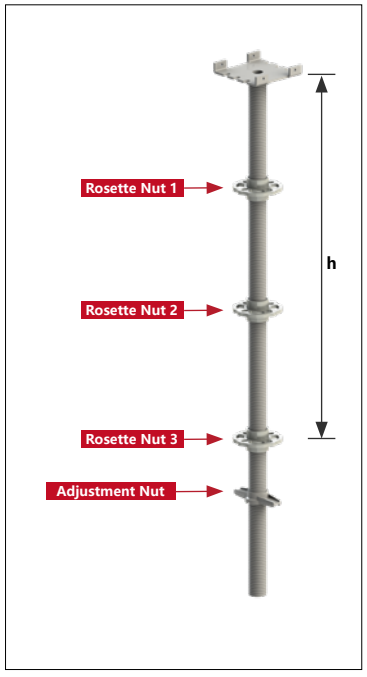
2.Rosette Nuts: There are Rosette Nut 1, 2, and 3 from top to bottom.

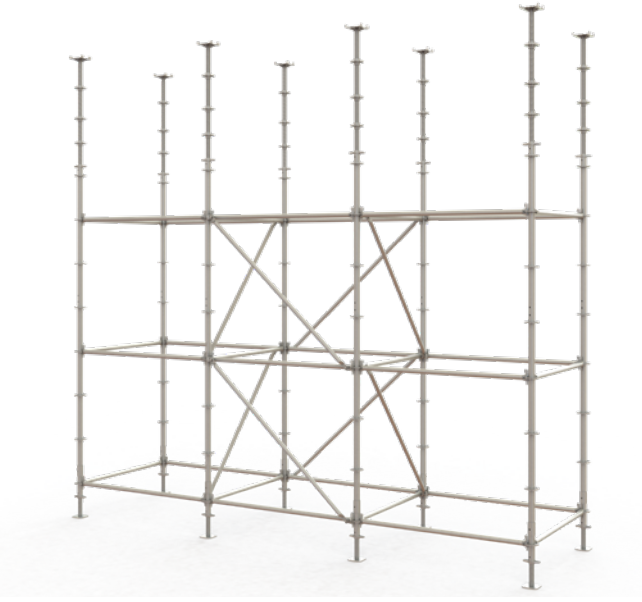
① Rosette Nut 1: Adjust the height of the top-layer Horizontal Ledger and control the free end length of the Multi-functional U-Head Jack (free end length ≤ 400mm);

② Rosette Nut 2 and 3: Install Heavy Duty Ledgers, control the beam bottom elevation by adjusting their height, with the height calculation formula: height difference (h) between Rosette Nut and jack plate = beam height - slab thickness - slab bottom primary bearer height + 70mm

Note: Rosette Nut 2 and 3 can be used for cross beams with different heights; Heavy Duty Ledgers can be installed on the same Rosette Nut when beam bottoms are at the same elevation.

3.Horizontal Calibration: Adjust the positions of each nut to keep the top surfaces of the jacks on the same horizontal plane with elevation error ≤ ±3mm, ensuring smooth installation of subsequent bearers and formwork.

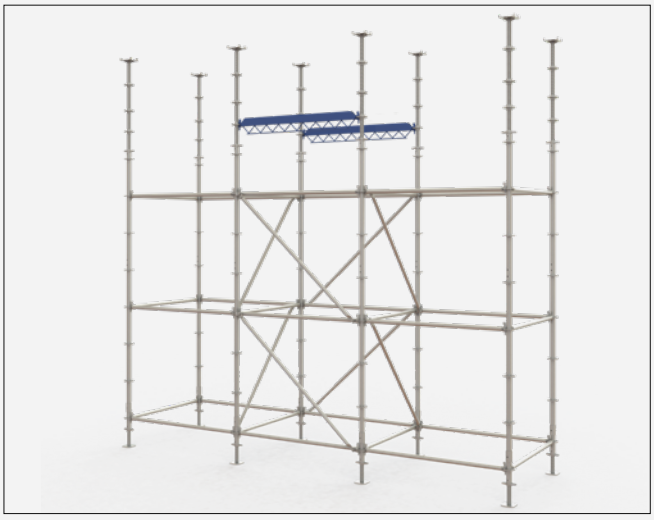




04 Installation Steps for Scaffolding

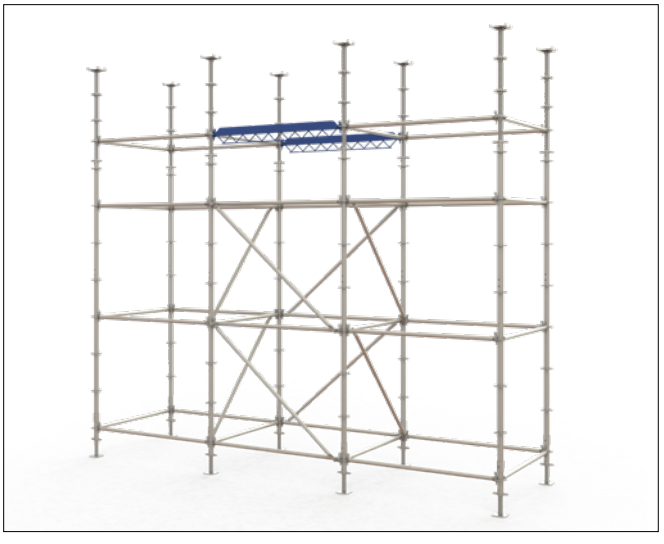
Step 10: Installation of Heavy Duty Ledgers

- Horizontally install Heavy Duty Ledgers on the specific Rosette Nuts (2 or 3) of Multi-functional U-Head Jacks corresponding to both sides of the beam: Insert the plugs at both ends of Heavy Duty Ledgers into the reserved small holes of Rosettes, ensuring the ledgers fit tightly with Rosettes without gaps; hammer the Wedges on Rosettes tightly to ensure the Wedges are fully embedded in the jacks, preventing Heavy Duty Ledgers from loosening or falling off (Heavy Duty Ledgers serve as beam bottom primary bearers, so installation quality must be guaranteed).



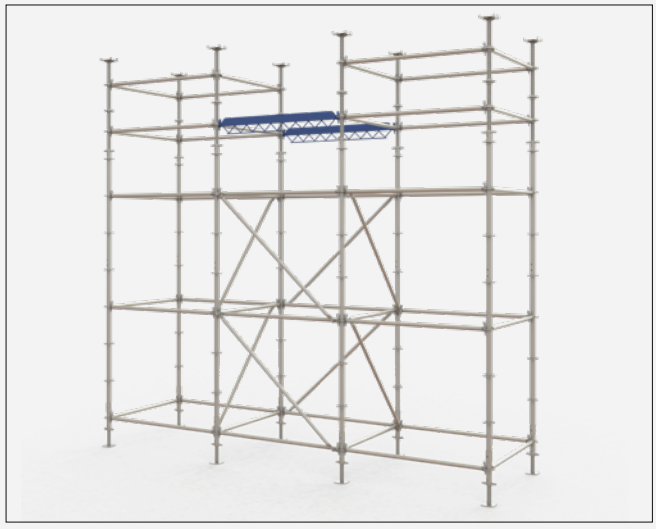
Step 11: Installation of Connecting Horizontal Ledgers

- Connect the Rosette Nuts at the Heavy Duty Ledger installation positions with Horizontal Ledgers: Insert the plugs at both ends of the ledgers into the reserved small holes of Rosettes on Rosette Nuts, ensuring the ledgers fit tightly with Rosettes without gaps. Enhance the frame's bearing capacity by installing connecting Horizontal Ledgers, avoiding bending of the Multi-functional U-Head Jack screw and reduction of bearing capacity due to the force on Heavy Duty Ledgers.



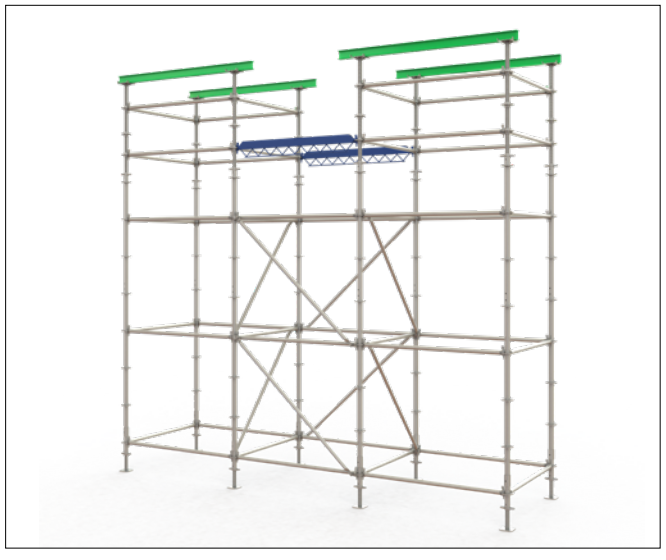
Step 12: Installation of the Top-Layer Horizontal Ledgers for Slab Bottom

- **Ledger Connection:** Insert the plugs at both ends of the top-layer Horizontal Ledgers into the reserved small holes of Rosette Nut 1 of Multi-functional U-Head Jacks, ensuring the ledgers fit tightly with Rosettes without gaps, and the height between the top-layer ledgers and the jack plate is ≤ 400mm.
- **Horizontal Calibration:** Check the levelness of the ledgers with a straightedge or level; correct deviations by adjusting the nuts of Adjustable Base Jacks until the top-layer ledger frame is completely horizontal (the levelness of the top-layer ledgers affects the verticality of Multi-functional U-Head Jacks and the frame's bearing capacity, so strict control is required).
- **Fixing and Wedging:** After horizontal calibration, hammer the Wedges on Rosettes tightly to prevent the ledgers from loosening or falling off.



Step 13: Installation of Primary Bearers

- According to the construction plan, place the slab bottom Primary Bearers and beam bottom Primary Bearers (Heavy Duty Ledgers already serve as beam bottom Primary Bearers) on the Adjustable U-Head Jacks: Ensure the bearers are tightly connected to the jacks; the splicing of bearers shall be overlapped at the Adjustable U-Head Jack positions, avoiding mid-span splicing (reliable connection measures shall be adopted for special cases).



Step 14: Installation of Secondary Bearers and Formwork

- **Secondary Bearers Installation:** Lay Secondary Bearers vertically above Primary Bearers, with the spacing of Secondary Bearers implemented according to the construction plan.
- **Formwork Laying:** Lay formwork (wooden formwork, steel formwork, etc.) on Secondary Bearers; the formwork joints shall be tight (gap ≤ 2mm), and seal excessive gaps with sealant or tape to prevent grout leakage during concrete pouring; after formwork laying, check the surface flatness with error ≤ 3mm/2m.

五 Acceptance and Concrete Pouring (Step 15)

Step 15: Acceptance and Concrete Pouring

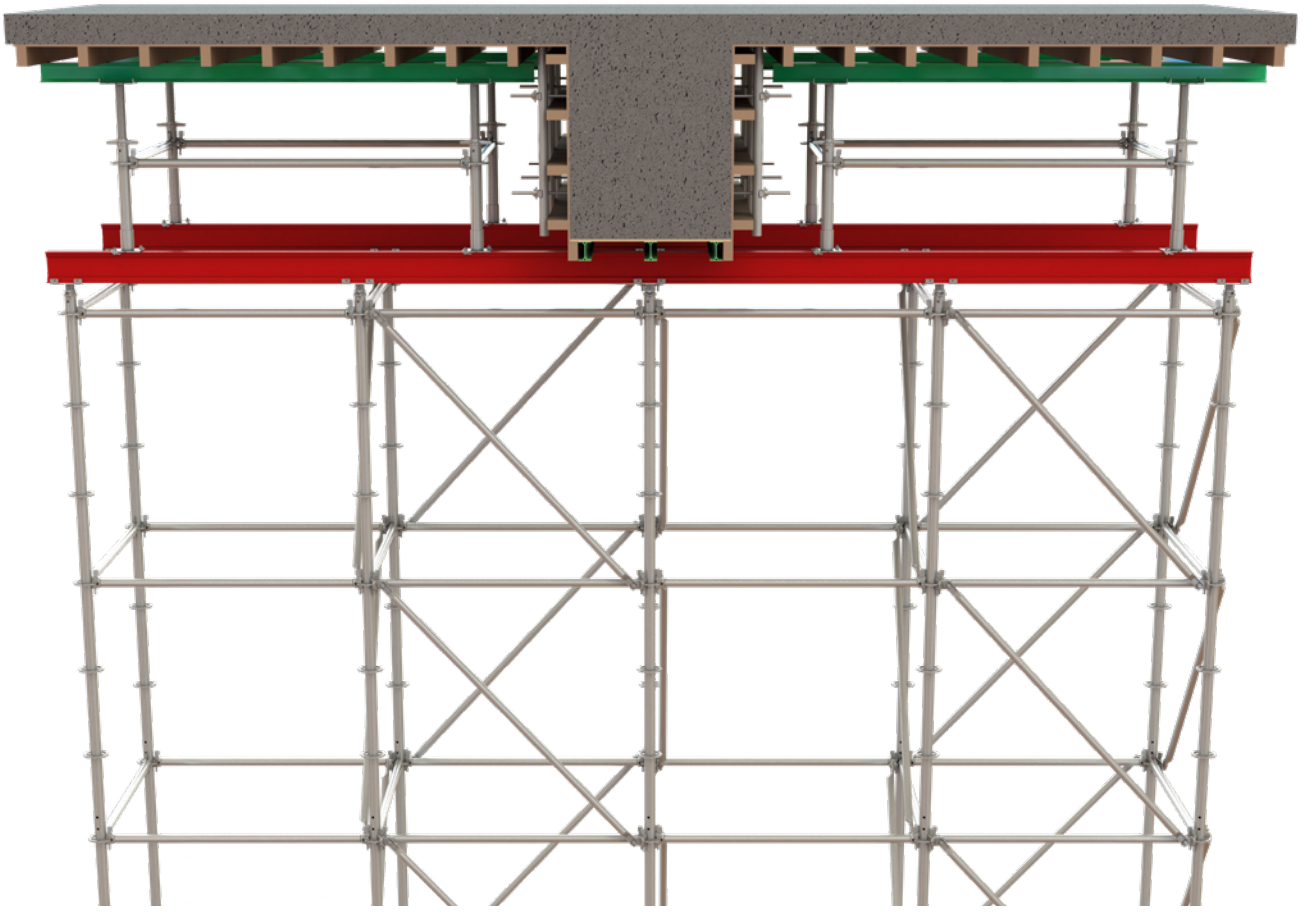
- **Comprehensive Acceptance:** After the formwork and support frame are fully erected, organize a joint acceptance inspection involving the technical, quality, and safety departments. The inspection items include: scaffold verticality, levelness of Horizontal Ledgers, firmness of joint connections, spacing of bearers, and formwork joints. After passing the acceptance, sign the acceptance record.
- **Concrete Pouring:** After passing the acceptance, carry out the pouring operation in accordance with the concrete pouring plan. During the pouring process, assign special personnel to observe the deformation of the scaffold and formwork. If problems such as bending of Vertical Standards, loosening of Horizontal Ledgers, or sinking of formwork are found, stop pouring immediately and continue construction only after taking reinforcement measures.
- **Post-Maintenance:** After the concrete pouring is completed, the formwork and support frame can be removed only when the concrete strength meets the design requirements (usually reaching 75% of the design strength). The removal sequence must follow the principle of "remove the first-supported parts last and the later-supported parts first", and unauthorized removal is strictly prohibited.

Platform Method Construction Technique

Technical Overview of Construction Method

The Platform Method is a specialized formwork support method for specific lightweight lattice beam structures in the Fineshore M60 Formwork Support System. It mainly solves the problems of material waste and high cost in traditional beam-slab separate support schemes, and is applicable to the following scenarios:

- **Structural Features:** Lightweight lattice beam structures with dense beam spacing (mostly less than 3m), small beam-slab dimensions (beam height ≤ 800mm, slab thickness ≤ 200mm), and consistent beam bottom height;
- **Traditional Pain Points:** In traditional beam-slab separate construction, limited by dense beam spacing, vertical standards are arranged with small spacing (often ≤ 1.5m) and low axial force (far below the 10-ton rated bearing capacity of Fineshore M60 vertical standards), resulting in underutilized vertical standard bearing capacity. Meanwhile, the usage of vertical standards and horizontal ledgers surges, significantly increasing construction costs. Although beam-slab co-support was previously achieved via channel steel support beams, it still failed to break the bottleneck of "vertical standard arrangement restricted by beam positions" and fully release the high load-bearing characteristics of disc-lock scaffolds.



04 Installation Steps for Scaffolding

Core Principle

Leveraging the modular structural advantages of the Fineshore M60 Shoring System , the Platform Method takes **"load equivalent integration + platform joist force transmission + slab bottom small frame coordination"** as its core logic. It breaks the limitation of "vertical standards being arranged according to beam spacing" in traditional beam-slab support, realizing efficient transmission of beam-slab loads and full release of the load-bearing capacity of vertical standards. The specific principle can be decomposed into three key mechanisms:

1. Load Equivalence Mechanism: Simplify Force Model, Release Vertical Standard Arrangement Freedom

Based on the structural characteristics of lightweight lattice beams—"dense beam spacing, small beam-slab dimensions, consistent beam bottom height"—the secondary beams and the corresponding covered floor slabs are equivalent to an "integral flat slab structure with the same thickness as the secondary beams". Through this equivalent treatment, the restriction of a single secondary beam on the support layout can be ignored; the support requirement is only calculated based on the flat slab load (including beam-slab self-weight and construction live load). This allows vertical standard arrangement to be free from the constraint of dense beam positions, only following the mechanical rules of flat slab support, creating conditions for increasing vertical standard spacing and utilizing the high load-bearing characteristics of vertical standards.

2. Platform Joist Force Transmission Mechanism: Integrate Dual Load Paths, Achieve Beam-Slab Co-Support

On top of the Fineshore M60 lower frame (vertical standard, horizontal ledger, diagonal brace system erected according to flat slab load), platform joists (commonly aluminum alloy beams or 10# I-beams) are laid perpendicular to the secondary beams. These joists undertake dual force-transmitting functions:

- As secondary beam main joists: Directly bear secondary beam loads and evenly transmit the loads to the lower frame vertical standards along the length of the joists, avoiding concentrated secondary beam loads on local vertical standards;
- As floor slab load carriers: Provide a stable support foundation for the slab bottom small frame, allowing slab bottom loads to be transmitted to the platform joists via the slab bottom small frame, and then the joists transmit the loads to the lower frame together with the secondary beam loads. Finally, an integrated transmission path of "beam and slab loads via the same platform joist → lower frame vertical standards" is realized.

3. Slab Bottom Small Frame Coordination Mechanism: Precisely Adapt to Slab Bottom Support, Ensure Local Force Stability

To solve the problem of "precision matching between the integral platform joist and local slab bottom support", platform rooting parts are fixed on the platform joists via clips (to prevent sliding), and a slab bottom small frame composed of Fineshore M60 standard vertical standards, horizontal ledgers, and adjustable U-head jacks is erected on the rooting parts:

- The small frame can flexibly adjust the height according to the slab bottom elevation requirement, ensuring the flatness of the slab bottom formwork;
- At the same time, through the independent support structure of the small frame, the local slab bottom load is evenly transmitted to the platform joist, avoiding joist deformation caused by concentrated slab bottom load, and further ensuring the force stability and construction precision of the entire support system.

Core Advantages

1.Release Vertical Standard Capacity, Reduce Material Usage

Breaking the traditional limitation of "vertical standards arranged along beams", vertical standards are only arranged according to the flat slab structure, with the spacing increased to 1.8m-2.4m (traditional schemes are mostly ≤ 1.5m), fully utilizing the 10-ton rated axial bearing capacity of Fineshore M60 vertical standards. Meanwhile, the number of vertical standard spacing types is reduced (only 1-2 types), horizontal ledger specifications are simplified, and the usage of vertical standards and horizontal ledgers is reduced by 30%-40% compared with traditional schemes, significantly lowering material procurement and turnover costs.

2.Simplify Erection Process, Shorten Construction Period

The vertical standard arrangement is uniform, eliminating the need to repeatedly adjust vertical standard positions due to dense beams; the installation process of platform joists and beam bottom joists is standardized, and the slab bottom small frame is quickly fixed via platform rooting parts, reducing on-site measurement and adjustment procedures. Combined with the advantage of reduced material usage, the labor for frame erection is reduced by more than 25%, and the formwork support construction period is shortened by 20%-25%.

3.Clear Load Transmission, Improve Structural Safety

As the core force-transmitting component, the platform joist bears secondary beam loads and transmits slab bottom loads simultaneously, with clear load paths (secondary beam load → platform joist → lower frame vertical standard; slab bottom load → slab bottom small frame → platform joist → lower frame vertical standard), avoiding force confusion caused by "cross transmission of beam and slab loads" in traditional schemes. The lower frame is designed according to flat slab loads, with higher overall stability, and the support system safety factor reaches above 2.0.

4.Strong Adaptability, Compatible with System Components

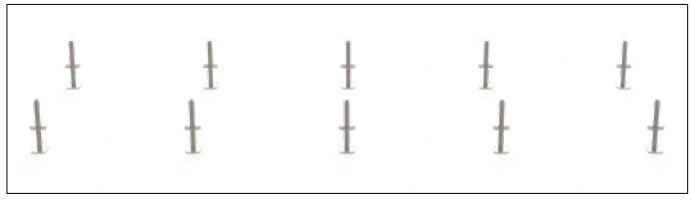
Platform joists can flexibly use materials such as aluminum alloy beams and 10# I-beams according to project needs, and the slab bottom small frame fully adopts Fineshore M60 standard components (vertical standards, horizontal ledgers, adjustable U-head jacks, etc.) without additional customized accessories. It can adapt to lightweight lattice beam structures with beam spacing of 1.5m-3m and beam height of 300mm-800mm, complementing other methods of the Fineshore M60 system (such as beam-support method and beam-slab co-support method).

04 Installation Steps for Scaffolding

— Preliminary Preparation and Foundation Construction (Steps 1-2)

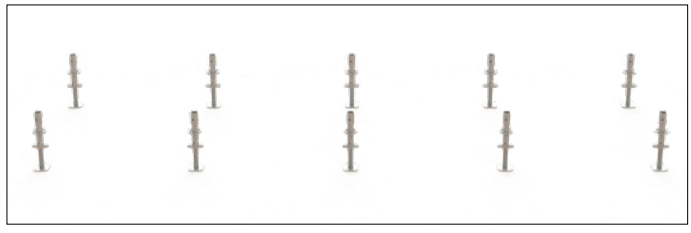
Step 1: Positioning, Layout and Adjustable Base Jack Installation

- **Site Survey and Positioning:** First, clear the erection site to ensure the ground is flat, free of debris, and its bearing capacity meets the design requirements (if the ground is soft, pre-lay steel plates or gravel cushions in advance).
- **Setting Out and Layout:** According to the construction drawings, use a chalk line reel or total station to mark the positions of Vertical Standards, ensuring the longitudinal and transverse spacing complies with design and specifications.
- **Adjustable Base Jack Placement:** Align the Base Jacks with the marked points, adjust the height of the base adjustment nuts so that the top surfaces of the nuts are on the same horizontal plane, with an error controlled within ±5mm, laying the foundation for subsequent Vertical Standard installation.



Step 2: Vertical Standard Base Collar Installation

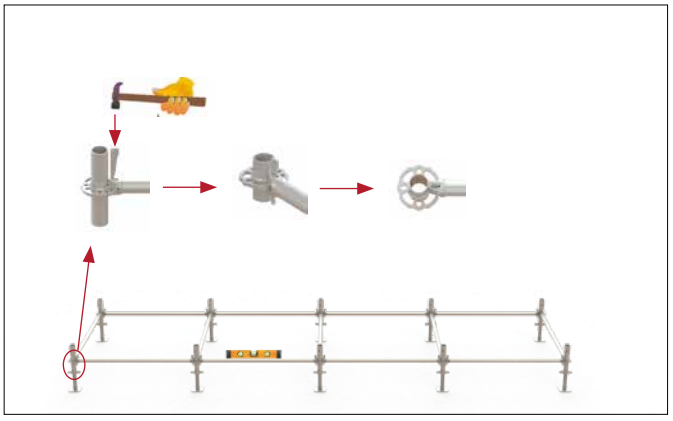
- Vertically sleeve the Vertical Standard Base Collars over the top of the Adjustable Base Jacks, with the insertion length of the Adjustable Base Jacks into the collars > 150mm. Ensure the collars are tightly connected to the Base Jacks without looseness. As the initial vertical support of the scaffold, the verticality deviation of the Base Collars shall be ≤ 1‰ to avoid subsequent structural inclination.



二 Bottom Frame Construction (Steps 3-4)

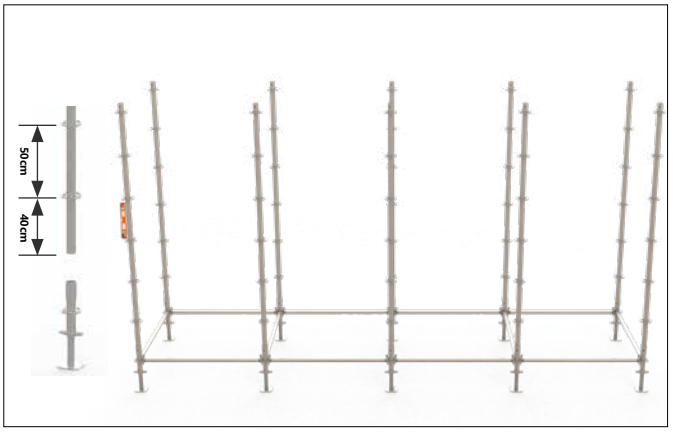
Step 3: Installation of the First-Layer Horizontal Ledgers

- **Ledger Connection:** Insert the plugs at both ends of the first-layer Horizontal Ledgers into the reserved small holes of the Rosettes on the Base Collars, ensuring the ledgers fit tightly with the Rosettes without gaps.
- **Horizontal Calibration:** Check the levelness of the Horizontal Ledgers using a straightedge or level. If there is a deviation, correct it by adjusting the nuts of the Adjustable Base Jacks until the entire bottom ledger frame is completely horizontal.
- **Fixing and Wedging:** After horizontal calibration, hammer the Wedges on the Rosettes tightly to ensure the Wedges are fully embedded in the jacks, preventing the Horizontal Ledgers from loosening or falling off.



Step 4: Installation of the First-Layer Vertical Standards

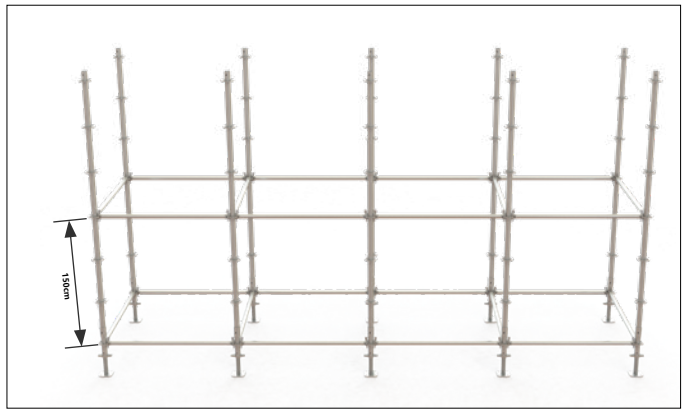
- **Vertical Standard Erection:** Vertically insert the first-layer Vertical Standards into the reserved interfaces of the Base Collars, ensuring the Vertical Standards are coaxial with the collars without deviation.
- **Verticality Inspection:** Check the verticality of the Vertical Standards using a plumb bob or theodolite, with the verticality deviation of a single Vertical Standard (when height ≤ 3m) ≤ 3mm.



三 Middle-Layer Structure Erection (Steps 5-9)

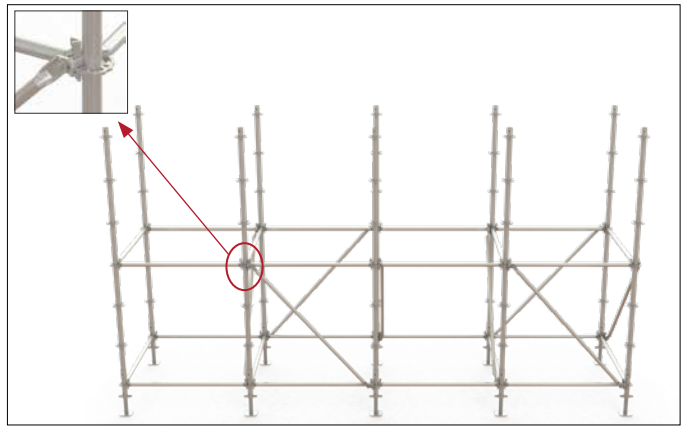
Step 5: Installation of the Second-Layer Horizontal Ledgers

- **Height Positioning:** According to design requirements, mark the installation position of the second-layer Horizontal Ledgers on the first-layer Vertical Standards, ensuring the height above the first-layer Horizontal Ledgers is 1.5m; if there are special requirements in the plan, follow the plan.
- **Ledger Installation and Fixing:** Connect the second-layer Horizontal Ledgers to the Rosettes on the Vertical Standards using the same method as the first layer. After connection, hammer the Wedge Pins tightly to ensure the Horizontal Ledgers are firmly fixed to the Vertical Standards without shaking.



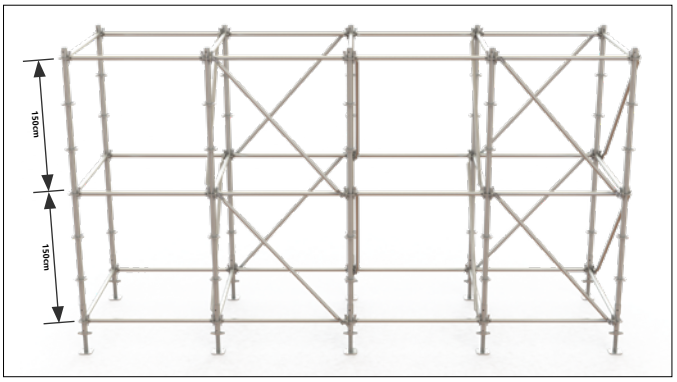
Step 6: Installation of the First-Layer Vertical Bay Braces

- **Vertical Bay Brace Position Selection:** Install Vertical Bay Braces along the longitudinal and transverse directions within the first step of the scaffold (i.e., the space between the first and second layers of Horizontal Ledgers). The Vertical Bay Braces form a triangular stable structure with the Vertical Standards and Horizontal Ledgers.
- **Vertical Bay Brace Connection:** Insert the plugs at both ends of the Vertical Bay Braces into the large holes of the Rosettes on the Vertical Standards, then hammer the pins tightly for fixation to ensure the braces are firmly installed.

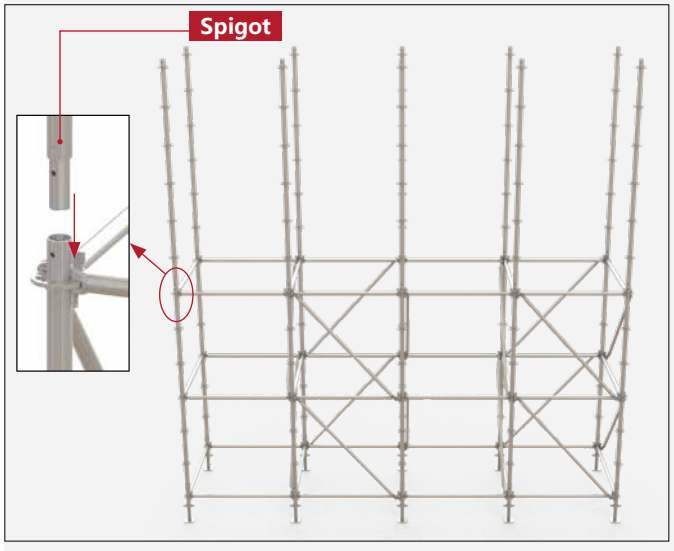


Step 7: Installation of Horizontal Ledgers and Vertical Bay Braces for the Second Step

- Cyclically install the Horizontal Ledgers and Vertical Bay Braces for the second step in accordance with the operation standards of Step 5 (ledger installation) and Step 6 (Vertical Bay Brace installation), ensuring the ledger levelness error ≤ 1mm/m and the brace angle controlled at 45° -60° .



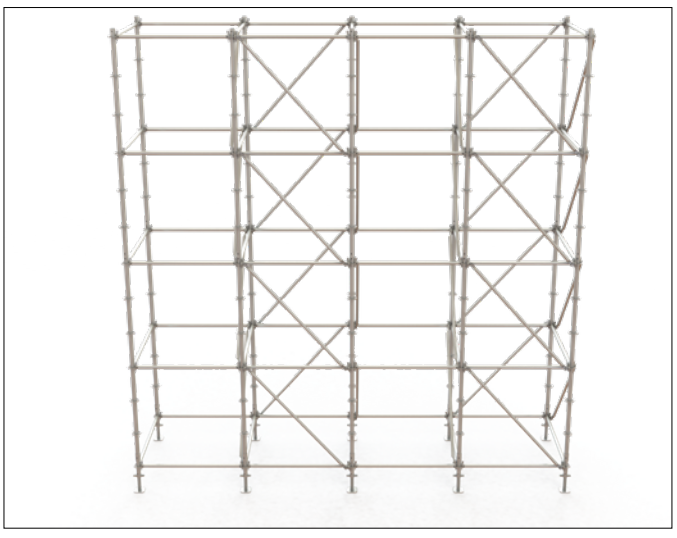
Step 8: Vertical Standard Splicing



- **Splicing Preparation:** When a higher scaffold is required, align the Spigots of the upper-layer Vertical Standards with the top interfaces of the lower-layer Vertical Standards, ensuring the Spigots are fully inserted into the lower-layer Vertical Standards.
- **Concentricity Control:** During installation, check the concentricity of the upper and lower layers of Vertical Standards using a plumb bob, with the concentricity deviation ≤ 2mm to ensure concentric force bearing and avoid Vertical Standard bending caused by eccentric loads.
- **Splicing Fixing:** Some Vertical Standards (at tension positions) are equipped with positioning pins or bolts at the splicing positions. Install fasteners as required to ensure the upper and lower layers of Vertical Standards are firmly connected without relative sliding.

Step 9: Cyclic Installation of High-Layer Horizontal Ledgers and Vertical Bay Braces

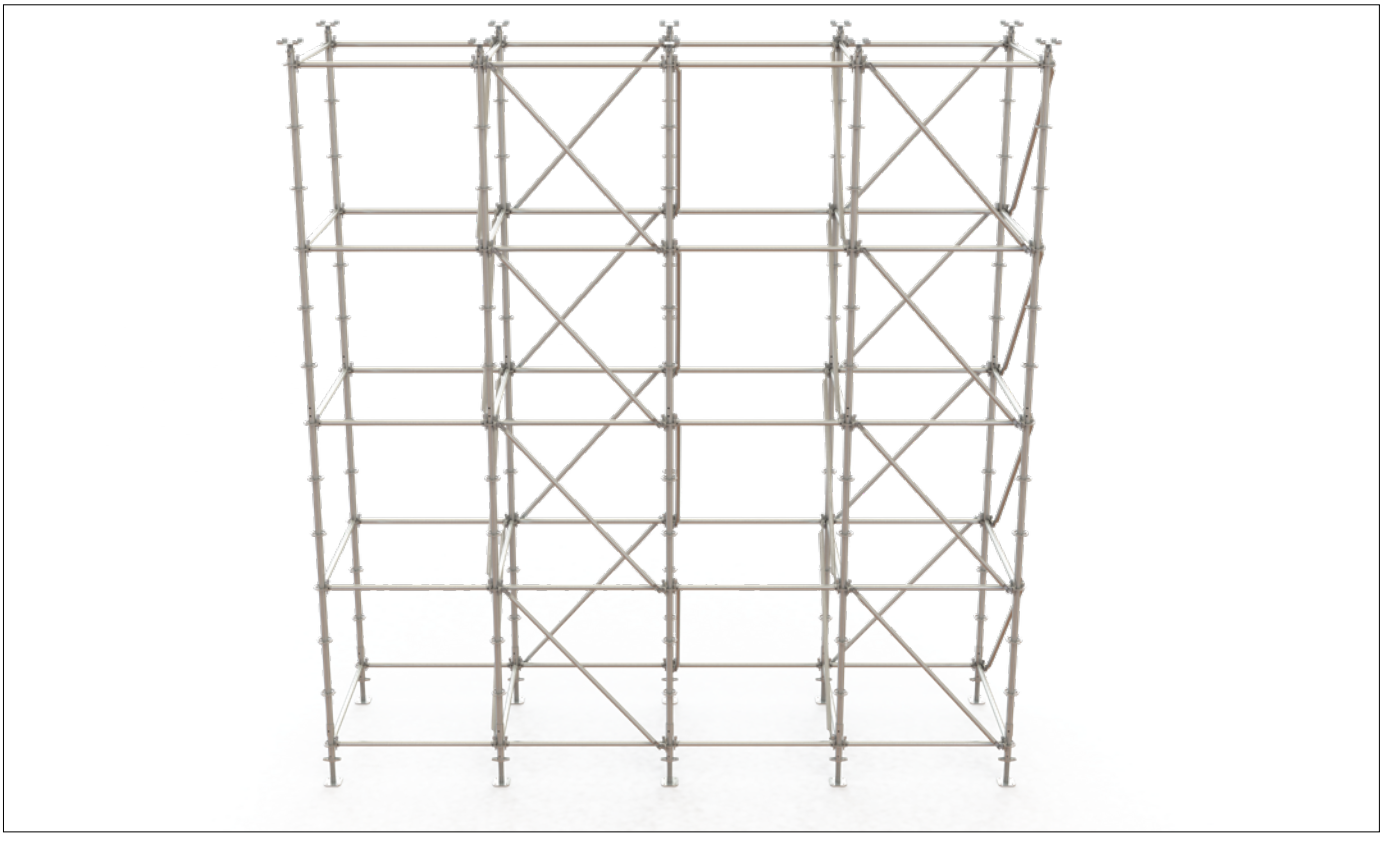
- Cyclically install higher-layer Horizontal Ledgers and Vertical Bay Braces in accordance with the operation standards of Step 5 (ledger installation) and Step 6 (Vertical Bay Brace installation) until the scaffold height meets the design requirements. For every 3 layers erected, conduct an overall inspection of the scaffolds verticality (cumulative deviation ≤ 10mm/10m height) and levelness, correct deviations in a timely manner, and check whether the pins are loose; re-hammer them tightly if necessary.



四 Platform Erection (Steps 10-15)

Step 10: Installation of Adjustable Top Jacks for Platform Base

- **Selection and Inspection of Top Jacks:** Select suitable U-Head Jacks (Adjustable Top Jacks for Platform Base) according to the platform joist load (including the load transmitted by the small slab-bottom support frame). The rated bearing capacity of the top jacks shall be ≥ 15kN, and the pallet size shall be ≥ 150×150mm. Before installation, check the thread integrity of the top jacks (no thread stripping or deformation) and the flatness of the pallet (error ≤ 1mm). Damaged components shall be replaced, and unqualified products are strictly prohibited.
- **Installation and Positioning of Top Jacks:** When the scaffold height reaches the predetermined height, vertically screw the threaded end of the U-Head Jacks into the internal thread at the top of the top-layer Vertical Standards, ensuring the top jacks are coaxial with the Vertical Standards (detected with a square ruler, coaxiality deviation ≤ 1mm). The installation positions of the top jacks must correspond one-to-one with the support points of the subsequent platform joists, with a deviation ≤ 50mm to avoid load deviation of the joists.
- **Height Adjustment and Calibration:** Use a level (accuracy ±0.5mm/m) to measure the elevation of the top surface of the top jack pallets point by point. Adjust the height by rotating the top jack adjustment nuts so that the top surfaces of all top jack pallets are on the same horizontal plane, with an elevation error ≤ ±3mm. After adjustment, tighten the top jack adjustment nuts with a torque wrench (torque value 30-35N·m) to prevent the nuts from loosening during subsequent construction. At the same time, check the length of the top jacks extending out of the Vertical Standards, which shall be ≤ 400mm (measured from the top surface of the Vertical Standards). If it exceeds, replace the top jacks with short screws or adjust the height of the Vertical Standards.



04 Installation Steps for Scaffolding

Step 11: Installation of Platform Joists

- **Joist Selection:** According to the construction plan, select the corresponding type of platform joists (165 Aluminium Beam or steel joists). The selection must match the platform design load (including the load transmitted by the small slab-bottom support frame and the beam load).

  Before installation, a special inspection shall be conducted on the flatness of the joists to ensure the joists are straight and free from defects such as local bending and torsion. This is to avoid affecting the platform elevation accuracy and load transmission efficiency due to joist defects.

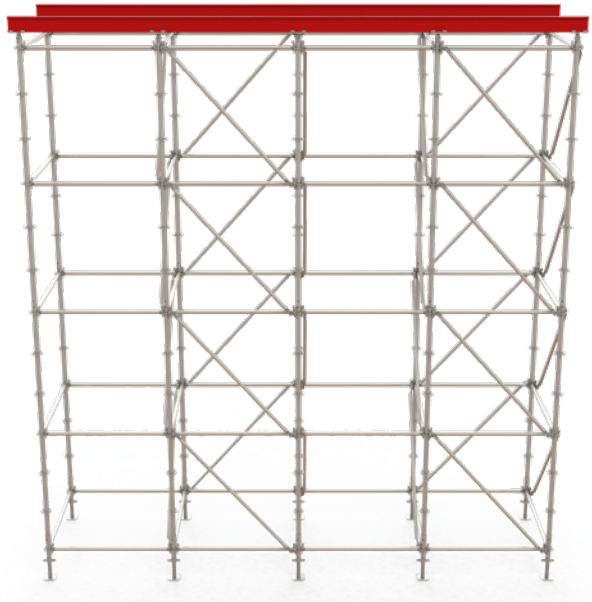
- **Joist Laying & Overlapping:**

  1. Joist Laying and Positioning: Place the platform joists stably on the U-head Jack pallets, ensuring the center line of the joists is aligned with the center line of the top Jack pallets to avoid local stress concentration caused by eccentric force on the joists. During laying, the joists shall be laid gently, and brute-force impact on the top Jacks or joists is prohibited to prevent pallet deformation or joist displacement;

  2. Joist Splicing and Overlapping Requirements: When the joist length is insufficient and needs to be extended, the joint must be within the range of the Adjustable Top Jack pallets. The overlapping length must meet two conditions simultaneously: ①≥ 300mm; ②≥ 2 times the cross-sectional height of the joists (e.g., the cross-sectional height of 10# I-steel is 100mm, so the overlapping length shall be ≥ 200mm, and finally 300mm is adopted);

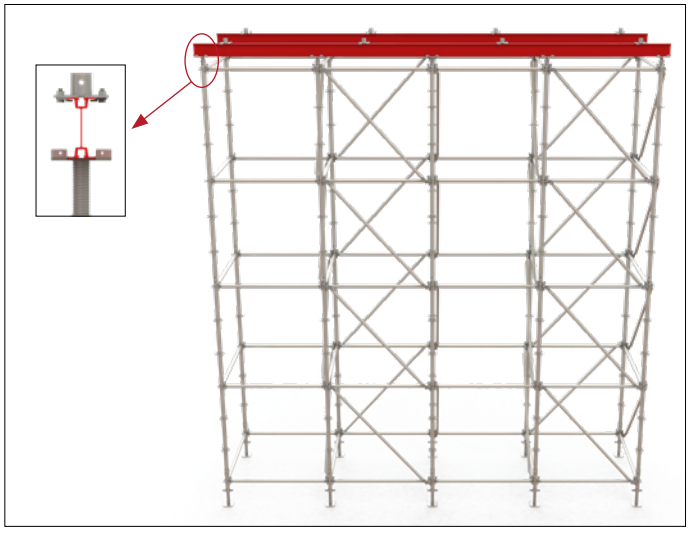
  3. Special Provisions for Mid-Span Extension: Routine mid-span extension is strictly prohibited; if mid-span extension is necessary due to span limitations , equivalent-strength or super-strength connection forms (e.g., double splint bolted connection) shall be adopted to ensure the joint bearing capacity meets the required standard and prevent joint deformation or fracture.

- **Elevation Recheck and Adjustment:** After the platform joists are laid, use a level again to detect the elevation of the top surface of the joists, and recheck according to the design elevation of the beam bottom (e.g., beam bottom elevation 3.8m). If the elevation deviation of the top surface of the joists is > ±3mm, correct it by fine-tuning the height of the Adjustable Top Jacks until the elevation of the top surface of the joists is consistent with the design value. This step is a key control point—if the upper support frame is constructed directly without correcting the elevation, the platform height cannot be adjusted subsequently, leading to excessive deviation of the beam bottom formwork installation elevation.



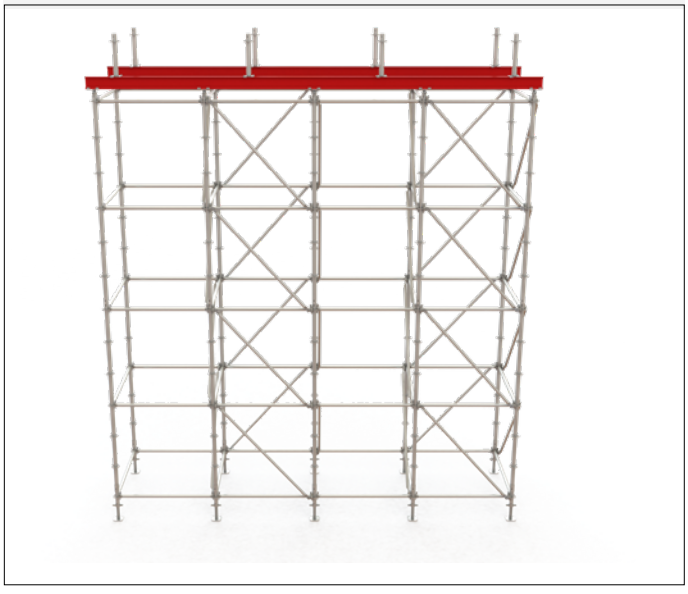
Step 12: Installation of Beam Anchoring Clamps (Platform Root Components)

- **Positioning and Installation:** According to the designed spacing specified in the construction plan, mark the installation positions of the Beam Anchoring Clamps on the platform joists using a tape measure. Align the open end of the Beam Anchoring Clamp with the joist web, then close the clamp slowly—ensure the clamp' s jaws fully wrap around the joist and the center of the Beam Anchoring Clamp is aligned with the marked position. This avoids joist overturning caused by eccentric loading. Forcible tapping on the Beam Anchoring Clamp during installation is strictly prohibited, as this may deform the jaws and compromise the fixing effect.
- **Fixing and Acceptance:** Tighten the fixing bolts of the Beam Anchoring Clamps with a wrench. After tightening, check the fit between the clamp' s jaws and the joist. For every 10 installed Beam Anchoring Clamps, randomly select 1 for an anti-slip test: push the Beam Anchoring Clamp with force—no displacement of the clamp and no loosening of the bolts indicate qualification. The installation quality of the Beam Anchoring Clamps directly affects the load transmission of the slab bottom; unqualified clamps must be rectified immediately until they pass the acceptance inspection.



Step 13: Installation of Slab-Bottom Vertical Standards on the Platform

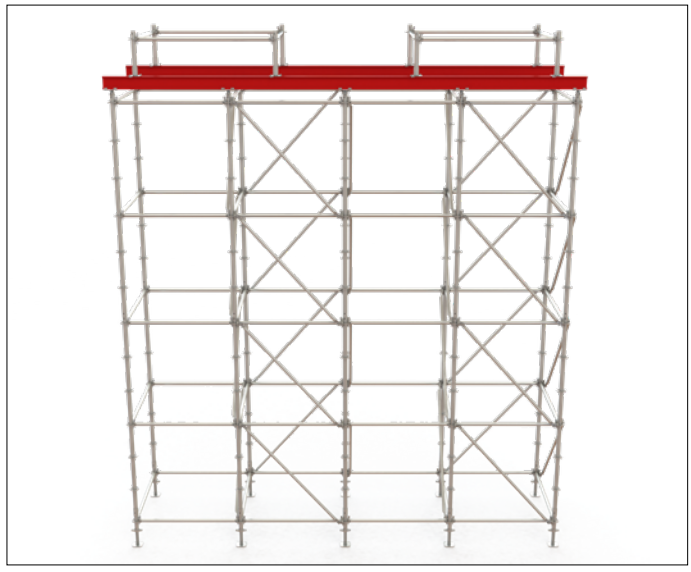
- **Vertical Standard Selection:** Select vertical standards in accordance with the plan, giving priority to Vertical Standards with Collar. The inner diameter of the collar shall match the diameter of the round tube above the Beam Anchoring Clamps (gap ≤ 0.8mm) to avoid installation jamming or loose connection caused by dimensional deviation. Before installation, check the straightness of the vertical standards (bending deviation ≤ 1/500 of the vertical standard length) and verify the welding quality of the collar—weld height ≥ 5mm, no cold welding, slag inclusion or air holes. Ensure the collar is firmly connected to the vertical standard body and can be smoothly sleeved into the round tube above the Beam Anchoring Clamps without jamming.
- **Vertical Standard Installation and Centering:** Vertically sleeve the collar at the bottom of the vertical standard over the round tube above the Beam Anchoring Clamps, with an insertion depth ≥ 80mm to ensure sufficient contact between the collar and the round tube, avoiding uneven force due to insufficient contact area. Use a plumb bob (accuracy ±1mm) to check the verticality of the vertical standard from both longitudinal and transverse directions—the verticality deviation of a single vertical standard ≤ 3mm (when height ≤ 2.5m), ensuring the vertical standard is coaxial with the Beam Anchoring Clamps (concentricity deviation ≤ 2mm). If there is deviation, adjust by slightly rotating the vertical standard; forced bending of the collar is prohibited to prevent plastic deformation of the collar, which may affect subsequent connection strength and load transmission stability.



04 Installation Steps for Scaffolding

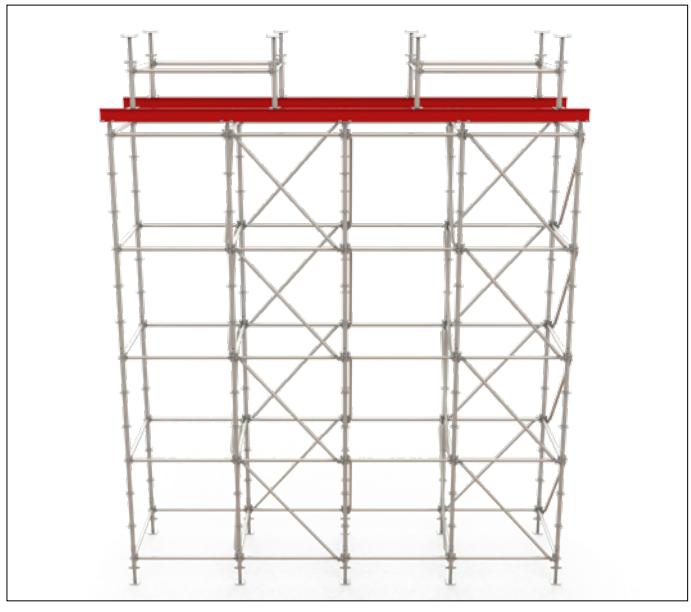
Step 14: Installation of Slab-Bottom Horizontal Ledgers

- **Ledger Connection:** Insert the plugs at both ends of the slab-bottom Horizontal Ledgers into the reserved small holes of the Rosettes on the Vertical Standards, ensuring the ledgers fit tightly with the Rosettes without gaps.
- **Fixing and Wedging:** Hammer the Wedges on the Rosettes tightly to ensure the Wedges are fully embedded in the jacks, preventing the Horizontal Ledgers from loosening or falling off.



Step 15: Installation of Adjustable Top Jacks for Slab Bottom

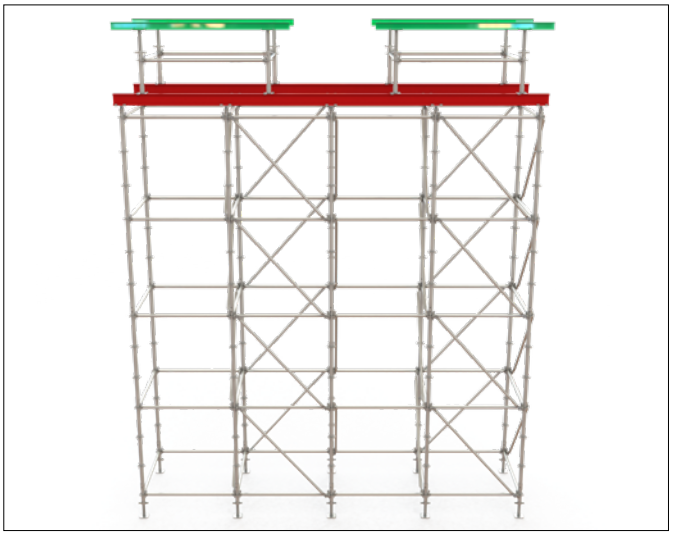
- When the scaffold height reaches the predetermined height, install U-Head Jacks (Adjustable Top Jacks for Slab Bottom) on top of the top-layer Vertical Standards. Adjust the height of the top jacks so that their top surfaces are on the same horizontal plane, with an error ≤ ±3mm, used to fine-tune the height of the top layer of the support frame and ensure smooth installation of subsequent bearers and formwork. The length of the top jacks extending out of the Vertical Standards shall be ≤ 400mm to avoid unstable force bearing due to excessive length.



五 Top-Layer Structure and Formwork Installation (Steps 16-17)

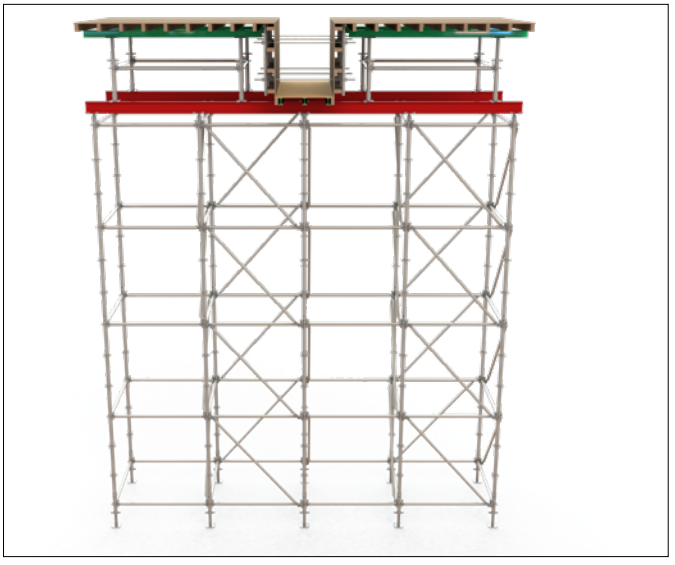
Step 16: Installation of Primary Bearers

- According to the construction plan, place the corresponding type of slab-bottom Primary Bearers on the Adjustable Top Jacks, ensuring the bearers are tightly connected to the top jacks. The Primary Bearers shall be overlapped and extended at the Adjustable Top Jack positions, avoiding mid-span extension; mid-span extension is prohibited unless reliable connection measures are adopted.



Step 17: Installation of Secondary Bearers and Formwork

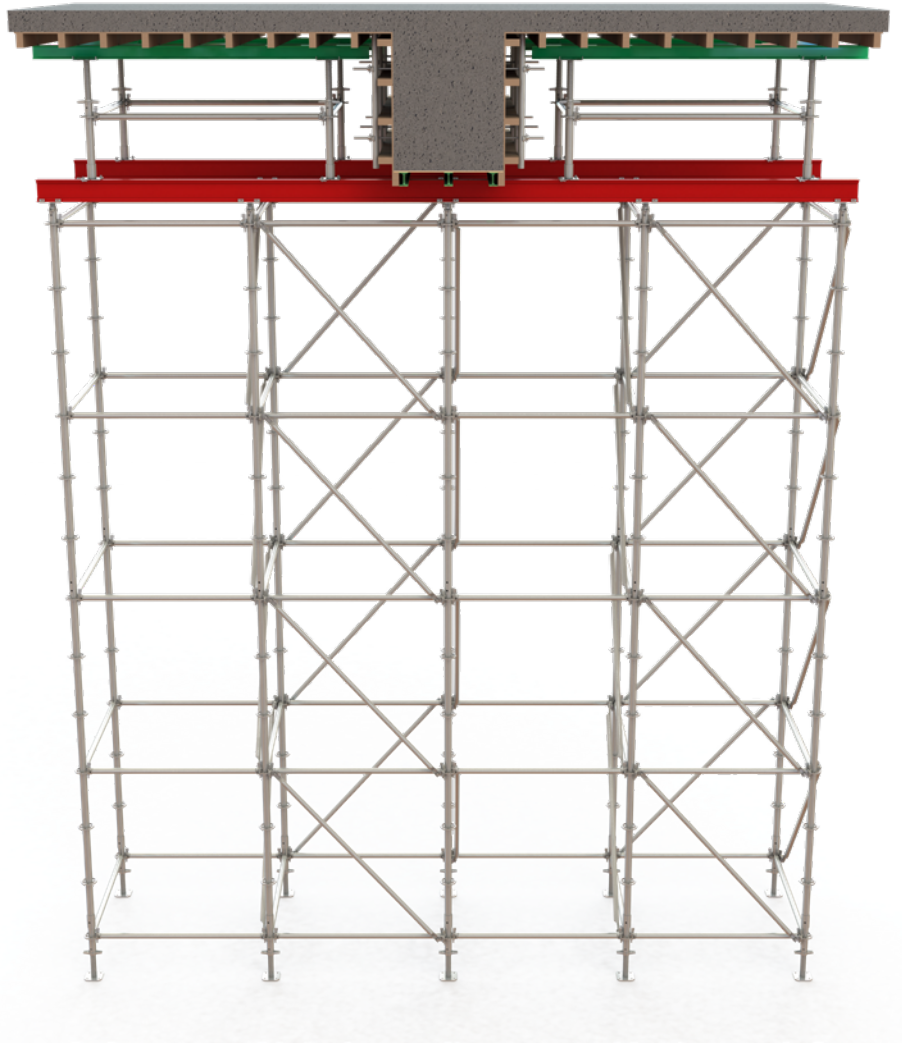
- **Secondary Bearers Installation:** Lay the Secondary Bearers vertically above the Primary Bearers, with the spacing of the Secondary Bearers implemented according to the plan requirements.
- **Formwork Laying:** Lay the formwork (e.g., wooden formwork, steel formwork) on the Secondary Bearers. The joints between the formwork shall be tight with a gap ≤ 2mm; if the gap is too large, seal it with sealant or tape to prevent grout leakage during concrete pouring. After formwork laying, check the flatness of the formwork surface, with an error ≤ 3mm/2m.



六 Acceptance and Concrete Pouring (Step 18)

Step 18: Acceptance and Concrete Pouring

- **Comprehensive Acceptance:** After the formwork and support frame are fully erected, organize a joint acceptance inspection involving the technical, quality, and safety departments. The inspection items include: scaffold verticality, levelness of Horizontal Ledgers, firmness of joint connections, spacing of bearers, formwork joints, and fixing status of Beam Anchoring Clamps. After passing the acceptance, sign the acceptance record.
- **Concrete Pouring:** After passing the acceptance, carry out the pouring operation in accordance with the concrete pouring plan. During the pouring process, assign special personnel to observe the deformation of the scaffold and formwork. If problems such as bending of Vertical Standards, loosening of Horizontal Ledgers, or sinking of formwork are found, stop pouring immediately and continue construction only after taking reinforcement measures.
- **Post-Maintenance:** After the concrete pouring is completed, the formwork and support frame can be removed only when the concrete strength meets the design requirements (usually reaching 75% of the design strength). The removal sequence must follow the principle of "remove the first-supported parts last and the later-supported parts first", and unauthorized removal is strictly prohibited.



05 Detailing Requirements

This chapter contains the recommended illustrations to tie and brace Fineshore M60 Shoring System Scaffold components. Different countries may have different standards and requirements. For your safety, please consult our engineers for specific applications and projects.

Ties and bracing may be needed to assure a safe and stable scaffold assembly. The height of the scaffold in relation to the minimum base dimension (length or width), wind loads, the use of brackets or cantilevered platforms, and imposed scaffold loads determine the need for sway and stability bracing. The following general guidelines apply:

5.1 General Requirements

- 5.1.1 The construction system of the scaffold should be complete, and the scaffold should possess overall stability.
- 5.1.2 Horizontal and diagonal braces of predetermined lengths should be selected based on the calculated longitudinal and transverse spacing of uprights in the construction plan. Furthermore, the assembly of uprights (Standards), bases (Base Collars), adjustable props (Adjustable U Heads), and adjustable bases (Adjustable Base Jacks) should be arranged according to the erection height.
- 5.1.3 The vertical step distance in scaffold erection should not exceed 2 meters.
- 5.1.4 Vertical diagonal braces of the scaffold should not be constructed using tubular coupler systems (tubes & couplers).
- 5.1.5 When the design value of the load on the uprights (Standards) exceeds 65 kN, the top story step distance of the scaffold should be reduced by 0.5 meters compared to the standard step distance.

5.2 Tying & Bracing

- 5.2.1 For support scaffolding with a standard vertical spacing of 1.5 meters, the arrangement of vertical diagonal braces should be determined based on the erection height of the support scaffolding, its model type, and the design value of the axial force in the uprights. The selection of the arrangement pattern for vertical diagonal braces should conform to the requirements specified in Table 5.2.

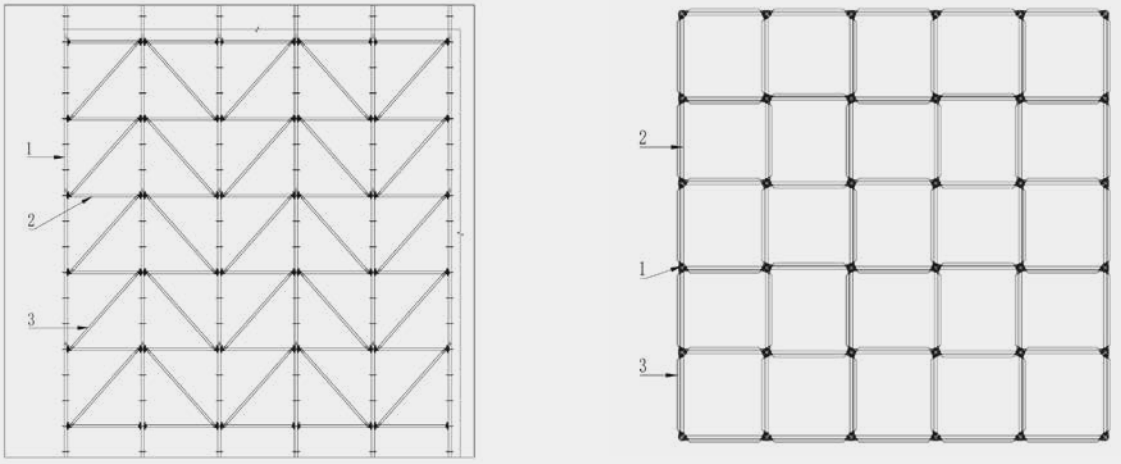
Table 5.2 Arrangement Patterns for Vertical Diagonal Braces Shoring Scaffolding

Axial Force Design Value N (kN)	Height of Scaffold Erection H (m)			
	H ≤ 8	8 < H ≤ 16	16 < H ≤ 24	H > 24
N ≤ 40	Skip 3 bay	Skip 3 bay	Skip 2 bay	Skip 1 bay
40 < N ≤ 65	Skip 2 bay	Skip 1 bay	Skip 1 bay	Skip 1bay
N>65	Skip 1 bay	Skip 1 bay	Skip 1 bay	Every bay

Note:

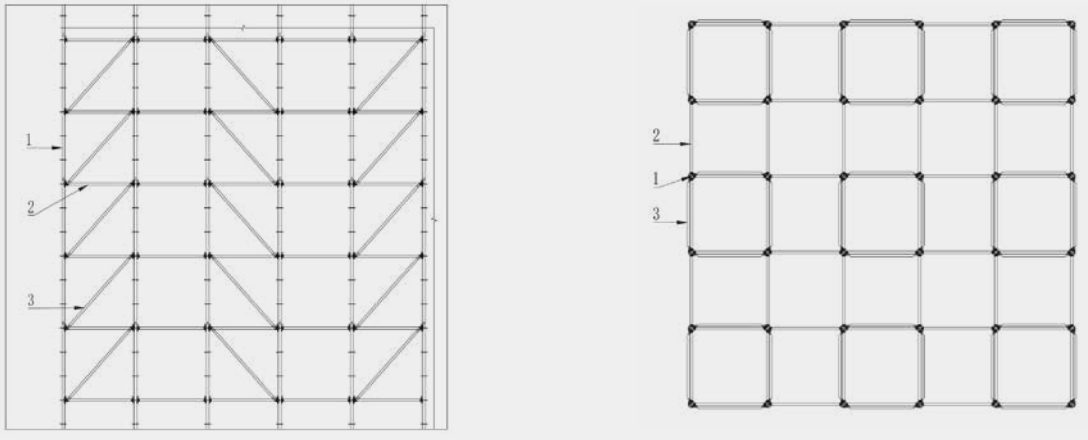
1. The design value of the axial force in uprights and the erection height of the scaffold refer to the maximum values within the same independent scaffold assembly.

2. "Every bay" indicates that vertical diagonal braces are installed in every bay along both longitudinal and transverse directions (refer to Figure 5.2.2-1). "Skip 1 bay" means vertical diagonal braces are installed every other bay, skipping one bay, in both longitudinal and transverse directions (illustrated in Figure 5.2.2-2). "Skip 2 bay" denotes installation of vertical diagonal braces every second bay, skipping two bays, along both longitudinal and transverse axes (as shown in Figure 5.2.2-3). Lastly, "Skip 2 bay" signifies the placement of vertical diagonal braces every third bay, omitting two bays in between, in both longitudinal and transverse orientations (demonstrated in Figure 5.2.2-4).



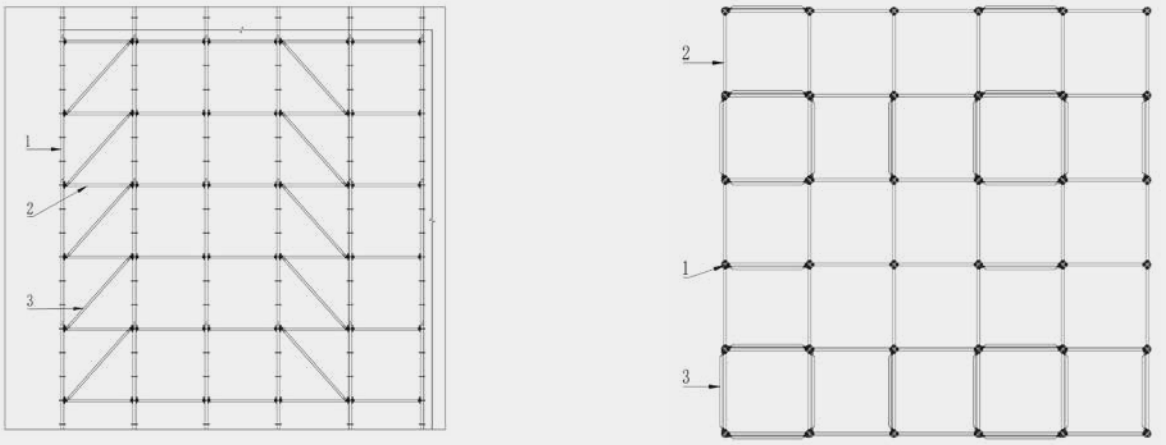
(a) Elevation (b) Plan

Figure 5.2.2-1 Diagram for the Setup of Diagonal Braces in a Support Scaffold every bay
1—Standard；2—Ledger；3— Vertical Brace



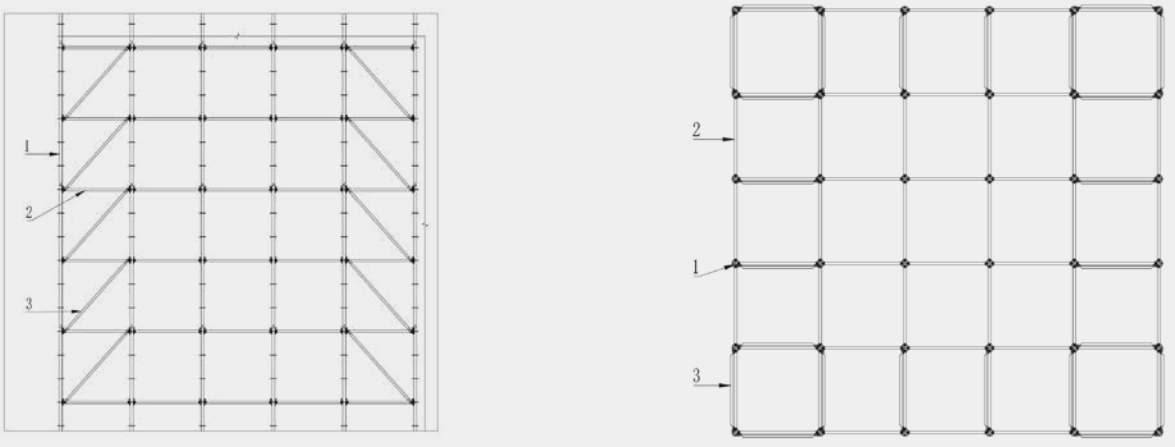
(a) Elevation (b) Plan

Figure 5.2.2-2 Diagram for the Setup of Diagonal Braces in a Support Scaffold with a skip 1 bay
1—Standard；2—Ledger；3— Vertical Brace



(a) Elevation (b) Plan

Figure 5.2.2-3 Diagram for the Setup of Diagonal Braces in a Support Scaffold with a skip 2 bay
1—Standard; 2—Ledger; 3— Vertical Brace



(a) Elevation (b) Plan

Figure 5.2.2-4 Diagram for the Setup of Diagonal Braces in a Support Scaffold with a skip 3 bay
1—Standard; 2—Ledger; 3— Vertical Brace

- 5.2.2 When the erection height of the support scaffold exceeds 16 meters, vertical diagonal braces should be installed in every bay of the top step.
- 5.2.3 Where the support scaffold's erection height surpasses 8 meters and there exists an existing building structure, reliable connections should be made between the scaffold and the surrounding completed structures at intervals of every 4 to 6 steps along the height.
- 5.2.4 Requirements for the Layout of Horizontal Braces
  - Horizontal braces shall be implemented using standard steel tube and coupling systems. According to regulatory requirements, the vertical spacing shall not exceed 4 to 6 stride intervals, while the horizontal spacing is set at 8 meters. The angle of the shear braces should range from 45° to 60° .

- When extending the length of braces, they shall be connected using an overlap joint, with the minimum overlap length being no less than 1000mm. Furthermore, this overlap shall be secured with a minimum of three equally spaced swivel couplers(as shown in Figure 5.2.4). The distance between the connection points of the horizontal braces and the node of the scaffold shall not exceed 300mm.

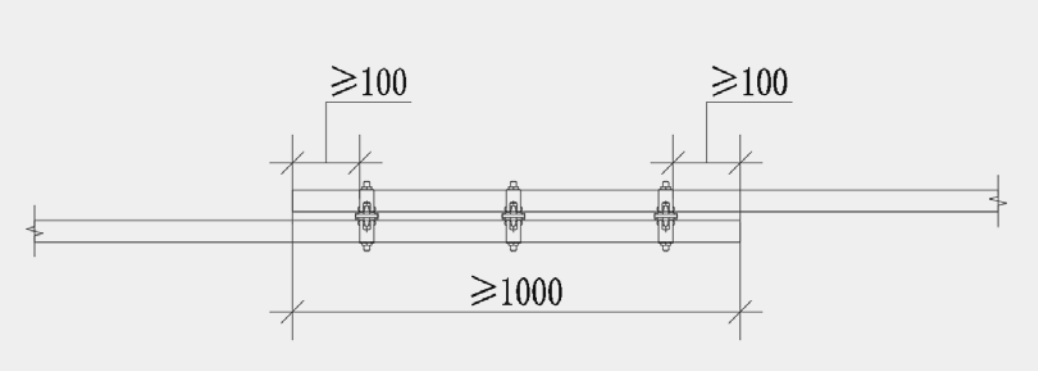


Figure 5.2.4 Steel Tube Overlap Installation Diagram

- This specific arrangement is designed to ensure the stability and integrity of the scaffold structure, especially under conditions where lateral forces might be significant, such as in high wind environments or seismic zones. The proper installation and maintenance of horizontal braces play a pivotal role in preventing racking and maintaining the overall rigidity of the scaffold system.
- Periodic inspection and maintenance are crucial to ascertain that the braces remain in good condition and continue to fulfill their designated function throughout the scaffold’ s operational lifespan. Immediate action should be taken to address any signs of wear, damage, or loosening of connections to avert potential structural failures.

- 5.2.5 The height-to-width ratio of support scaffolding should preferably be controlled within 3. For support scaffolding with a height-to-width ratio greater than 3, it should be rigidly connected to the existing structure or additional measures to enhance resistance against overturning should be implemented.
- 5.2.6 When the support scaffold is erected in the form of independent towers, horizontal ties should be made between adjacent independent towers at intervals of every 2 to 4 steps along the height.

5.3 Adjustable U Head & Adjustable Base Jack

- 5.3.1 For a shoring scaffold, the cantilever length of the adjustable support (Adjustable U-head) projecting beyond the center-line of the topmost horizontal member or double channel beam (as shown in Figure 5.3.1) should not exceed 650mm, and the exposed length of the threaded rod should not exceed 400mm. The insertion length of the adjustable support into the upright or double channel beam must not be less than 150mm.5.3.1 For a shoring scaffold, the cantilever length of the adjustable support (U-head) projecting beyond the center-line of the topmost horizontal member or double channel beam (as shown in Figure 5.3.1) should not exceed 650mm, and the exposed length of the threaded rod should not exceed 400mm. The insertion length of the adjustable support into the upright or double channel beam must not be less than 150mm.

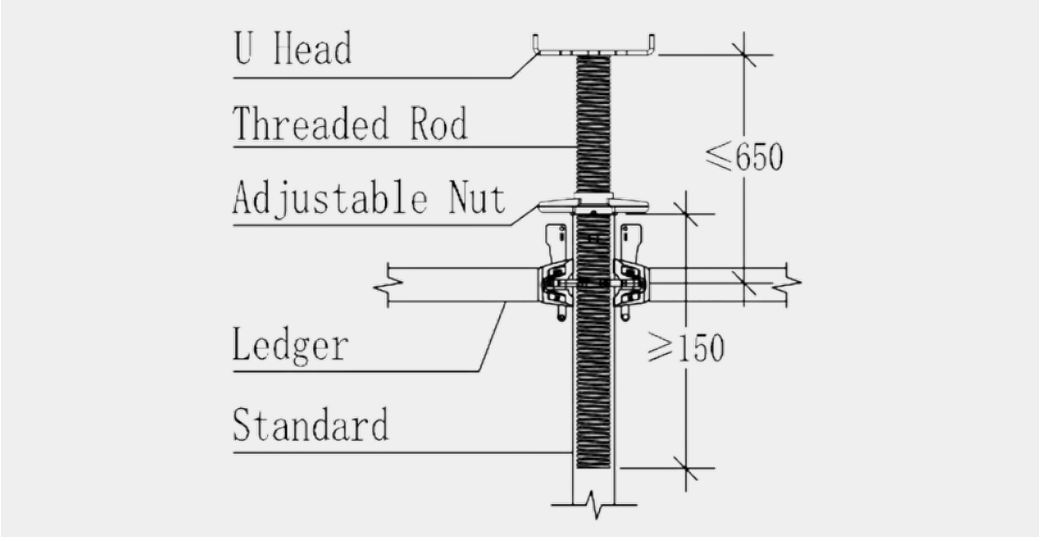
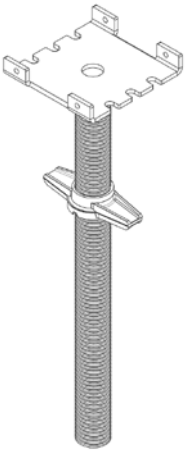


Figure 5.3.1 Adjustable U Head Installation Diagram

Analysis of Adjustable U Heads Top Plate Design

Adjustable U Heads are commonly utilized components in construction work, serving to adjust and sustain the height of formworks, scaffolding, or other temporary structures. The top plate design of Adjustable U Heads features dual-directional openings, a smart adaptation to accommodate the placement requirements of different scenarios involving cross beams, ensuring structural stability and safety.



Characteristics of Dual-Directional Opening Design:

1. Large Opening Design: This orientation is primarily intended for the placement of two parallel cross beams. This design allows for the parallel arrangement of two beams on the top plate, thereby increasing the width of the bearing surface and enhancing the load-bearing capacity and stability of the entire support structure. The size of the large opening is typically designed according to the combined width of the double beams, ensuring that the beams can be placed stably while restricting their lateral movement, facilitating more direct and uniform force transmission.

2. Small Opening Design: The small opening direction is specifically designed for single beam placement. The width of a single beam is narrower; the small opening precisely restricts the position of the beam, preventing it from shifting when subjected to force, ensuring that the Adjustable U Head bears force along its axis, improving the overall stability of the structure. The dimension of the small opening matches the width of the single ledger, ensuring its firmness and avoiding unnecessary swinging or deflection during force application.

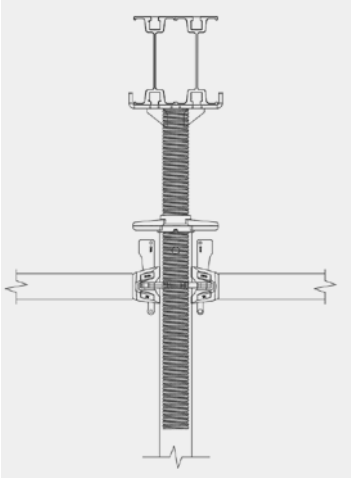


Figure 5.3.2 Double Beams Installation Diagram

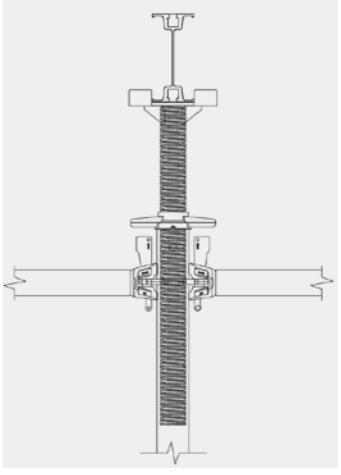


Figure 5.3.3 Single Beam Installation Diagram

Design Advantages:

• **Flexibility:** The dual-opening design enables Adjustable U Heads to accommodate beams of varying widths, meeting diverse construction needs, and enhances the flexibility and efficiency of structural design.

• **Safety:** By limiting the position of the beams, it ensures force transmission along the axial direction, reducing the likelihood of eccentric loading on the structure, enhancing the overall stability and safety of the support structure.

• **Usability:** The opening design simplifies the placement process of beams, enabling quick positioning and installation without the need for additional tools, boosting on-site work efficiency.

The dual-directional opening design of the top plate on Adjustable U Heads, through its adaptability to the placement of beams with different widths, not only enhances the stability and safety of the support structure but also improves construction efficiency and flexibility. This design fully embodies the dual pursuit of structural stability and construction convenience in modern construction engineering, standing as an indispensable technological innovation in architectural construction.

- 5.3.2 For the adjustable base (Adjustable Base Jack) of a shoring scaffold, the insertion length of the threaded rod into the upright should not be less than 150mm, and the exposed length of the threaded rod should preferably not exceed 300mm (as shown in Figure 5.3.4). The height of the center-line of the lowest horizontal member, serving as the sweep rod, above the bottom plate of the adjustable base should not be greater than 550mm.

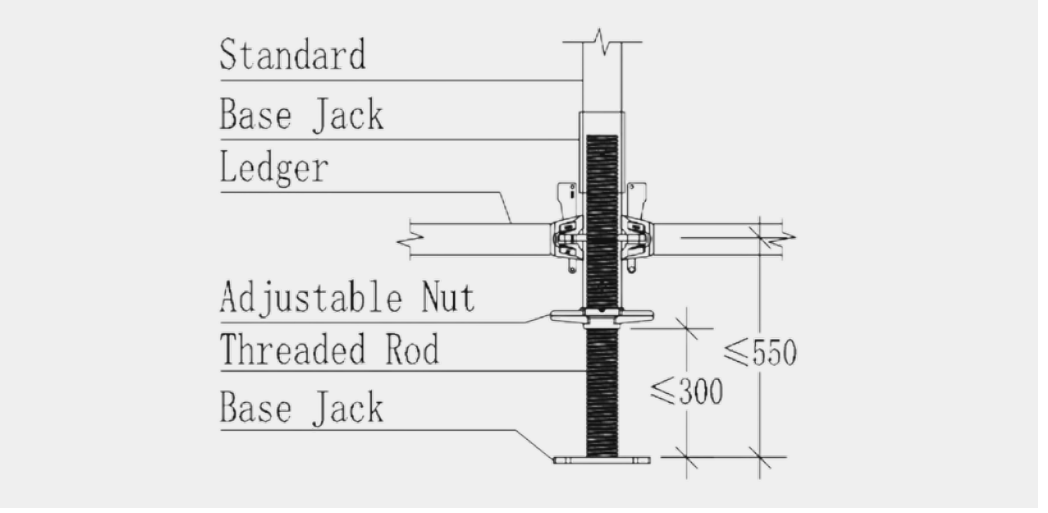


Figure 5.3.4 Adjustable Base Jack Installation Diagram

In summary, the regulating nut of a Adjustable Base Jack plays a pivotal role in the setup and operation of a shoring scaffold, ensuring that it is level, stable, and capable of safely supporting the intended loads.

5.4 Access Passageways

When a pedestrian passage, having the same width as a single horizontal strut, is set up inside the shoring scaffold, the first layer of horizontal struts and diagonal bracing can be selectively removed to form an access route for construction personnel. Vertical diagonal bracing should be installed between the uprights on both sides perpendicular to the passage. When the pedestrian passage within the shoring scaffold has a width different from that of a single horizontal strut, a support beam should be erected above the passage (as shown in Figure 5.4). The model and spacing of the beam should be determined according to the load calculations.

The spacing of uprights supporting the beams in adjacent spans should be set according to calculations to ensure structural integrity around the passage area. The surrounding shoring scaffold should be interconnected to maintain overall stability. A protective cover board should be laid over the top of the opening to ensure safety. Adjacent spans should be equipped with safety nets. For openings through which motor vehicles pass, safety warnings and anti-collision measures must be provided.

This arrangement ensures that the shoring scaffold can accommodate necessary passages for personnel or vehicles while maintaining its structural integrity and safety. Careful planning and engineering calculations are required to ensure that the removal of certain components does not compromise the overall stability of the scaffold, and that additional measures are taken to protect users passing through these areas.

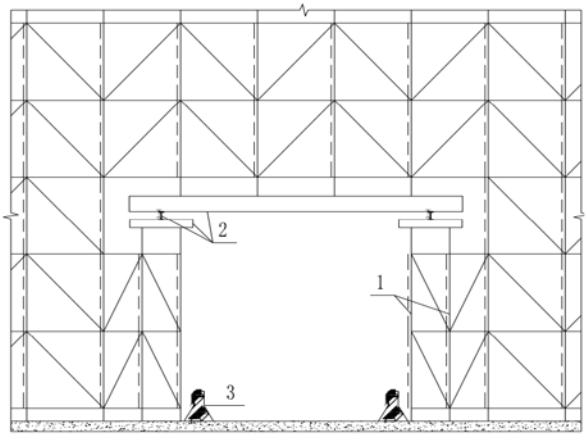


Figure 5.4 Diagram for the Configuration of Access Passageways in Shoring Scaffold

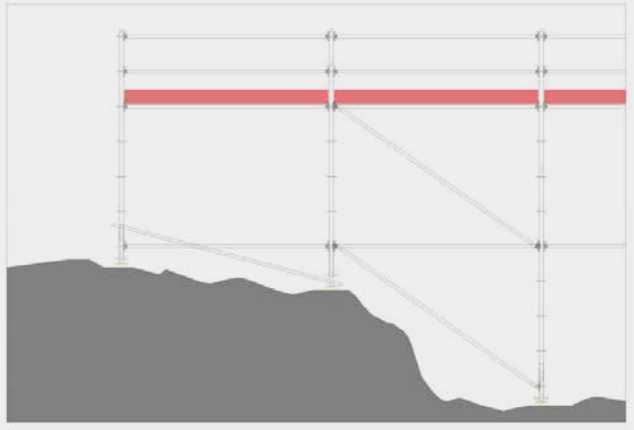
1 - Upright Pole; 2 - Support Beam; 3 - Collision Prevention

Ground Adjustment

For uneven ground, it is recommended that the scaffolding assembly starts at the highest point of the assembly surface. The adjustment to ground irregularities and height differences in the ground is achieved using base jacks.

Caution: The maximum loading of the base jack must not be exceeded when adjusting it, and if necessary it must be stiffened with a tube connected to the base jack by a wedged swivel Coupler with spindle insert.

Major height differences can be balanced out by additional vertical standards. Additional standards must be stiffened with diagonal bracing to the base point.



Use of The Scaffolding

1. After completion of the assembly the scaffold must be inspected and tagged by the scaffolding erector .
2. The scaffolding may only be entered via its accesses; climbing up the scaffolding is prohibited.
3. No heavy objects may be thrown onto scaffolding decks, which may only be subjected to the maximum loads listed for the specified load classes.
4. Jumping onto scaffolding decks is prohibited.
5. No ladders, boxes etc. may be used at the top scaffolding level to increase the working height.
6. When storing material or components on working platforms, minimum 20 cm of clear space must be maintained.
7. Only decks that are complete may be walked on.
8. Hatches in access decks must be closed when not in use.

Dismantling The Scaffolding

To dismantle scaffolding, the sequence of working steps described for assembly must be reversed. The stability of the scaffolding must be verified prior to dismantling. The following must be noted in addition:

1. The scaffolding contractor must ensure that all reasonably foreseeable hazards to health and safety associated with the dismantling are identified before and during dismantling of the scaffolding.
2. Any hazard identified must be assessed in terms of risk and must be controlled by the scaffolding contractor.
3. Anchoring must not be released until the scaffolding levels above it have been completely dismantled.
4. Components of which the connectors have been released must be removed immediately.
5. Removed scaffolding components must not be thrown off the scaffolding.
6. Scaffolding components must be stored properly.
7. Only decking surfaces that are complete may be walked on.
8. Scaffolding may only be entered via its accesses.
9. Climbing up the scaffolding is prohibited.

05 Detailing Requirements

Fineshore M60 Safety Guidelines

Scaffolding Operations

Please note that this guidance is offered to you as a minimum requirement for scaffolder’ s to work safely. If you work on a site with more stringent Company procedures (i.e. continuous attachment policy, inertial reels, etc.) then this will take precedence.

1. It is recommended that Scaffolders wear safety harnesses and maintain 100% hook up all times when erecting dismantling or altering scaffolding. Working at height PPE should be worn as dictated by procedure and/or site requirements. Your fall arrest equipment should be thoroughly checked each shift before starting work. Report any suspected defects to your Company management.
2. Measures to prevent falls should always be considered before resorting to fall arrest equipment. Scaffolders should therefore install as a minimum, a single guardrail to each lift at all locations in accordance with SG4 (latest edition). Advanced guardrail systems, Scaffolders step or other propriety equipment may be employed to erect the edge protection.
3. Additional methods may be employed including safety nets, inertia reel blocks, and horizontal line systems. These should be considered when planning your job and if necessary be included in your Risk Assessment. Specialist training or guidance will be required to use this proprietary equipment.
4. Scaffolders must erect the full width of the platform by using the appropriate number of WalkBoard.
5. It is recommended the Scaffolder clips to a suitable anchorage point and remain attached at all times when at risk of a fall. This will include when:

• Working outside the protected area (i.e. decked platform and single guardrail).

• Climbing up or down the structure.

• Raising and lowering scaffolding components.

• Fixing/dismantling scaffolding components.

• Moving the working platform (e.g. when raising or lowering steel WalkBoard).

6. Ladders should be fitted as early as possible during erection and removed as late as possible during dismantling to eliminate the need to climb the scaffold structure. Refer to “Safety Guideline—Use of Ladders”.
7. A suitable rescue procedure should be considered to be put in place to urgently retrieve an individual in the event of an arrested fall. This should be part of your Risk Assessment and understood by all involved before starting any job.
8. The erection of Finelock system scaffolding is a skilled task and must only be carried out by trained personnel. By the very nature of the work, the hazards are severe and accidents frequently result in serious injuries or fatalities.
9. Before commencing work, check that all necessary clearances or permits have been obtained and always check the Risk Assessment and sign to signify your understanding.
10. It is recommended that you check your scaffold tools each day before work, to ensure that all parts are in good condition, if you discover or suspect any defects, report them immediately to your Company management. Do not use faulty equipment.
11. Be aware, and make your workmates aware of any potential hazards near your place of work, i.e. noxious fumes, acids, electrical plant, overhead conductors, excessive heat, working machinery etc.
12. Obtain and use any required safety equipment, e.g. inertia reel blocks, running lines respirator, goggles, etc., and always wear a safety helmet, safety boots, overalls, gloves, eye protection and a safety harness.
13. Where there is a possibility of other persons passing through or near the work zone,ensure that suitable barriers or signs are erected to warn and exclude them from the danger area.
14. During scaffold erection, ensure that you and all other members of the scaffolding gang, do the following:

• Use gin wheel and rope for raising and lowering scaffolding components, DO NOT throw scaffolding components up or down.

- When at height ensure that at all times you take the necessary precautions to ensure a safe method of work and prevent a fall, (refer to item 2 above).
- Erect advanced guardrails wherever possible and as soon as practicable.
- Ensure that all members of the scaffolding gang have sufficient experience of erecting 'Advanced' or 'Special' structures. Do not take unnecessary risks.
- Check all components are serviceable before use. Reject and report to your Company management any defective components.

15. Always ensure that the foundations or structure from which a scaffold is to be built are adequate:

- Use Adjustable Base Jacks and timber sole boards under every standard. On soft ground or where there is any likelihood of surface penetration ensure an adequate base is provided for each standard.
- If the scaffold is to be erected on a roof or over a basement or upper fl oor, check with the Client, that the foundation is suitable or if back propping or shoring is required.
- Inform your Company management if excavations are taking place in the immediate vicinity of the scaffold base.
- Ensure that the scaffold is erected with appropriate bay length and lift height to suit the specified loading. Safe Axial Loads are available for each possible lift height .
- Ensure that the scaffold is adequately tied to the building or structure in accordance with the tie patterns in this Technical Manual. During erection, fit ties progressively as soon as the specified height is reached. When dismantling each tie should be removed as late as possible and if necessary fit alternative means to maintain stability.
- Ensure that all guardrails and toeboards are fitted to all edges of platforms (including return ends) where a fall could occur, to comply with statutory regulations.

- Ensure that all incomplete structures are fitted with "DO NOT USE" or "SCAFFOLD INCOMPLETE" signs as soon as possible after erection and before dismantling has commenced.

- A system should be in place to communicate (such as a scaffolding tag procedure) whether the scaffold is safe for use, its duty rating/suitability i.e. access, general purpose or heavy duty.

- Ensure that all spare scaffolding components are safely and securely stowed or returned to a rack or compound. No scaffold is 'Complete' until this task has been performed.
- Before dismantling is commenced, check that all ties are in position and that the scaffold is safe to access.
- Ensure that during dismantling operations a safe method of work is maintained and that a sequence of operations is adopted to ensure that the scaffold is stable and secure at each stage.
- Do not overload the scaffold with stored scaffolding components or other materials, when dismantling or re-erecting.

05 Detailing Requirements

Handling and Storage of Finelock Components

The following basic rules should be adhered to when manually handling the Finelock system and associated components.

1. Plan lay down/storage areas in advance to reduce the distance materials have to be manually handled. Ensure the area is clear of any tripping hazards
2. Only tackle loads that can be reasonably handled by the individuals involved – i.e. consider personal physical capabilities.
3. Manual handling operations should be eliminated where possible by using mechanical handling equipment and manual handling aids whenever possible. These include light-lines, gin wheel , forklifts and cranes etc.
4. Always use the correct kinetic handling technique:

   Feet on a firm level base a comfortable distance apart. (Approx. 300mm) Use your legs and not your back to bend.

   Raise your head slightly and tuck in your chin to keep your spine straight. Avoid twisting with the trunk of the body.
5. Always check the transit route before manual handling to ensure that it is suitable and free from obstructions.
6. When handling long materials beware of damage to property, overhead electric lines, other people and moving vehicles.
7. Use the correct knots and hitches if using rope to lift equipment (refer to "Gin Wheels and Ropes").
8. Wear the appropriate type of gloves to protect your hands, whenever necessary. Take extra care when handing sharp-edged metal components.
9. Always pass scaffolding components by hand, or use a Gin Wheel and rope. Never bomb, throw or allow scaffolding components to fall.
10. Do not carry scaffold components up or down a ladder.
11. Ensure all your Finelock components and equipment are neatly stored in scaffolding storage rack. Stack neatly to no more than five lifts high (local site/ regional rules and regulations apply)
12. Ensure scaffolding storage rack are loaded to the approved Safe Working Load and not overloaded.
13. Scaffolding storage racks should be fork lifted or craned onto a flatbed truck for transport. Individual or loose items should be stacked into scaffolding storage racks and wrapped/ strapped prior to loading and transport
14. Where possible store all equipment in a dry and secure environment.
15. Visually inspect all scaffolding after use and arrival back into storage area. Refer to Technical Information and Maintenance Manual for inspection and quarantine of components.
16. Inspect scaffolding equipment at regular intervals not greater than 30 days to inspect for general wear and tear. All scaffold components should be checked prior to erection and use.
17. If stored in an outdoor environment be careful to ensure ground stability when stacking and moving Finelock scaffolding components.

Use Of Ladders

Accidents involving ladders frequently occur within our industry and account for many
serious injuries. Because the ladder is regarded as one of the most basic forms of
access, the dangers are not always anticipated.
1. Inspect ladders each time before they are used and report defects to your management. Ensure they are straight with no obvious defects. Do not use defective ladders.
2. Set ladders on a firm and level base. Ensure, before climbing, that they are securely tied at the top and footed such that it cannot slip outwards or sideways. Ladder access points should be without obstructions, so that no one has to climb over a toeboard or under a guardrail.

3. Wherever possible use the "one in four rule" i.e. the ladder should slope one metre out at the base for every four metres of height.
4. Ensure that the ladder is long enough, i.e. it must project at least 1.0m (usually 5 rungs) above the landing place.
5. Ensure that the Ladder is fastened to Finelock with an appropriate Ladder attachment coupler or 18mm polypropylene rope.
6. Work safely from ladders at all times. Use both hands to climb and do not overreach when working from a ladder, you must maintain 3 points of contact at all times.
7. Use a safety harness and lanyard connected to a suitable independent anchorage point, if you need to have your hands free for working.

Gin Wheels and Ropes

There are special instructions for dealing with Gin Wheels and ropes. Make sure you are familiar with the instructions provided by your Company before starting work.

1. Gin wheels and ropes used to lift and lower scaffolding components have to be properly examined and these records should be kept for future use. Gin Wheel registers, instructions for use and inspection and rope quality should be kept with the Gin wheel. Ensure the Safe Working Load is stamped to the Gin Wheel frame. Any rope and wheel MUST have current certification of inspection to ensure they are fi t for purpose.
2. Remember the MAXIMUM recommended loading on a rope and wheel should be restricted to 25kg for a one man lift, but should definitely not exceed the Safe Working Load of a Fittings Bag. Loads to be lifted should wherever possible be broken down into manageable weights which can be easily handled by one person.
3. Finelock system Davit arms should be used where necessary. Gin Wheel rings must be connected to the Davit arm with a 'D' shackle with a minimum Safe Working Load of 30kN minimum.
4. Ropes used on Gin Wheels must be of the correct size (usually 18mm diameter polypropylene rope).
5. All loads must be properly secured using the correct knots, lifting containers, bags or nets. Test by raising the load slightly from the ground or platform and make certain that it is secure before raising or lowering further.
6. Erect signs to indicate that hoisting activities are taking place around the safe area. Before any lifting or lowering operations commence, the work area MUST be cordoned off to prevent the access of unauthorized personnel.
7. ALWAYS keep yourself clear when hoisting scaffolding components. Never stand directly under the load.
8. Faults to look for in a Gin Wheel

- No certification
- No Safe Working Load stamped on the wheel
- Split pin missing
- Dents in the main body which will prevent smooth operation of the rope
- Only ring type gin wheels are permitted

9. Faults to look for in a Rope

- No certification
- Rope is sleeved with an identification tag at each end.
- At least one of these tags is an original identification label.
- Abrasions, flaws, wear, thinning or rotting.
- Usually only 18mm polypropylene rope is permitted.

06 Shoring Safety Guidelines

Shoring Safety: A Collective Responsibility

Shoring safety is indeed everyone’ s responsibility! The safety of all individuals on site hinges on the proper installation and safe utilization of shoring systems. Prior to each use, inspect your shoring to ensure that it has not been tampered with and remains safe for use.

- It is crucial to prominently display these shoring safety rules and ensure that all personnel involved in erecting, using, or dismantling shoring are fully aware of them. Adhere to all relevant codes, ordinances, and regulations at the state, provincial, local, and federal levels concerning shoring.
- Before utilizing any equipment, conduct a thorough inspection. Never use equipment that is damaged, severely corroded, or lacks locking mechanisms. Components that cannot be properly aligned or engaged with the parts they are meant to fit into or onto must be removed and replaced.
- A detailed shoring layout should always be accessible and utilized on the job site. Shoring design must involve the analysis of load-bearing components by qualified professionals. Information regarding the load capacity and weight of Fineshore shoring components is available from Fineshore itself.

Inspect erected shoring and forming systems for compliance with the layout and safety practices before, during, and after the concrete pour until the concrete has set.If in doubt, consult your Fineshore representative. Shoring is our expertise, and we urge you never to take unnecessary risks.

⚠ WARNING

FAILURE TO BECOME FAMILIAR WITH AND COMPLY WITH ALL RELEVANT SAFETY REQUIREMENTS AS OUTLINED BY FEDERAL, STATE, PROVINCIAL, AND LOCAL REGULATIONS COULD RESULT IN SERIOUS INJURY OR DEATH. IT IS IMPERATIVE THAT YOU UNDERSTAND THESE SAFETY GUIDELINES BEFORE ATTEMPTING TO ERECT, USE, OR DISMANTLE THIS SHORING SYSTEM.

Safety must never be compromised. Familiarize yourself with the guidelines and regulations pertinent to your jurisdiction and ensure that all necessary precautions are taken to safeguard lives and property. Regular training, adherence to best practices, and continuous vigilance are key to maintaining a safe working environment.

一 Prior To The Pour

1. Use Fineshore’ s Recommended Safe Working Loads and Procedures For:

- a. Span, spacing, and types of shoring members.
- b. Types, sizes, heights, and spacing of vertical shoring supports.

2. Use lumber equivalent to the stress, species, grade, and size specified on the layout. Use only lumber that is in good condition. Do not splice timber members between their supports.

3. Provide proper foundation (sills, beams, or cribbing) below base plates for the distribution of leg loads to concrete slabs or ground. Existing ground shall be level and thoroughly compacted prior to erection of shoring to prevent settlement. Consideration must be given to potential adverse weather conditions throughout the pour cycle such as washouts, freezing and thawing of ground, etc. Consult a qualified soils engineer to determine the proper size foundation required for existing ground conditions.

4. Do not make unauthorized changes or substitution of equipment; always consult WENMA prior to making changes necessitated by job-site conditions.

5. Provide guardrail systems on all open sides and openings in formwork and slabs.

6. Access must be provided to all forming deck levels. If it is not available from the structure, access ladders or stair towers must be provided. Access ladders must extend at least 3 ft. above formwork. Position or restrain ladders to prevent ladder or formwork displacement.

WARNING: FALL ARREST EQUIPMENT ATTACHED TO SHORING MAY NOT PREVENT SERIOUS INJURY OR DEATH IF A FALL OCCURS.

7. If motorized concrete placement equipment is to be used, be sure that lateral loads, vibration, and other forces have been considered and adequate precautions taken to assure stability.

8. Plan concrete pouring methods and sequences to ensure against unbalanced loading of the shoring equipment. Take all necessary precautions to avoid uplift of shoring components and formwork.

9. Fasten all braces securely.

10. Check to see that all clamps, screws, pins, and all other components are in a closed or engaged position.

11. Make certain that all base plates and shore heads are in firm contact with the foundation and forming material.

12. Use special precautions when shoring to or from sloped surfaces.

13. Avoid eccentric loads on U-Heads and top plates by centering stringers on these members.

14. Avoid shock or impact loads for which the shoring was not designed.

15. Do not place additional temporary loads (such as rebar bundles) on erected formwork or poured slabs without checking the capacity of the shoring and/or structure to safely support such additional loads.

16. The completed shoring setup shall have the specified bracing to give it lateral stability.

17. The erection of shoring should be under the supervision of an experienced and Competent Person.

These guidelines are essential for ensuring the safety and structural integrity of the shoring system before the concrete pour. Following these steps will help prevent accidents and ensure that the shoring can withstand the loads applied during the construction process. Always consult with WENMA representatives and qualified professionals to address any uncertainties or job-specific conditions that may require adjustments to these standard procedures.

06 Shoring Safety Guidelines

二 During the Pour

1. No Adjustment to Shoring: Once concrete pouring begins, no adjustments to shoring or post shores to raise the formwork are allowed, to prevent structural instability due to changes in stress conditions.

2.Control of Pouring Sequence: Strictly follow the preset pouring sequence (e.g., from the middle to both sides, layered and segmented pouring) to avoid unbalanced loads caused by concrete accumulation. For large-area slabs, the single pouring width should not exceed 3 meters to ensure uniform load transfer to the shoring system.

3. Real-time Monitoring Requirements:

- Assign personnel to monitor the shoring status throughout the pouring process, focusing on verticality of uprights, tightness of node connections, and foundation settlement;
- Use inclinometers, levels, and other tools to record shoring deformation data. If upright inclination exceeds 1/200, settlement exceeds 10mm, or components make abnormal noises, stop pouring immediately, take reinforcement measures, and report to the engineer.

4. Equipment Operation Specifications:

- Concrete pumps, placing booms, and other equipment shall not be placed directly on shoring; independent foundations or dedicated load-bearing platforms shall be provided;
- When pumping concrete, the hose outlet shall not face shoring uprights directly to avoid bending of uprights due to lateral impact force.

5. Personnel Safety Control:

- No standing or staying under the pouring area; set up rigid isolation barriers and hang warning signs;
- Workers shall operate on stable platforms; standing on formwork edges or temporary supports is strictly prohibited.

6. Emergency Response: Equip the site with temporary supports (e.g., adjustable jacks, steel pipes) and reinforcement tools. If local deformation of shoring is found, immediately use temporary supports to prop up stress points, and perform systematic repairs after concrete initial setting.

WARNING: DO NOT POSITION WORKERS BELOW FORMWORK WHILE CONCRETE IS BEING PLACED.

三 Removal

1. Removal Authorization: No loaded shoring equipment (including cross braces) shall be released or removed until written approval from a qualified engineer is obtained. The engineer shall specify the removal time, sequence, and method based on concrete strength reports, structural stress analysis, and on-site conditions.

2.Prohibition of Premature Removal: Premature removal of formwork or shoring may cause structural failure due to insufficient strength, leading to collapse. Note: Removal time for long-span beams, cantilever structures, and high-strength concrete components shall be extended, subject to engineers evaluation.

3. Removal Sequence: Follow the principle of "remove later-erected components first, earlier-erected components last"; simultaneous removal of upper and lower layers is strictly prohibited. For multi-layer shoring, start from the top layer and proceed downward layer by layer. After removing each layer, confirm that the lower structure has independent load-bearing capacity.

4. Load Control: During removal, it is forbidden to pile debris, materials, or other additional loads on shoring or formwork to prevent structural instability due to superimposed loads.

5. Safety Protection:

- Set up warning signs and enclosures in the removal area to prohibit entry of unauthorized personnel;
- Workers must wear safety helmets, non-slip shoes, safety belts, and other protective equipment. For high-altitude operations, safety belts shall be tied to safety ropes independent of the shoring system;
- For removal at heights exceeding 1.5 meters, set up temporary work platforms; it is strictly prohibited to operate directly on formwork or shoring.

6.Component Handling: Removed shoring components (e.g., vertical standards, horizontal ledgers, braces) shall be lowered gently; throwing is strictly prohibited. Components shall be stacked neatly by category. Damaged parts shall be marked separately and repaired or scrapped in a timely manner; re-use is forbidden.

7. Weather Impact: In case of heavy rain, strong winds (wind force ≥ 6), heavy fog, or other severe weather, stop removal operations immediately and temporarily reinforce the removed parts to prevent accidental collapse.
8. Emergency Measures: Equip the removal site with emergency rescue equipment (e.g., first-aid kits, jacks, temporary supports). If structural deformation, abnormal noise, or other anomalies are found, stop operations immediately, evacuate personnel, and report to the engineer; resume work only after hidden dangers are eliminated.

A qualified engineer must decide when and how stripping is to proceed. Weather conditions, variations in different parts of the structure, and the setting qualities of the concrete all affect the stripping process.

These guidelines are critical for ensuring the stability and safety of the shoring system during various stages of construction, from initial setup through the concrete pour and subsequent removal of the formwork. Compliance with these instructions is essential to prevent accidents and ensure the integrity of the structure being built. Always consult with the appropriate professionals and follow industry standards and local regulations when executing any construction-related tasks.

四 Reshoring

Definition

Reshoring refers to the construction operation in which new shoring equipment is installed as the original forms and shores are removed, in order to support partially cured concrete and construction loads.

1. Reshoring is one of the most critical operations in formwork; consequently, reshoring procedures must be designed and planned in advance by a qualified structural engineer and approved by the project architect/engineer.
2. Slabs or beams which are to be reshored should be allowed to take their permanent deflection before final adjustment of reshoring equipment is made. This ensures that the reshoring system is correctly supporting the structure in its final position.
3. The reshoring shall be thoroughly checked by the architect/engineer to determine that it is properly placed and that it has the allowable load capacity to support the areas that are being reshored. This inspection is crucial for the safety and integrity of the structure.
4. Equipment to be left in position for reshoring should be checked thoroughly by a qualified engineer. Horizontal shoring beams should never be used as a part of the reshoring system. Extreme care must be taken to release the adjustment screws to a point where the slab takes its permanent deflection. The adjustment screws should then be tightened until contact is again made with the underside of the slab. In this manner, the frame reshoring below will not be carrying the load of the slab that it had previously shored.

Reshoring is a specialized task that requires careful planning and execution to prevent structural failures and ensure the safety of workers and the public. It is imperative that all reshoring activities are supervised by competent professionals who understand the structural implications and have the expertise to design and implement effective reshoring strategies. Always refer to local building codes and seek advice from qualified engineers and architects to ensure that reshoring practices meet or exceed the required safety standards.
Footnote 1: China requires a height-to-minimum base width ratio of three to one (3:1). Refer to the governing codes for your job location to ensure compliance with local regulations and standards.

07 Handling and Storage

Code of Practice for Manual Handling and Storage of Fineshore M60 Shoring System System Components

Basic Rules for Manual Handling

1.Plan the component stacking/storage area in advance to reduce the manual handling distance; ensure no tripping hazards exist in the area.
2.Only handle loads that can be reasonably borne by individual physical capacity, fully considering personal physical limits.
3.Use mechanical handling equipment (e.g., forklifts, cranes) and manual auxiliary tools (e.g., traction ropes, pulleys) as much as possible to reduce or eliminate manual handling operations.
4. Always use correct force - application techniques for handling:

- Stand on firm, level ground with feet spaced approximately 300mm apart; rely on leg strength instead of back strength when bending.
- Slightly raise the head, tuck the chin, keep the spine straight; avoid twisting the torso.

5. Inspect the transportation route before handling to ensure it is unobstructed and free of obstacles.
6. When handling long components, be alert to avoid damaging property, touching overhead wires, injuring others, or interfering with moving vehicles.
7.If using rope hoisting equipment, use correct knots and tying methods (see *Pulleys and Ropes* specification for details).
8. Wear suitable gloves to protect hands when necessary; exercise extra caution when handling metal components with sharp edges.
9. Always pass scaffold components by hand, pulley, or rope; strictly prohibit throwing, tossing, or dropping components.
10. Do not handle scaffold components while ascending or descending ladders.

Component Storage Specifications

1.All Fineshore M60 system components and equipment must be neatly stored in scaffold storage racks, with a stacking height not exceeding 5 layers (subject to local construction site/regional regulations).
2. Scaffold storage racks must be loaded in accordance with the approved safe working load; overloading is strictly prohibited.
3. Scaffold storage racks must be lifted and loaded onto flatbed trucks using forklifts or cranes; scattered components must first be placed in storage racks, then wrapped/bound for fixation before loading and transportation.
4.Store all equipment in a dry, safe environment as much as possible.
5.Conduct a visual inspection of all scaffold components after use and before transporting them back to the storage area; refer to the *Technical Information and Maintenance Manual* for component inspection and isolation methods.
6. Conduct regular inspections of scaffold equipment at intervals not exceeding 30 days to check for general wear; all components must be inspected before erection and use.
7.If components are stored outdoors, exercise caution to ensure stable ground when stacking and moving Fineshore scaffold components.

Component Packaging Instructions

The following are the illustrations, dimensions, weights, and allowable load specifications for the packaging and stacking of Fineshore M60 Shoring System components; the marked weights can be used to calculate the single-piece transportation weight or total transportation weight.

07 Handling and Storage

Vertical Standard (M60)

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M60VS300	17.20	81	1393.20	Rack	1477.70	3000x1060x1000
M60VS250	14.39	81	1165.59	Rack	1250.09	2500x1060x1000
M60VS200	11.58	81	937.98	Rack	1022.48	2000x1060x1000
M60VS150	8.52	81	690.12	Rack	774.62	1500x1060x1000
M60VS100	5.68	81	460.08	Rack	544.58	2000x1060x1000
M60VS50	2.84	324	920.16	Rack Bin	968.26	1148x1148x820

Vertical Standard (M60,) w/ Spigot

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M60VS300S	18.25	81	1478.25	Rack	1562.75	3130x1060x1000
M60VS250S	15.44	81	1250.64	Rack	1335.14	2630x1060x1000
M60VS200S	12.63	81	1023.03	Rack	1107.53	2130x1060x1000
M60VS150S	9.57	81	775.17	Rack	859.67	1630x1060x1000
M60VS100S	6.73	162	1090.26	Rack	1174.76	2130x1060x1000
M60VS50S	3.89	243	945.27	Rack	1029.77	1655x1060x1000
M60VS50C	3.36	243	816.48	Rack	900.98	1585x1060x1000
M60VS25C	2.16	324	699.84	Rack	784.34	1080x1060x1000

Base Collar (M60)

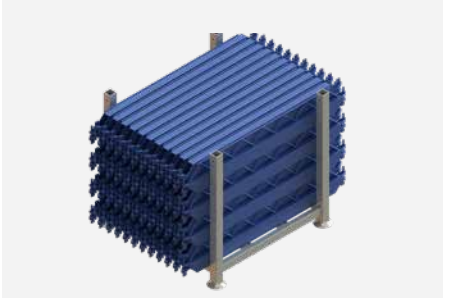
Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M60BC	2.52	486	1224.72	Rack	1309.22	1630x1060x1000

Horizontal Ledger

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M60HL30	10.12	247	2499.64	Rack	2584.14	2950x1060x1000
M60HL24	8.24	247	2035.28	Rack	2119.78	2350x1060x1000
M60HL21	7.30	247	1803.10	Rack	1887.60	2050x1060x1000
M60HL18	6.36	247	1570.92	Rack	1655.42	1750x1060x1000
M60HL15	5.42	247	1338.74	Rack	1423.24	1450x1060x1000
M60HL12	4.48	247	1106.56	Rack	1191.06	1150x1060x1000
M60HL09	3.54	238	842.52	Rack	927.02	1060x1060x1000
M60HL06	2.60	512	1331.20	Rack	1415.70	1070x1060x1000
M60HL03	1.66	600	996.00	Rack Bin	1044.10	1148x1148x820

Vertical Bay Brace

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M60VBB2415	8.56	198	1694.88	Rack	1779.38	2730x1060x1000
M60VBB2115	7.85	198	1554.30	Rack	1638.80	2490x1060x1000
M60VBB1815	7.16	198	1417.68	Rack	1502.18	2260x1060x1000
M60VBB1515	6.58	198	1302.84	Rack	1387.34	2050x1060x1000
M60VBB1215	6.26	198	1239.48	Rack	1323.98	1860x1060x1000
M60VBB0915	5.76	198	1140.48	Rack	1224.98	1710x1060x1000
M60VBB0615	5.56	198	1100.88	Rack	1185.38	1600x1060x1000



Heavy Duty Ledger

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M60HDL18	14.86	92	1367.12	Rack	1451.62	1750x1060x1000
M60HDL15	12.28	92	1129.76	Rack	1214.26	1450x1060x1000
M60HDL12	8.10	128	1036.80	Rack	1121.30	1150x1060x1000

Base Jack (M60)

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M60ABJ	4.52	288	1301.76	Rack	1386.26	1060x1060x1000
M60ABJ_H	4.38	256	1121.28	Rack	1205.78	1060x1060x1000

U-Head Jack (M60)

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M60AUH	5.46	180	982.80	Rack	1067.30	1200x1200x1000
M60AUH_H	6.18	160	988.80	Rack	1073.30	1200x1200x1000

U-Head Jack, Multi-functional (M60)

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M60MHJ	13.28	90	1195.20	Rack	1279.70	1700x1060x1000

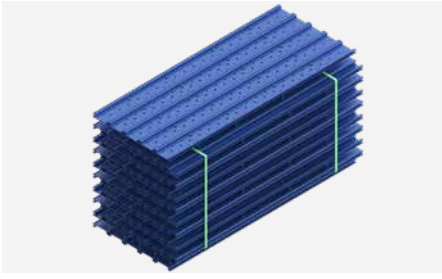
07 Handling and Storage

Steel Plank

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M48SP_30	16.28	72	1172.16	Rack	1256.66	3060x1060x1000
M48SP_24	13.29	72	956.88	Rack	1041.38	2460x1060x1000
M48SP_21	11.79	72	848.88	Rack	933.38	2160x1060x1000
M48SP_18	10.29	72	740.88	Rack	825.38	1860x1060x1000
M48SP_15	8.79	72	632.88	Rack	717.38	1560x1060x1000
M48SP_12	7.29	72	524.88	Rack	609.38	1260x1060x1000
M48SP_09	5.79	72	416.88	Rack	501.38	1060x1060x1000
M48SP_06	4.30	144	619.20	Rack	703.70	1300x1060x1000

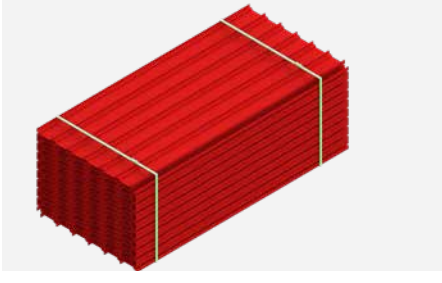
Steel Walkboard

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M48SWB_30	19.42	65	1262.30	Rack	1346.80	3060x1060x1000
M48SWB_24	15.73	65	1022.45	Rack	1106.95	2460x1060x1000
M48SWB_21	13.88	65	902.20	Rack	986.70	2160x1060x1000
M48SWB_18	12.03	65	781.95	Rack	866.45	1860x1060x1000
M48SWB_15	10.19	65	662.35	Rack	746.85	1560x1060x1000
M48SWB_12	8.34	65	542.10	Rack	626.60	1260x1060x1000
M48SWB_09	6.50	65	422.50	Rack	507.00	1060x1060x1000
M48SWB_06	4.64	130	603.20	Rack	687.70	1300x1060x1000



Double C-Channel Beam

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M60ADCB18	17.56	54	948.24	Bundle	948.24	2000x1060x1050
M60ADCB15	14.26	54	770.04	Bundle	770.04	1700x1060x1050
M60SDCB15	25.60	70	1792.00	Rack	1876.50	1650x1060x1000
M60SDCB12	20.80	70	1456.00	Rack	1540.50	1350x1060x1000

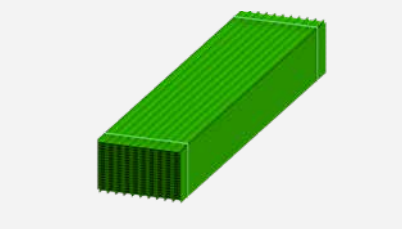


Aluminium Beam

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M60ALB47_165	18.14	108	1959.12	Bundle	1959.12	4700x1060x760
M60ALB26_165	10.04	108	1084.32	Bundle	1084.32	2600x1060x760
M60ALB22_165	8.49	108	916.92	Bundle	916.92	2200x1060x760

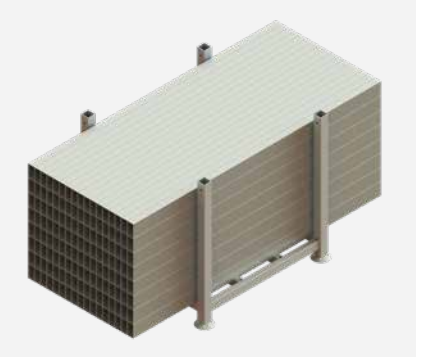
Aluminium Beam

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M60ALB47_100	18.14	108	1959.12	Bundle	1959.12	4700x1060x760
M60ALB22_100	8.49	108	916.92	Bundle	916.92	2200x1060x760



Square Steel Tube Beam

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M60STB470	31.87	40	1274.80	Bundle	1274.80	4700x500x400
M60STB300	20.34	136	2766.24	Rack	2850.74	3000x1060x1000
M60STB240	16.28	136	2214.08	Rack	2298.58	2400x1060x1000
M60STB210	14.24	136	1936.64	Rack	2021.14	2100x1060x1000
M60STB200	13.56	136	1844.16	Rack	1928.66	2000x1060x1000
M60STB180	12.21	136	1660.56	Rack	1745.06	1800x1060x1000
M60STB120	8.14	136	1107.04	Rack	1191.54	1200x1060x1000
M60STB086	5.83	136	792.88	Rack	877.38	1060x1060x1000



Side Bracket (M60)

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M60SB12	11.78	40	471.20	Bundle	471.20	1240x1150x1150
M60SB09	8.80	90	792.00	Rack	876.50	2020x1060x1000
M60SB06	6.34	72	456.48	Rack	540.98	1360x1060x1000
M60SB03	3.95	132	521.40	Rack	605.90	1300x1060x1000

Jack Support

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M60JS	2.58	230	593.40	Rack Bin	641.50	1148x1148x820

07 Handling and Storage

Beam Anchoring Clamp

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M60BAC	1.36	500	680.00	Rack Bin	728.10	1148x1148x820

Stairway Aluminum

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M60SW2420_AL650	22.60	7	158.20	Rack	242.70	3210x1060x1000
M60SW2120_AL650	22.10	7	154.70	Rack	239.20	2980x1060x1000
M60SW1820_AL650	21.33	7	149.31	Rack	233.81	2780x1060x1000

Platform Stairway Aluminum

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M48PSW3020_AL750	26.95	6	161.70	Rack	246.20	3690x1060x1000
M48PSW2420_AL750	29.80	6	178.80	Rack	263.30	3200x1060x1000

Aluminum Scaffolders Step

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M48ASS	5.94	18	106.92	Rack	191.42	1060x1060x1000

Spigot (M60)

Part No.	Fineshore M60 Components			Racking		
	Weight (kg)	QTY/Rack (pcs)	Total weight (kg)	Type	Total Weight w/ Rack	Racking Dimension mm
M60S	1.05	700	735.00	Rack Bin	783.10	1148x1148x820

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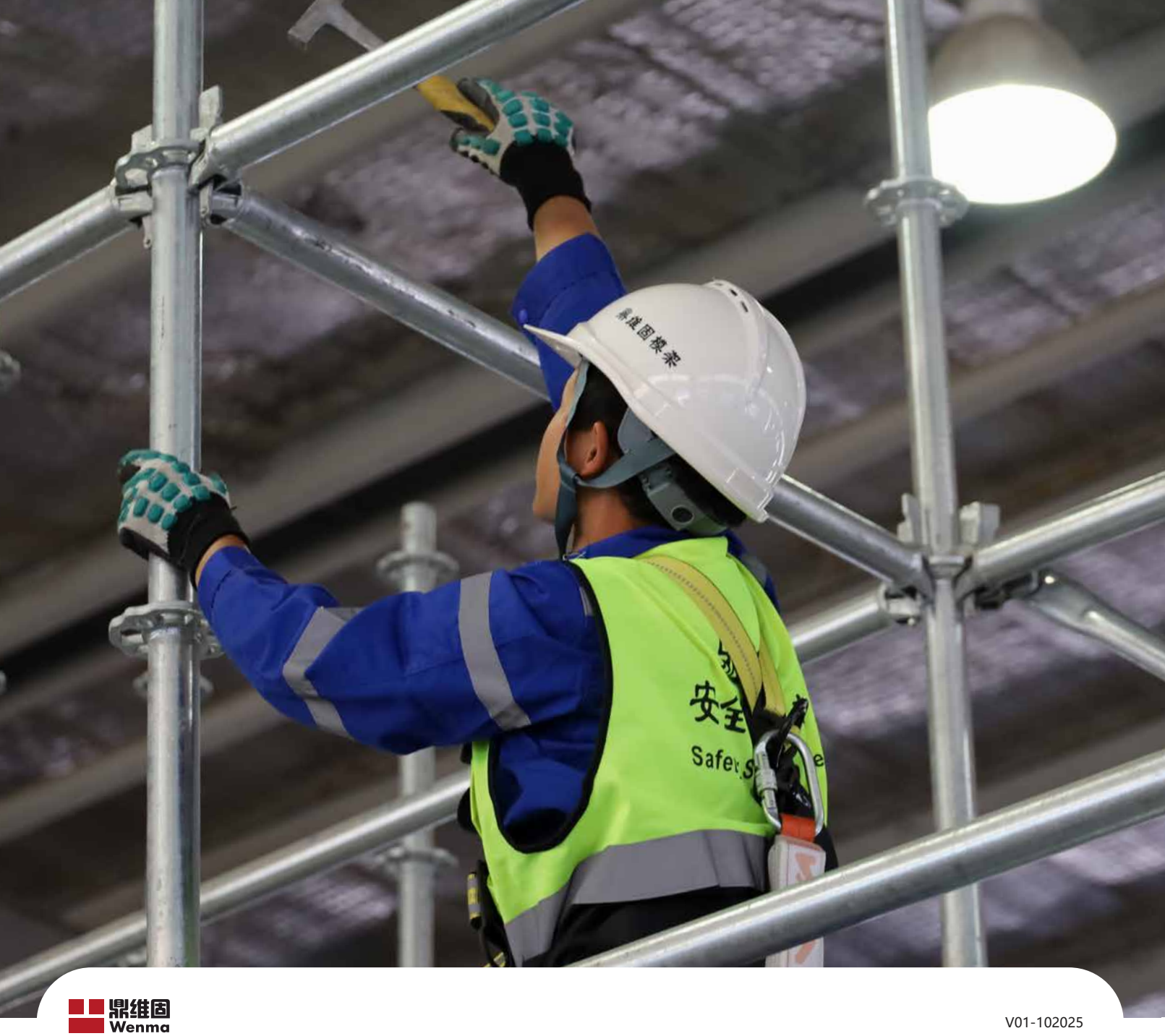

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