TRUONG PHU STEEL

ISO 9001:2008

SAFETY HANDBOOK FOR CONSTRUCTION SITE

TRUONG PHU CONSTRUCTION & STEEL STRUCTURE J.S.C.

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1. General Safety And Health Provisions

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All officers - construction workers involved in the policy must comply with the rules and regulations on labor safety as follows:

1. All officers - construction workers involved in the construction site must be registered labor contract, and pass the Health and Safety training courses in building and have construction accident insurance.
2. Construction workers include: Clothing - Work wear non - application - use gloves when electric welding machine, cutting machine, protective glasses - Must wear access valid card during construction on the policy.
3. Must have a serious style of construction, absolutely no skinny teasing each other. Alcohol is prohibited or stimulants before or during the working process, not arbitrarily take of things, explosive on the site.
4. When working in height which over 2m, workers must wear safety belts - safety belt anchor point must hook on to check the stability and ruggedness and length prior to construction.
5. When carrying heavy objects in each group from 2 or more people must select group similarity in height, and must be ordered by site manager.
6. Crane operation - excavators and rough service must have a job, and the right expertise is confirmed, can work only in a state of full health, we have to check all actions to ensure the appliance works correctly before sewing operation.
7. All levels -hooks must be smooth and had to periodic inspections, any damage must be repaired or replaced immediately recommended the same time reported in Check Published weekly occupational safety.
8. When nighttime construction must ensure adequate lighting in the area of construction as well as the dangerous corridors.
9. All electrical wiring and equipment in the electrical system must be covered and ensure watertight. Power transmission lines, construction of location must be arranged at dry place yet to be shielded must go through the main roads of the policy.
10. Absolute hygiene industry on public policy and do not litter – and keep clean in public area, materials and equipment. After construction must be tidy on warehousing and careful maintenance.

All officers - construction workers involved in the policy must comply with the rules and regulations on labor safety as follows:

11. Ladders must extend three feet above landing on roof for proper use.
12. Defective ladders must be properly tagged and removed from service.
13. Keep ladder bases free of debris, hoses, wires, materials, etc.
14. Build scaffolds according to manufacturers' recommendations.
15. Scaffold planks shall be properly lapped, cleared or otherwise secured to prevent shifting.
16. Use only extension cords of the three-prong type. Use ground fault circuit interrupters at all times and when using tools in wet atmosphere (e.g. outdoors) or with any temporary power supply. Check the electrical grounding system daily.
17. The use of harnesses with safety lines when working from unprotected high places is mandatory. Always keep your line as tight as possible.
18. Never throw anything "overboard." Someone passing below may be seriously injured.
19. Open fires are prohibited.
20. Know what emergency procedures have been established for your job site. (location of emergency phone, first aid kit, stretcher location, fire extinguisher locations, evacuation plan, etc.)
21. Never enter a manhole, well, shaft, tunnel or other confined space which could possibly have a non respirable atmosphere because of lack of oxygen, or presence of toxic or flammable gas, or has a possibility of engulfment by solids or liquids. Make certain a qualified person tests the confined area with an appropriate detector before entry, that the necessary safety equipment is worn. Standby person may be required to be stationed at the entrance.
22. Portable ladders in use shall be equipped with safety feet unless ladder is tied, blocked or otherwise secured. Step ladders shall not be used as a straight ladder.

Safety Manager of Truong Phu Steel Company
Signed & Stamp

TEAMWORK PRINCIPLES

Follow the guidance of the site manager directly.

Properly carried out by employment history

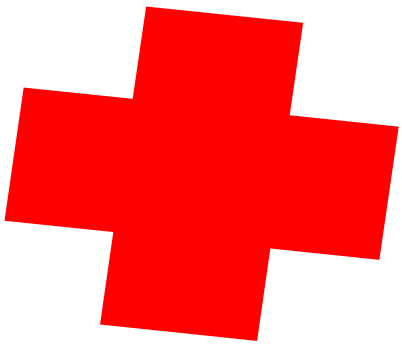
When work shifts changed or are transferred to a different location, must have clear job handed to person responsible.

WORK IN SITE CONSTRUCTION

Always helmet (straps tuck) and safety shoes

Note avoiding wires, standing water, sharp objects ...

Do not stand or walk below the crane or forklift



3. Working On Height

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Working at height remains one of the biggest causes of fatalities and major injuries. Common cases include falls from ladders and through fragile roofs.

Work at height means work in any place, including at or below ground level (for example in underground workings), where a person could fall a distance liable to cause injury.

This section shows how employers can take simple, practical measures to reduce the risk of any of their workers falling while working at height.

Control measures

There is a simple hierarchy of control measures (as described below) which you should follow to minimize the risk of a fall from height. The hierarchy should be followed **systematically** and only when one level is not *reasonably practicable* may the next level be considered.

Those in control of the work **need to:**

avoid work at height where they can

use work equipment to prevent falls where work at height cannot be avoided

where the risk of a fall cannot be eliminated, use work equipment to minimise the distance and consequences of a fall if one occurs

always consider measures that protect all those at risk, ie collective protection measures (scaffolds, nets, soft landing systems) before measures that only protect the individual, ie personal protection measures (a harness)

What do I have to do?

You must make sure that **all** work at height is properly planned, supervised and carried out by people who are competent (someone who has the skills, knowledge and experience) to do the job. This must include the use of the right type of access equipment.

To prevent or minimize risk when planning for work at height, consider what needs to be done and take a sensible, risk-based approach to identify suitable precautions.

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3. Working On Height
Do and do not of working at height

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- **Do….**
- make sure the surface/access equipment in use is stable and strong enough to support the worker's weight and that of any equipment. Any edge protection should be wide enough and strong enough to prevent a fall
- as much work as possible from the ground or partly from the ground, for example assemble structures on the ground and lift them into position with lifting equipment
- take precautions when working on or near fragile surfaces, eg an asbestos cement roof, to prevent a fall or to minimize the distance and consequences in the event of a fall
- ensure workers can get safely to and from where they want to work at height and also consider emergency evacuation and rescue procedures
- make sure everyone involved is competent to do the work they are responsible for, including those who plan and organize it
- choose the most appropriate equipment for the type of work being done and how often it will be used
- provide protection from falling objects
- make sure equipment used for work at height is well maintained and inspected regularly
- **Don't…**
- overload ladders – the person and anything they are taking up should not exceed the highest load stated on the ladder
- overreach on ladders or stepladders – keep your belt buckle (navel) inside the stiles and both feet on the same rung throughout the task
- use ladders or stepladders if the nature of the work is deemed to be 'heavy' or if the task will take longer than thirty minutes or so to complete
- use ladders if workers cannot maintain three points of contact (hands and feet) at the working position. If this is not possible, consider an alternative safe system of work
- let anyone who is **not** competent (someone who doesn't have the skills, knowledge and experience to do the job) carry out work at height

3. Safety rules on scaffolding

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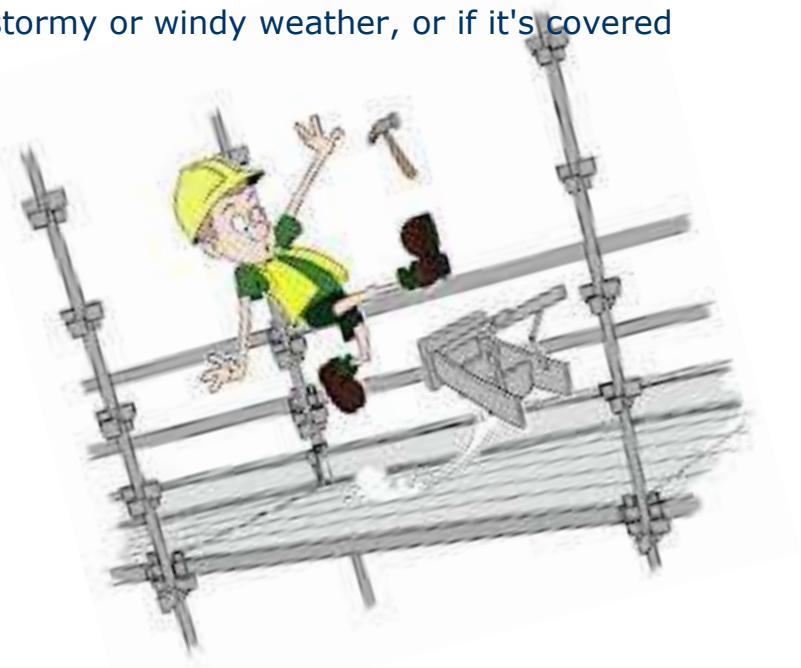
DO

- Make sure a competent person has inspected the scaffold before you go up.
- Wear a hard hat whether you work on or under a scaffold.
- Be sure to wear sturdy shoes with nonslip soles as well.
- Use a personal fall arrest system whenever required.
- Watch out for co-workers on the scaffold as well as people below.
- Always use common sense when working on any scaffold, and move around slowly and carefully.
- Ask a supervisor if you're not sure if a scaffold or working conditions are safe.

DON'T

- Take chances.
- Overload a scaffold.
- Keep debris or unnecessary materials on a scaffold where someone could trip over them or accidentally knock them off the platform.
- Hit a scaffold with anything heavy—a truck, a forklift, a load of lumber, etc.
- Leave materials and equipment on the platform at the end of the day.
- Use an outdoor scaffold in stormy or windy weather, or if it's covered with ice or snow.



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4. Preparatory For Safety Erection of Steel Structure

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PREPARATION WORKS

- Before starting erection, make sure that you have a complete set of Erection drawings marked “Issued for Construction”. The cover sheet of the Steel Contractor Erection drawings lists all the drawings in the set along with the latest revision number and date.
- It is the Builder / Erector’s responsibility for mobilization, receiving, off loading and furnishing necessary tools for the proper erection of a Steel Contractor Building.
- The structure should be adequately braced at all times before raising the next component. The structure must be secured with temporary or permanent bracing before release of lifting equipment and at the end of the day, weekends or other shutdowns. When commencing erection of the building, the first bay must be erected with all wind bracing, eave purlins/struts, purlins, girts and flange braces completely installed and all bolts properly tightened to make certain that the building is properly braced. (Refer to appropriate pages that follow in this Manual).
- All joints should be made up and all bolts are in place before releasing Lifting Equipment.
- Until the first run of roof sheets is secured, temporary scaffold should be used to start sheeting so that Cladding Crew will have something to stand on. Refer to proper method of walking on the roof described in the sheeting section of this Manual.
- All Cladding Crew should be cautioned regarding roof openings. Any uncovered openings should be properly guarded.
- Workers should never slide down columns and other structural members. Ladders should be used to get on and off the building. Wall grits and diagonal braces should not be used as ladders.

5. Safe Erection of Steel Structure

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Safety installation

The installation of structural steel and the frame is often related to the overhead work, as well as easily lead to high accident intersection.

The number of casualties in the installation of steel structures accounted for the highest percentage compared to all other jobs in the construction sector. Since the time working at each position in the installation of steel structures is relatively short so the scaffolding is rarely used.

Many workers do the installation believe in the safety of themselves, the work was carried out in a dangerous situation unnecessarily.

Therefore, Health and Safety must ensure includes 02 steps:

- Prepare design
- Safety erection Supervisor

5. Safe Erection of Steel Structure

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Prepare design:

- The worker must master the principles of safety prior to the installation of structural steel. The issues of safety must are focused since the design.
- The designer must establish the reality of the case and understanding the problems related to erection of steel structures such as joint position, the ability to connect to the place, fixing the floor, load related the capacity of the crane lifting etc.
- Construction safety plan should point out the difficulties and risks that may affect the installation process.

Safety Erection

The responsibilities of Erection engineer.

The erection engineer approves the sequential erection procedure which includes how the structure is stabilized at each stage and signs any modifications, and is required to provide guidance to the builder and erection crew on matters including:

- joints and additional erection cleats
- structural design criteria affecting construction
- temporary bracing
- lifting points
- loads and conditions likely to be experienced during the lifting and erection
- any wind load limitations on the integrity of the structure as it is being erected according to the signed-off sequential erection procedure
- wind load on the braced members.
- joint positions (as they affect erection sequences)
- accessibility of connections
- fixings for working platforms, hand rails etc
- preferred method of connecting steel members
- preferred type and number of cranes to erect members of particular size and shape, and for vertical and horizontal bracing requirements
- instructions on how to stabilize the structure at

each stage of erection which involves:

– verifying the adequacy of the base on connections (steel to foundations)

– checking stability under construction load conditions

- capacity to withstand accidental vehicle impact.

The fabricator can also provide guidance in this area.

Safety Erection

The erector ensures that:

- the structure is erected in accordance with the sequential erection procedure
- confirms with the builder's representative that the ground or supporting surface is suitable for mobile plant to safely operate
- pre-assembly of members and the movement and location of heavy members are considered prior to installation
- weather conditions are continually monitored, and in particular, potentially hazardous situations like high or strong winds and electrical storms for which a contingency plan should be developed and implemented as required.

The erection supervisor is responsible for directing and coordinating the agreed sequential erection procedure. They should hold a high risk work license for rigging in either the Intermediate Rigging or Advanced Rigging classes (class codes RI or RA) as appropriate (see Table 1).

The crane operator must hold a license to perform high risk work appropriate for the type of crane and, in the case of a slewing mobile crane, the crane's capacity (WLL) (or be under the direct supervision of the holder of the appropriate license).

The size and make-up of the remainder of the erection crew will vary depending upon the nature of the site and the particular circumstances. All members of the crew must hold the basic rigging license (class code RB) as a minimum. Anyone who is being trained, in order to obtain a license, must be directly supervised to ensure that the work is carried out safely

5. Safe Erection of Steel Structure

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Things to remember: SHOULD!

Safety nets, safety belts tied to the use of adaptive and protective clothing will reduce the number of casualties are many, and create better conditions to work in unfavorable position . Should maintain a safety net constructed at a height from 2 storeys or more.

Installation of structural steel is related to the loading and unloading operations, lifting materials by hand. These manipulations can cause spinal injuries or injuries in limbs if workers are not well trained, or not use protective equipment appropriate.

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6. Points to Remember About Safe

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- Reduce the number of bolts at the joints in order to save time lifting is a very dangerous act.
- Does not work when there is strong wind or wet structural.
- When erected by crane should always remember to add the two handles on either end of the steel frame. Workers guide to place the steel frame will use the right hand and standing positions meet the minimum distance is 5m.

ELECTRICAL SAFETY

Storage:

Not to put hot material (welding torch, just drill drill ...) and sharp objects touch the electric wires.

Electrical equipment must be placed in a dry place

Check out:

Regularly check the safety of electrical equipment, electrical wiring and connections ...

Rescue of electric shock

When someone is electrocuted to:

- Cutting power: using insulator (dry wood, rubber gloves, boots ...) To isolate the victim from the power source.
- If the victim is conscious: to sit in comfortable condition.
- If the victim is unconscious (breathing): perform artificial respiration and chest presses.
- Take the victim to the nearest medical facility (and still perform step 3)

7. Principles of safety electrical

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Learning the following electrical safety principles will enable personnel to understand and be aware of dangers associated with electrical energy sources.

Hazards associated with electrical circuits. Four hazards are associated with electrical circuits: shock, fire, arc/blast, and burns.

Shock

When the flow of electrical energy is interrupted and redirected through a human body, creating a new circuit, electrical shock occurs.

Fire

Electrical fire hazards occur when a circuit is overloaded. A typical example of an overloaded circuit is when too many appliances are plugged into one temporary power tap (TPT) and the TPT begins to generate heat.

Arc/blast

An arc/blast can occur when two points with different potential come in contact, or close proximity. A common example of an arc is when two exposed wires from one extension cord cross one another and a spark is produced. The spark or arc is really a low-level blast. A full-fledged "blast" event would occur when greater amounts of electrical energy were given off.

Burns

The most common shock-related injury is a burn. Electrical burns are one of the most serious injuries you can receive and should be given immediate attention. Additionally, Clothing may be ignited in an electrical accident and a thermal burn will result.

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8. Health, Safety of manufacturing of steel structures

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SECURITY WITH SOME MACHINERIES

a / Safety Drill:

- Wear protective glasses
- Test drilling has not yet mounted.
- No mouth-blown, do not use your hands to push mulch.
- When drilling thin sheet of plywood lined up.
- When drilling the wall or ceiling to determine the location of underground wires.

b / Grinding machines, cutting machines:

- Use goggles when operating the machine.
- Machine parts must be shielded.
- Maintaining distance between the grinding wheel and shelving at 3 mm.
- Stand to one side when operating the machine, avoid standing directly (same plane) with grinding disc, cutting disc to prevent incidents occur when rocks break disk, break abrasive material (debris shot out ...)
- When replacing grinding, cutting necessarily have to run the machine about 01 minutes to 03 minutes for testing.
- Do not use abrasive discs, cutting discs when have cracks.
- When abrasive grinding material to be exposed to the grinding wheel slowly (to avoid strong shock occurs).

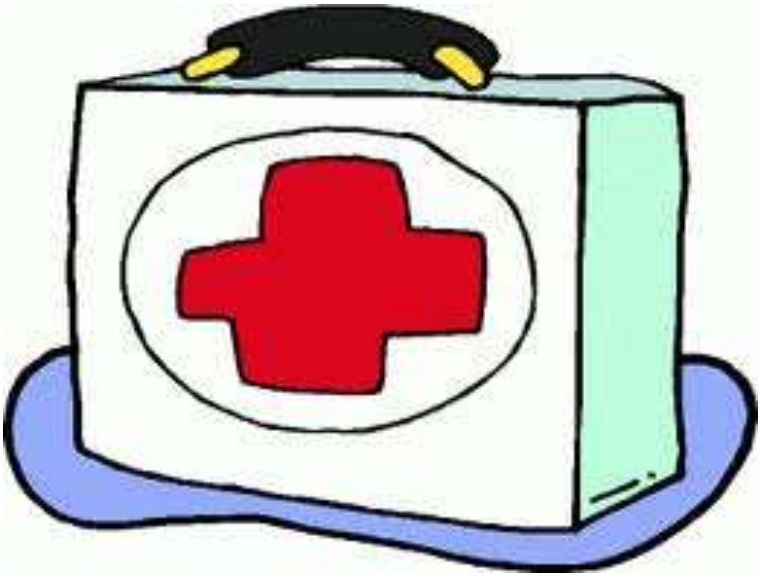
SECURITY WITH SOME MACHINERIES

c / Welding Gas (oxygen, acetylenic, Argon ...)

- Lock valve after finishing work.
- Do not use oxygen to blow the dust in clothes.
- Absolutely not exposed to oxygen grease.
- Do not mean to bump, lodging, strong vibrations.
- No modifying van bottles, bottle oxygen.

d / Arc welding (welding)

- Must carry personal protection equipment (welding mask, gloves, insulated boots ...)
- Workplace must have the means fire protection.
- Do not put the glass of flammable materials near the weld.
- Do not wear clothing with quality plastic, synthetic fibers.
- Note insulation safety equipment: welding pliers, electrical cabinet, power cord, ...
- Avoid inhaling fumes emitted where welding.



9. Safety Sign Standards

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- Safety consciousness when work must come from the heart. Always check for quadrilateral protective equipment before it can work.
- Safety performance through action
- Workplace is a safe place to have quality work to maximum efficiency high.

10. Accident and First aid procedures

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- **First aid is an important skill. By performing simple procedures and following certain guidelines, it may be possible to save lives by giving basic treatment until professional medical help arrives.**
- **Do not waste time checking for a pulse, if the patient is not responding.**

1. Place the heel of your hand in the middle of the chest above the breasts. The heel of your hand should now be positioned on the middle of the lower half of the breastbone (not over the ribs or stomach).
2. Now place the heel of your other hand on top of the first. Keep your fingers off the chest, by locking them together. Your pressure should be applied through the heels of the hands only.
3. Keep your elbows straight, and bring your body weight over your hands to make it easier to press down.
4. Press down firmly and quickly to achieve a downwards movement of 4 to 5cm, then relax and repeat the compression.
5. Do this at a rate of about 100 times a minute (which is fast and hard work – you can help your timing and counting by saying out loud 'one and two and three and four ...' etc)
6. Do this 30 times.
7. Now open the airway by positioning the head with the chin pointing upward.
8. Pinch the nostrils shut with two fingers to prevent leakage of air.
9. Take a normal breath, and seal your own mouth over the person's mouth, making sure there's a good seal.
10. Breathe slowly into the person's mouth – it should take about two seconds to adequately inflate the chest.
11. Do this twice.
12. Check to see if the chest rises as you breathe into the patient's mouth.
13. If it does, enough air is being blown in.
14. If there's resistance, try to hold the head back further and lift the chin again.
15. Continue with 30 chest compression, then two rescue breaths – and only stop if the victim starts to breath.

- Do not stop for any other reason, until someone else can take over form you.

URGENT CONTACT

- Police 113
- Fire 114
- Medical Emergency 115
- Company Telephone: +848 39744677
- Hotline: 0918 00 88 63 – 0975 88 11 55

Labor safety is everyone's responsibility. However, the management is the set of safety standards to create a safe working environment. The issue of safety which apply to Truong Phu practical, effective and enforced.

Labor safety Handbook will be reassessed annually to ensure compliance and consistent with the management system of the company.

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Thank You!

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