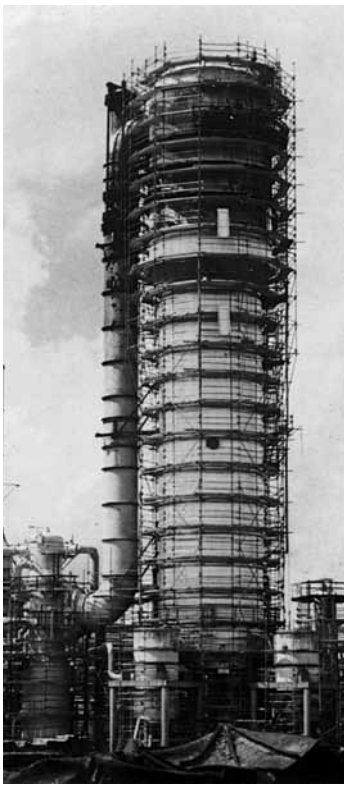
Tube & Clamp Scaffold
Product Selection Guide

T&C

SAFWAY®

Unlimited Adaptability



Left: Tube & Clamp encircles a tall stack. **Right:** Tube & Clamp provides access within a domed structure.

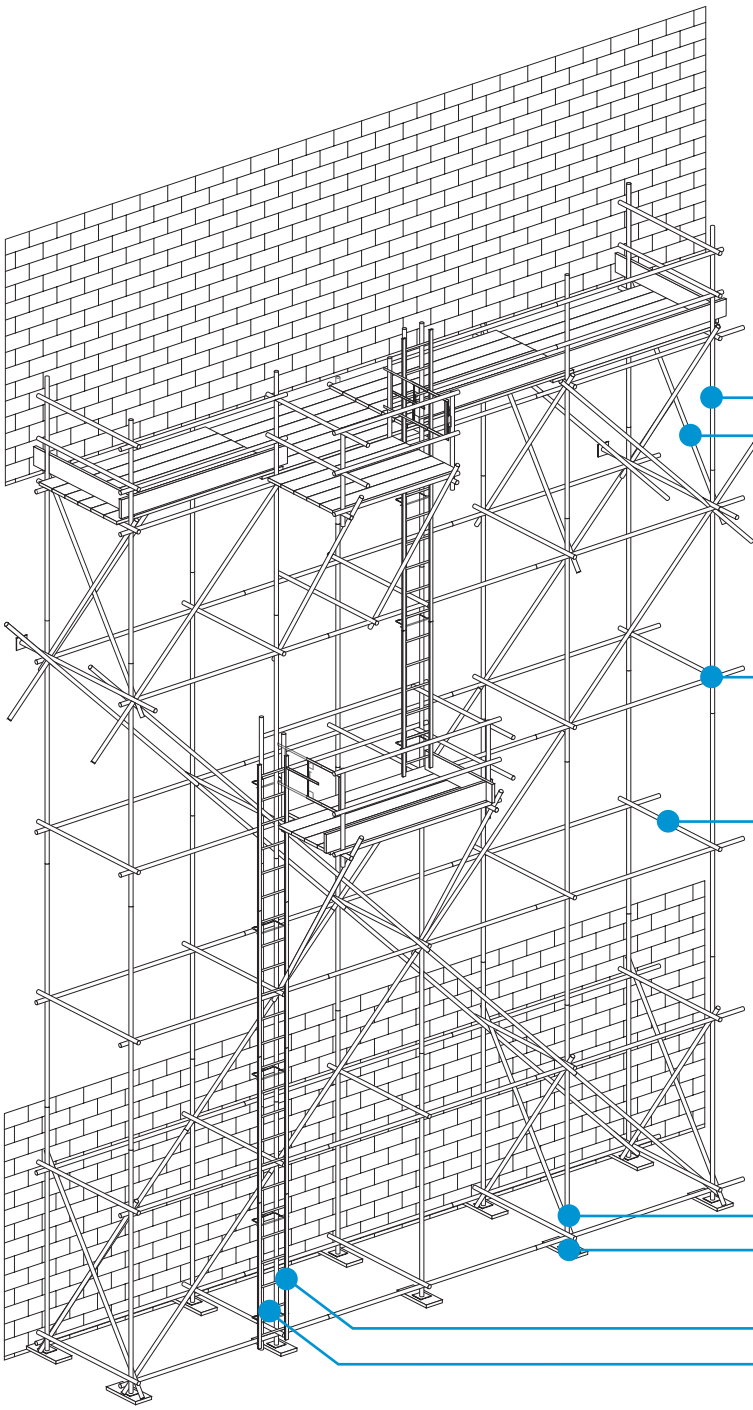
Tube & Clamp may be one of the most labor intensive scaffold systems, but the return on the time invested is nearly unlimited adaptability and access to even the most unique jobsite.

Structurally, Tube & Clamp scaffold is easy to erect and dismantle. With only three basic components, Tube & Clamp is adaptable to any scaffold situation – high or low, inside or out, round or straight, standard or irregular shapes.

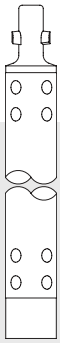
Compatible with Safway® Sectional scaffold and Systems™ scaffold, it is versatile enough to be used independently or to supplement scaffold (depending on job conditions).

Durable CRA19 and CSA19 clamps fasten securely to both 1.69-inch and 2-inch nominal outer diameter (OD) steel tubing. Tubing is galvanized, and drop forged clamps are galvanized to protect against rust and corrosion.

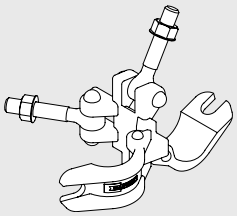
Versatile Scaffold



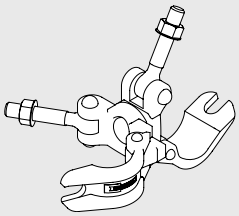
ST4SG / ST6SG / ST8SG / ST10SG / ST13SG	Interlocking Steel Tubes
CRA19	Rigid Clamp
ST4SG / ST6SG / ST8SG / ST10SG / ST13SG	Interlocking Steel Tubes
CSA19	Swivel Clamp
BP1SG	Base Plate
SAU3 / SAU6	Access Ladder Unit
SAUB	Access Ladder Bracket



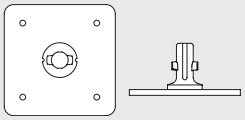
ST__SG



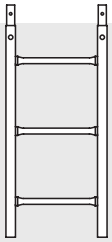
CRA19



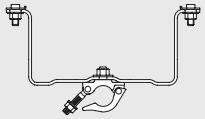
CSA19



BP1SG



SAU3



SAUB

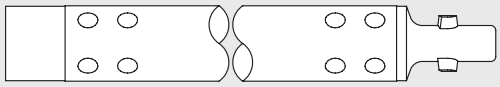
T&C

Tube & Clamp Component Parts

Interlocking Steel Tubes

Part No.	Length	Weight
ST4SG	4' 1¾"	11.0 lbs.
ST6SG	6'	14.6 lbs.
ST8SG	8'	18.5 lbs.
ST10SG	10'	22.4 lbs.
ST13SG	13'	28.2 lbs.
ST16SG	16'	34.0 lbs.

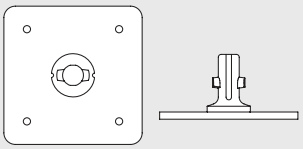
Galvanized 2" nominal OD tubing with twist and lock fittings on ends.



ST__SG

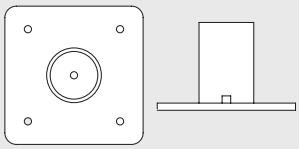
Base Plate

Part No.	Weight
BP1SG	3.6 lbs.
BP10SG	4.3 lbs.



BP1SG

Provides secure footing for vertical tubes. Has twist and lock fitting to secure plate to vertical tubing.

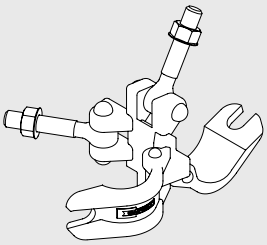


BP10SG

Can be used in place of Base Plate BP1SG. Female end of scaffold tube fits into base plate tube to prevent lateral movement.

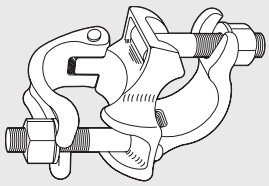
Right Angle Clamps

Part No.	Description	Weight
CRA19	Right Angle Clamp	3.0 lbs.
CRA2B	Right Angle Beam Clamp	3.9 lbs.
CRAL2	Light Duty Right Angle Clamp	2.5 lbs.
MS2R	Military Right Angle Clamp	6 lbs.



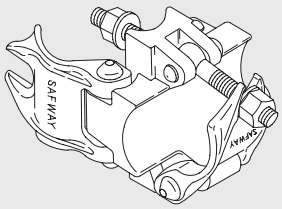
CRA19

Used to join tubes at right angles. Eye bolts swing up against vertical tube allowing easy placement of horizontal members. Clamp caps support horizontal tubes until they can be bolted securely.



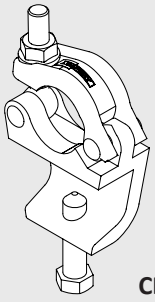
CRAL2

Light duty clamp with replaceable T-bolts and collar nuts. Single size 1.9" tube. Caps and body hot dip galvanized and zinc plated dichromate bolts and nuts.



MS2R

Military clamp is 4" wide and used to join 2" nominal OD tubing or pipe at right angles. Meets or exceeds Navy Specification MIL-S-29180A.



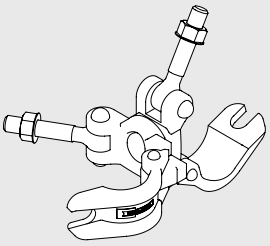
CRA2B

Used to clamp 2" nominal tubing to beam flanges. Must be used in pairs.

Tube & Clamp Component Parts

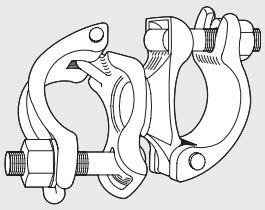
Swivel Clamps

Part No.	Description	Weight
CSA19	Swivel Clamp	3.5 lbs.
CSAL2	Light Duty Swivel Clamp	2.6 lbs.
MS2S	Military Swivel Clamp	6.3 lbs.
HDSA238	Shoring Swivel Clamp	4 lbs.
WSC	Sidewalk Canopy Swivel Clamp	6.1 lbs.



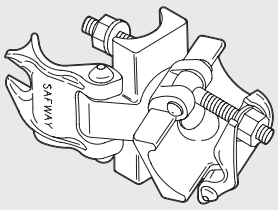
CSA19

Used to join tubes at any angle required. Used primarily for diagonal bracing. These clamps have same eye bolts and flanged nuts used on the right angle clamps.



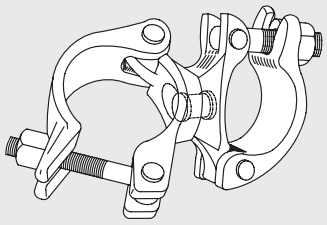
CSAL2

Light duty clamp with replaceable T-bolts and flanged nuts. Single size 1.9" tube. Caps and body hot dip galvanized and zinc plated dichromate bolts and nuts.



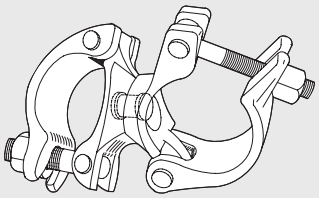
MS2S

Heavy duty clamp is 4" wide and used for bracing. Compatible with 2" nominal OD tubing or pipe at any angle. Meets or exceed Navy Specification MIL-S-29180A.



HDSA238

Joins 2" nominal OD tube bracing members to 2⅜" diameter shoring frame legs.

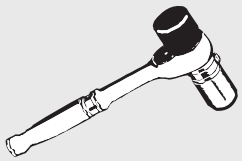


WSC

Joins 2" nominal OD tube bracing members to 3½" OD heavy duty sidewalk canopy posts.

Tube & Clamp Wrench

Part No.	Description	Weight
CW78	Ratchet and Socket Wrench with Mallet	2 lbs.



CW78

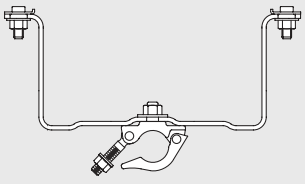
Access Ladder Units and Components

Part No.	Description	Weight	Width	Rung Spacing
SAU3*	Access Ladder Unit, 3'	9.6 lbs.	17¾"	12"
SAU6*	Access Ladder Unit, 6'	18.3 lbs.	17¾"	12"
SAUB	Access Ladder Bracket	5.8 lbs.		

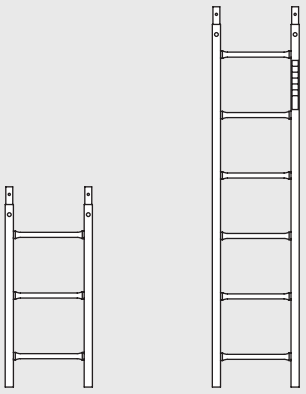
*Must be installed with SAUB brackets. Two brackets are required on base ladder section; one on each additional section.

Climbing ladder and brackets must be used to provide easy access to scaffold. Landing platforms must be provided when required.

Access Ladder Bracket (SAUB) will attach to SAU ladder sections at any elevation and clamp to either a vertical tube or a horizontal bearer. Provides 7" toe clearance.



SAUB

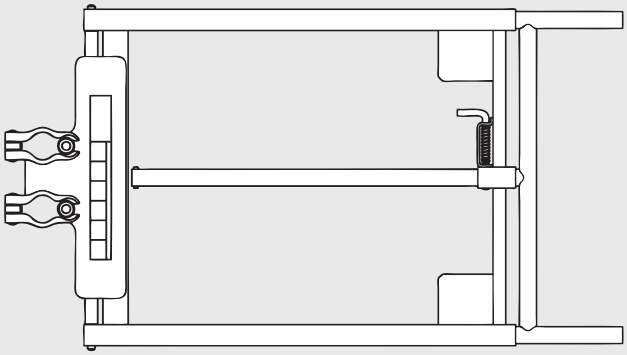


SAU3 **SAU6**

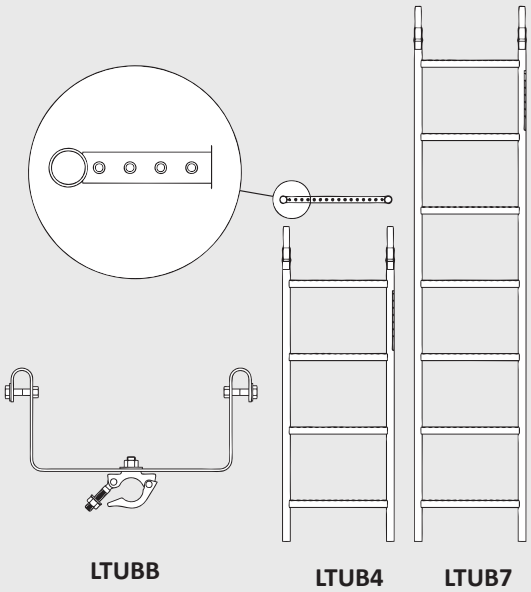
Tube & Clamp Component Parts

Access Ladders and Gates

Part No.	Description	Weight
GRGA	Adjustable Gate	27.9 lbs.
LTUB4	Access Ladder Unit 4'	14.2 lbs.
LTUB7	Access Ladder Unit 7'	24.1 lbs.
LTUBB	Access Ladder Bracket	6.3 lbs.



GRGA



LTUBB LTUB4 LTUB7

Notes

Notes

Tube & Clamp
Safety Guidelines

Scaffold safety is everyone's responsibility. Everyone's safety depends upon the design, erection, use, and dismantling of scaffold by **Competent Persons only**. Inspect your scaffold before each use to see that the assembly has not been altered and is safe for your use.

⚠ WARNING
SERIOUS INJURY OR DEATH CAN RESULT FROM YOUR FAILURE TO FAMILIARIZE YOURSELF, AND COMPLY WITH, ALL APPLICABLE SAFETY REQUIREMENTS OF FEDERAL, STATE AND LOCAL REGULATIONS AND THESE SAFETY GUIDELINES BEFORE ERECTING, USING OR DISMANTLING THIS SCAFFOLD.

⚠ WARNING
BE SURE TO FULLY TIGHTEN CLAMPS IMMEDIATELY AFTER PLACING COMPONENT. CLAMPS THAT ARE NOT FULLY TIGHTENED WILL NOT SUPPORT DESIGN LOADS. FAILURE TO TIGHTEN CLAMPS COULD CAUSE SERIOUS INJURY OR DEATH.

Safety must come first!

Safway® equipment is designed and manufactured with the user in mind. The safety that goes into each piece of equipment, however, cannot offset carelessness on the part of the erector or the user. With this thought in mind, **in order to prevent injury to the users** of Safway® equipment, we urge you to follow these safety guidelines.

Scaffold design must include analysis of load carrying members by properly qualified personnel. Safway® component load capacity and weight information is available from your Safway branch. Scaffold must be erected, used, moved and disassembled only under the supervision of Competent Persons.

I. Erection Of Tube & Clamp Scaffold

A. Prior To Erection - All Scaffold Assemblies

1. Job site must be inspected to determine ground conditions, strength of supporting structure, proximity of electric power lines, overhead obstructions, wind conditions, and the need for overhead or weather protection. These conditions must be evaluated and adequately addressed.
2. Post spacing and sill size can only be determined after the total loads to be imposed on the scaffold and the weight of the scaffold have been calculated.
3. Stationary scaffolds over 125 ft. in height must be designed by a professional engineer.
4. All equipment must be inspected to see that it is in good condition and is serviceable. Damaged or deteriorated equipment must not be used.

⚠ WARNING
NOT ALL SPECIES AND GRADES OF LUMBER CAN BE USED AS SCAFFOLD PLANK. WOOD PLANKS USED FOR SCAFFOLD PLATFORMS MUST BE GRADED AS SCAFFOLD PLANK BY AN APPROVED GRADING AGENCY OR SPECIFICALLY MANUFACTURED FOR SCAFFOLD USE.

5. Scaffold plank must be inspected to see that it is graded as scaffold plank, is sound and in good condition, and is free from saw cuts, cracks, notches, splits, delaminations and holes.
6. A fully qualified and Competent Person can deviate from these guidelines only if it can be shown that the resulting scaffold design complies with applicable codes and generally accepted scaffold engineering practices.
7. The scaffold assembly must be designed to comply with local, state and federal requirements.

B. Erection Of Fixed Scaffold

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

Scaffold must be erected, moved or disassembled only under the supervision of Competent Persons. Safety equipment, including safety glasses and hard hats, must be worn by all persons erecting, moving, dismantling or using scaffold.

1. Base plates must be used on all scaffolds, centered on the sills, and be in firm contact with both sills and vertical posts. Be especially careful when scaffolds are to be erected on soft or frozen ground. Any part of a building or structure used to support the scaffold must be capable of supporting the load to be applied.
2. Use base plates and sills if required by ground conditions. **Do not use** unstable objects or materials.
3. Use only tools recommended by Safway for erection and dismantling.
4. Plumb and level scaffold until connections can be made with ease. Be sure scaffold stays plumb and level as erection progresses.

⚠ WARNING
SAFWAY® "TWIST AND LOCK" TUBING, WHETHER USED AS VERTICAL OR HORIZONTAL MEMBERS, MUST BE ROTATED INTO A LOCKED POSITION BEFORE BEING CLAMPED.

5. Space the vertical posts so that the maximum length of the bearers and runners are as follows:

UNIFORMLY DISTRIBUTED LOAD	BEARERS	RUNNERS
25 lbs./ft². (light duty)	4 ft.	10 ft.
50 lbs./ft². (medium duty)	3.5 ft.	8 ft.

6. Horizontal members must be installed with right angle clamps and must be level. Vertical posts must be plumb.

⚠ WARNING
ALL CLAMPS MUST BE TIGHTENED FIRMLY (APPROXIMATELY 45 FT.-LBS. OF TORQUE) AS ERECTION PROCEEDS.

7. Runners (horizontal run members) shall be securely clamped to posts at each end. They shall not be spaced more than 6 ft. 6 in. apart vertically, with the bottom runner placed as close to the base as possible. Runners must be erected along the length of the scaffold. Interlock ends to form continuous lengths when necessary.
8. Bearers are horizontal members which support a platform. Each bearer clamp shall be positioned above, and in contact with, a runner clamp. Bearers should not extend beyond their supports more than 6 in. unless the scaffold design requires a longer member.
9. Bracing across the width of the scaffold shall be installed at the ends of the scaffold and at least every fourth level vertically and repeated every third set of posts horizontally. This bracing shall form a cross configuration which extends from the bottom of the inner post or runner to the top of the outer post or runner, and from the bottom of the outer post or runner to the top of the inner post or runner.
10. Diagonal bracing on both the inside and the outside row of posts must start as close to the bottom as possible on each end of the scaffold run and extend upward at approximately a 45 degree angle to the top of the scaffold. If such a diagonal bracing does not reach the top, the direction of the bracing must be reversed and proceed to the top of the scaffold. This bracing pattern must be repeated at every fifth vertical post. Diagonal bracing may be coupled to the runners.
11. Ties, guys, bracing and/or outriggers may be needed to assure a safe, stable scaffold assembly. The height of the scaffold in relation to the minimum base width, wind loads, the use of brackets or cantilevered platforms and imposed scaffold loads determines the need for sway and stability bracing. The following general guidelines apply:
    a. A scaffold must always be secured when the height of the scaffold exceeds four times the minimum base width. See **Footnote 1**.

⚠ WARNING
OUTRIGGERS, OR OTHER MEANS, MAY BE USED TO INCREASE THE MINIMUM BASE DIMENSION OF A SCAFFOLD TOWER. THE RESULTING BASE DIMENSION, HOWEVER, MAY NO LONGER BE THE MINIMUM (OR LIMITING) BASE DIMENSION.

    b. Ties must be placed as near as possible to horizontal members. The bottom tie must be placed no higher than 4 times the minimum scaffold base width. Subsequent vertical tie placement will depend upon the scaffold width. Scaffolds 3 ft. and narrower must be tied at vertical intervals no more than 20 ft. apart. Scaffolds wider than 3 ft. must be tied at vertical intervals no more than 26 ft. apart. The uppermost tie should be placed as close to the top as possible and, in no case, more than 4 times the minimum base width from the top. See **Footnote 1**.
    c. Vertical ties must be placed at the ends of the scaffold runs and at no more than 30-ft. horizontal intervals in between.
    d. Ties must be installed as the erection progresses and not removed until scaffold is dismantled to that height.
    e. Side brackets, cantilevered platforms, pulleys, hoist arms, enclosed scaffolds, sloped surfaces and windy conditions introduce overturning and uplift forces which must be considered and compensated for. These situations require additional bracing, tying or guying.
    f. Circular scaffolds erected completely around or within a structure may be restrained from tipping by use of "stand off" bracing members.
    g. A free standing tower must be guyed at the intervals outlined above or otherwise restrained to prevent tipping or overturning.

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12. Work platforms must be fully decked with platform units in good, sound condition. Platform units may be individual scaffold grade wood planks, fabricated scaffold platforms.
    a. Scaffold platforms and walkways must be at least 18 in. wide.
    b. Each end of each plank must overlap its support by a minimum of 6 in. or be cleated.
    c. Each end of each platform 10 ft. long or less must overhang its supports by no more than 12 in. Each end of each platform longer than 10 ft. must overhang its supports by no more than 18 in. Larger overhangs must be guarded to prevent access to the overhang. Materials must not be stored on overhangs. Do not stand on platform overhangs.
    d. Each plank on a continuous run scaffold must extend over its supports by at least 6 in. and overlap each other by at least 12 in.
    e. Spans of 2 in. x 10 in. nominal scaffold grade plank must never exceed 10 ft. No more than one person must stand on an individual plank at one time. Loads on planks must be evenly distributed and not exceed the allowable loads for type of plank being used.
    f. Secure platform units to scaffold to prevent uplift caused by high winds or other job site conditions. Use latches, if supplied by platform manufacturer, or other suitable means.
13. Guardrails must be used on all open sides and ends of scaffold platforms. Both top and midrails are required. Local codes specify minimum heights where guardrails are required. Use at lower heights if falls can cause injury.
14. Toeboards must be installed whenever people are required to work or pass under a scaffold platform. When materials are to be stacked higher than the toeboard, screening is required from the toeboard or platform to the top guardrail.
15. Access must be provided to all work platforms. If access is not available from the structure, access ladder units or stairways must be provided. When access ladder units are provided, a rest platform must be installed at vertical intervals of 35 ft. or less. Attachable ladder units must extend at least 3 ft. above platforms. Install access ladder units as scaffold erection progresses.
16. Use fabricated decks or cleated plank to minimize platform interference in access areas.
17. Bearers may be used to provide a cantilevered support for use as brackets for light duty scaffold. If used in this manner, they shall not extend more than 20 in. nor carry more than two 2 in. x 10 in. planks unless knee braced.
18. Cantilevered platforms must be specifically designed for that purpose and adequate ties provided to prevent overturning.
19. Materials must never be placed on cantilevered platforms unless the assembly has been designed to support material loads by a qualified person. These types of platforms cause overturning and uplift forces which must be compensated for.
20. **Do not** install platforms between free standing towers.
21. Material hoists and derricks should not be mounted on a scaffold unless the scaffold is specifically designed for that purpose.
22. Check the entire scaffold assembly before use. Thoroughly inspect the completed assembly to see that it complies with all safety codes, all fasteners are in place and tightened, it is level and plumb, work platforms are fully decked, guardrails are in place and safe access is provided.

C. Erection Of Rolling Scaffolds

The following additional precautions apply to the erection of rolling towers:

1. Height of the rolling tower must not exceed 4 times its minimum base width, or 40 ft., whichever is lower. See **Footnote 1**.

⚠ WARNING

THE LOAD RATING OF THE CASTERS USED WILL LIMIT THE SIZE, CONFIGURATION AND LOAD CAPACITY OF THE ROLLING TOWERS.

2. All casters must be secured to adapters with nuts and bolts.
3. Horizontal diagonal bracing must be used at the bottom and top of rolling towers where the top work platform is more than 9 ft. above the surface. When rolling towers are to be erected higher than 9 ft., the first brace must be no more than 2 ft. above the casters, the others at no greater than 21-ft. intervals above. Fabricated planks with hooks may be used as diagonal braces.
4. Platform units with hooks, or cleated planks, must be used on rolling towers.

II. Use Of Scaffolds

A. All Scaffolds

1. Each time before you use the scaffold, a Competent Person must: inspect the scaffold assembly to be sure it has not been altered, is assembled correctly, is level and plumb, all base plates are in firm contact with sills, all bracing is in place and securely fastened, all platforms are fully decked, all guardrails are in place, safe access is provided, it is properly tied and/or guyed, there are no overhead obstructions, there are no energized electric power lines within 12 ft. of the scaffold assembly, all clamps are firmly tightened, and correct any deficiencies prior to use.
2. Use only proper access. Do not climb bracing, guardrails or vertical posts. Do not climb any scaffold component unless it is specifically designed for that purpose.
3. Climb safely!
    a. Face the rungs as you climb up or down.
    b. Use both hands.
    c. Do not try to carry materials while you climb.
    d. Be sure of your footing and balance before you let go with your hands. Keep one hand firmly on frame or ladder at all times.
    e. Clean shoes and rungs to avoid slipping.
4. **Do not** work on slippery platforms.
5. **Do not** overload platforms with materials.
6. **Do not** extend working heights by standing on planked guardrails, boxes, ladders or other materials on scaffold platforms.
7. **Do not** loosen, detach or remove any component of a scaffold assembly except under the supervision of a Competent Person. Components that have been removed must be replaced immediately.
8. **Do not** erect scaffold on wagons, trucks or other wheeled vehicles.
9. Stand only within the platform area; do not try to extend work area by leaning out over guardrailing.

B. Use Of Rolling Towers

All of the above precautions plus:

1. **Do not ride manually propelled rolling scaffold. No one must be on a rolling tower while it is being moved.**
2. Lock all casters before getting on a rolling tower. Casters must be locked at all times the scaffold is not being moved.
3. **Do not** bridge between rolling towers.
4. Remove all materials from scaffolding before moving a rolling tower.
5. Be sure floor surface is clear of obstructions or holes before moving scaffold.
6. Be sure there are no overhead obstructions or energized electric power lines in the path when moving a rolling tower.
7. Rolling towers must only be used on level surfaces.
8. Move rolling towers from the base level only. **Do not pull or push** from the top.

III. Dismantling Scaffolds

The following additional precautions apply when dismantling scaffolds:

⚠ WARNING

IT MAY BE NECESSARY TO ADD PARTS TO A SCAFFOLD BEFORE IT CAN BE DISMANTLED SAFELY.

1. **Prior to removal or loosening** of any component, consider the effect the removal of the component, or the loosening of a joint, will have on the strength of the remaining assembly.
2. Check to see if scaffold has been altered in any way which would make it unsafe. If so, reconstruct where necessary before beginning the dismantling process.
3. Use only proper access. Do not climb braces, guardrails, or vertical members. Do not climb scaffold components unless they are specifically designed for that purpose. Do not stand on platform overhangs.
4. **Do not** remove ties until scaffold above has been removed.
5. Visually inspect each plank to be sure it is supported on both ends and is safe to stand or work on.
6. **Do not** accumulate removed components or equipment on the scaffold.
7. Lower components in a safe manner as soon as dismantled. Do not throw components off scaffold.
8. Stockpile dismantled equipment in an orderly manner.
9. Remove component immediately after loosening clamps.

Understanding and following these safety guidelines will increase your personal safety and the safety of your fellow workers.

Footnote 1:
California and some other states require a height-to-minimum base dimension (length or width) ratio of three-to-one (3:1). Refer to the governing codes for your job location.

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