



INSTANTLOCK

S Y S T E M S C A F F O L D

INSTANTLOCK SYSTEM SCAFFOLD COMPONENT TECHNICAL MANUAL

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INTRODUCTION

This manual does not replace the OSHA 1926/1910 and/or CAL-OSHA documents.

InstantLock 1 scaffold components are the latest in quick connect scaffold technology and can be used in conjunction with most standard ring (rosette) and pin scaffold. InstantLock 1 uses a spring-loaded dual point connection, which has been proven to be stronger than a standard pin connection due to its unique design. Even though InstantLock 1 is stronger than a standard pin lock connection, the scaffold must still be designed to the weakest component of the scaffold.

1. Compatibility of InstantLock 1:

InstantLock 1 is designed and engineered to be compatible with standard tube and clamp components (i.e.: clamps, poles, ladders and ladder brackets) that are currently available within the scaffold industry and Layher pin and ring products. These tube and clamp components are generally used for:

- Tie-offs when needed for seismic considerations.
- When needed to transition horizontally to get around obstacles.
- When needed to transition vertically to get around interference.
- Ladders and ladder brackets for access to work platforms.
- As needed for structural bracing and reinforcement.

2. Compatibility of InstantLock 1 System with other standard ring and pin lock systems:

- InstantLock 1 components have been designed be used in conjunction with standard ring and pin lock scaffolding components such as side brackets, ledgers, trusses, braces, standards, etc. The scaffold shall first be analyzed to determine the weakest component and the design and loading based upon those findings.

3. General erection criteria:

- InstantLock 1 was designed and engineered to be constructed using the same requirements specified by OSHA and CAL-OSHA, that have been historically used with tube and clamp and other system type scaffolds.
- InstantLock 1 expects all users to be familiar with all Federal, State and local regulations governing scaffold construction and use.
- InstantLock 1 expects all users to erect, modify or dismantle scaffolding using only qualified and competent personnel with adequate supervision.
- InstantLock 1 expects all users to provide supervision that is competent and qualified, and who can inspect and sign off on each scaffold before authorization is given for general use.
- InstantLock 1 expects all users to follow all common safety guidelines including: pre-job briefings, procedure compliance, tagging, flagging, wearing of proper PPE, weight-loading restrictions, vertical leg placement, use of diagonal bracing, horizontal wraps, proper use of toe boards, safety netting, screw jacks, ladders, metal or wood decking, etc.
- InstantLock 1 expects all users to utilize a registered professional engineer (licensed PE) to design and approve drawings as required by OSHA, CAL-OSHA or any other regulatory agency.

All material must be inspected prior to use! See inspection guidelines on page 67.

INTRODUCTION

4. Special considerations:

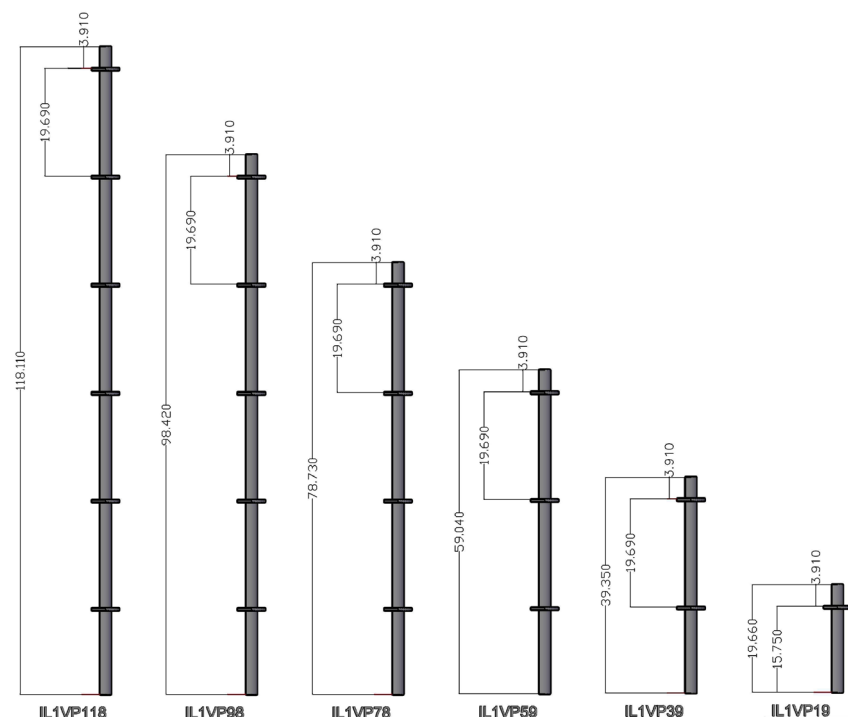
- Be extra careful when working with components that telescope.
- Telescoping components can move/slide while being transported, handled and passed to other workers.
- Many InstantLock 1 components swivel, slide or hinge. Use caution when passing to other workers, transporting and installing these items.
- Ensure all items containing locks or pins are secured before handling, transporting or passing these items to another worker.

INTENDED USE OF INSTANTLOCK 1 SYSTEM SCAFFOLD

1. Unless otherwise stated, all load data presented in this manual includes the OSHA (4:1) Safety Factor.
2. Unless otherwise stated, InstantLock 1 material, when constructed for normal use, is not designed to be up- or side-loaded in excess of OSHA and ANSI requirements. When conditions require special loading, extra design features must be added to ensure proper stability.
3. Once installed and completed, scaffold should be considered part of the customers plant equipment. Abuse or mistreatment of the scaffold material should not be tolerated.
4. The scaffold material should be inspected for damage and repaired after any incident which could affect the integrity of the scaffold material such as:
 - The scaffold comes into contact with any moving equipment, forklifts, trucks or trailers, and other types of mobile equipment.
 - The scaffold is affected by an unintended load, flanges or piping attached to a crane or come-along, objects dropped from above or swung in from the side, etc.
 - Excessive force is applied to the scaffold from abuse or accidental contact.
 - The material is modified in any way with a torch, saw or other equipment.
 - The material is affected from corrosive chemicals that remove the coating and/or damage the base metal.
 - The material is bent or otherwise damaged.
5. The end-user should ensure their competent, qualified individuals and scaffold erection personnel are trained and fully understand the above requirements.
6. When testing of material is required, it should be conducted by qualified personnel in a testing environment. Field testing of scaffold components should not be conducted without a formal test plan approved by the manufacturer.
7. All end-users must be trained in the proper use of InstantLock 1 System Scaffold. The tech manual is provided as a reference for training. New users should examine the Key Rules at the end of the manual.
8. OSHA requires that inspections must be made by a scaffold builder deemed competent.

All material must be inspected prior to use! See inspection guidelines on page 67.

INSTANTLOCK 1 VERTICAL POST



Part Number	Description	Effective Length (inches)	Overall Length ith pin (inches)	Tube Length (inches)	Weight Galvanized (lbs)
ILVP1	Vertical Pin	11.5			1.8
ILSC	Instant-LockStarter Collar	13.0	18	18	6.8
IL1VP19	1'-7" Instant-Lock-1 Vertical	19.69	25.69	19.69	6.2
IL1VP39	3'-3" Instant-Lock-1 Vertical	39.43	41.43	39.43	11.2
IL1VP59	4'-11" Instant-Lock-1 Vertical	59.06	65.06	59.06	16.2
IL1VP78	6'-6" Instant-Lock-1 Vertical	78.74	84.74	78.74	21.3
IL1VP98	8'-2" Instant-Lock-1 Vertical	98.43	104.43	98.43	26.3
IL1VP118	9'-10" Instant-Lock-1 Vertical	118.11	124.11	118.11	31.5

Note: All tubing is 1.90 diameter, 11 gauge (0.120 wall), high-strength, minimum 50,000 yield, and 75,000 tensile. Tube length is the length of tubing required to manufacture each vertical.

Rosette spacing is 20 inches center to center. Verticals are designed to be compatible with standard 1.90 OD tube and clamp, and pin and ring material. When connecting verticals, a vertical pin with snap buttons must be used to align the verticals. Use caution when passing verticals to ensure the vertical pin is correctly fastened.

<<<CAUTION There is a pinch point located where two verticals are pinned together.>>>

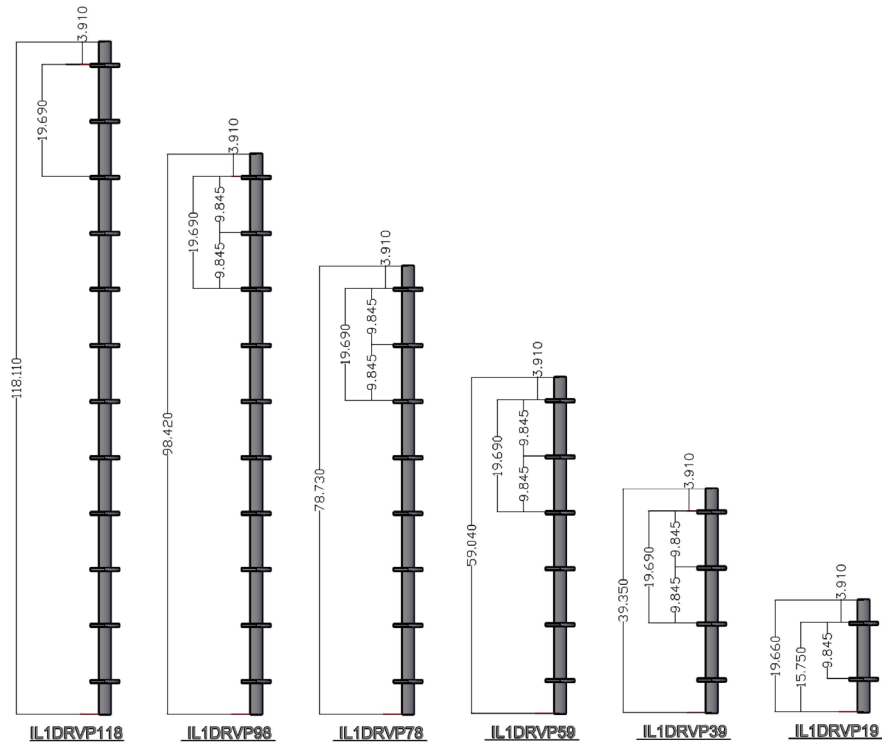
Two-rosette verticals should only be used as the top member of vertical column.

Two-rosette verticals cannot have a vertical pin inserted in the top and bottom. The snap buttons will not lock on both pins and may create a drop hazard.

Starter collar members to be used at base of scaffold only.

All material must be inspected prior to use! See inspection guidelines on page 67.

INSTANTLOCK 1 VERTICAL POST



Part Number	Description	Effective Length (inches)	Overall Length With Pin (inches)	Tube Length (inches)	Weight Galvanized (lbs)
LP1	Vertical Pin	11.5			1.8
ILSC	Instant-LockStarter Collar	13.0	18.0	18.0	6.8
IL1DRV19	1'-7" Instant-Lock-1 Vertical	19.69	25.69	19.69	7.3
IL1DRV39	3'-3" Instant-Lock-1 Vertical	35.43	41.43	35.43	13.5
IL1DRV59	4'-11" Instant-Lock-1 Vertical	55.12	65.06	59.06	19.8
IL1DRV78	6'-6" Instant-Lock-1 Vertical	74.80	84.74	78.74	26.0
IL1DRV98	8'-2" Instant-Lock-1 Vertical	94.49	104.43	98.43	32.2
IL1DRV118	9'-10" Instant-Lock-1 Vertical	114.17	124.11	118.11	38.5

Note: All tubing is 1.90 diameter, 11 gauge (0.120 wall), high-strength, minimum 50,000 yield, and 75,000 tensile. Tube length is the length of tubing required to manufacture each vertical.

Rosette spacing is 20 inches center to center. Verticals are designed to be compatible with standard 1.90 OD tube and clamp, and pin and ring material. When connecting verticals, a vertical pin with snap buttons must be used to align the verticals. Use caution when passing verticals to ensure the vertical pin is correctly fastened.

<<<CAUTION There is a pinch point located where two verticals are pinned together.>>>

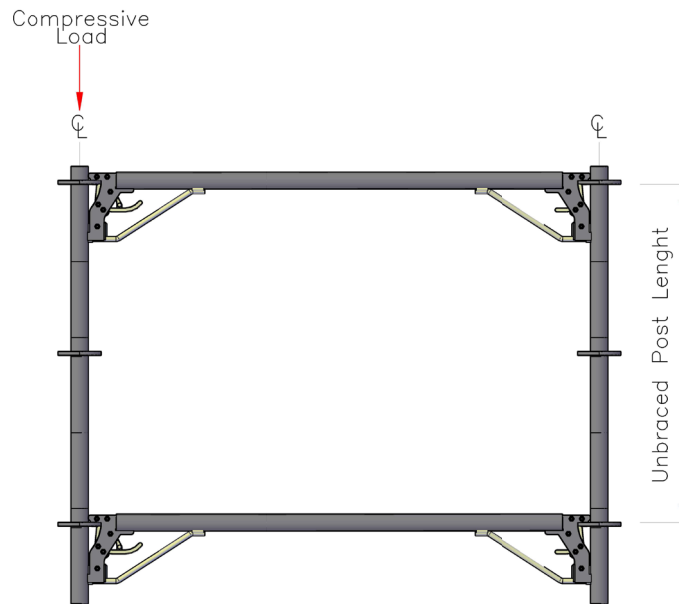
Two-rosette verticals should only be used as the top member of vertical column.

Two-rosette verticals cannot have a vertical pin inserted in the top and bottom. The snap buttons will not lock on both pins and may create a drop hazard.

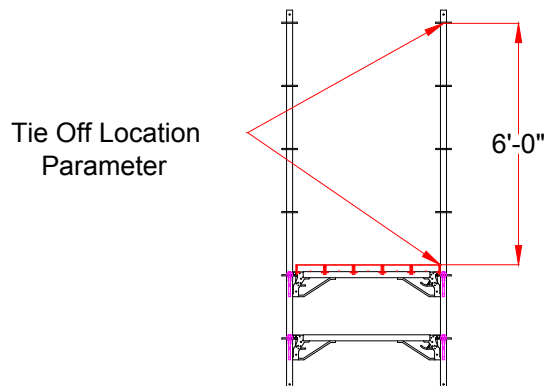
Starter collar members to be used at base of scaffold only.

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INSTANTLOCK 1 VERTICAL POST



Unbraced Post Length	Maximum Allowable Compressive Load When Rated for Scaffold Use (Lbs)
78	4,700
59	5,500
39	6,800

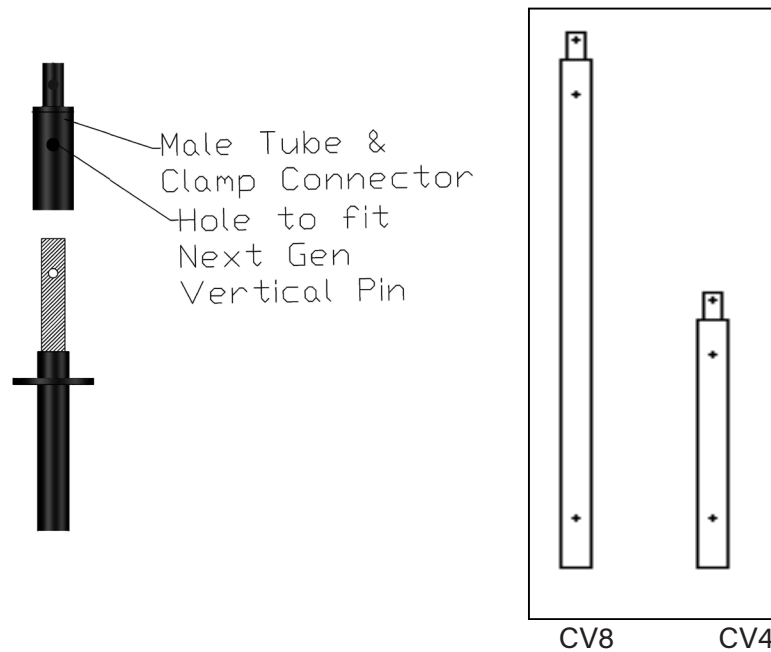


Vertical joint has to be below the top wrap in order to be used as an anchorage point

Note: Allowable loads include OSHA (4:1) Safety Factor
When designing scaffolds with unique configurations or special loading conditions, consult with a professional structural engineer.

All material must be inspected prior to use! See inspection guidelines on page 67.

INSTANTLOCK 1 VERTICAL POST



Part Number	Description	Effective Length (inches)	Overall Length (inches)	Tube Length (inches)	Weight Galvanized (lbs)
CV4	Vertical Adapter 4	23	26.25	23	5
CV8	Vertical Adapter 8	46	49.25	46	13.2

Unbraced Post Length	Maximum Allowable Compressive Load When Rated for Scaffold Use (Lbs)
69	6986
46	8230
23	8690

Note: All tubing is 1.90 diameter, 11 gauge (0.120 wall), high-strength, minimum 50,000 yield, and 75,000 tensile.

This item is designed to allow a vertical to pass through a congested area, such as a pipe rack or cable tray.

Verticals are designed to be compatible with standard 1.90 OD tube and clamp material.

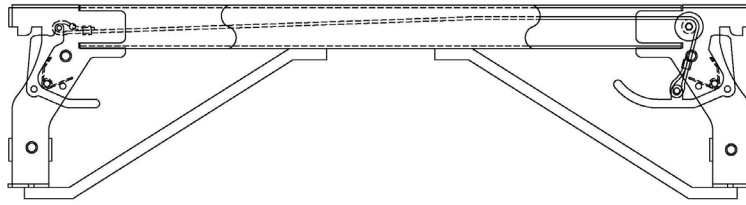
Vertical adapters shall never be stacked such that there is more than sixty-nine (69) inches of unsupported vertical.

<<<CAUTION There is a pinch point where two verticals are pinned together.>>>

All material must be inspected prior to use! See inspection guidelines on page 67.

INSTANTLOCK 1 HORIZONTAL BAR

WITH CABLE AND TRIGGER GUARD



The InstantLock 1 horizontal members can be used with any ring rosette system scaffold and are equipped with two different triggers—one master trigger which releases both ends of the member, and a secondary trigger which controls only that end of the horizontal member. The master trigger is larger for ease of use when releasing both ends of the horizontal member.

The InstantLock 1 end connector design allows metal scaffold boards to be placed the full length of the horizontal. The horizontal is capped on the top to prevent debris from entering into the trigger locking mechanism.

Part Number	Description	Vertical Post Spacing (inches)	Overall Width (inches)	Tube Length (inches)	Weight Galvanized (lbs)
IL1PB24	2' Bearer	24	22"	17.38	10.5
IL1PB36	36" Bearer	36	34	29.38	11.5
IL1PB42	3'-6" Bearer	42	40	35.38	12.5
IL1PB48	4' Bearer	48	46	41.38	13.0
IL1PB60	5' Bearer	60	58	53.38	15.5
IL1PB72	6' Bearer	72	70	65.38	18.0
IL1PB84	7' Bearer	84	82	77.38	20.0
	Horizontal Ledger				
IL1HL96	8' Ledger	96	94	89.38	21.0
IL1HL108	9' Ledger	108	106	101.38	22.0
IL1HL120	10' Ledger	120	118	113.38	25.5

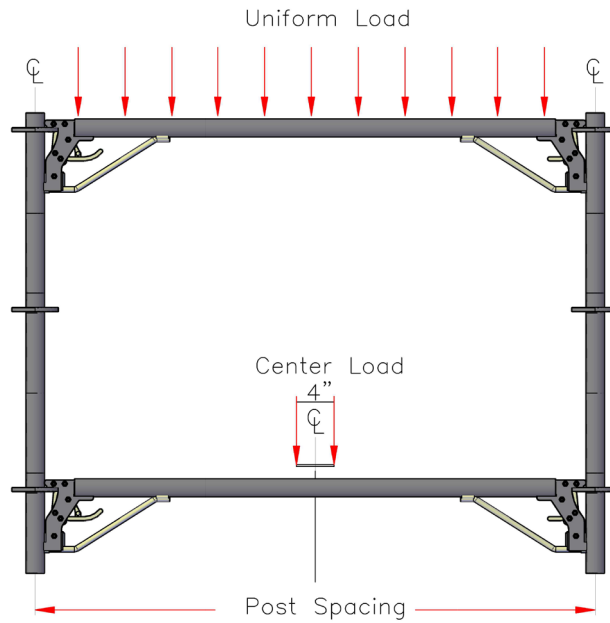
Note: Tube length is the length of tubing required to manufacture each horizontal. Horizontals are designed to be compatible with standard 1.90 OD tube and clamp material.

Tubing for the 7-foot bearer through the 10-foot ledger are 1.90 diameter, 12 gauge (0.108 wall), high-strength tubing minimum 65,000 yield, 75,000 tensile. All other tubing is 13 gauge (0.083 wall), high-strength minimum 65,000 yield, 75,000 tensile.

<<CAUTION There is a pinch point when closing the trigger.>>>

All material must be inspected prior to use! See inspection guidelines on page 67.

INSTANTLOCK 1 HORIZONTAL BAR LOADING



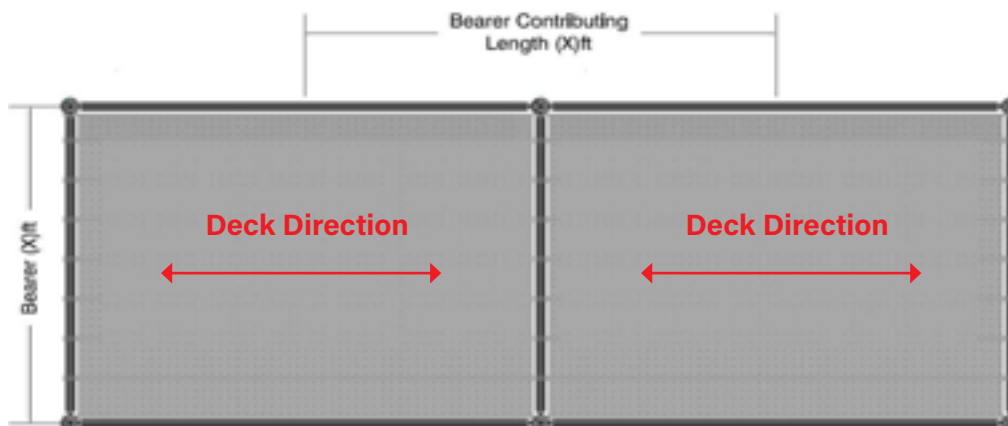
Part Number	Description	Vertical Post Spacing (inches)	Allowable Center Load	Allowable Uniform Load	
			lbs	lbs	lbs/ft
IL1PB24	24" Bearer	24	2,250	4,500	2,250
IL1PB36	36" Bearer	36	1,100	2,039	680
IL1PB42	3'-6" Bearer	42	1,000	2,000	571
IL1PB48	4' Bearer	48	900	1800	450
IL1PB60	5' Bearer	60	625	1,250	250
IL1PB72	6' Bearer	72	530	1,060	177
IL1PB84	7' Bearer	84	410	820	117
	Horizontal Ledger				
IL1HL96	8' Ledger	96	320	640	80
IL1HL108	9' Ledger	108	275	550	61
IL1HL120	10' Ledger	120	250	500	50

Note: Vertical leg may be the limiting load carrying member.
Center load is applied to the center four (4) inches of the bearer or ledger.

All material must be inspected prior to use! See inspection guidelines on page 67.

INSTANTLOCK 1 HORIZONTAL BAR

MULTIPLE-BAY LOADING



Bearer	Ledge Length										
		IL2PB24	IL2PB36	IL2PB42	IL2PB48	IL2PB60	IL2PB72	IL2PB84	IL2HL96	IL2HL108	IL2HL120
		24	36	42	48	60	72	84	96	108	120
IL2PB24	24	1125	750	643	563	450	375	321	281	250	225
IL2PB36	36	340	227	194	170	136	113	97	85	76	68
IL2PB42	42	286	190	163	143	114	95	82	71	63	57
IL2PB48	48	225	150	129	113	90	75	64	56	50	45
IL2PB60	60	125	83	71	63	50	42	36	31	28	25
IL2PB72	72	88	59	50	44	35	29	25	22	20	18
IL2PB84	84	59	39	33	29	23	20	17	15	13	12
IL2HL96	96	40	27	23	20	16	13	11	10	9	8
IL2HL108	108	31	20	17	15	12	10	9	8	7	6
IL2HL120	120	25	17	14	13	10	8	7	6	6	5

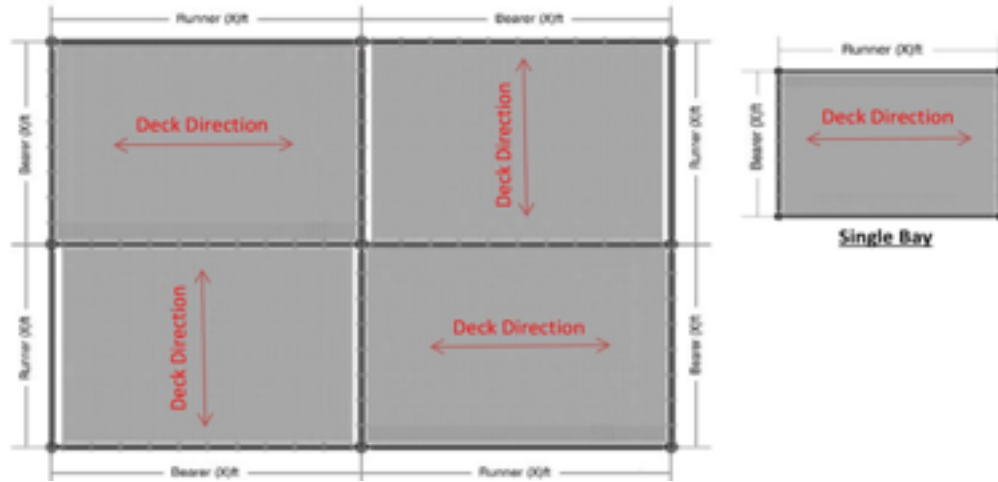
Chart shows the total allowable load per square foot (live load + dead).

Note: All areas below 25 lbs./sq. ft. (in yellow) do not meet OSHA requirements for a light-duty scaffold. OSHA 1926.451 (a) 6 in conjunction with non-mandatory Appendix A, define uniform loads for scaffold types. Deck planking or vertical members may be the limiting load carrying member.

All material must be inspected prior to use! See inspection guidelines on page 67.

INSTANTLOCK 1 HORIZONTAL BAR

SINGLE-BAY LOADING



Note: Bearer supports the boards.

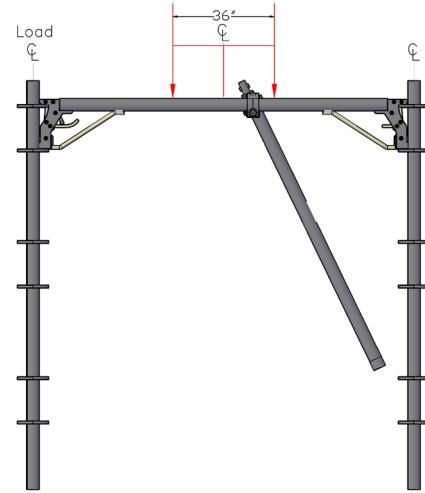
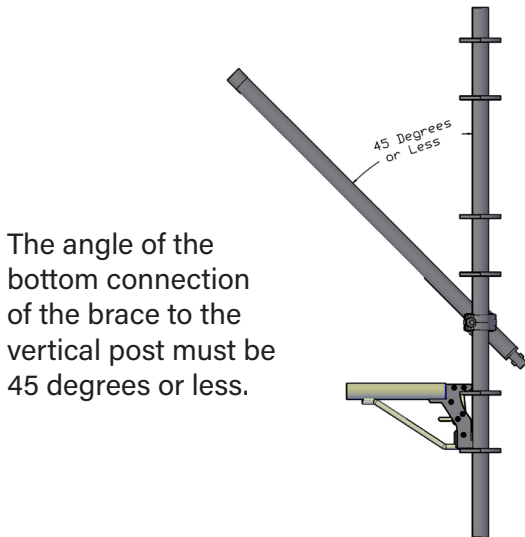
Bearer	Ledger Length										
		IL2PB24	IL2PB36	IL2PB42	IL2PB48	IL2PB60	IL2PB72	IL2PB84	IL2HL96	IL2HL108	IL2HL120
		24	36	42	48	60	72	84	96	108	120
IL2PB24	24	2250	1500	1286	1125	900	750	643	563	500	450
IL2PB36	36	680	453	388	340	272	227	194	170	151	136
IL2PB42	42	571	381	327	286	229	190	163	143	127	114
IL2PB48	48	450	300	257	225	180	150	129	113	100	90
IL2PB60	60	250	167	143	125	100	83	71	63	56	50
IL2PB72	72	177	118	101	88	71	59	50	44	39	35
IL2PB84	84	117	78	67	59	47	39	33	29	26	23
IL2HL96	96	80	53	46	40	32	27	23	20	18	16
IL2HL108	108	61	41	35	31	24	20	17	15	14	12
IL2HL120	120	50	33	29	25	20	17	14	13	11	10

Chart shows the total allowable load per square foot (live load + dead load).

Note: All areas below 25 lbs./sq. ft. (in yellow) do not meet OSHA requirements for a light-duty scaffold. OSHA 1926.451 (a) 6 in conjunction with non-mandatory Appendix A, define uniform loads for scaffold types. Deck planking or vertical members may be the limiting load carrying member.

All material must be inspected prior to use! See inspection guidelines on page 67.

BRACING INSTANTLOCK 1 HORIZONTAL BARS



Bracing can be added to InstantLock 1 horizontal bars when greater strength is required. Diagonal swivel braces, diagonal pin braces, short diagonal braces, or tube and clamp may be used to provide additional strength to the InstantLock 1 horizontal bar.

The brace must be placed within 18 inches of either side of the center of the horizontal.

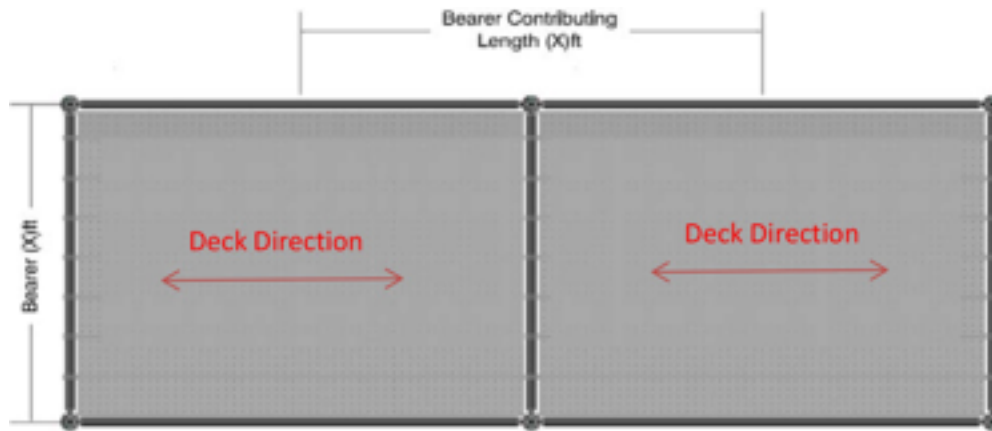
Part Number	Description	Vertical Post Spacing (inches)	Allowable Center Load	Allowable Uniform Load	
			lbs.	lbs.	lbs./ft
IL2PB60	60" Bearer	60	1,200	2,400	480
IL2PB72	6' Bearer	72	975	1,950	325
IL2PB84	7' Bearer	84	975	1,750	250
	Horizontal Ledger				
IL2HL96	8' Ledger	96	750	1,500	188
IL2HL108	9' Ledger	108	675	1,350	150
IL2HL120	10' Ledger	120	625	1,250	125

Note: Vertical leg may be the limiting load carrying member. Horizontal bracing adds additional torque to the verticals, which must be considered when building heavy-duty or tall scaffolds. Center load is applied to the center four (4) inches of the bearer or ledger.

All material must be inspected prior to use! See inspection guidelines on page 67.

INSTANTLOCK 1 HORIZONTAL BAR

WITH ONE (1) BRACE



Note: Bearer supports the boards and has one (1) diagonal brace.

Standard board layout.

Bearer	Ledger Length										
		IL2PB24	IL2PB36	IL2PB42	IL2PB48	IL2PB60	IL2PB72	IL2PB84	IL2HL96	IL2HL108	IL2HL120
		24	36	42	48	60	72	84	96	108	120
IL2PB60	60	240	160	137	120	96	80	69	60	53	48
IL2PB72	72	163	108	93	81	65	54	46	41	36	33
IL2PB84	84	125	83	71	63	50	42	36	31	28	25
IL2HL96	96	94	63	54	47	38	31	45	23	21	19
IL2HL108	108	75	50	43	38	30	25	21	19	17	15
IL2HL120	120	63	42	36	31	25	21	18	16	14	13

Chart shows the allowable load per square foot when horizontal is braced as defined on page 7—horizontal bracing.

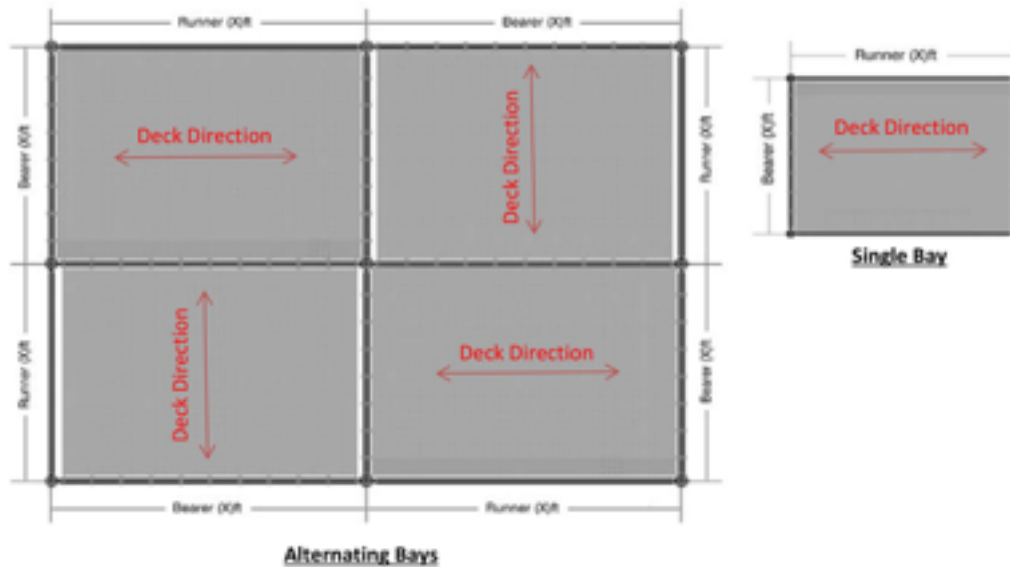
Chart shows the total allowable load per square foot (live load + dead load).

Note: All areas below 25 lbs./sq. ft. (in yellow) do not meet OSHA requirements for a light-duty scaffold. OSHA 1926.451 (a) 6 in conjunction with non-mandatory Appendix A, define uniform loads for scaffold types. Deck planking or vertical members may be the limiting load carrying member.

All material must be inspected prior to use! See inspection guidelines on page 67.

INSTANTLOCK 1 HORIZONTAL BAR

WITH ONE (1) BRACE



Note: Bearer supports the boards and has one (1) diagonal brace.

Single-bay scaffold or staggered board deck layout.

Bearer	Ledge Length										
		IL2PB24	IL2PB36	IL2PB42	IL2PB48	IL2PB60	IL2PB72	IL2PB84	IL2HL96	IL2HL108	IL2HL120
		24	36	42	48	60	72	84	96	108	120
IL2PB60	60	480	320	274	240	192	160	137	120	107	96
IL2PB72	72	325	217	186	163	130	108	93	81	72	65
IL2PB84	84	250	167	143	125	100	83	71	63	56	50
IL2HL96	96	188	125	107	107	94	63	54	47	42	38
IL2HL108	108	150	100	86	75	60	50	43	38	33	30
IL2HL120	120	125	83	71	63	50	42	36	31	28	25

Chart shows the allowable load per square foot when horizontal is braced as defined on page 7—horizontal bracing.

Chart shows the total allowable load per square foot (live load + dead load).

Note: All areas below 25 lbs./sq. ft. do not meet OSHA requirements for a light-duty scaffold. OSHA 1926.451 (a) 6 in conjunction with non-mandatory Appendix A, define uniform loads for scaffold types. Deck planking or vertical members may be the limiting load carrying member.

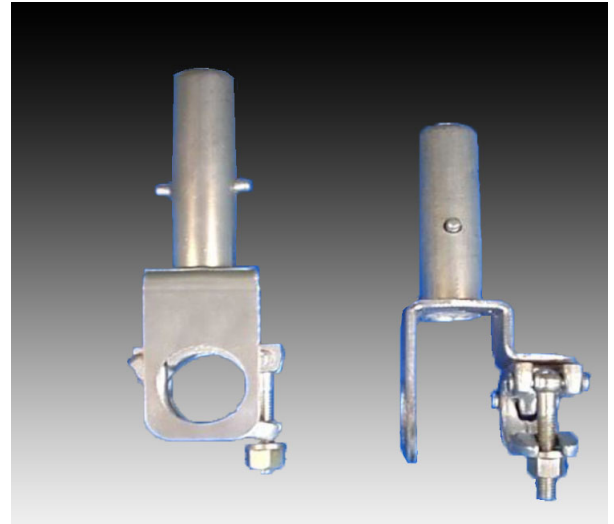
All material must be inspected prior to use! See inspection guidelines on page 67.

INTERMEDIATE HORIZONTAL ADAPTER WITH CLAMP

The intermediate horizontal adapter with clamp can be used like a regular intermediate adapter.

The loading and installation requirements are the same as the intermediate adapter.

When possible, the intermediate horizontal adapter with clamp should be used in sets, adding a tube that is used to provide additional support. The bottom support and the intermediate horizontal adapter with clamp can be replaced with other equivalent support.



The maximum load that can be placed on the intermediate adapter with clamp is equal to the maximum center load of the horizontal or truss on which it is installed, or the rated load of the intermediate horizontal adapter with clamp, whichever is less. Only a two (2) ring or a four (4) ring, with rings spaced ten (10) inches on center, is to be used unless additional bracing is installed.

To install the intermediate horizontal adapter with clamp, attach the connectors to the horizontal and then slide a piece of tube under the deck through the clamps as shown in the photo.

The clamp bolts should be tightened to between 40 and 65 lbs. tension. Overtightening could damage the threads, bolt or item the clamp is attached to.



Part Number	Description	Weight (lbs.)	Max Vert Load (lbs.)
IHA-C	Intermediate Horizontal Adapter with Clamp	3.5	1,500

Note:

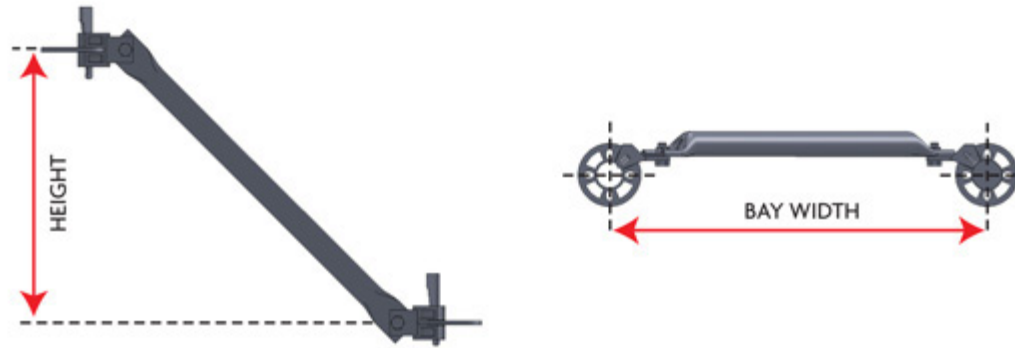
When an intermediate horizontal adapter with clamp is supporting a board deck, the deck load must be limited to light-duty only. DO NOT PASS material to another employee with the intermediate horizontal adapter with clamp attached.

Intermediate horizontal adapters with clamps should never be used to support rigging, or used as a rigging point.

All material must be inspected prior to use! See inspection guidelines on page 67.

VERTICAL DIAGONAL BRACE

WEDGE HEAD DESIGN



Part Number	Description	Total Length of Brace (inches)	Bay Width Spacing (inches)	Height Length (inches)	Weight Galvanized (lbs.)
SBB36	Brace for 3' Wide Bay	85.9	36	78	17.6
SBB42	Brace for 3'-6" Wide Bay	88.6	42	78	18.
SBB48	Brace for 4' Wide Bay	91.6	48	78	18.3
SBB60	Brace for 5' Wide Bay	98.4	60	78	19.2
SBB72	Brace for 6' Wide Bay	106.4	72	78	20.3
SBB84	Brace for 7' Wide Bay	114.6	84	78	21.5
SBB96	Brace for 8' Wide Bay	123.7	96	78	22.8
SBB108	Brace for 9' Wide Bay	133.2	108	78	24.2
SBB120	Brace for 10' Wide Bay	143.1	120	78	25.6

Note: Compatible vertical diagonal bracing may be used with InstantLock 1 components.

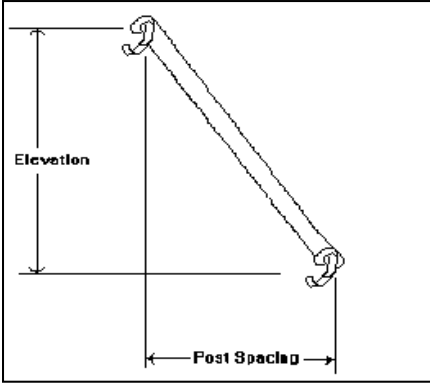
Load capacities may vary depending on application and bracing being used.

Spacing between vertical rings on the vertical must be verified to ensure proper fit of the diagonals.

<<<CAUTION There is a pinch point at the clamps and where both parts telescope.>>>

All material must be inspected prior to use! See inspection guidelines on page 67.

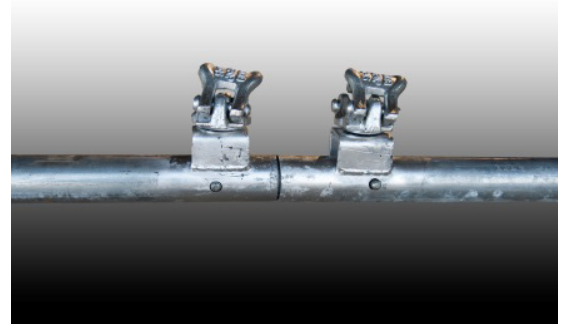
DIAGONAL PIN BRACE



The diagonal pin brace is designed to be a multipurpose brace. It has standard swivel clamps on each end, so it can be fastened to any scaffold vertical or horizontal. It is also drilled and fitted, so a standard vertical pin can be used to connect two or more braces together. This may be desirable when there is a need to brace longer structures, up to fourteen (14) feet.

Diagonal pin braces are designed to be pinned together using standard vertical locking pins to create longer braces where needed.

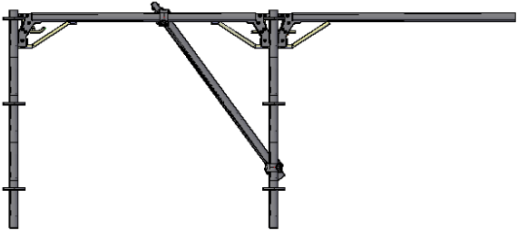
When more than one brace is used, the brace should be tied, when possible, in the middle with #9 wire or equivalent to a horizontal, vertical or another diagonal. When braces are connected together, the middle clamps may or may not be used.



Part Number	Description	Single Fits Post Spacing (inches)	Double Fits Post Spacing (inches)	Length (inches)	Weight Galvanized (lbs.)
DPB	Diagonal Pin Brace	24 - 84	96 - 168	108	24
SDPB	Short Diagonal Pin Brace	Horizontal Bracing		36	8
	Bearer Description	Post Spacing	Elevation (Approx)	Brace Angle (degrees)	Hole Location
	24" Bearer, 2-Plank Bearer	24	105.3	108	77.16
IL2PB36	36" Bearer	36	101.82	108	70.53
IL2PB42	42" Bearer, 4-Plank Bearer	42	99.5	108	67.11
IL2PB48	48" Bearer, 5-Plank Bearer	48	96.75	108	63.61
IL2PB60	60" Bearer, 6-Plank Bearer	60	89.8	108	56.25
IL2PB72	6' Bearer	72	80.5	108	48.19
IL2PB84	7' Bearer	84	67.88	108	38.94
IL2HL96	8' Ledger	96	193.49	216	63.61
IL2HL108	9' Ledger	108	187.06	216	60
IL2HL120	10' Ledger	120	179.6	216	56.25

All material must be inspected prior to use! See inspection guidelines on page 67.

DIAGONAL PIN BRACE



The short diagonal pin brace can be used to provide additional support to horizontal bearers or to extend the length of a diagonal pin brace for use on a 10-foot wide scaffold.

Diagonal pin braces can also be used as a vertical to pass through a congested area, such as a pipe rack or cable tray.

Unbraced Post Length (inches)	Maximum Allowable Compressive Load When Rated for Scaffold Use (lbs.)
69	6,986
46	8,230
23	8,690

When used as a vertical, the brace must be supported by tube and clamp, braces, or tied so that there is never more than sixty-nine (69) inches of unsupported vertical.



Note: All tubing is 1.90 diameter, 11 gauge (0.120 wall), high-strength, minimum 65,000 yield, and 75,000 tensile. Diagonal pin braces are designed to be compatible with standard 1.90 OD tube and clamp material.

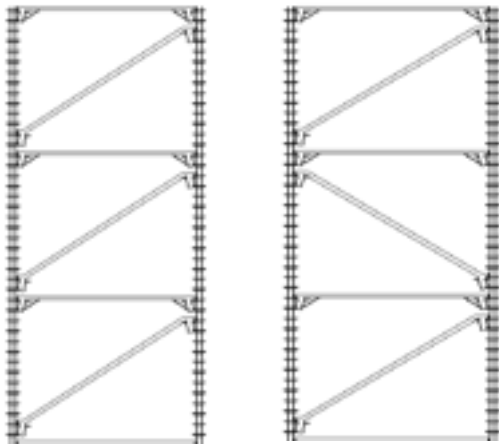
Clamp bolts should have between 40 and 65 lbs. tension. Overtightening could damage the threads, bolt or item the clamp is attached to.

<<<Caution there is a pinch point at the clamps and where the parts pin together.>>>

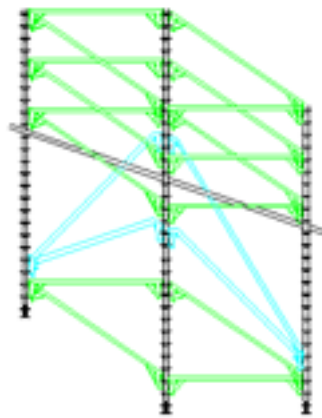
All material must be inspected prior to use! See inspection guidelines on page 67.

GENERAL GUIDELINES FOR BRACING

The following bracing recommendations are for all non-seismic scaffolding built using InstantLock 1 scaffold components. Bracing and/or tying should be applied to any scaffold where the top of the scaffold has a movement of more than 6 inches in any direction. The bracing should be placed to run in opposite directions on opposing sides. It may be zigzagged or run all in the same direction. (See normal bracing diagram below.)



Normal Bracing (Plain Or Zigzag)



Heavy-Duty Bracing

Bracing under the board deck that is attached diagonally from vertical to vertical should be placed every third deck when possible.

Single-bay scaffolds should be braced on a minimum of two (2) sides and when feasible on all four (4) sides, starting at the bottom and continuing to a minimum of ten (10) feet from the top of the scaffold.

All other bay configurations require bracing placed on one (1) bay for every 30 foot length of scaffold (generally every 4th bay). At a minimum, bracing should be placed on the inside and outside row of the scaffolding verticals, starting at the bottom and continuing to a minimum of ten (10) feet from the top of the scaffold.

Scaffolds that contain side brackets or outriggers where there is a possibility of tipping, must also be braced or tied, with tube and clamp, and a minimum of two (2) strands of #9 wire or equivalent to plant approved structural steel components (i.e., I-beams, handrails, grating, etc.)

The following additional bracing recommendations are for light-duty, non-seismic scaffolding, built using InstantLock 1 scaffold components.

Bay widths of 42 inches and less, that are less than 20-feet tall, may not require bracing. The special truss design of InstantLock 1 horizontals provides the necessary bracing. Scaffolds above 20-feet tall should be braced using clamp braces or tube and clamp applied to the bottom of the scaffold, leaving an unbraced height of 20 feet or less. (Bracing should always be added if there is excessive movement of the scaffold structure.)

Scaffolds with a deck height less than ten (10) feet do not require bracing provided they are tied off with tube and clamp, and two (2) strands of #9 wire or equivalent to plant approved structural steel components (i.e., I-beams, handrails, grating, etc.).

The following additional bracing recommendations are for medium- and heavy-duty, non-seismic scaffolding, built using InstantLock 1 components.

Heavy-duty scaffolds should have as much bracing as required to meet the desired loading. Bracing and/or tying should be placed on all sides of the scaffold. Multi-bay scaffolds should have bracing on every other bay, front, middle and back rows. (See heavy-duty bracing diagram above.)

All material must be inspected prior to use! See inspection guidelines on page 67.

SIDE BRACKETS



2-Foot Side Bracket



3-Foot Side Bracket

Part Number	Description	Effective Width (inches)	Net Width (inches)	Overall Width (inches)	Overall Height (inches)	Weight Galvanized (lbs.)
IL2SB-24	2' Side Bracket	24	20.5	26	19.5	14.5
IL2SB-36	3' Side Bracket	36	34.5	38	19.5	23.3

Part Number	Description	Maximum Uniform Load (lbs./ sq. ft.)	Maximum Load on End (lbs.)
IL2SB-24	2' Side Bracket	500	500
IL2SB-36	3' Side Bracket	330	500

All tubing is 1.90 diameter, 11 gauge (0.120 wall), high-strength, minimum 65,000 yield, and 75,000 tensile.

<<<CAUTION There is a pinch point when closing the trigger.>>>

Check that the vertical pin is properly secured before handling.

All material must be inspected prior to use! See inspection guidelines on page 67.

SCAFFOLD CASTER AND CASTER ADAPTER



Part Number	Description	Wheel Type	Weight (lbs.)	Allowable Rolling Load (lbs.)
CR8	8" Caster with pin	Plastic	17	900
CRF8	8" Caster flat base	Plastic	17.5	900
CR12	12" Caster	Plastic	23	1,300

Note: Casters must be locked while working on the scaffold.

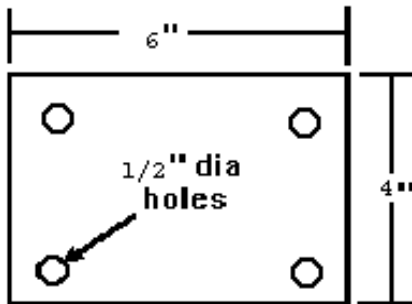
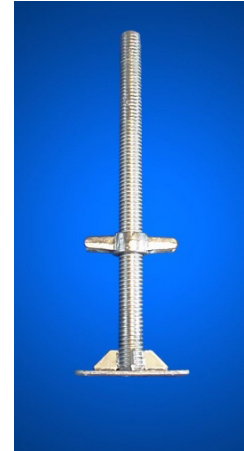
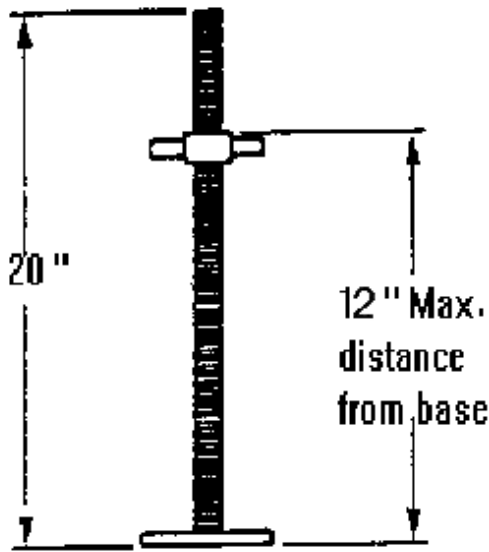
Casters should be periodically maintained. If they have grease fittings, they should be filled with a white lithium grease (ST-80 High-Performance Grease or its equivalent).

WD-40 can be used before application of grease or oil to loosen old grease and remove any rust buildup. The caster bearings must be inspected for any wear or damage. Replace any casters that show signs of wear or damage.

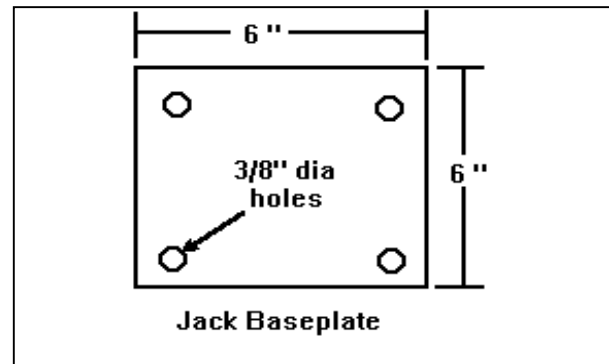
Note: Check the weight of the scaffold and intended load when using casters! To maintain a 4:1 safety factor, a scaffold 15-feet high with two (2) board decks is the largest scaffold that should be built with 8-inch casters. A scaffold 21-feet high with three (3) board decks is the largest scaffold that should be built with 12-inch casters.

All material must be inspected prior to use! See inspection guidelines on page 67.

SCAFFOLD SCREW JACK



Caster Jack (FBJ2 Base)



Standard Jack (FBJ Base)

Part Number	Description	Weight (lbs.)	Maximum Allowable Load (lbs.*)
FBJ	Fixed Base Screw Jack	11.6	7,500
FBJ2	Fixed Base Caster Screw Jack	12.2	7,500

***Note:** Jack cannot be extended more than 12 inches above the base.

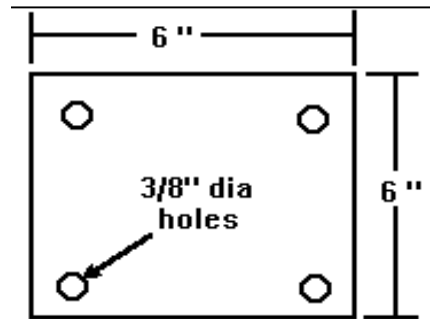
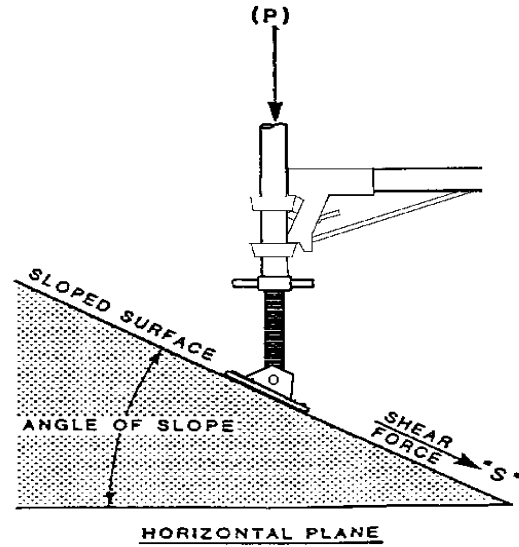
The fixed base caster screw jack has a larger base plate that is designed to allow the jack to be bolted to a standard flat top caster. The fixed base caster screw jack also has added bracing to make it stronger while attached to a caster.

Note:

7/16 x 1-1/2 inch, grade 5 or stronger bolts with flat washers must be used to bolt the caster to the fixed base caster screw jack.

All material must be inspected prior to use! See inspection guidelines on page 67.

SCAFFOLD SWIVEL JACK



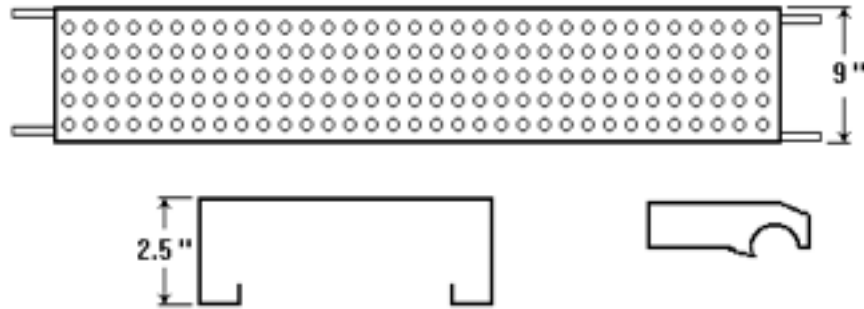
Jack Baseplate

Part Number	Description	Weight (lbs.)	Maximum Allowable Load (lbs.) Load (P) When Angle of Slope 0°
SBJ	Swivel Base Screw Jack	7.5	5,000

***Note:** Jack cannot be extended more than 12 inches above the base.

All material must be inspected prior to use! See inspection guidelines on page 67.

SCAFFOLD METAL BOARDS



Part Number	Description	Width (inches)	Weight (lbs.)	Uniform Load (lbs./ft)	Center Load (lbs.)
SP24	2' Plank	9	11.5	271	600
SP36	3' Plank	9	16	271	600
SP42	3.5' Plank	9	18	232	546
SP48	4' Plank	9	18.8	213	520
SP60	5' Plank	9	23.5	185	480
SP72	6' Plank	9	28.5	105	388
SP84	7' Plank	9	30.5	100	322
SP96	8' Plank	9	37.5	93	284
SP108	9' Plank	9	41.5	69	250
SP120	10' Plank	9	46.5	58	233
6SP24	6" x 2' Plank	6	10.5	271	600
6SP36	6" x 3' Plank	6	12.9	271	600
6SP42	6" x 3.5' Plank	6	14.5	232	546
6SP48	6" x 4' Plank	6	16.1	213	520
6SP60	6" x 5' Plank	6	19.4	185	480
6SP72	6" x 6' Plank	6	22.6	105	388
6SP84	6" x 7' Plank	6	25.9	100	322
6SP96	6" x 8' Plank	6	27.7	93	284
6SP108	6" x 9' Plank	6	32.4	69	250
6SP120	6" x 10' Plank	6	35.6	58	233

Note: Where a possibility of uplift could occur, all boards should be securely attached to the scaffold with #9 wire, tie wraps, toe boards, filler plates or other equivalent means.

All material must be inspected prior to use! See inspection guidelines on page 67.

SCAFFOLD LADDER

When installing ladders, the collar should always be placed at the bottom.

Part Number	Description	Overall Length (inches)	Max. Total Vertical Load on Ladder (lbs.)	Max. Load on One (1) Ladder Rung (lbs.)	Weight Galvanized (lbs.)
LA10	10' ladder	118	1,000	500	42
LA9	9' ladder	106.5	1,000	500	36
LA8	8' ladder	95	1,000	500	34
LA7	7' ladder	83.5	1,000	500	32.1
LA5	5' ladder	60.5	1,500	500	22.2
LA4	4' ladder	49	1,500	500	18.3
LA3	3' ladder	37.5	2,000	500	14.3
LA2	2' ladder	26	2,000	500	8
LA1	1' ladder	14.5	2,000	500	4.1

Note: Ladders are not designed to support loads as walkways, pipe supports, pipe hangers, lifting rigs, etc. Ladders should only be used for access to scaffolds. The ladder brackets may limit the load carrying ability of the ladder.

SCAFFOLD LADDER BRACKET



Clamp brackets may be installed on the horizontal bars or vertical posts.

Part Number	Description	Overall Width (inches)	Max Total Vertical Load on Bracket (lbs.)	Weight (lbs.)
LB3	Clamp Bracket	12	600	12.3

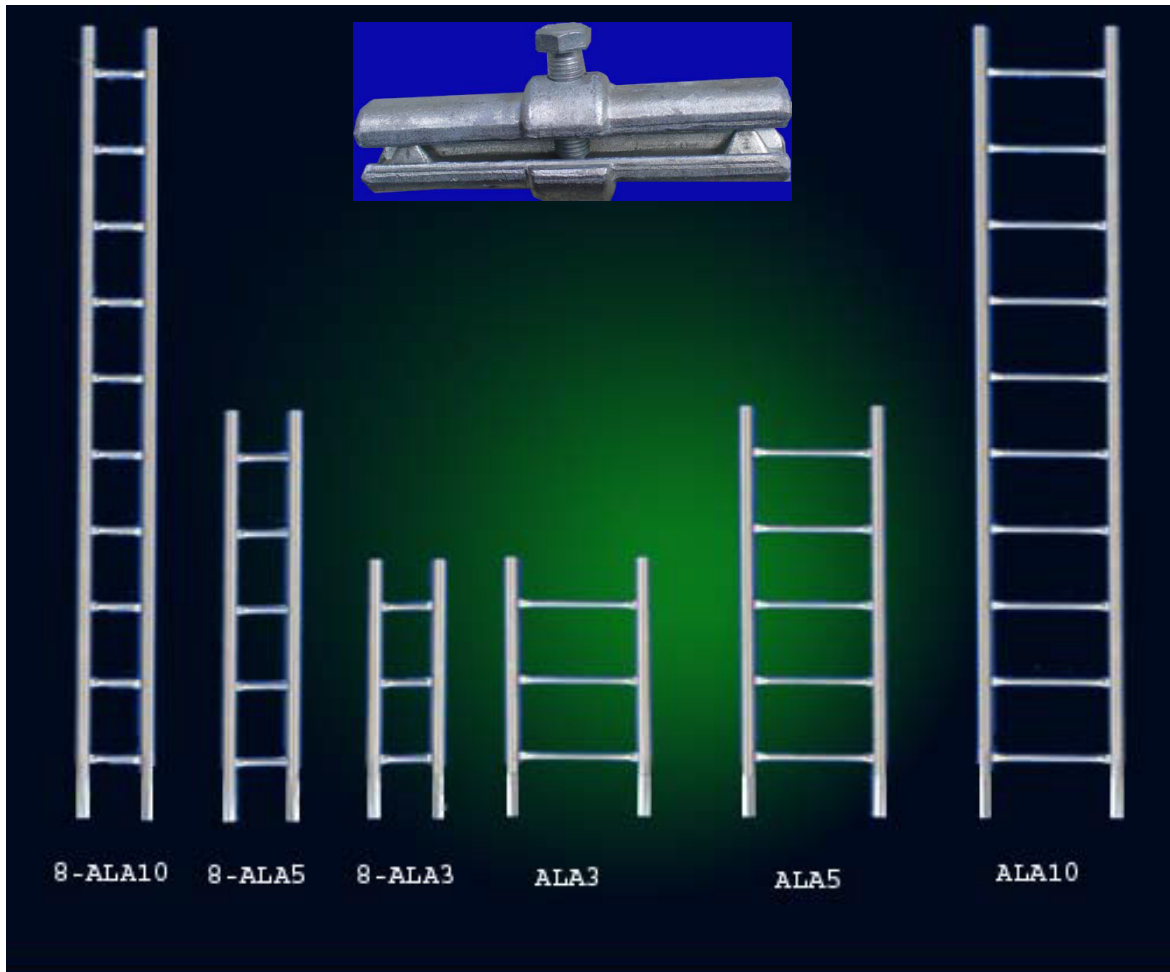
Note: Use more brackets when necessary to carry greater loads. The ladder may be the load limiting member.

Clamp bolts should have between 40 and 65 lbs. tension. Overtightening could damage the threads, bolt or item the clamp is attached to.

<<<CAUTION There is a pinch point when closing the trigger.>>>
Do not pass ladders to another employee with the ladder bracket installed.

All material must be inspected prior to use! See inspection guidelines on page 67.

SCAFFOLD ALUMINUM LADDER



When installing aluminum ladders, the expansion pin should always be securely tightened.

Part Number	Description	Overall Length (inches)	Max. Total Vertical Load on Ladder	Max. Load on One (1) Ladder Rung	Weight Galvanized (lbs.)
ALA10	10' Aluminum Ladder	120	1,000	500	24
ALA5	5' Aluminum Ladder	60	1,500	500	12
ALA3	3' Aluminum Ladder	36	2,000	500	7
8-ALA10	8' wide 10' Aluminum Ladder	120	1,000	500	22
8-ALA5	8' wide 5' Aluminum Ladder	60	1,500	500	11
8-ALA3	8' wide 3' Aluminum Ladder	36	2,000	500	6.5
AEP	Expansion Pin	7.5	NA	NA	2.5

All material must be inspected prior to use! See inspection guidelines on page 67.

SCAFFOLD SNOW LADDER



Rugged, extra-grip rungs help prevent slips.



Snow ladders are not compatible with regular ladder brackets and must use the clamp and pin style ladder bracket .



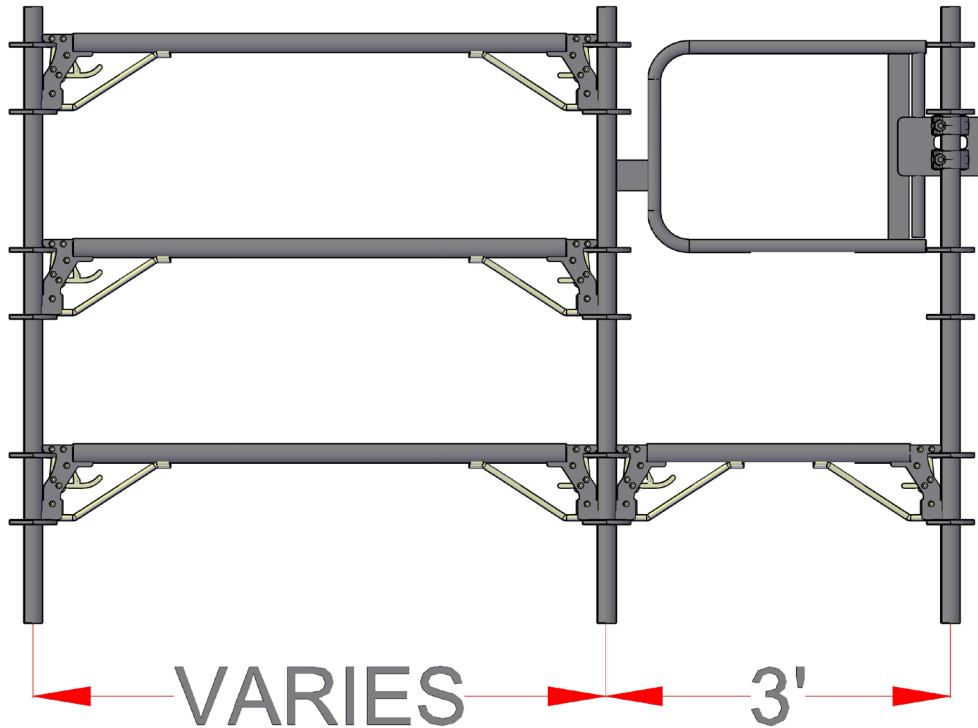
Snow ladders provide a greater non-slip tread for use in snow, ice or other slippery conditions.

Part Number	Description	Overall Length (inches)	Max. Total Vertical Load on Ladder (lbs.)	Max. Load on One (1) Ladder Rung (lbs.)	Weight Galvanized (lbs.)
SLA5	5' Snow Ladder	60.5	1,500	500	19.5
SLA3	3' Snow Ladder	37.5	2,000	500	10
SLB1	Snow Ladder Bracket				3

Note: Snow ladders are not designed to support loads as walkways, pipe supports, pipe hangers, lifting rigs, etc. Ladders should only be used for access to scaffolds.

All material must be inspected prior to use! See inspection guidelines on page 67.

SCAFFOLD SAFETY GATES



Safety gates are designed to provide safe access for scaffolds.

Safety gates can be installed on any 36-inch wide scaffold bay. To install a safety gate on a larger-sized scaffold bay (5-feet to 10-feet) a 36-inch side bracket or heavy-duty intermediate adapter can be installed with shorter bars to support the gate. The gate must only be attached to the existing vertical post and not to the post attached to the end of the side bracket or heavy-duty intermediate adapter.

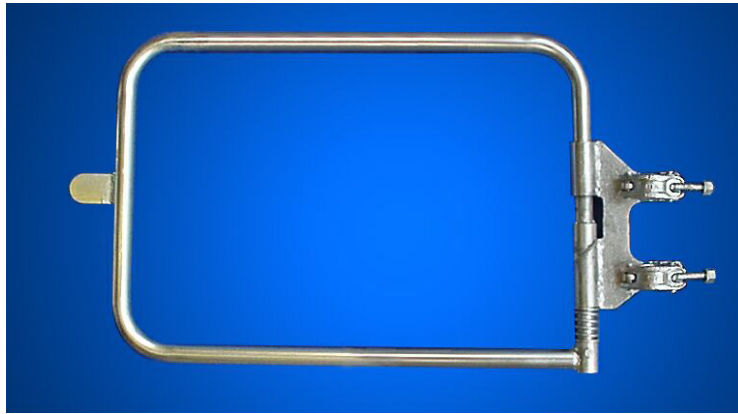
InstantLock 1 material or tube and clamp should be used to close off areas greater than 36 inches.

Gates can be used on bays smaller than 36 inches, as long as they open and latch properly.

Note: The safety gate should not be attached to the vertical that is attached to the intermediate horizontal adapter.

All material must be inspected prior to use! See inspection guidelines on page 67.

SCAFFOLD SAFETY GATES



The SG2 gate may be flipped to allow the gate to swing in either direction.

For greater versatility, the safety gate is equipped with clamps and designed to fit all types of scaffolding. To properly install the clamp safety gate, first place the gate on the vertical and lightly secure the clamps. Then, rotate the gate around the vertical toward the outside of the scaffold until the spring has enough tension that the gate remains closed. Finally, tighten the clamps to hold the gate in place. When properly placed, the strike plate should touch 50% or more of the vertical post. During periodic scaffold inspections, the gate may require that the clamps be loosened and the gate rotated to re-tighten the spring.

Part Number	Description	Weight (lbs.)
SG2	Safety Gate with Clamps	21

Note: Gates should be periodically maintained. If they have grease certs, they should be filled with a white lithium grease (ST-80 High-Performance Grease or its equivalent). Gates without grease certs should be lubed with a 10-weight oil or dry graphite.

WD-40 can be used before application of grease or oil to loosen old grease and remove any rust buildup. The gate must be cycled (swung in both directions) as many times as necessary to allow the oil/grease to work in and allow the gate to swing freely.

Clamp bolts should have between 40 and 65 lbs. tension. Overtightening could damage the threads bolt or item the clamp is attached to.

All material must be inspected prior to use! See inspection guidelines on page 67.

INSTANTLOCK 1 USED WITH TUBE AND CLAMP

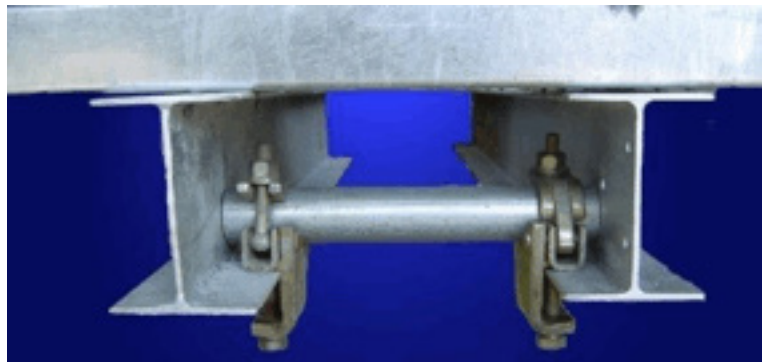
The vertical tube adapter pin is designed to provide a safe, strong method to transition from InstantLock 1 to tube and clamp.

InstantLock 1 material is designed to be 100% compatible with most types of tube and clamp.

Part Number	Description	Weight (lbs.)
TCA	Tube and Clamp Adapter	3.5
TU-20	20' Tube	30
TU-16	16' Tube	27
TU-13	13' Tube	22
TU-10	10' Tube	21
TU-8	8' Tube	18
TU-6	6' Tube	14
TU-4	4' Tube	11
SWC	Swivel Clamp	3
RAC	Right-Angle Clamp	4
SBC	Swivel Beam Clamp	4
RBC	Rigid Beam Clamp	4
MBP-1	Male Base Plate	5

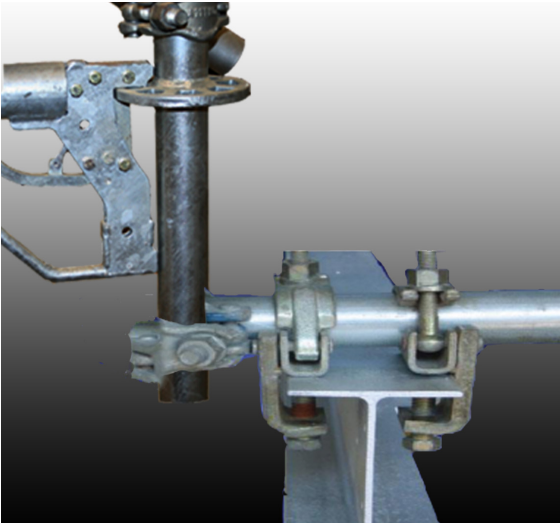
Note: When tube and clamp scaffolding is used to continue a vertical above the InstantLock 1 system, the load ratings and restrictions of the tube and clamp manufacturer must be used. Swivel beam clamps and rigid beam clamps should be used only for scaffold bracing or as shown below. To support a scaffold structure, use tube and clamp or heavy-duty support beam clamps designed for such use.

When the top of the beam cannot be reached because of an obstruction, tube and clamp cut to length or tubing designed to fit between two beams can be used for support.



All material must be inspected prior to use! See inspection guidelines on page 67.

INSTANTLOCK 1 USED WITH TUBE AND CLAMP



Beam clamps attach to the top of the I-beam where the load is not on the clamp bolt.



Secure the beam from all sides using tube and clamp as shown.

Use backup clamps to prevent slippage of the tubing.



CAUTION:

When installing swivel beam and rigid beam clamps to the bottom flange, please consult the Next Generation Scaffold Engineering department for safe loading capacities and proper installation of beam clamps.

Clamps are to always be used in pairs.

When at all possible use the beam clamps on the top flange of the beam.

All material must be inspected prior to use! See inspection guidelines on page 67.

INSTANTLOCK 1 USED WITH TUBE AND CLAMP

Tube and clamp material has been manufactured by many different vendors. There is no easy way to identify the manufacturer or the quality of material used in its construction. Always assume that the material is of lesser quality and use the most conservative designs when building with this material.

The strength of the scaffold is greatly affected by the torque on the bolted connections.

Tube lengths of 16 feet and 20 feet, without proper support, may not meet minimum requirements for scaffold loads.

Tube and clamp material must be assembled in strict accordance with all current Federal and State guidelines. (See OSHA 1926.452(b) "Tube and coupler scaffolds.")

Most tube material is manufactured with 13 gauge, 1.90 diameter tubing.

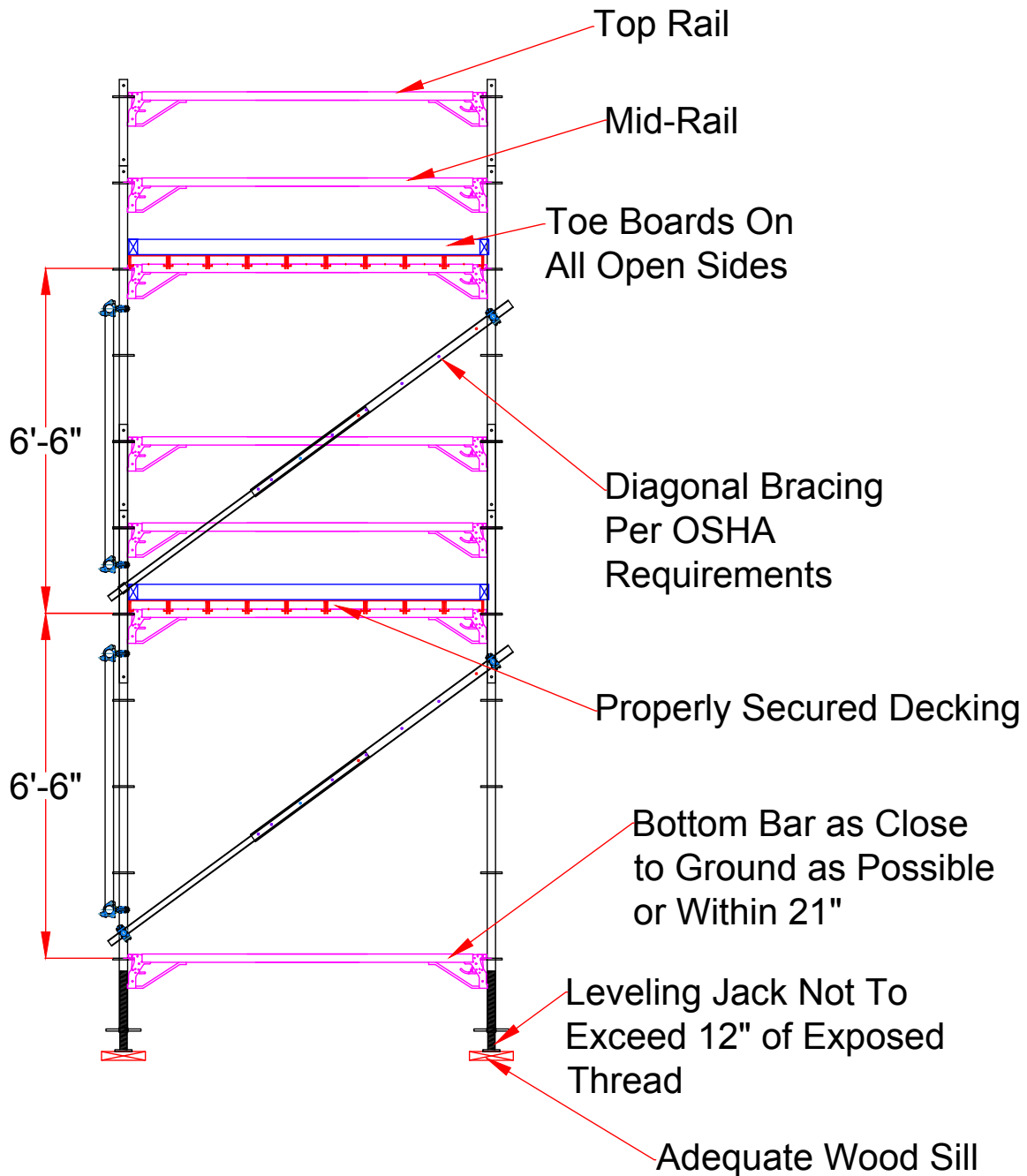
Rigid beam clamps and swivel beam clamps must be inspected for damage/cracking at the weld and the top bend of the clamp. Beam clamps have been known to fracture at the top bend area.



Clamp bolts should have between 40 lbs. and 65 lbs. tension. Overtightening could damage the clamp, bolt, threads or item the clamp is attached to.

All material must be inspected prior to use! See inspection guidelines on page 67.

INSTANTLOCK 1 ASSEMBLY INSTRUCTIONS



All material must be inspected prior to use! See inspection guidelines on page 67.

INSTANTLOCK 1 AS AN ANCHORAGE POINT FOR FALL PROTECTION

InstantLock 1 should only be used for a fall protection anchorage point when no other method of tie off is available. Shock absorbent lanyards or personal retractable lanyards attached to InstantLock 1 must use the manufacturers recommended method of attachment.

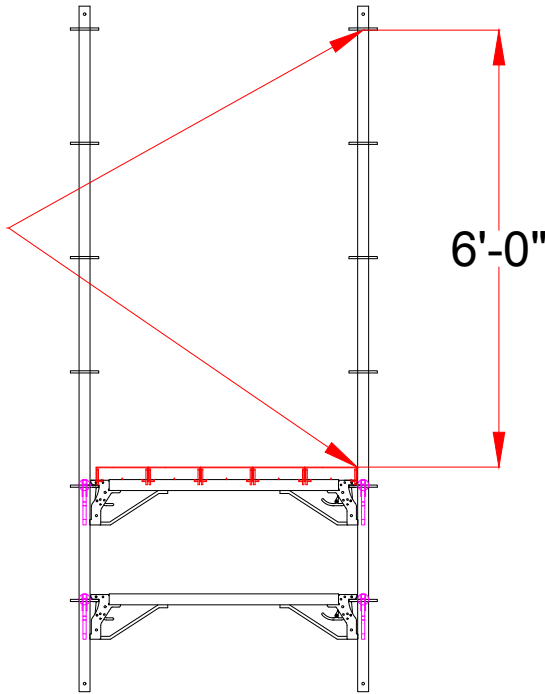
In order to provide the safest work environment for all personnel, NextGen recommends that the scaffold not be used as a fall protection anchorage point when other locations or methods of fall protection anchorage are available. In the event that there is nothing else suitable for a fall protection anchorage point, InstantLock 1 may be used, providing the following prerequisite guidelines are followed.

1. 1) The anchorage point may be made on a vertical above the last horizontal connection with a minimum of two (2) horizontals and within 6 inches of those connections, and as shown on the sketch on following page.
2. The anchorage point may be made to a horizontal bar provided that both end connectors are securely locked in place.
 - a) Check Scaffold Truss Manufacturer's Technical manual for all imposed loads.
 - b) InstantLock 1 horizontals may be used without modification for an anchorage point, as long as properly installed and in proper working conditions.
3. Only one individual can tie off at any anchorage point anywhere on a single vertical or horizontal. No one may tie off to any of the other horizontal members that are tied together as part of the anchorage point.
4. The anchorage point must be as high as possible above the employees' work area.
5. When a horizontal is used as a tie-off point, each vertical the horizontal is attached to must be secured by a minimum of one (1) other horizontal member or equivalent.
6. The anchorage point must never be made to a vertical that does not extend to the ground or supporting structure. Never tie off to part of a cantilever side bracket, gate or intermediate bracket.
7. All scaffolds that are built on any structure other than the ground shall be properly secured to the structure and be evaluated by a competent person prior to being used for a tie-off point.
8. All scaffold anchorage points must be evaluated by a competent person prior to being used.
9. When the scaffold contains casters:
 - a) The casters shall be locked.
 - b) Outriggers, such as a properly designed pipe and clamp outrigger that extends a minimum of 20 inches from the base of the scaffold, must be installed to prevent rolling and tipping of the scaffold.
 - c) The scaffold should also, when possible, be tied to an existing stable structure to prevent sliding or tipping.

All material must be inspected prior to use! See inspection guidelines on page 67.

INSTANTLOCK 1 AS AN ANCHORAGE POINT FOR FALL PROTECTION (CONT'D)

Tie Off Location
Parameter



Vertical joint has to be below
the top wrap in order to be
used as an anchorage point

10. When possible, scaffolds that are used for a tie-off anchorage point shall be secured to a permanent structure, tied, guy wired, or provided with outriggers. If a scaffold is to be free standing, the scaffold must meet the following conditions:
 - a) The scaffold is to have a minimum base of 5 feet long x 5 feet wide (excluding outriggers if used).
 - b) All free-standing scaffolds that will be used for fall protection shall have a 3:1 height to base ratio.
 - c) The scaffold is to have vertical diagonal bracing installed on all four sides of a single bay scaffold from the base to the underside of the deck.
 - d) When attaching to vertical post of a free-standing scaffold, the point of connection shall have two (2) horizontal members attached 90 degrees to each other, as close to the connection point as possible. When attached to a horizontal member, the conditions listed on Note 2 of page 30 shall apply. Should smaller base free-standing scaffolds be erected, the scaffold shall be designed by an Engineer, or qualified person prior to erecting. When the scaffold is tied in to a permanent structure, the minimum requirement for tying is two (2) strands of #9 wire or equivalent (tube and clamp). This tie is to be from the vertical on the opposite side of the scaffold to a permanent structure. This is in addition to tying required by Federal, State or local regulations. Anytime a free-standing scaffold is to be used for a tie-off anchorage point, it must be noted on the tag.

All material must be inspected prior to use! See inspection guidelines on page 67.

INSTANTLOCK 1 AS AN ANCHORAGE POINT FOR FALL PROTECTION (CONT'D)

InstantLock 1 encourages users of its scaffold material, either through independent testing or with the aid of a professional engineer, to develop their own tie-off guidelines which may be different than those listed above, as long as they are stricter and meet all OSHA requirements.

InstantLock 1 may give different guidelines depending on the specific needs of the customer and the type of scaffold maintenance program and safe regulated work areas.

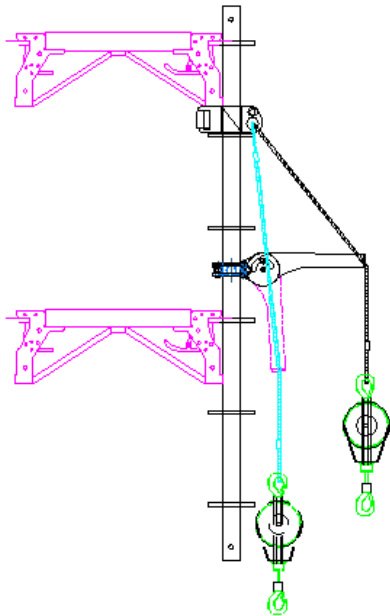
Note: "Rescue considerations." As required by 1926.502(d)(20), when personal fall arrest systems are used, the employer must ensure employees can be promptly rescued or can rescue themselves should a fall occur. The availability of rescue personnel, ladders or other rescue equipment should be evaluated. In some situations, equipment which allows employees to rescue themselves after the fall has been arrested may be desirable, such as devices which have descent control built in.

Note: "Inspection considerations." As required by 1926.502(d)(21), personal fall arrest systems must be regularly inspected. Any component with any significant defect, such as cuts, tears, abrasions, mold, or undue stretching, alterations or additions which might affect its efficiency, damage due to deterioration, contact with fire, acid, or other corrosives, distorted hooks or faulty hook springs, tongues unfitted to the shoulder of buckles, loose or damaged mountings, non-functioning parts, or wearing of internal deterioration in the ropes must be withdrawn from service immediately, and shall be tagged or marked unusable and destroyed.

Note: Any material that is subjected to a load from a fall shall be replaced, even if there is no visible damage to the scaffold material. This includes verticals which may have been bent from the stresses from the fall. If it is not possible to immediately replace the material because of structural considerations, the material must be braced with tube and clamp or equivalent means and inspected by an engineer to ensure it is safe for continued use. In most cases, verification by a PE may be required and is strongly recommended. The material must be replaced as soon as possible and the affected equipment tagged and removed from service.

SRL ADAPTER

The SRL adapter is designed to provide support and ladder clearance when using a retractable SRL device to protect workers on the scaffold ladder access.



The cable supporting SRL or other ladder safety device must be secured to vertical as defined on pages 33 and 34.

The cable must be secured to the vertical one (1) ring (between 16 and 18 inches) above the center of the SRL adapter.

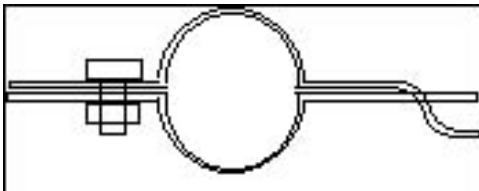
The swivel bolt on the SRL adapter must not be overtightened.

The SRL adapter must be set at the alignment marks, so that the cable supporting the end of the adapter is one (1) inch below the center of the adapter.

The SRL adapter is never intended to carry any load. It is designed to align the SRL or other safety device with the ladder access.

As a load is applied to the SRL adapter, it will retract, bringing the SRL or other ladder safety device and load toward the scaffold and ladder allowing the vertical post to absorb the downward load.

The SRL must be fastened high enough above the ladder so that it is not possible for the person climbing the ladder to come in contact with it.



The SRL or other ladder safety device will drop approximately four (4) inches as the SRL adapter retracts.

The tension bolts must be torqued to the minimum level required to support the weight of the SRL or other safety device.

The SRL adapter clamp or other approved means can be used to attach the SRL cable to the vertical.

Previous Part Number	Part Number	Description	Weight (lbs.)
YYA	SRL-A	SRL Adapter (Yo-Yo Adapter)	2
YYA1	SRL-B	SRL Adapter Clamp (Yo-Yo Adapter Clamp)	1
YYC	SRL-C	SRL Choker (Yo-Yo Choker)	1
YYs	SRL-S	SRL Shackle (Yo-Yo Shackle)	1
SRL	SRL	SRL Retracting Lanyard	6

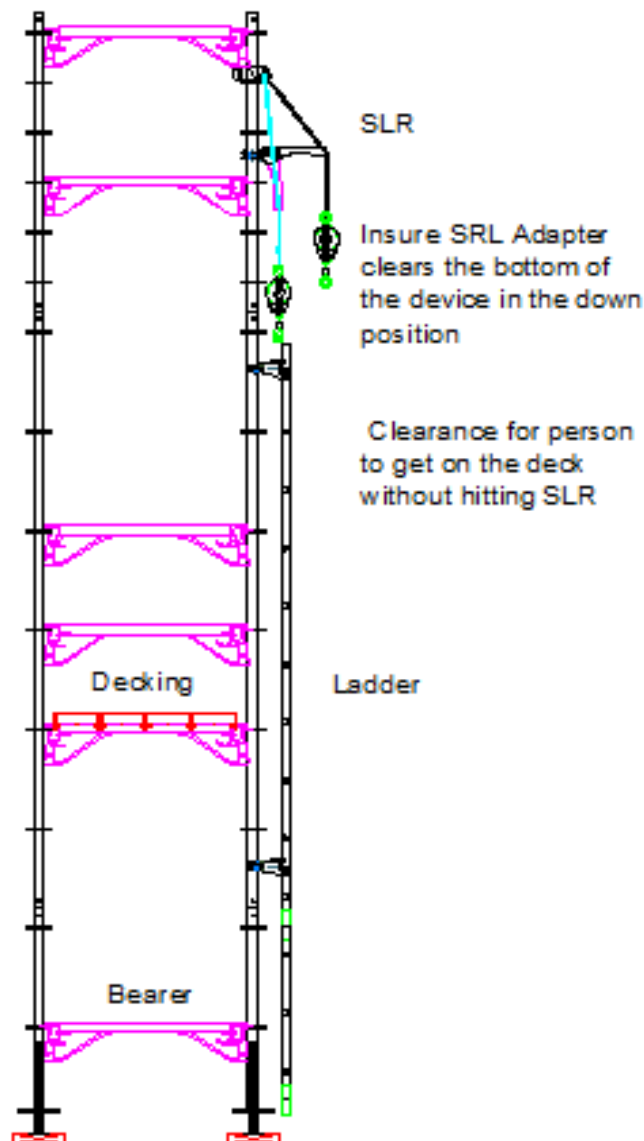
Please see warnings on next page.

All material must be inspected prior to use! See inspection guidelines on page 67.

SRL ADAPTER

Warning:

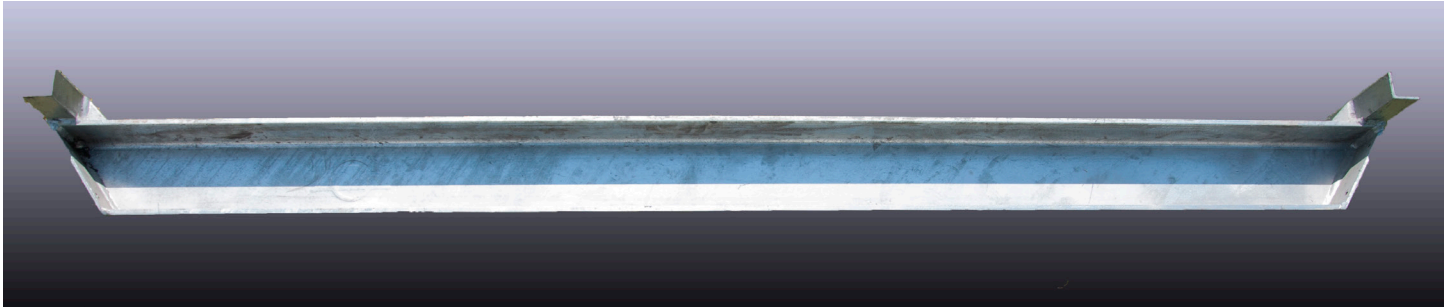
- 1.) Do not overtighten the tension bolts. The SRL adapter must be allowed to move to prevent bending the vertical post.
- 2.) The SRL or other safety device must be installed such that the end of the SRL adapter clears the top of the SRL in the down position.
- 3.) The end supporting the cable must be installed one (1) inch below the center bolt of the SRL adapter.
- 4.) The cable used to secure the SRL must move freely in the SRL adapter. Use 1/4" or 5/16" cable only.
- 5.) When used, the SRL adapter clamp must be securely latched and bolted.
- 6.) All cable connections must be double-cable clamped or approved cable chokers used.
- 7.) The system is designed for a maximum load of 5,500 lbs.
- 8.) Clamp bolts should have between 40 and 65 lbs. tension. Overtightening could damage the threads, bolt or item the clamp is attached to.



All material must be inspected prior to use! See inspection guidelines on page 67.

INSTANTLOCK 1 BOILER EQUIPMENT

InstantLock 1 foundry equipment makes the job of building scaffold inside v-bottom boilers safe and fast.



Boiler beams are 6 feet – 8 feet long and come in two strengths depending on the height of the scaffold inside the boiler.



Boiler ladders are designed to provide scaffold support to the boiler walls. They come in seven- (7-) and three- (3-) foot lengths.

Boiler chairs are attached to the boiler ladders, providing a jack stand on the sloped boiler walls.



Part Number	Description	Weight (lbs.)	Maximum Supported Loads (lbs.)
Bbem-HV	Heavy-Duty Boiler Beam	152	7,500
Bbem-LT	Light-Duty Boiler Beam	120	3,750
Bchair	Boiler Ladder Chair	16.5	5,500
BL7	7' Boiler Ladder	39.6	7,500
BL3	3' Boiler Ladder	16.5	7,500
SH1	Shoring Head	1.5	7,500
BL-Start	Boiler Starter Ladder	24	7,500

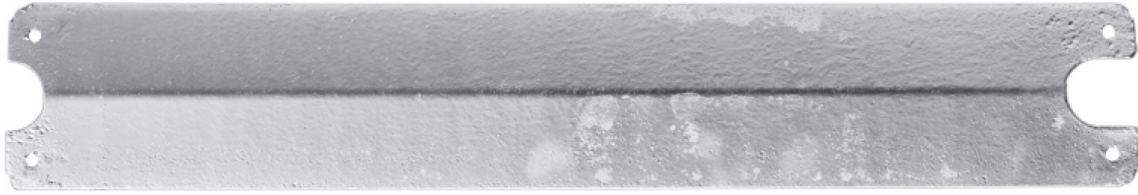
All OSHA and plant safety regulations governing shoring must be followed.

Note: 1) The area supporting the boiler beams must be able to handle the required loads.

2) Attached equipment (i.e. verticals, etc.) may be the load limiting factor.

All material must be inspected prior to use! See inspection guidelines on page 67.

FILLER PLATES



InstantLock 1 filler plates are designed to fit all types of scaffolding. They are designed to cover gaps between wood or metal boards.

Filler plates come in various lengths and contain holes that allow the filler plate to be tied or nailed in place.

When tying filler plates, a single strand of #9 wire at each end is required.

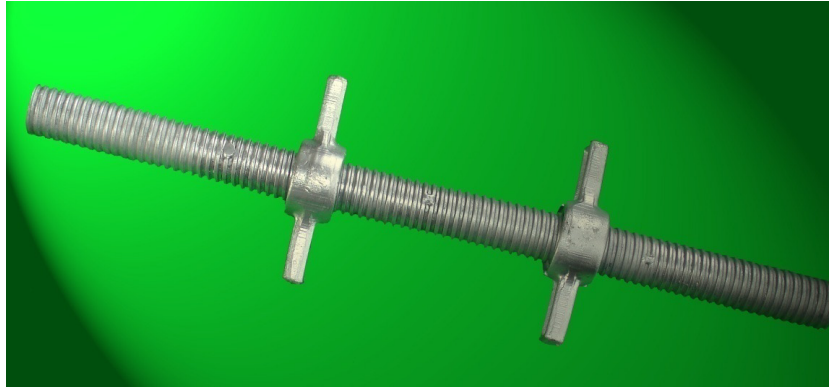
Filler plates are designed with one end slotted more than the other to allow the filler plate to be installed without bending.

Part Number	Description	Weight (lbs.)
FP24	Filler Plate 24"	3.1
FP36	Filler Plate 36"	4.7
FP42	Filler Plate 42"	5.5
FP48	Filler Plate 48"	6.3
FP60	Filler Plate 60"	7.8
FP72	Filler Plate 72"	9.4
FP84	Filler Plate 84"	10.9
FP96	Filler Plate 96"	12.5
FP108	Filler Plate 108"	14.1
FP120	Filler Plate 120"	15.6

Note: All filler plates are made from 10 gauge galvanized steel.

All material must be inspected prior to use! See inspection guidelines on page 67.

ADJUSTABLE TUBE AND CLAMP ADAPTER



The adjustable tube and clamp adapter is designed to allow the elevation of a board deck to be changed, so that the top portion of a scaffold can be aligned with a scaffold built on a separate structure. This allows the vertical rosettes of one scaffold to be aligned with another scaffold built at a different elevation.

The adjustable tube and clamp adapter may be placed on top of an existing InstantLock 1 scaffold or tube and clamp scaffold.

InstantLock 1 or tube and clamp scaffold may be placed on top of the adjustable tube and clamp adapter.

There must be a wrap of horizontals (either InstantLock 1 or tube and clamp) attached to the verticals above and below the adjustable tube and clamp adapter.

Part Number	Description	Weight (lbs.)	Maximum Allowable Load at 12" (lbs.)
ATCA	Adjustable Tube and Clamp Adapter	3.5	5,000

Note:

- 1) There must always be a minimum of 6 inches of screw inside the upper and lower vertical.
- 2) Only one adjustable tube and clamp adapter may be used in any run of verticals.
- 3) Before use inspect the adjustable tube and clamp adapter assembly to ensure there are no cracks in the wing nuts and verify that three (3) tack welds are visibly in place.
- 4) The maximum spacing between the nuts is twelve (12) inches.

All material must be inspected prior to use! See inspection guidelines on page 67.

SCAFFOLD WOOD PLANKS

NextGen only purchases quality wood planks that meet the OSHA requirements for lumber type and density.

The following is the required inspection/storage procedure for boards.

- 1.) The boards should be inspected before they are put into service for damage and wear. All planks must be inspected routinely for damage and wear, so that they can be replaced as quickly as necessary.
- 2.) Identification of damage. Employees shall be trained to recognize the following types of wear/damage:
 - a.) Decay: Boards should be examined to determine if age/weathering/wear is excessive. Wood ages and reacts to usage and will begin to show checks, splits and notches. These will vary in degree, depending on the loads a plank has carried, the weather to which it has been exposed, the length of time it has been in use, etc. Planks with splits—that is, cracks that go completely through the wood—for more than a few inches should not remain in service, as they may no longer maintain the necessary load-bearing capacity. Planks with checks—cracks that are on the surface only and do not go completely through the wood— should be watched, as the checks may develop into splits over time.
 - b.) Damage: Does the board contain any notches, cuts or other visual damage that would render it unsafe to use? Notched plank can lead to problems since, essentially, a portion of the plank is now missing, thereby weakening the plank at that particular area. If a scaffold plank has been used as a mudsill, it should not be returned to service on a platform. Moisture from standing water, as well as point-loading from the scaffold legs may have weakened it, making it unable to bear the weight that will be placed on it.
 - c.) Chemical/heat damage: Has the board been exposed to excessive chemicals/heat (soaked with oil, scorch marks)? Scaffold planks that have visible chemical or scorch marks must be removed from service.
 - d.) Surface covering: Is the surface free from items that may cause a slip, (oil/tar/etc.)? OSHA [1926.451(b)(9)] says that scaffold planks that have accumulated layers of mortar, grout, paint, plaster, etc., are not permitted to remain in service since it is impossible to determine their conditions. Dangerous splits may be hidden underneath those coatings.
 - e.) Shrinkage: Has the board size decreased past its useful size?
 - f.) Deflection: The flex or “give” of a plank can indicate its condition. OSHA calls for deflection criteria of $L/60$ (the length of span in inches divided by 60) to get the maximum deflection limit at center span in inches. An example would be a seven-foot (84-inch) span between scaffold frame supports: $84/60 = 1.40$ inches. Therefore, you’d never want to allow a plank to deflect more than 1-3/8 inches at the middle of that length span, regardless of type of plank being used. Only sample testing should be performed since test loading can damage the board.

All material must be inspected prior to use! See inspection guidelines on page 67.

SCAFFOLD WOOD PLANKS

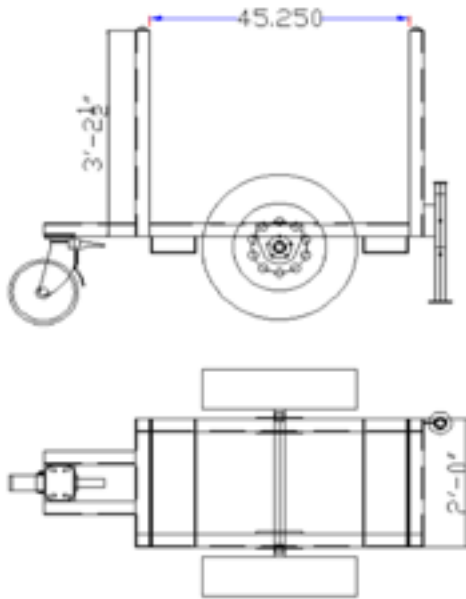
Part Number	Description	Maximum Loading Using Full Thickness Undressed Lumber (lb/sq ft)	Weight (lbs.)	Maximum Scaffold Span (ft)
WP-4	4' Wood Plank	75	18	2
WP-6	6' Wood Plank	75	27	4
WP-8	8' Wood Plank	50	36	6
WP-10	10' Wood Plank	25	45	8
WP-12	12' Wood Plank	25	54	10

Allowable loads when rated for scaffold use include OSHA (4:1) Safety Factor.

Storage: When not in use, all wood planks, should be stored above ground on dunnage to keep moisture from entering the bottom of the boards. Additionally, all boards should have some sort of lath or stickers between layers to allow for air circulation through the boards. Most important, a tarp or something as simple as a sheet of plywood should be placed over the top of the boards to prevent moisture from dropping down through the stack. Ideally, indoor storage is best.

Note: Where a possibility of uplift could occur, all boards should be securely attached to the scaffold with #9 wire, tie wraps, toe boards, filler plates or other equivalent means.

SCAFFOLD EQUIPMENT CART



Part Number	Description	Load Capacity (lbs.)	Weight (lbs.)
S-Cart	Scaffold Cart	3,340	300

Note:

1. Cart is only to be lifted by a forklift at pockets provided and all material strapped into place prior to lifting.
2. Cart is not meant to be towed by a motorized vehicle and is to be lifted by forklift or pushed by man power.
3. Cart wheels are to be locked while loading and unloading to prevent movement.
4. The stabilizer at the back of the cart is to be used whenever the cart is stationary.

All material must be inspected prior to use! See inspection guidelines on page 67.

SCAFFOLD SKID PAN

USE AND INSPECTION REQUIREMENTS

Skid pans are used to move scaffold material from ground level closer to the location the material is required. This may be a higher elevation or across obstructions, such as fences, roads, streams, etc.

Skid pans come in many different sizes and shapes depending on the intended use. The following guidelines must be observed.

- 1). All skid pans, cables, shackles and associated lifting equipment must be thoroughly inspected by the designated person when first delivered to the jobsite. The inspection must meet the requirements as defined in ASME B30.20-1.3.
 - a) A visual inspection must be performed by a qualified person making records of the apparent external condition to provide the basis for a continuing evaluation.
 - b) The inspection must be documented, dated and signed by the person performing the inspection.
- 2). For all equipment, inspect:
 - a) structural members for deformation, cracks or excessive wear.
 - b) loose or missing guards, fasteners, covers, stops or name plates.
 - c) all functional operating mechanisms for mis-adjustments interfering with operation.
 - d) deformation—any bending or twisting exceeding 10 degrees (or as recommended by the manufacturer) from the normal plane.
 - e) throat opening—any distortion causing an increase in the throat opening exceeding 15 percent (or as recommended by the manufacturer).
 - f) wear—any wear exceeding 10 percent (or as recommended by the manufacturer) of the original section dimension.
- 3) Frequent visual examinations shall be performed weekly (or more frequently if recommended by the designated person), while the equipment is in service. No records are required.
- 4) A documented thorough inspection shall be performed any time there is reason to believe part of the lifting equipment may have been damaged during use.
- 5) A skid pan shall not be used if it does not contain a label plate that lists the manufacturer, a serial number and the rated load.

All material must be inspected prior to use! See inspection guidelines on page 67.

SKID PANS

USE AND INSPECTION REQUIREMENTS (CONT'D)

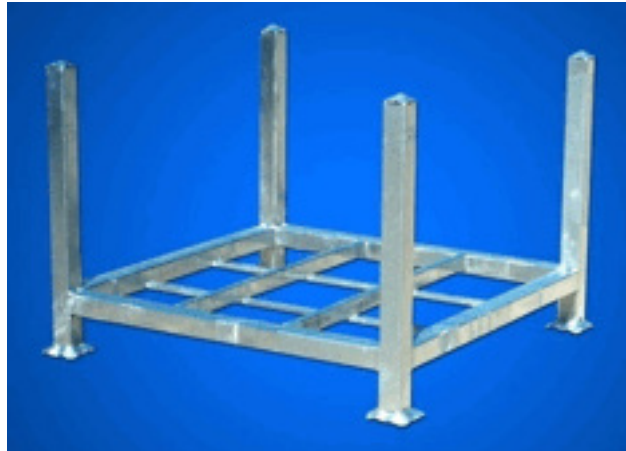
Part Number	Bottom Length (ft)	Full Length (ft)	Empty Weight (lbs.)	Max. Loaded Weight (lbs.)
SKID-8	6	8	900	3,000
SKID-10	8	10	1,050	3,000

When not in use, skid pans and all associated lifting equipment shall be stored in such a way to protect the life of the equipment.



All material must be inspected prior to use! See inspection guidelines on page 67.

SCAFFOLD SQUARE STORAGE RACK



Square racks are designed to hold verticals, diagonals and other irregularly shaped components.

When shipping, the square racks require two (2) pieces of banding to be placed around the base of the rack and the item being carried.

Racks are designed to hold a maximum of 5,000 lbs. of material.

Square racks may be stacked for storage. The strength of the storage surface will determine how many racks can be stacked.

On grass, dirt or other unpacked surfaces, racks should be placed singly. On prepared surfaces, racks can be placed two (2) or three (3) high. On asphalt and three (3) or more inches of concrete, racks may be stacked three (3) or four (4) units high. Racks should not be stacked more than four (4) units high.

Always inspect the surface of the area where racks are stored for any cracking or sinking and inspect the racks for tilting or leaning. Correct any problems immediately.

Square racks are designed so special casters may be placed on the bottom to allow the racks to be easily moved without a forklift.



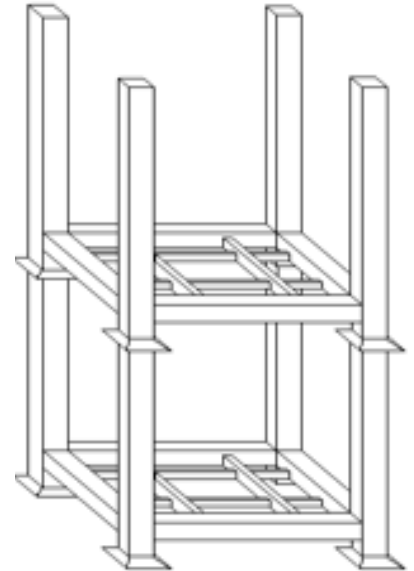
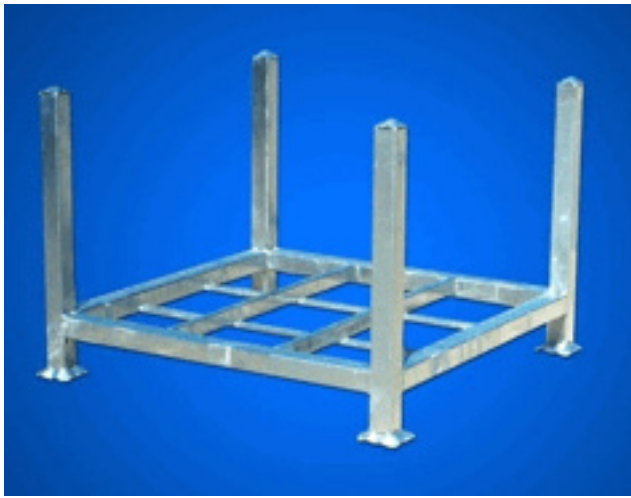
Part Number	Description	Weight (lbs.)	Dimensions (inches) Length x Width x Height
SSR	Square Steel Rack	134	44.25 x 44.25 x 32.25

Note: Do not overload the casters when stacking a rack on top of another rack that uses casters.

Always inspect rack feet for damage before installing casters or loading the rack.

All material must be inspected prior to use! See inspection guidelines on page 67.

SCAFFOLD METAL BOARD STORAGE RACK



Metal board racks are designed to hold metal boards and other irregularly shaped components.

Metal board racks will hold 62 metal boards, 4 feet or longer and 124 metal boards, 32 inches or shorter.

When shipping, the metal board racks require two (2) pieces of banding to be placed around the base of the rack and the item being carried.

Racks are designed to hold a maximum of 5,000 lbs. of material.

Metal board racks may be stacked for storage. The strength of the storage surface will determine how many racks can be stacked.

On grass, dirt or other unpacked surfaces, racks should be placed singly. On prepared surfaces, racks can be placed two (2) or three (3) high. On asphalt and three (3) or more inches of concrete, racks may be stacked three (3) or four (4) units high. Racks should not be stacked more than four (4) units high.

Always inspect the surface of the area where racks are stored for any cracking or sinking and inspect the racks for tilting or leaning. Correct any problems immediately.

Metal board racks are designed so special casters may be placed on the bottom to allow the racks to be easily moved without a forklift.

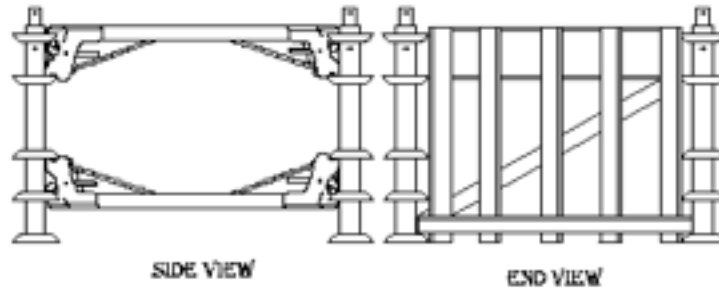
Part Number	Description	Weight (lbs.)	Dimensions (in) Length x Width x Height
SBR	Steel Board Rack	160	59.75 x 47 x 36

Note: Do not overload the casters when stacking a rack on top of another rack that contains casters.

Always inspect rack feet for damage before installing casters or loading the rack.

All material must be inspected prior to use! See inspection guidelines on page 67.

SCAFFOLD HORIZONTAL STORAGE RACK



Horizontal racks are designed for easy storage and inventory of horizontals. Each rack holds 96 horizontals and uses four (4) horizontals for support, for a total of 100 horizontals. To perform a quick inventory simply count the full racks.

When shipping, the horizontal racks require one (1) piece of banding to be placed around the 96 center horizontals.

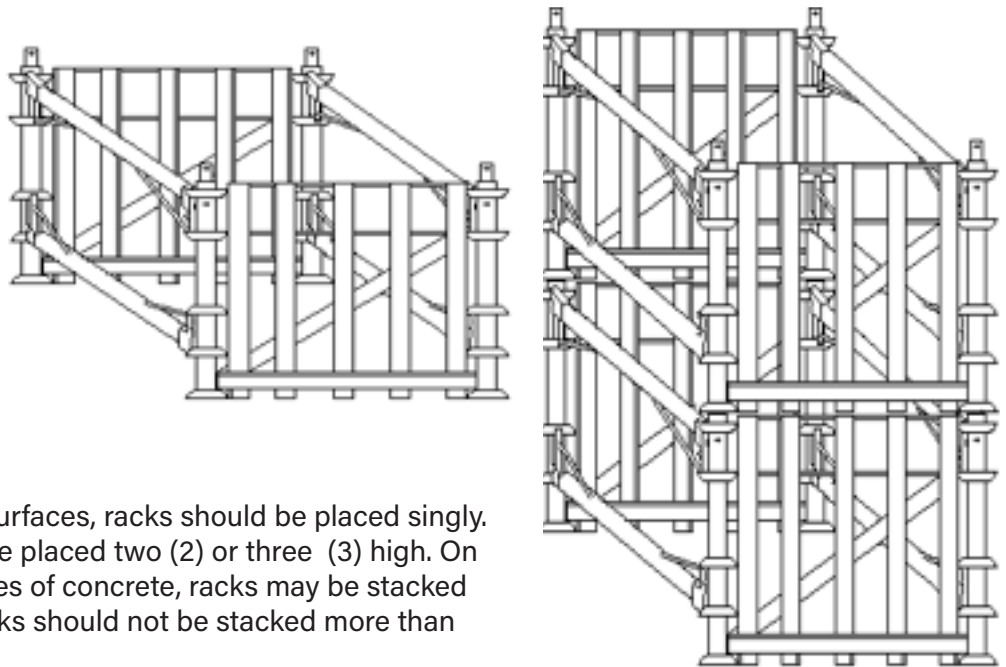
Horizontal racks are designed to hold a maximum of 3,000 lbs. of material.

Horizontal racks are designed to hold only InstantLock 1horizontals.

Horizontal racks may be stacked for storage. The strength of the storage surface will determine how many racks can be stacked.

On grass, dirt or other unpacked surfaces, racks should be placed singly. On prepared surfaces, racks can be placed two (2) or three (3) high. On asphalt and three (3) or more inches of concrete, racks may be stacked three (3) or four (4) units high. Racks should not be stacked more than four (4) units high.

Horizontal racks are designed so casters may be placed on the bottom to allow the racks to be easily moved without a forklift. Horizontal racks **MUST NOT** be stacked when equipped with casters.



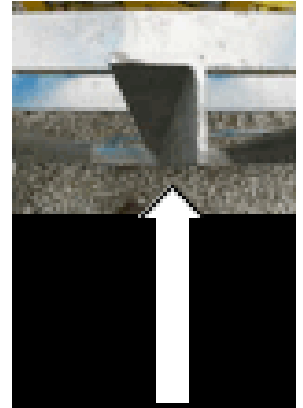
Part Number	Description	Weight (lbs.)	Dimensions (inches) Width x Height
ILHR1	Horizontal Rack	79	44.5 x 38.5

All material must be inspected prior to use! See inspection guidelines on page 67.

SCAFFOLD HORIZONTAL STORAGE RACK

ADDITION OF THE RACK SUPPORT

Caution should be used when assembling or disassembling horizontal racks. The racks are heavy and have rough edges that can cause injury.



Beware Sharp Edges

Care must be taken to make sure a loose rack will not fall. It should be safely supported on the ground or held by another worker during assembly and disassembly.

Always check to ensure the bottom horizontal is securely latched before beginning disassembly. The opposite horizontal rack can fall when the bottom horizontal is released, if the horizontal is not securely latched on the other rack.

When possible, always disassemble racks from the outside.

Whenever assembling or disassembling racks without a rack support foot, **do not leave a single rack standing without support.**



A rack support foot may be added to the bottom of each horizontal rack to help prevent the rack from falling over when assembling and disassembling the racks. The rack foot will make it much harder for the rack to fall in either direction. The rack can still fall over if the ground is not level. The rack must be checked for stability before letting it stand on its own. Care must be taken to only assemble or disassemble racks on level ground.

All material must be inspected prior to use! See inspection guidelines on page 67.

SCAFFOLD STORAGE BASKET



Wire baskets are designed to hold InstantLock 1 casters, ladder brackets, clamps and other small components only.

Wire baskets are designed to hold a maximum weight of 2,000 lbs.

Items should never be stacked above the rim in wire baskets.

When shipping, wire baskets may require a plywood lid to prevent items from bouncing out.

Wire baskets may be stacked for storage. Wire baskets should never be stacked more than two (2) units high.

Part Number	Description	Weight (lbs.)
FWB	Folding Wire Basket	240

All material must be inspected prior to use! See inspection guidelines on page 67.

LIFTING AND MOVING INSTANTLOCK 1

The following general guidelines are provided for lifting and rigging InstantLock 1 scaffold material. These are general guidelines. Users should follow all Federal, State and local rigging guidelines. (See: OSHA – 1926.251, Rigging equipment for material handling, OSHA – 1926.753, Hoisting and rigging, OSHA – 1926 Subpart N, Cranes, Derricks, Hoists, Elevators, and Conveyors, other OSHA and ASME standards as applicable.)

InstantLock 1 racks may be used to hold material while lifting, provided the following guidelines are followed:

1. All material must be evenly balanced in the rack.
2. All material must be secured from sliding. (Two (2) ratchet straps, two (2) wraps of banding, or other approved method of securing the material shall be used.)
3. All material must be secured to the rack. (This can be accomplished by the same strapping/banding required above.)
4. Standard rigging procedures should be used to prevent movement of the straps while lifting the load. (Use of a spreader bar when possible is preferred.)

Note:

1. All OSHA and plant safety regulations governing rigging and material handling must be followed.
2. All loose material must be removed or secured before lifting.
3. Spreader beams must be used, so that the lifting load on all vertical posts is applied in an upward direction.
4. The scaffold must be properly braced to prevent deformation during movement.
5. Scaffold weight loads must be calculated to prevent the overloading of any scaffold or lifting component.
6. All scaffold components (deck boards, etc.) must be secured to the scaffold.

Clamp bolts should have between 40 and 65 lbs. tension. Overtightening could damage the threads, bolt or item the clamp is attached to.

SCAFFOLD MATERIAL LOADING AND SHIPPING GUIDELINES

SAFETY IS ALWAYS OUR NUMBER ONE GOAL AND CONCERN

These are NextGen's company goals regarding the shipment and receipt of InstantLock 1 material. Clients are requested to comply with these common sense requirements when they are preparing scaffold shipments for return to NextGen.

1. Upon completion of the project, NextGen requires that all scaffold material be properly segregated and racked by individual components. Prior to being released for transport, customers must have completed the following actions to correctly prepare the scaffold material for shipment back to NextGen:
 - a.) Material must be properly segregated by size and component.
 - b.) Material must be properly counted and a shipping ticket completed for each truckload.
 - c.) Material must be racked or put into baskets by component.
 - d.) Material must be banded to the rack to ensure it will not shift or break loose while in transit.
 - e.) Advanced copies of shipping tickets must be sent to NextGen.
 - f.) Shipments must be coordinated in advance with our NextGen warehouse.
 - g.) Do not schedule material for shipment until all items have been completed.
2. Have proper client authorization request and release paper work listing material needed.
 - a.) Computer load calculations are completed for total weight verification prior to loading material.
 - b.) Complete initial pre-loading diagrams to ensure how and where material will be placed on truck.
 - c.) Complete all shipment, tractor, trailer and driver inspection paper work.
 - d.) If at all possible, you should always have material pulled and staged prior to truck arrival.
 - e.) For safety reasons, always use a two-man team when loading scaffold material shipments.
3. Do not load trucks early in the morning or late at night and in instances where there is not enough light to properly and safely see after dark.
 - a.) Do not let the tractor operator/driver get in the way while you are loading scaffold material.
 - b.) Require driver to wear hard hat when forklifts are operating during loading and unloading.
4. Take pictures of all incoming and outgoing shipments prior to release of truck.
 - a.) Use a dry erase board or other means to show date, time, ticket number, etc.
 - b.) Ensure both the truck and trailer have current registration tags before loading.
 - c.) Ensure the truck driver has a valid driver's license before loading.
 - d.) Trailer and tractor should have good tires (not bald) on all axles before loading.
 - e.) Ensure the truck driver has all of the required insurance paperwork before loading.
 - f.) Driver should be observed for any obvious FFD impairment problems.
 - g.) If all conditions cannot be properly met, do not load the truck.

SCAFFOLD MATERIAL LOADING AND SHIPPING GUIDELINES



5. Ensure all material is loaded and secured as required for safe handling, loading and shipment.
 - a.) Material should never be free-loaded. It should be planned in advance and weighed accurately.
 - b.) Material must be properly secured/banded.
 - c.) Small items should be put into standard InstantLock 1 baskets or boxes to prevent falling out during transit.
 - d.) Material should be properly segregated by type and size of scaffold components.
 - e.) Material should be properly banded/secured inside of shipping container to prevent movement.
6. When loading requires horizontal racks that are not the same length to be stacked (see pictures above), the following additional guidelines MUST be met:
 - a.) The rack with the longest horizontals must be placed on the truck first.
 - b.) The rack with the shortest horizontals must be placed on top, so that one set of rack feet sit on top of the lower rack's post.
 - c.) Cribbing must be placed on top of the horizontals, under the other set of rack feet.
 - d.) The cribbing must be secured from movement by using cleats, banding or other means.
 - e.) The two racks must be banded together to prevent the top rack from dislodging.
 - f.) When loading requires any other racks, baskets or bundled material that are not the same length to be stacked, cribbing must be used between the racks, baskets or material to ensure it is level and will not shift during transport or unloading.
 - g.) If all of the above conditions cannot be properly met, do not load or ship the material.
7. You should have an independent (two different people) double-check and verify the following:
 - a.) Ensure the truck is not overweight.
 - b.) Maximum material loaded height above the ground must not exceed 13.5 feet.
 - c.) Material loaded must not extend beyond the width of trailer.
 - d.) Never load racks of steel planks or toe boards on the back of the truck, as they can come out easily.
 - e.) Once material is loaded onto the trailer, make sure it is properly secured by the driver.
 - f.) Ensure the correct scaffold material components and sizes are actually on the trailer.
 - g.) Ensure the driver has been given copies of all shipping paperwork before he is released.
 - h.) Ensure the driver fully understands where he is going and when he is expected to arrive.
 - i.) When required, instruct the driver to weigh his truck at the nearest scales to determine if he is overloaded.

SCAFFOLD MATERIAL LOADING AND SHIPPING GUIDELINES

8. Notify the receiving organization that the material has departed and is in transit.
 - a.) Ensure the load will arrive at the designated location during normal working hours/days.
 - b.) Fax a copy of exactly what material is being shipped to NextGen.
 - c.) Verify the location is aware that the shipment is en route and that someone will be there to receive and unload it.
9. Charges for return of InstantLock 1 material not properly sorted and racked.

The goal is for all InstantLock 1 material to be returned from customers in the same manner in which it was shipped. Properly prepared InstantLock 1 shipments make it easier, safer, quicker and more accurate for all involved parties in the physical inventory and return process. If for any reason the InstantLock 1 material is not returned as requested, NextGen will take the following corrective actions:

 - a.) Breaking down any racks or baskets of material that were improperly loaded.
 - b.) Properly re-racking as required by our quality assurance program.
 - c.) Track all of the extra man-hours/handling charges associated with re-racking material in order to store the components long term, awaiting future client orders and shipment.
 - d.) NextGen will invoice the customer for the additional charges incurred with correcting the shipment.
 - e.) NextGen will also invoice the customer for any fees and/or penalties related to improperly loaded or overloaded return shipments assessed to and paid by NextGen.
10. InstantLock 1 material quantity disputes and final inventory reconciliation.
 - a.) Material shipped from the NextGen warehouse to all customers undergoes stringent quantity verification. All outgoing and incoming transactions are subject to two independent verification counts. If needed, a third independent count is performed to reconcile any differences before final shipping or receipt.
 - b.) All shipments to customers should be verified immediately upon receipt of the material. Any discrepancies must be reported to the NextGen warehouse immediately, before any material is utilized. NextGen will have 24 hours after receiving a discrepancy notice to make arrangements for an independent verification, or to submit pertinent information. During this period the material must be segregated, not moved or utilized for erection, allowing NextGen the ability to respond .
 - c.) Material will not be subjected to rent during this period. At the end of this period, if NextGen does not independently verify the counts, the material may be used and the quantities reported by the client will be utilized in the inventory.
 - d.) Upon receipt of the material at the NextGen warehouse, the scaffold material is again subjected to two independent verification counts, and if needed a third reconciling count. Any discrepancies between the counts and the quantity reflected on the client-prepared shipping ticket faxed to the NextGen warehouse will be reported to the client immediately. The client will have 24 hours after receiving a discrepancy notice to make arrangements for an independent verification. NextGen will segregate and hold the material awaiting the client's decision. After this period, if the client does not independently verify the counts, the material will be returned to stock and the NextGen counts will be utilized in the inventory.
 - e.) At the end of the project, all concerned parties will review the final inventory status, which is based on each shipping ticket (inbound and outbound). NextGen will invoice the client for any material shortages or damages which would be included as part of the final closeout invoice.

Always call NextGen in advance of shipping if you have any questions on the above guidelines. (832) 429-0786

KEY RULES

The purpose of adding the “Key Rules Section” to our InstantLock 1 Tech Manual was to have a common place to collect valuable information on lessons learned and scaffold erection practices that would be useful to end-users to make their work activities safer, easier and more efficient.

SAFETY IS ALWAYS NUMBER ONE

1. Always keep the most up-to-date copy of the InstantLock 1 Technical Specification Manual nearby. Visit our website, where it can be downloaded as needed. www.NextGenScaffold.com
2. When constructing, modifying or removing InstantLock 1 material, it is very important when handling the components in the field to always wear the proper PPE. Leather gloves are especially important to prevent accidental hand injuries that could be caused by the positive-locking trigger mechanism on each end of the horizontal bars, which are a potential pinch point.
3. When building towers out of InstantLock 1 material, utilize the same building techniques that you have always used with tube and clamp and other modular systems for bracing and board deck wrap requirements.
4. Take the time during your initial jobsite walkdown to gather the required information and measurements to make a detailed and accurate InstantLock 1 cut list for pulling material.
5. Always refer to the InstantLock 1 technical specification manual to get the exact load ratings.
6. InstantLock 1 material is typically more expensive than tube and clamp and should only be cut as a last resort. There will be invoices for damaged material.
7. Always start tower erection with adjustable screw jacks. You must assume that the floor is not level. Always place screw jacks in the middle of threads or approximately 6 inches off the ground.
8. Always do a visual inspection of the horizontal bars as the scaffold is being constructed to make sure the triggers are properly locked in place and that they are in the up position.
9. Random field testing of InstantLock 1 components by unqualified personnel is not allowed. Any concerns, issues or questions with supplemental testing should always be referred to the manufacturing facility to the attention of Lance Smith at (443) 293-6352.
10. Use a level to get the tower totally plumb/level at the very beginning of the build, on the very first base wrap.
11. Always have two hands on the components at any one time, especially when setting another set of vertical legs on an existing set of vertical legs.
12. When setting a vertical leg on top of an existing leg, one hand shall support the upper leg, while the other hand depresses the spring clip. Then, slowly lower the top vertical leg down. Slightly twist the vertical until the spring clip locks into place. Do not drop the upper vertical leg onto the lower vertical leg coupling pin.
13. To remove vertical legs that are connected, depress spring clip, twist the upper vertical leg approximately 20 degrees, and with both hands lift to remove from lower vertical leg coupling pin.
14. All sizes of bearers and runners (horizontal bars) are 2 inches shorter than the actual size, allowing for center-to-center measurement between vertical leg assemblies.

KEY RULES

15. Two- (2-) through seven- (7-) foot InstantLock 1 horizontal bars are all load-bearing ledgers. All other InstantLock 1 horizontal bars are **NON**-load-bearing runners only.
16. You can board-deck out to eight- (8), nine- (9) and ten- (10) foot runners, as long as you install one (1) diagonal brace back to the leg within 18 inches from the center of the runner.
17. When passing (i.e., manual chain line) any type of telescoping brace (adjustable handrail or diagonal brace), ensure components are secured together by a clip prior to upward or downward movement. This applies to adjustable toe boards as well.
18. Diagonal swivel braces typically require four (4) nodes between the top connector on one end and the bottom connector on the other end—four (4) nodes between the two (2) ends. Do not exceed a maximum of four (4) node points (6' 6") spacing between horizontal board deck wraps from the top of lower horizontal bar wrap to the top of the next horizontal bar wrap.
19. Standard handrail corner posts are always comprised of 3'-3" vertical leg assemblies.
20. When installing telescoping toe boards, make sure you install the toe board end connector in the unlocked position to the vertical leg and tighten the half clamp just enough so that it won't fall off. After you have all the toe boards installed into the toe board end connector, then line everything up and tighten the half clamp as the very last step.
21. Clean verticals (no rosettes) are used to get through very tight places (cable trays, piping runs, etc) where standard vertical legs with rosettes will not fit. Clean verticals must not exceed 69".
22. When adding a leg in the middle of a horizontal bearer or using an intermediate horizontal adapter on top of a side bracket or cantilever, you cannot exceed 25 lbs./sq. ft. unless it is supported back to a primary leg with a second diagonal brace.
23. When using truss assembly lifting rigs, always ensure you use a nylon strap that is at least four (4) inches wide or greater.
24. To properly install swing gates, rope pulley hoists and SRL adapters, always connect these particular InstantLock 1 components to the vertical leg that goes all the way to the ground for stability purposes.
25. When installing vertical access ladders, always remember the ears on the ladder bracket always point up and are installed on the ladder first, then attached to the vertical post. Additionally, always install the vertical ladder with the male end of the ladder pointed up and the female end pointed down.
26. When installing a rope pulley hoist above the top handrail, always install another complete wrap of horizontal bars at least four (4) feet above top handrail to tie in with the rest of the tower.
27. The approved tie-off area for fall protection is above the top handrail, where two (2) horizontal bars connect to a vertical leg. Refer to the technical manual on how to use horizontal bars, which are now approved for tie-off purposes.
28. When installing an SRL adapter above the top handrail, you must always install another entire board deck wrap at least four (4) feet above the top handrail to tie in with the rest of tower.
29. When building hanging InstantLock 1 towers, ensure you install a safety clamp onto the vertical leg directly above the InstantLock 1 horizontal bar that will be holding the weight of the leg going down, or use a backup clamp.

KEY RULES

30. Always use handrails and step in the center of the treads. Always walk down the stair tower, do not run, do not skip any steps.
31. Clamp bolts should have between 40 and 65 lbs. tension. Overtightening could damage the threads, bolt or item the clamp is attached to.
32. Never use rigid beam clamps or swivel beam clamps to hang or support a scaffold with the bolts. These types of clamps should only be used for bracing a scaffold or with the flat portion supporting the load.
33. It is a very sound work practice to get the truck driver to go directly to the closest CAT certified weigh scale after they leave the jobsite to double-check the total loaded weight. This way if the truck is overweight, the driver can quickly return to the site to have material removed to lower the gross vehicle weight, bringing it into compliance with the Federal DOT requirements.
34. When shipping InstantLock 1 material, take adequate time upfront and be careful to make sure that it is always properly racked, stacked and banded prior to loading onto the flat bed trailer to prevent inadvertent shifting during transit.
35. When shipping InstantLock 1 material, make sure use the proper racks and baskets. Do not make your own temporary racks out of miscellaneous scaffold parts that could come apart when loaded, unloaded or during transit, which could result in possible injury to personnel or property.
36. When loading racks and baskets of InstantLock 1 material onto flat bed trailers, take adequate time to make sure items are properly secured to the flat bed trailer using multiple ratchet tie down straps for each level and row of baskets and racks to prevent shifting during transit.
37. When unloading racks and baskets of InstantLock 1 material off of flat bed trailers, inspect the load to see if any items have shifted during transit prior to removing any of the ratchet tie down straps. Ensure personnel do not stand below the rows of racks being unstrapped, in case any material comes loose and falls off the truck.
38. When loading a truck and stacking racks, baskets or bundles of material that are not the same length, use the proper cribbing to ensure the load is level and will not shift during transit or unloading.
39. Casters are the easiest item to overload when building a rolling scaffold. Scaffolds should be limited to two (2) work decks, 15 feet high when using 8-inch casters and three (3) work decks, 21 feet high when using 12-inch casters.
40. Always inspect horizontal bars prior to installation to ensure the trigger and spring are installed properly and functioning correctly. If you find an end connector with a broken trigger or weak spring, do not use that component. Pull it out of service and tag it for repair. Additionally, when installing ledgers or bearers, do not let go of the bar until you verify that it is properly locked into place and that the trigger is resting in the up position.
41. Always remember that when constructing InstantLock 1 lifting rigs—structures that use I-beams as part of a trolley movement system for transporting live loads—this application was only designed for use with a W-6 I-beam only. No other size I-beam is authorized for use in a trolley system because they will not properly fit into the trolley strap kit and could cause a potential failure.

KEY RULES

42. When building lifting rigs or trolley movement systems, never utilize standard intermediate horizontal adapters to hold the up the truss that will be the load bearing component where the chain fall hoist is attached. Intermediate horizontal adapters were not designed for this purpose and they can fail, causing the accidental drop of a load.
43. If you have questions regarding the contents of the InstantLock 1 Technical Manual; suggestions on new scaffold component designs; or any issues, concerns or problems with an InstantLock 1 component, please call Lance Smith, Design Engineer at (443) 293-6352.

CODE OF SAFE PRACTICES

NextGen recognizes that the scaffold industry is considered “inherently dangerous.” It is the intent of this section of the technical manual to provide pertinent guidelines for the proper, safe use, and maintenance of scaffold components and structures. These guidelines are generalities and do not intend to cover every specific situation or component, they do not purport to be all-inclusive, nor supplant other regulatory and precautionary measures for the safe use of scaffold in usual or unusual conditions. The primary codes or regulations are those promulgated by OSHA. They are Federal laws intended to provide a safe workplace by providing minimum reference guidelines upon which related activities should be carried out. It shall be the responsibility of all users/erectors to avail himself and to comply with all applicable codes, regulations, standard and common sense practices designed to purport safety in the erection, use and dismantling of scaffold.

General Guidelines Prior to Use of Scaffolding

1. Jobsite conditions within the boundaries of a refinery, chemical plant, manufacturing plant, pulp and paper mill, power plant or construction site may vary, and each presents unique circumstances. Efficient and proper planning of each job must be done by a competent, qualified person: OSHA 1926.451 (a) (3) No scaffold shall be erected, moved, dismantled or altered except under the supervision of competent persons.
2. The jobsite should be inspected and supervision be familiarized with proper access, proximity of power or process lines, obstructions, ground conditions, openings or pits, strength of supporting structure(s), interference with other workers, overhead protection, wind/weather protection and environmental hazards. These conditions must be evaluated and adequately provided for. Also, consider the protection of people who will be passing or working beneath or around scaffold structures.
3. The work to be done and the number of persons involved must be determined to properly calculate the loading. The total loads and the supporting ground or structure must be considered when designing a scaffold structure—leg spacing, adequate sills, horizontal bracing, etc.
4. Stationary scaffolds over 125 feet in height and rolling towers over 60 feet in height must be designed by a professional engineer.
5. All equipment must be inspected to ensure it is in good condition. Damaged or deteriorated equipment should not be used and must be removed from service.
6. Scaffolds must be designed and used in accordance with the manufacturer's specifications and recommendations. Do not intermix different brands of scaffold, unless authorized by the manufacturer, or plan to use materials in any manner other than what the manufacturer intended their design to accommodate.
7. When planning the job, remember to use common sense, sound judgment and qualified reasoning for the following:
 - a.) Provide adequate foundations.
 - b.) Provide proper access.
 - c.) Provide proper bracing.
 - d.) Provide proper handrails and toe boards.
 - e.) Provide adequate decking materials.
 - f.) Design scaffold structure on components to adequately compensate for all intended loads. Use only qualified personnel who are in good shape—emotionally and physically.
8. Read, understand and comply with all Federal (OSHA), State, and local codes and regulations pertaining to scaffold erection and removal.
9. When covering scaffold with plastic, tarps or other types of solid material the user must consider all wind and/or snow loading. NextGen recommends that all users consult with an engineer to ensure the proper bracing for the maximum expected wind or snow loads.

CODE OF SAFE PRACTICES

GIVE TO SCAFFOLD ERECTOR AND USER OR POST ON JOB

CODE OF SAFE PRACTICES FOR
FRAME SCAFFOLDS, SYSTEM SCAFFOLDS, TUBE AND CLAMP SCAFFOLDS AND ROLLING SCAFFOLDS
DEVELOPED FOR INDUSTRY BY SCAFFOLD INDUSTRY ASSOCIATION, INC.

It shall be the responsibility of all users to read and comply with the following common sense guidelines which are designed to promote safety in the erecting, dismantling and use of scaffolds. These guidelines do not purport to be all-inclusive, nor supplant or replace other additional safety and precautionary measures to cover usual or unusual conditions. If these guidelines in any way conflict with any Federal, State, local or other government statute or regulation, said statute or regulation shall supersede these guidelines and it shall be the responsibility of each user to comply therewith.

General Guidelines

Post these scaffolding safety guidelines in a conspicuous place and be sure that all persons who erect, dismantle or use scaffolding are aware of them.

1. Follow all Federal, State, and local codes, ordinances and regulations pertaining to scaffolding.
2. Survey the jobsite. A survey shall be made of the jobsite for hazards, such as untamped earth fills, ditches, debris, high-tension wires, unguarded openings and other hazardous conditions created by other trades. These conditions should be corrected or avoided as noted in the following sections.
3. Inspect all equipment before using. Never use any equipment that is damaged or defective in any way. Remove it from the jobsite.
4. Scaffolds must be erected in accordance with design and/or manufacturer's recommendations.
5. Do not erect, dismantle or alter a scaffold unless under the supervision of a qualified person.
6. Do not abuse or misuse the scaffold equipment.
7. Erected scaffolds should be continually inspected by users to be sure that they are maintained in safe condition. Report any unsafe condition to your supervisor.
8. Never take chances! If in doubt regarding the safety or use of the scaffold, consult your scaffold supplier.
9. Never use equipment for purposes or in ways for which it was not intended.
10. Do not work on scaffolds if your physical condition is such that you feel dizzy or unsteady in any way.

Guidelines for Erection and Use of Scaffolds

1. Scaffold bases must be set on an adequate sills or pads to prevent slipping or sinking, and fixed where required. Any part of a building or structure used to support the scaffold, shall be capable of supporting the maximum intended load to be applied.
2. Use adjusting screws or other approved methods, instead of blocking to adjust to uneven grade conditions.

CODE OF SAFE PRACTICES

3. Bracing, leveling and plumbing of frame scaffolds
 - a.) Plumb and level all scaffolds as the erection proceeds. Do not force frames or braces to fit—level the scaffold until proper fit can easily be made.
 - b.) Each frame or panel shall be braced by horizontal bracing, cross bracing, diagonal bracing or any combination thereof for securing vertical members together laterally. All brace connections shall be made secure, in accordance with the manufacturer's recommendations.
4. Bracing, leveling and plumbing of tube and clamp and system scaffolds
 - a.) Posts shall be erected plumb in all directions, with the first level of runners and bearers positioned as close to the base as feasible. The distance between bearers and runners shall not exceed manufacturer's recommended procedures.
 - b.) Plumb, level and tie all scaffolds as erection proceeds.
 - c.) Fasten all couplers and/or connections securely before assembly of next level.
 - d.) Vertical and/or horizontal diagonal bracing must be installed according to manufacturer's recommendations.
5. Tie continuous (running) scaffolds to the wall or structure at each end and at least every 30 feet of length when scaffold height exceeds the maximum allowable free-standing dimension. Begin ties or stabilizers when the scaffold height exceeds that dimension, and repeat at vertical intervals not greater than 26 feet. The top anchor shall be placed no lower than four (4) times the base dimension from the top of the completed scaffold. Anchors must prevent scaffold from tipping into or away from wall or structure. Stabilize circular or irregular scaffolds in such a manner that completed scaffold is secure and restrained from tipping. When scaffolds are partially- or fully-enclosed or subjected to overturning loads, specific precautions shall be taken to ensure the frequency and accuracy of ties to the wall and structure. Due to increased loads resulting from wind or overturning loads the scaffolding component to which ties are subjected shall be checked for additional loads.
6. When free-standing scaffold towers exceed four (4) times their minimum base dimension vertically, they must be restrained from tipping. (CAL/OSHA and some government agencies require stricter ratio of 3 to 1.)
7. Do not erect scaffolds near electrical power lines unless proper precautions are taken. Consult the power service company for advice.
8. A means of access to all platforms shall be provided.
9. Do not use ladders or makeshift devices on top of scaffolds to increase the height.
10. Provide guardrails and mid-rails at each working platform level where open sides and ends exist, and toe boards where required by code.
11. Brackets and cantilevered platforms
 - a.) Brackets for system scaffolds shall be installed and used in accordance with manufacturer's recommendations.
 - b.) Brackets for frame scaffolds shall be seated correctly, with side bracket parallel to the frames and end brackets at 90 degrees to the frames. Brackets shall not be bent or twisted from normal position. Brackets (except mobile brackets designed to carry materials) are to be used as work platforms only and shall not be used for storage of material or equipment.
 - c.) Cantilevered platforms shall be designed, installed and used in accordance with manufacturer's recommendations.
12. All scaffolding components shall be installed and used in accordance with the manufacturer's recommended procedure. Components shall not be altered in the field. Scaffold frames and their

CODE OF SAFE PRACTICES

components manufactured by different companies shall not be intermixed, unless the component parts readily fit together and the resulting scaffold's structural integrity is maintained by the user.

13. Planking

- a.) Working platforms shall cover scaffold bearer as completely as possible. Only scaffold grade wood planking or fabricated planking and decking meeting scaffold use requirements shall be used.
- b.) Check each plank prior to use to be sure plank is not warped, damaged, or otherwise unsafe.
- c.) Planking shall have at least a 12-inch overlap and extend 6 inches beyond center of support, or be cleated or restrained at both ends to prevent sliding off supports.
- d.) Solid-sawn lumber, LVI (laminated veneer lumber) or fabricated scaffold planks and platforms (unless cleated or restrained) shall extend over their end supports not less than 6 inches nor more than 18 inches. This overhang should not be used as a work platform.

14. For putlogs and trusses the following additional guidelines apply:

- a.) Do not cantilever or extend putlogs/trusses as side brackets without thorough consideration for loads to be applied.
- b.) Putlogs/trusses should be extended at least 6 inches beyond point of support.
- c.) Place recommended bracing between putlogs/trusses when the span of putlog/truss is more than 12 feet.

15. For rolling scaffolds, the following additional guidelines apply:

- a.) Riding a rolling scaffold is very hazardous. The Scaffold Industry Association does not recommend, nor encourage this practice. However, if you choose to do so, be sure to follow all State, Federal or other governmental guidelines.
- b.) Casters with plain stems shall be attached to the panel or adjustment screw by pins or other suitable means.
- c.) No more than 12 inches of the screw jack shall extend between the bottom of the adjusting nut and the top of the caster.
- d.) Wheels or casters shall be provided with a locking means to prevent caster rotation and scaffold movement and kept locked.
- e.) Joints shall be restrained from separation.
- f.) Use horizontal diagonal bracing near the bottom and at 20-foot intervals measured from the rolling surface.
- g.) Do not use brackets or other platform extensions without compensating for the overturning effect.
- h.) The platform height of a rolling scaffold must not exceed four (4) times the smallest base. Government agencies require a stricter ratio of 3:1).
- i.) Cleat or secure all planks.
- j.) Secure or remove all materials and equipment from platform before moving.
- k.) Do not attempt to move a rolling scaffold without sufficient help. Watch out for holes in floor and overhead obstruction. Stabilize against tipping.

16. Safe use of scaffold

- a.) Prior to use, inspect scaffold to ensure it has not been altered and is in safe working condition.
- b.) Erected scaffolds and platforms should be inspected continuously by those using them.
- c.) Exercise caution when entering or leaving a work platform.
- d.) Do not overload scaffold. Follow manufacturer's safe working load recommendations.
- e.) Do not jump onto planks or platforms.
- f.) Do not use ladders or makeshift devices on top of working platforms to increase the height or provide access from above.
- g.) Climb in access areas only and USE BOTH HANDS.

CODE OF SAFE PRACTICES

When Dismantling Scaffolding the Following Additional Guidelines Apply:

1. Check to ensure scaffolding has not been structurally altered in a way which would make it unsafe and, if it has, reconstruct where necessary before commencing with dismantling procedures. This includes all scaffold ties.
2. Visually inspect planks prior to dismantling to be sure they are safe.
3. Consideration must be given as to the effect removal of a component will have on the rest of the scaffold prior to that component's removal.
4. Do not accumulate excess components or equipment on the level being dismantled.
5. Do not remove ties until scaffold above has been removed (dismantled).
6. Lower dismantled components in an orderly manner. Do not throw off of scaffold.
7. Dismantled equipment should be stockpiled in an orderly manner.
8. Follow erection procedures and user manuals.

These safety guidelines (Codes of Safe Practice) set forth common sense procedures for safely erecting, using and dismantling scaffolding equipment. However, equipment and scaffolding systems differ, and accordingly, reference must always be made to the instructions and procedures of the supplier and /or manufacturer of the equipment.

Since field conditions vary and are beyond the control of the Scaffold Industry Association, safe and proper use of scaffolding is the sole responsibility of the user.

OSHA COMPLIANCE OF INSTANTLOCK 1

All InstantLock 1 equipment can be used to construct scaffolds that are 100% compliant with OSHA regulations.

It is important to understand that OSHA does not regulate how scaffold material is manufactured. The manufacture of scaffold material is covered by ANSI and ASTM specifications. OSHA 1926.450-453,1053 governs the construction of scaffolds using different types of scaffold material. The only restrictions that OSHA places on scaffold material are a 4:1 safety factor and loading values for decks, handrails and ladders.

When InstantLock 1 material is assembled according to the loading and assembly requirements in the InstantLock 1 Technical Manual the completed scaffold will meet OSHA regulations.

This document is an explanation of how InstantLock 1 material meets the OSHA 1926.450-453,1053 documents.

Ultimate Load

The load values listed in our technical manual reflect all InstantLock 1 components have been tested to a minimum safety factor of 4:1.

1.A.) OSHA Standard requires a 4:1 safety factor for scaffold material that does not contain suspension rope.

1926.451 (a)(1)

Except as provided in paragraphs (a)(2), (a)(3), (a)(4), (a)(5) and (g) of this section, each scaffold and scaffold component shall be capable of supporting, without failure, its own weight and at least four (4) times the maximum intended load applied or transmitted to it.

Section (a)(2) refers to counterweights, section (a)(3) and (a)(4), suspension rope, section (a)(5) scaffold hoist and (g) handrails.

InstantLock 1 material is tested to a better than 4:1 safety factor. ISO 9001-2000 test documentation is available upon request.

2.A.) The OSHA standard for handrails is 200 lbs.

1926.451(g)(1)(iv)

Each employee on a self-contained adjustable scaffold shall be protected by a guardrail system (with minimum 200 lbs. top rail capacity) when the platform is supported by the frame structure, and by both a personal fall arrest system and a guardrail system (with minimum 200 lbs. top-rail capacity) when the platform is supported by ropes.

All InstantLock 1 handrails exceed this value.

3.A.) OSHA provides for three (3) deck-loading values 25-lb/sq ft, 50-lb/sq ft and 75-lb/sq ft.

Index to Appendix A for Subpart L

1. (c) Fabricated planks and platforms may be used in lieu of solid sawn wood planks. Maximum spans for such units shall be as recommended by the manufacturer based on the maximum intended load being calculated as follows:

OSHA COMPLIANCE OF INSTANTLOCK 1

Rated Load Capacity	Intended Load
Light-Duty	25 lbs. per square foot applied uniformly over the entire span area.
Medium-Duty	50 lbs. per square foot applied uniformly over the entire span area
Heavy-Duty	75 lbs. per square foot applied uniformly over the entire span area

Note: Platform units used to make scaffold platforms intended for light-duty use shall be capable of supporting at least 25 lbs. per square foot applied uniformly over the entire unit-span area, or a 250-pound point load placed on the unit at the center of the span, whichever load produces the greater shear force.

4.A) The required load on stairs and ladders as defined by OSHA is two (2) loads of 250 lbs.

1926.1053

(a)(1) Ladders shall be capable of supporting the following loads without failure:

(a)(1)(i) Each self-supporting portable ladder: At least four (4) times the maximum intended load, except that each extra-heavy-duty type 1A metal or plastic ladder shall sustain at least 3.3 times the maximum intended load. The ability of a ladder to sustain the loads indicated in this paragraph shall be determined by applying or transmitting the requisite load to the ladder in a downward vertical direction. Ladders built and tested in conformance with the applicable provisions of Appendix A of this subpart will be deemed to meet this requirement.

(a)(1)(ii) Each portable ladder that is not self-supporting: At least four (4) times the maximum intended load, except that each extra-heavy-duty type 1A metal or plastic ladders shall sustain at least 3.3 times the maximum intended load. The ability of a ladder to sustain the loads indicated in this paragraph shall be determined by applying or transmitting the requisite load to the ladder in a downward vertical direction when the ladder is placed at an angle of 75 1/2 degrees from the horizontal. Ladders built and tested in conformance with the applicable provisions of appendix A will be deemed to meet this requirement.

(a)(1)(iii) Each fixed ladder: At least two (2) loads of 250 lbs. (114 kg) each, concentrated between any two consecutive attachments (the number and position of additional concentrated loads of 250 lbs. (114 kg) each, determined from anticipated usage of the ladder, shall also be included), plus anticipated loads caused by ice buildup, winds, rigging, and impact loads resulting from the use of ladder safety devices. Each step or rung shall be capable of supporting a single concentrated load of at least 250 lbs. (114 kg) applied in the middle of the step or rung. Ladders built in conformance with the applicable provisions of appendix A will be deemed to meet this requirement.

InstantLock 1 ladders and stairs have been tested to meet the above required loads.

OSHA COMPLIANCE AND MAINTENANCE OF INSTANTLOCK 1

All InstantLock 1 equipment can be used to construct scaffolds that are 100% compliant with OSHA regulations.

When InstantLock 1 material is assembled and maintained using the requirements in this InstantLock 1 Technical Manual, the completed scaffold will meet the OSHA regulations.

The following sections from the OSHA 1926.450-453,1053 documents must be followed by the end-user to ensure all scaffolds are correctly constructed and all scaffold components correctly installed and maintained.

1926.454

(b) The employer shall have each employee who is involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting a scaffold trained by a competent person to recognize any hazards associated with the work in question. The training shall include the following topics, as applicable:

(b)(1) The nature of scaffold hazards,

(b)(2) The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold in question,

(b)(3) The design criteria, maximum intended load-carrying capacity and intended use of the scaffold,

(b)(4) Any other pertinent requirements of this subpart.

1926.451

(f)(3) Scaffolds and scaffold components shall be inspected for visible defects by a competent person before each work shift, and after any occurrence which could affect a scaffold's structural integrity.

(f)(4) Any part of a scaffold damaged or weakened such that its strength is less than that required by paragraph (a) of this section shall be immediately repaired or replaced, braced to meet those provisions, or removed from service until repaired.

1926.451

(d)(10) Ropes shall be inspected for defects by a competent person prior to each work-shift and after every occurrence which could affect a rope's integrity. Ropes shall be replaced if any of the following conditions exist:

(d)(10)(i) Any physical damage which impairs the function and strength of the rope.

(d)(10)(ii) Kinks that might impair the tracking or wrapping of rope around the drum(s) or sheave(s).

(d)(10)(iii) Six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay.

(d)(10)(iv) Abrasion, corrosion, scrubbing, flattening or peening causing loss of more than one-third of the original diameter of the outside wires.

(d)(10)(v) Heat damage caused by a torch or any damage caused by contact with electrical wires.

(d)(10)(vi) Evidence that the secondary brake has been activated during an over-speed condition and has engaged the suspension rope.

OSHA COMPLIANCE OF INSTANTLOCK 1

1926.451

(d)(12) When wire rope clips are used on suspension scaffolds: (d)(12)(i) There shall be a minimum of 3 wire rope clips installed, with the clips a minimum of 6 rope diameters apart,

(d)(12)(ii) Clips shall be installed according to the manufacturer's recommendations,

(d)(12)(iii) Clips shall be re-tightened to the manufacturer's recommendations after the initial loading,

(d)(12)(iv) Clips shall be inspected and re-tightened to the manufacturer's recommendations at the start of each work shift thereafter,

(d)(12)(v) U-bolt clips shall not be used at the point of suspension for any scaffold hoist,

(d)(12)(vi) When U-bolt clips are used, the U-bolt shall be placed over the dead end of the rope, and the saddle shall be placed over the live end of the rope.

1926.1053

(b)(15) Ladders shall be inspected by a competent person for visible defects on a periodic basis and after any occurrence that could affect their safe use.

1926.1060

(a) The employer shall provide a training program for each employee using ladders and stairways, as necessary. The program shall enable each employee to recognize hazards related to ladders and stairways, and shall train each employee in the procedures to be followed to minimize these hazards.

(a)(1) The employer shall ensure each employee has been trained by a competent person in the following areas, as applicable:

(a)(1)(i) The nature of fall hazards in the work area,

(a)(1)(ii) The correct procedures for erecting, maintaining, and disassembling the fall protection systems to be used,

(a)(1)(iii) The proper construction, use, placement, and care in handling of all stairways and ladders,

(a)(1)(iv) The maximum intended load-carrying capacities of ladders, and

(a)(1)(v) The standards contained in this subpart.

During manufacture, InstantLock 1 goes through a very intensive inspection program. Each part is handled and inspected two (2) times. Items are then randomly selected for non-destructive testing and a final inspection is performed. Further visual inspection is performed as the material is loaded for shipment to any jobsite.

Even with this intensive inspection system, it is still the responsibility of the end-user to ensure each piece of scaffold material installed is free of defects.

SCAFFOLD INSPECTION GUIDELINES

Scaffolds are usually built by one craft group and then work is performed on and around the scaffold by many different craft groups. During normal use, it is possible that scaffold components will become damaged. The following are general guidelines to aid the end-user in identifying potential problems with InstantLock 1 material. This list is by no means all-inclusive, and is provided only as a general guide.

All components must be checked every time they are used, prior to installation or removal, for any visible damage, missing or broken welds, deformed or dented parts that may affect the strength of the item, saw marks, welding burn marks, excessive rust or chemical damage. Material must be removed from service any time rust or chemical damage has affected the strength or fit of the material. This is especially critical with the trigger and spring assembly.

End-users should immediately contact **Next Generation Scaffold Services at (832) 429-0786** regarding any abnormal issues or concerns.

- 1. For all items with end connectors**, the end connector must be undamaged and the trigger unbroken. Look for missing bolts or nuts that hold in the trigger or spring. Examine the trigger mechanism and ensure the trigger and spring are functioning correctly. Check to ensure the trigger/spring is free of weld splatter, gunnite and other products which could affect the smooth operation of the trigger/spring. Ensure the fit of the end connector to the vertical post is not excessively loose due to damage to the end connector.
- 2. Intermediate horizontal adapters** must be free of any visible damage, missing or broken welds on the rosettes, bent or deformed rosettes, bent or deformed top plate, missing or bent top pin. The part must also be free from any saw marks, welding burn marks, or other damage which may affect the strength of the member.
- 3. Verticals** must be free of any visible damage, missing or broken welds on the rosettes, bent or deformed rosettes, or bent or deformed tubing. The tubing must also be free of any saw marks, welding burn marks, large dents or other damage which may affect the strength of the member.
- 4. Shoring posts** require special attention because of the loads they are required to support. They must be free of any visible damage, missing or broken welds on the rosettes, bent or deformed rosettes, or bent or deformed tubing. The tubing must also be free of any saw marks, welding burn marks, large dents or other damage which may affect the strength of the member. The members must be checked to ensure they are straight and plumb.
- 5. Shoring jacks and shoring heads** require the same attention as the shoring post. Additionally, the screw connections must be checked for broken welds or damaged threads.
- 6. Vertical adapters** must be must be free of any visible damage. The tubing must also be free of any saw marks, welding burn marks, large dents or other damage which may affect the strength of the member.
- 7. Horizontals** must be free of any visible damage, missing or broken welds on the end connectors or bent or deformed tubing. The tubing must also be free of any saw marks, welding burn marks, large dents or other damage which may affect the strength of the member.
- 8. Adjustable bearers** must be free of any visible damage, missing or broken welds on the end connectors or bent or deformed tubing. The tubing must also be free of any saw marks, welding burn marks, large dents or other damage which may affect the strength of the member. The locking bolt must be installed and working correctly to prevent movement.

SCAFFOLD INSPECTION GUIDELINES

9. **Adjustable braces, adjustable swivel braces and adjustable combination braces** must be free of any visible damage, bent or deformed tubing, missing or broken welds on the end connectors or clamp assemblies. The tubing must also be free of any saw marks, welding burn marks, large dents or other damage which may affect the strength of the member. The clamp rivet must be examined for wear or bending and the bolt threads must be free of defects. Locking pins must be installed and functional.
10. **Diagonal pin braces** must be free of any visible damage, bent or deformed tubing, missing or broken welds on the clamp assemblies. The tubing must also be free of any saw marks, welding burn marks, large dents or other damage which may affect the strength of the member. The clamp rivet must be examined for wear or bending and the bolt threads must be free of defects.
11. **Side brackets** must be free of any visible damage, missing or broken welds on the end connectors or rosettes, bent or deformed tubing. The tubing must also be free of any saw marks, welding burn marks, large dents or other damage which may affect the strength of the member. Special attention must be placed on inspecting the end connector where it fits into the rosette and the trigger to ensure it fits snugly onto the vertical rosettes, and that there is no visible damage or bending.
12. **Castors** must be free of any visible damage. The caster must be round, the pin assembly must be straight, and all bolts and nuts must be present.
13. **Safety outriggers** must be free of any visible damage, missing or broken welds on the end connectors or rosettes, bent or deformed tubing. The tubing must also be free of any saw marks, welding burn marks, large dents or other damage which may affect the strength of the member.
14. **Screw jacks and swivel jacks** must be checked for proper operation and for damaged threads or nuts.
15. **Metal boards** must be free of any visible damage, creases in the board surface, bending of the support runners, excessive rust or chemical damage, missing or broken welds on the cleats. Board strength is directly affected by the cleats and the side rails. Ensure the cleats are undamaged and all welds are intact, and ensure the side rails are straight and undamaged.
16. **Trusses** must be free of any visible damage, missing or broken welds on the end connectors or bent or deformed tubing. The tubing must also be free of any saw marks, welding burn marks, large dents or other damage which may affect the strength of the member.
17. **Trolley beams** must be free of any visible damage. They must not contain saw marks, welding burn marks, large dents or other damage which may affect the strength of the member. The bottom web, which supports the trolley, must be free of dents or bends.
18. **Ladders** must be free of any visible damage, missing or broken welds on the rungs, bent or deformed tubing or rungs. The side rails and rungs must also be free of any saw marks, welding burn marks, large dents or other damage which may affect the strength of the members.
19. **Ladder brackets** must be free of any visible damage. The clamp rivet must be examined for wear or bending and the clamp bolt threads must be free of defects.
20. **Safety gates** must be free of any visible damage, missing or broken welds. The tubing must be free of any saw marks, welding burn marks, large dents or other damage. The clamp rivet must be examined for wear or bending and the clamp bolt threads must be free of defects.
21. **Safety gate handrails** must be free of any visible damage, missing or broken welds. Special attention must be placed on inspecting the end connector where it fits into the rosette and the trigger to ensure it fits snugly onto the vertical rosettes and that there is no visible damage or bending.

SCAFFOLD INSPECTION GUIDELINES

- 22. Stair system parts** must be free of any visible damage, missing or broken welds, missing tread lock down clips or missing locking bolts. Stair stringers must be straight and undamaged. The tread locking clips must be able to lock down the boards when they are in place and must have the snap buttons installed. The stair base must have all bolts for locking the foot in place and the bolts must be in good working condition. The end hooks must be examined for bends, cracks or broken welds.
- 23. Rope pulley hoist** must be free of any visible damage, missing or broken welds. The tubing must be free of any saw marks, welding burn marks, large dents or other damage. Special attention must be placed on inspecting the end connector where it fits into the rosette and the trigger to ensure it fits snugly onto the vertical rosettes and that there is no visible damage or bending. The clamp rivet must be examined for wear or bending and the bolt threads must be free of defects. Locking pins must be installed and functional. Any attached pulley and rope must be inspected according to OSHA guidelines and the manufacturer's recommendations.
- 24. Tube and clamp** material has been manufactured by many different vendors. When the vendor can be determined, always use their guidelines for inspection and maintenance. The tubing must be free of any visible damage, saw marks, welding burn marks, large dents or other damage. The tube ends must be securely attached to the tubing and must be undamaged. The clamp rivet must be examined for wear or bending and the bolt threads must be free of defects.
- 25. SRL adapter** parts must be inspected daily before use. They must be free of any visible damage. The clamp rivet must be examined for wear or bending and the bolt threads must be free of defects. The adapter clamp must be free of any bending, (it must be discarded if used to prevent a fall or damaged) the bolts must be free of defects. The wire rope must be inspected as required by OSHA. Wire rope shall be replaced if the rope has any physical damage which impairs its function and strength—six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay, abrasion, corrosion, scrubbing, flattening or peening causing loss of more than one-third of the original diameter of the outside wires, evidence of any heat damage resulting from a torch or any damage caused by contact with electrical wires.
- 26. Horizontal tie-off support** locations must be inspected daily before use. They must be free of any visible damage, saw marks, welding burn marks, large dents or other damage. The clamp rivets and wedges must be examined for wear or bending and the bolt threads must be free of defects. The horizontal bearing member should fit snugly against the rosettes and be fully engaged. The rosette members must also be examined for bends, cracks or broken welds.
- 27. Lifting devices** must be inspected before use. They must be free of any visible damage, saw marks, welding burn marks, large dents or other damage. The bolts must be tightened and free of defects. The vertical they are attached to must be inspected and all vertical locking clamps installed at the joints of the vertical.
- 28. Vertical locking clamp** must be inspected before use. They must be free of any visible damage, saw marks, welding burn marks, large dents or other damage. The clamp rivets must be examined for wear or bending and the bolt threads must be free of defects.
- 29. Boiler equipment** must be free of any visible damage, missing or broken welds. The tubing and beams must be free of any saw marks, welding burn marks, large dents or other damage. Special attention must be placed on the shoring beams and ladders to ensure they are undamaged.
- 30. Toe boards and toe board connectors** must be free of any visible damage, saw marks, welding burn marks, large dents or other damage. The clamp rivets must be examined for wear or bending and the bolt threads must be free of defects. The snap buttons must be installed and working correctly.

SCAFFOLD INSPECTION GUIDELINES

- 31. Rapid access equipment** must be free of any visible damage, saw marks, welding burn marks, large dents or other damage. The clamp rivets must be examined for wear or bending and the bolt threads must be free of defects. Special attention must be given to the ladder hooks to ensure they are unbent and free of damage.
- 32. Beam clamps-rigid and swivel** must be free of any visible damage, saw marks, welding burn marks, large dents, cracks, damaged bolt threads, loose or damaged rivets or other damage. The clamp must be examined for wear, cracking or bending and the bolt threads must be free of defects. Special attention must be given to the radius area of the clamp to ensure there are no cracks in the bend area.

GUIDELINES THAT MUST BE FOLLOWED BY INSTANTLOCK 1 END-USERS

The following are NOT authorized to be performed in the field and must be returned to NextGen Scaffold Services for repair.

1. Re-galvanizing InstantLock 1 components that have been corroded or sand blasted.
2. Straightening vertical leg assemblies that have been bent.
3. Shortening vertical leg assemblies that have been cut.
4. Straightening horizontal bar assemblies that have been bent.
5. Shortening horizontal bar assemblies that have been cut.
6. Any repairs to trolley movement system components.
7. Any repairs to truss components.
8. Any repairs to metal deck board components.
9. Any repairs to stair stringer components.
10. Any repairs to rope pulley hoist components.
11. Any welding to any component.
12. Replacement of triggers and cable system in horizontal members.