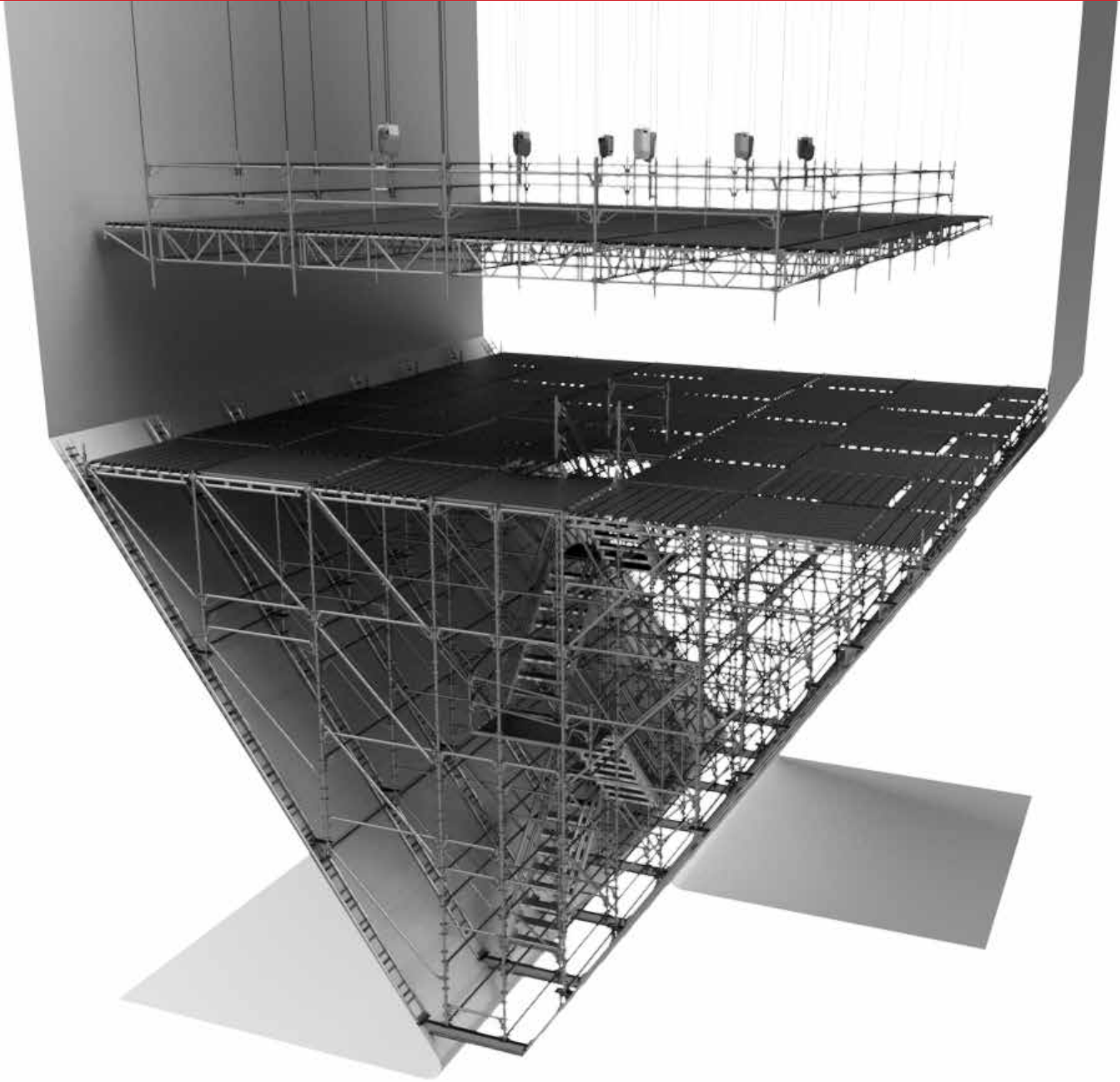




SAFEDECK SYSTEM TECHNICAL MANUAL





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INTRODUCTION



THE SAFEDECK SYSTEM

The SafeDeck System is the only purpose-built scaffold product that allows for up to 90% installation of suspended/cantilevered scaffold platforms without exposure to leading-edge falls.

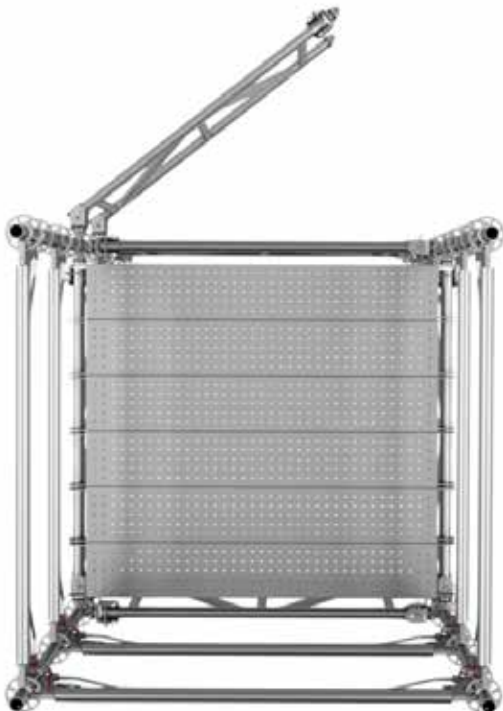
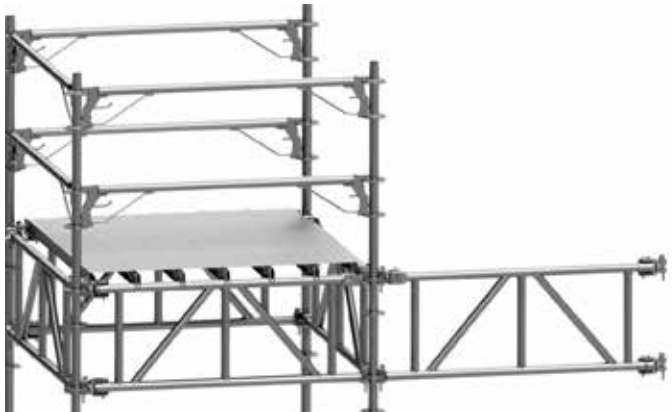
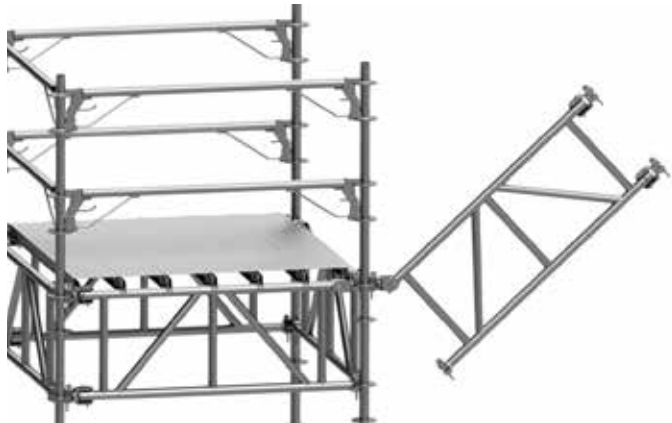
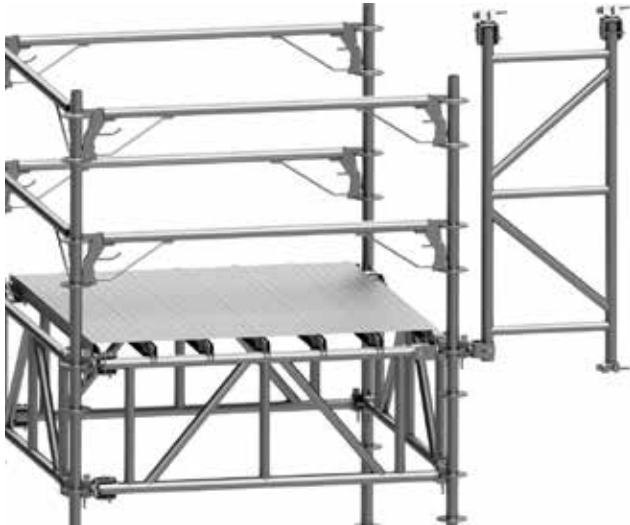
SafeDeck was designed by experienced scaffold builders who saw a need for a safer product after having utilized various scaffold systems to suspend platforms in highly dangerous situations on major industrial projects across the United States.

PRODUCT RANGE OF MOTION

The SafeDeck System utilizes a patented, heavy-duty, hinged truss that can be installed using either a vertical or horizontal range of motion, allowing safe installation around obstructions.

Each truss has three (3) hinges which allow for free range of motion. One end of the truss is fitted with two hinges, allowing the truss to swing in a 180-degree horizontal motion away from the builder working from an existing platform. The third hinge, located on the opposite end of the truss, rotates 90 degrees allowing the truss to be installed using a vertical range of motion.

VERTICAL POSITION



HORIZONTAL POSITION



INTRODUCTION (CONT'D)

TOOL REQUIREMENTS

The SafeDeck System does not require special tools for installation. Standard hand tools commonly used in the industry are all that are needed. This includes: steel hammer, 7/8-inch scaffold ratchet, level, wrench, and wire cutters.

COMPATIBLE PRODUCTS

SafeDeck was designed with scaffold contractors' existing inventory in mind. The system has been simplified to work with most tube and clamp, and pin and ring systems, including decking products.

While there are other products on the market that have similar features and benefits of the SafeDeck system, none were specifically designed to work in conjunction with existing scaffolding components. SafeDeck is designed to work with these components:

- InstantLock System Scaffold
- Layher Scaffold
- Step Up Scaffold
- Direct Scaffold
- Universal scaffold and metal planking
- Pin and ring verticals, horizontals and diagonal braces
- Wood planks
- Slick tubes
- Right-angle, swivel and beam clamps
- Screw jacks
- Ladders and ladder brackets

Shipping and Receiving:

(832) 479-0779 | yard.manager@bartlett.group

Engineering:

(443) 293-6352 | engineering@bartlett.group

Website: <https://www.nextgenscaffold.com/products/safe-deck/>

THIRD-PARTY TESTING



SAFEDECK EFFICIENCY

As verified through third-party testing, when compared to other scaffold systems, installation of the SafeDeck system is proven to be three (3) times faster than other systems on the market.

A seven- (7) foot by seven- (7) foot SafeDeck platform was completed in an average 8.5 minutes. Other systems averaged a build time of 24 minutes. Additionally, builders were never exposed to falls outside the perimeter guardrail of a completed platform during the SafeDeck installation.

THIRD-PARTY LAB RESULTS

Element Materials Technology (formerly Stork) was utilized as an unbiased third-party witness during a demonstration of construction of a cantilevered work platform utilizing SafeDeck.

The demonstration was conducted on January 6, 2012 at Dynamic Industries, Inc., 6005 Port Road in New Iberia, LA. The platforms were constructed by trained Dynamic Industries personnel. Element Materials Technology videoed and photographed the construction processes and timed each event.

Two SafeDeck platforms were constructed, one using seven- (7) foot trusses and the other using ten- (10) foot trusses, both utilizing a patented design and method from SafeRite Platforms, an affiliate of Excel Modular Scaffold and Leasing Corp. and Next Generation Scaffold Services, Inc.

It is important to note that common approaches require personnel to change tie-off locations and climb outside of the original structure as they cantilever a platform. The SafeDeck application allowed builders to install trusses, planking, vertical members and all OSHA compliant guardrails while tied off to a completed working platform.

SEVEN- (7) FOOT TRUSS DEMONSTRATION

The first demonstration required builders to construct a seven- (7) foot cantilevered working platform using common scaffold construction practices where the platform is supported by overhead structural steel using tube and clamp. The time to complete this seven- (7) foot deck was 24 minutes. The seven- (7) foot SafeDeck platform was erected in 8.5 minutes—almost a full 16 minutes faster than the common industry method.

TEN- (10) FOOT TRUSS DEMONSTRATION

A second demonstration was performed for the construction of a ten- (10) foot platform extension utilizing SafeDeck. The time required for completion was 10.5 minutes, however, a two- (2) minute delay occurred due to an alignment issue where a horizontal pin had been installed in the incorrect receiving hole of the rosette—a delay not related to the SafeDeck system itself. Outside of this delay, the ten- (10) foot platform extension was technically constructed in approximately the same amount of time as the seven- (7) foot system.

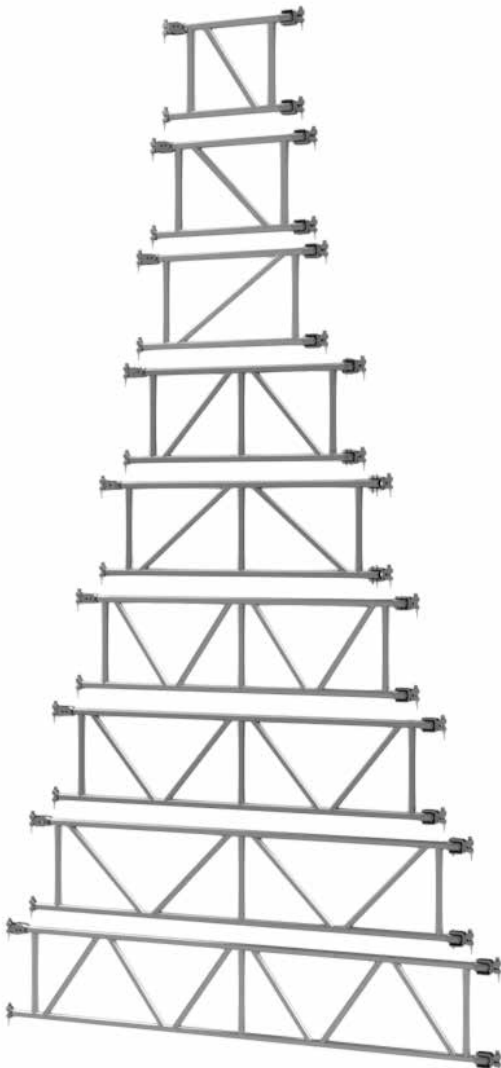
TESTING SUMMARY

The SafeDeck design was proven to greatly reduce construction time by more than two-thirds for cantilevered working platforms, as well as reduce exposure to leading-edge falls. Builders were never required to work outside the boundaries and protection of a fully-handrailed platform. After completion of an initial cantilevered platform, personnel can safely work method to reach the desired target.



SAFEDECK TRUSS

PART #	DESCRIPTION	LENGTH (INCHES)	DEPTH (INCHES)	WEIGHT GALVANIZED (LBS.)
STJ3	3' Truss	36	21	36
STJ36	3'-6" Truss	42	21	39
STJ4	4' Truss	48	21	41.2
STJ5	5' Truss	60	21	46.7
STJ6	6' Truss	72	21	51.3
STJ7	7' Truss	84	21	56
STJ8	8' Truss	96	21	60.8
STJ9	9' Truss	108	21	73.8
STJ10	10' Truss	120	21	78.6



MATERIAL SPECS:

All load-bearing tubes are 1.90 diameter, 11-gauge (0.120 wall), high-strength min. 65,000 yield, 75,000 tensile.

BUILD NOTES:

1. Trusses should be installed in pairs and have pins and wedges completely installed prior to installing decking.
2. A single truss can be installed if properly braced or tied back to an adjacent leg or structure.

SAFEDECK TRUSS (CONT'D)

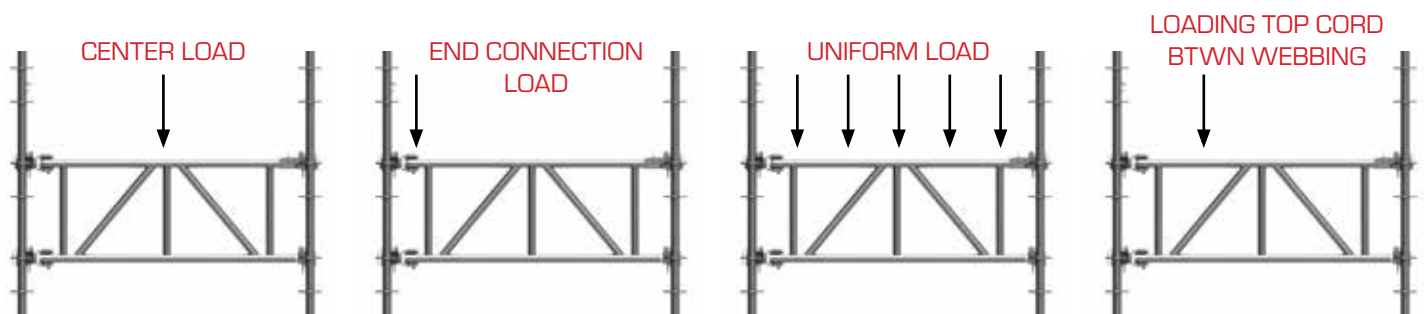
LOADING FOR SUPPORTED APPLICATION



PART #	DESCRIPTION	ULTIMATE LOAD AT CENTER OF TRUSS (LBS.)	ULTIMATE LOAD AT END CONNECTOR (LBS.)	ULTIMATE LOAD AT TOP CORD BETWEEN TRUSS WEB (LBS.)
STJ3	3' Truss	10,500	10,500	9,000
STJ36	3'-6" Truss	10,500	10,500	9,000
STJ4	4' Truss	10,500	10,500	9,000
STJ5	5' Truss	10,500	10,500	9,000
STJ6	6' Truss	10,500	10,500	9,000
STJ7	7' Truss	10,500	10,500	9,000
STJ8	8' Truss	10,500	10,500	9,000
STJ9	9' Truss	10,500	10,500	9,000
STJ10	10' Truss	10,500	10,500	9,000

PART #	DESCRIPTION	ALLOWABLE CENTER LOAD (LBS.)	ALLOWABLE LOAD AT END CONNECTOR (LBS.)	ALLOWABLE UNIFORM LOAD (LBS.)	ALLOWABLE LOAD AT TOP CORD BETWEEN TRUSS WEB (LBS.)
STJ3	3' Truss	2,625	2,625	1,750	2,250
STJ36	3'-6" Truss	2,625	2,625	1,500	2,250
STJ4	4' Truss	2,625	2,625	1,312	2,250
STJ5	5' Truss	2,625	2,625	1,050	2,250
STJ6	6' Truss	2,625	2,625	875	2,250
STJ7	7' Truss	2,625	2,625	750	2,250
STJ8	8' Truss	2,625	2,625	656	2,250
STJ9	9' Truss	2,625	2,625	583	2,250
STJ10	10' Truss	2,625	2,625	525	2,250

Load ratings reflect a safety a factor of 4:1.



BUILD NOTES:

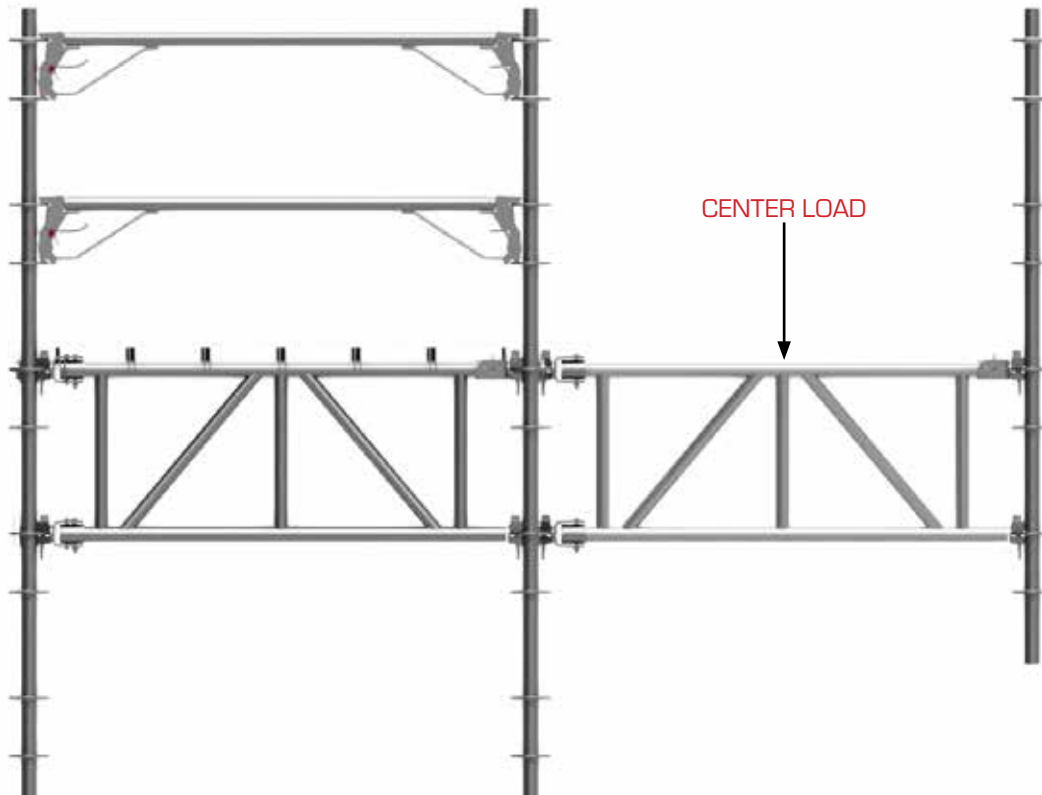
1. Vertical leg may be the limiting load carrying member.
2. Consult chart above for loading of top cord of truss.



SAFEDECK TRUSS (CONT'D)

LOADING FOR CANTILEVERED APPLICATION

PART #	DESCRIPTION	ULTIMATE CANTILEVERED LOAD AT CENTER OF TRUSS (LBS.)	ALLOWABLE CANTILEVERED LOAD (LBS.)
STJ3	3' Truss	2,000	500
STJ36	3'-6" Truss	2,000	500
STJ4	4' Truss	2,000	500
STJ5	5' Truss	2,000	500
STJ6	6' Truss	2,000	500
STJ7	7' Truss	2,000	500
STJ8	8' Truss	1,740	435
STJ9	9' Truss	1,740	435
STJ10	10' Truss	1,740	435



All cantilevered SafeDeck truss scaffold must be certified through a qualified person or engineer.

BUILD NOTE:

Deck planking or verticals may be the limiting load carrying member.

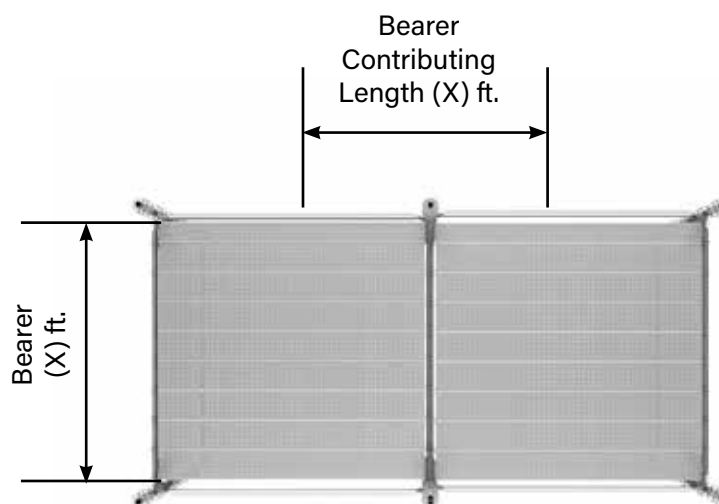
SAFEDECK TRUSSES (CONT'D)

MULTIPLE-BAY LOADING



BEARER	LENGTH (INCHES)	LEDGER LENGTH									
		IL2PB24	IL2PB36	IL2PB42	IL2PB48	IL2PB60	IL2PB72	IL2PB84	IL2HL96	IL2HL108	IL2HL120
		24	36	42	48	60	72	84	96	108	120
STJ3	36	875	583	500	438	350	292	250	219	194	175
STJ36	42	750	500	429	375	300	250	214	188	167	150
STJ4	48	656	437	375	328	262	219	187	164	146	131
STJ5	60	1050	700	600	525	420	350	300	263	233	210
STJ6	72	438	292	250	219	175	146	125	109	97	88
STJ7	84	375	250	214	188	150	125	107	94	83	75
STJ8	96	328	219	187	164	131	109	94	82	73	66
STJ9	108	292	194	167	146	117	97	83	73	65	58
STJ10	120	263	175	150	131	105	88	75	66	58	53

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



Continuous-Run Scaffold

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.

BUILD NOTE:

Deck planking or verticals may be the limiting load carrying member.

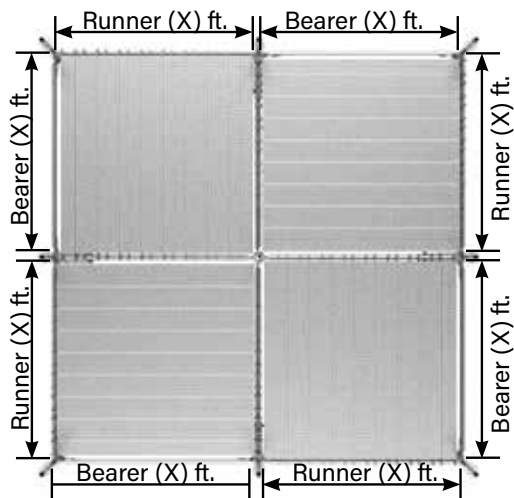


SAFEDECK TRUSSES (CONT'D)

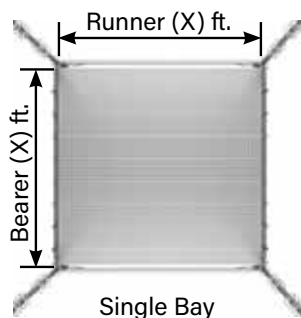
SINGLE-BAY LOADING

BEARER	LENGTH (INCHES)	LEDGER LENGTH									
		IL2PB24	IL2PB36	IL2PB42	IL2PB48	IL2PB60	IL2PB72	IL2PB84	IL2HL96	IL2HL108	IL2HL120
		24	36	42	48	60	72	84	96	108	120
STJ3	36	1750	1167	1000	875	700	583	500	438	389	350
STJ36	42	1500	1000	857	750	600	500	429	375	333	300
STJ4	48	1312	875	750	656	525	437	375	328	292	262
STJ5	60	1050	700	600	525	420	350	300	263	233	210
STJ6	72	875	583	500	438	350	292	250	219	194	175
STJ7	84	750	500	429	375	300	250	214	188	167	150
STJ8	96	656	437	375	328	262	219	187	164	146	131
STJ9	108	583	389	333	292	233	194	167	146	130	117
STJ10	120	525	350	300	263	210	175	150	131	117	105

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



Alternating Bays



Single Bay

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.

BUILD NOTE:

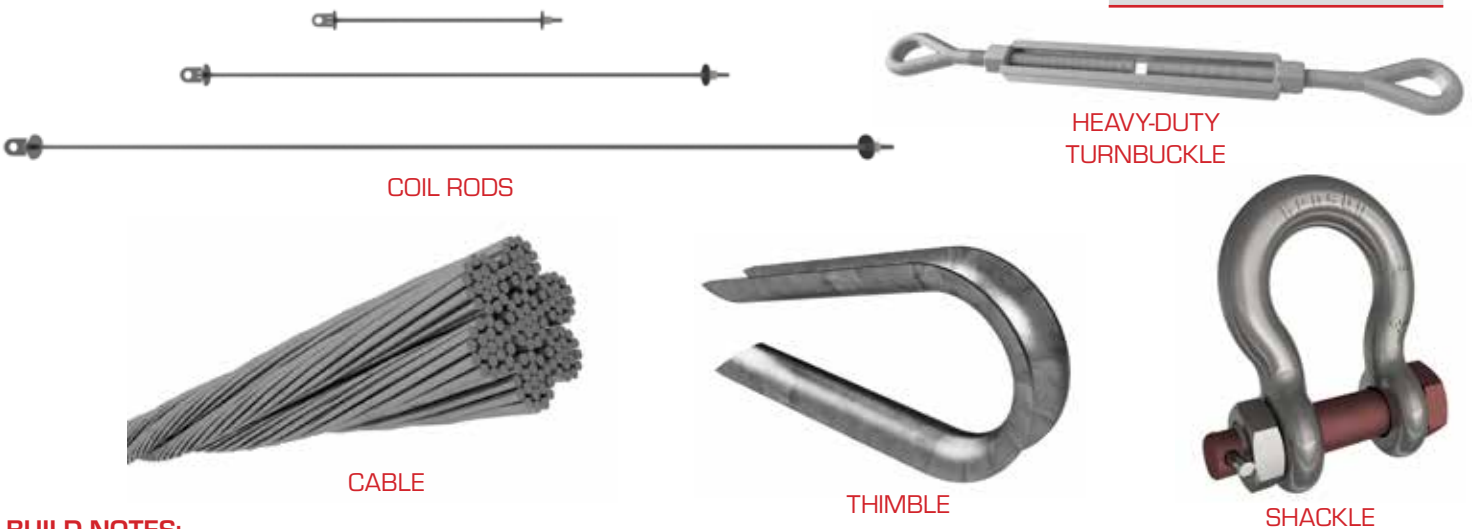
Deck planking or verticals may be the limiting load carrying member.

SAFEDECK SUSPENDED SCAFFOLD COMPONENTS (UTILIZING CABLE)



PART #	DESCRIPTION	WEIGHT (LBS.)	MAXIMUM SUPPORTED LOADS (LBS.)
HDCD106	3/4" Heavy-Duty Coil Rod 10'	7	4,500
HDCD7	3/4" Heavy-Duty Coil Rod 7'	11	4,500
HDCD36	3/4" Heavy-Duty Coil Rod 3'-6"	15	4,500
HDTB	1'-1/4" Heavy Duty Turnbuckle*	19	15,200
5/8" Shackle	5/8" Shackle*	1.68	10,000
3/4" Shackle	3/4" Shackle*	2.72	14,000
THBL3/4	3/4 " Thimble*	—	—
THBL5/8	5/8" Thimble*	—	—
FG3/4	3/4" Fist Grip*	—	—
FG5/8	5/8" Fist Grip*	—	—
3/4 CABLE	3/4" Cable*	1.04	11,760
5/8 CABLE	5/8" Cable*	0.72	8,240
NS	Nylon Strap 4" Double Stick 4"*	—	Vertical - 11,000 Choker - 8,800 Basket - 22,000

*Third-party manufactured components. Data may vary.



BUILD NOTES:

1. Contact the SafeDeck engineering department for use and loading.
2. When using cables, shackles, turnbuckles, thimbles, fist grips, or nylon straps refer to manufacture's specifications for allowable loading, maintenance, inspection.
3. Ensure all components have updated labelling and tagging.
4. Ensure the proper size rigging components are being used in accordance the Federal, State and local regulations prior to installing.



CANTILEVERED SCAFFOLD

CANTILEVERED PLATFORM INSTALLATION

Start from a rigid frame scaffold set on a suitable base (not hanging). This starter scaffold is to be of adequate dimensions and properly anchored to an approved structure prior to installing the cantilevered scaffold. The starter scaffold is to be utilized as a tie-off location.

1. Remove the two (2) hitch pins from the horizontal hinge assembly on one (1) InstantLock 2 truss allowing the hinges to rotate freely.

Work in groups of two (2) with Builder 1 on the working platform and Builder 2 on the platform below. Working together, stage the InstantLock 2 truss, so the truss swings horizontally with the wedges on top. The first truss will be installed level with the working platform, at Builder 1's feet.

2. Builder 1 (at the top of the truss) installs the top wedge by driving it into place, while Builder 2 checks the truss for level and plumb.
3. Once level, the bottom wedge of the truss can be driven into place by Builder 2. It is important that the truss is kept plumb using a level. A misaligned truss can rotate along the vertical axis, possibly creating an unsafe structure.
4. If necessary, the bottom truss is now installed below following steps 2 thru 5.
5. A vertical is installed at the open end of the truss while folded up against the starter scaffold.
6. The leveled truss is now fully secured to verticals on each end. Then, Builder 1 can rotate the truss 90 degrees, locking it into position using the supplied hitch pins.
7. Steps 2 thru 8 are now repeated for the second set of trusses.



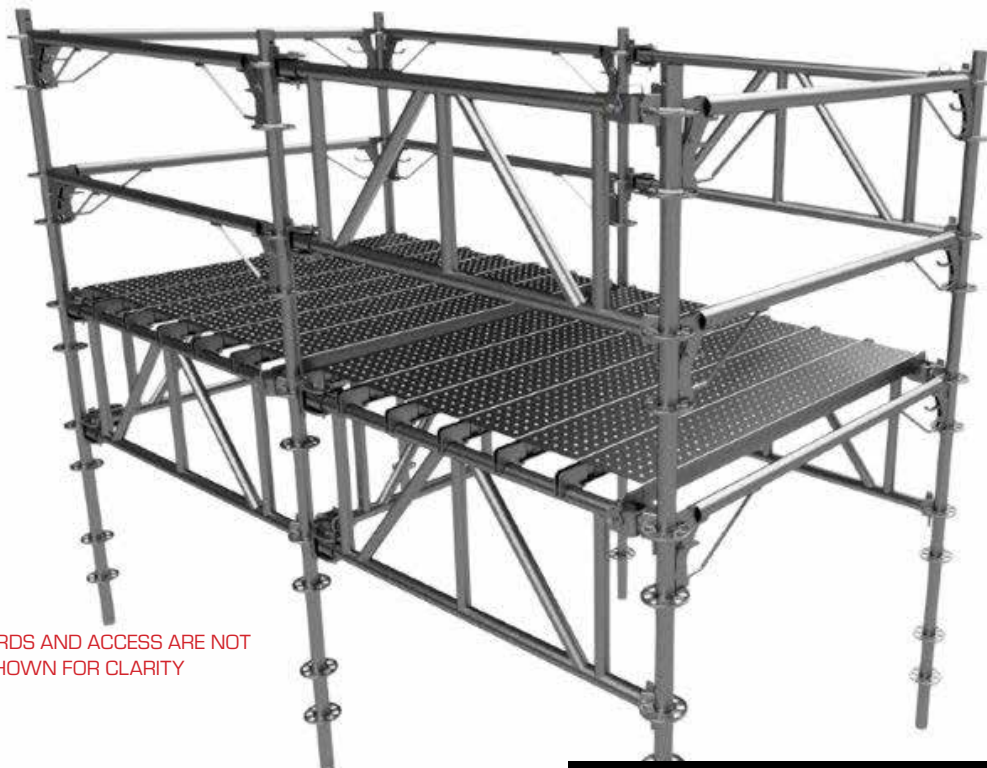
CANTILEVERED SCAFFOLD (CONT'D)



8. The planking is installed by sliding each plank out until fully decked. (The builder is tied off to the starter scaffold. Never tie off to the cantilever at this stage.)
9. Complete the cantilever by installing handrails followed by toe boards.

BUILD NOTES:

1. Swinging trusses can be used for a knee-out up to a maximum of 7-feet in length, so long as one of these requirements is implemented:
 - 45-degree tie back in tension or compression to an approved supporting leg is used.
 - Double-truss configuration is used.
2. If swinging trusses are used in a cantilever bridge scenario, the builder must remain tied to an approved adjacent structure until the cantilever components are static on both ends.
3. Knee-outs over seven (7) feet require an engineer's involvement.



**COMPLETED
CANTILEVER**

TOE BOARDS AND ACCESS ARE NOT
SHOWN FOR CLARITY



WARNING: InstantLock 2 horizontals should not be used for cantilever applications. However, if the application is required, a qualified person must be contacted and the builder must have the proper training.



SAFEDECK TRUSS INSTALLATION

ALLOWABLE PLATFORM LOADS

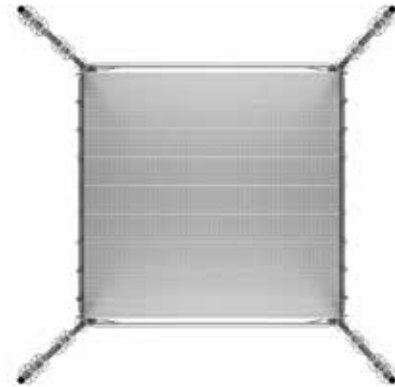
Platforms shall be constructed in a grid pattern with every vertical member adequately attached to the overhead structure.

For a heavy-duty (75 psf) work platform, vertical members shall be spaced no more than seven (7) feet on-center in both directions.

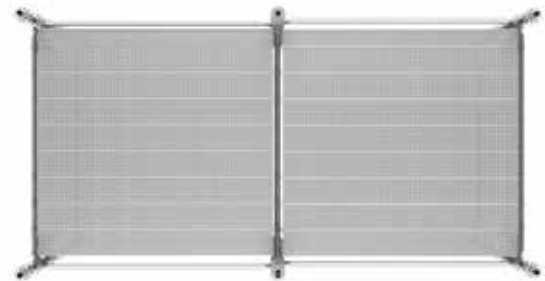
A medium-duty (50 psf) work platform will have vertical members spaced up to seven (7) feet in one direction and ten (10) feet in the other.

To achieve a light-duty (25 psf) work platform, vertical members shall be installed no more than ten (10) feet on-center in both directions.

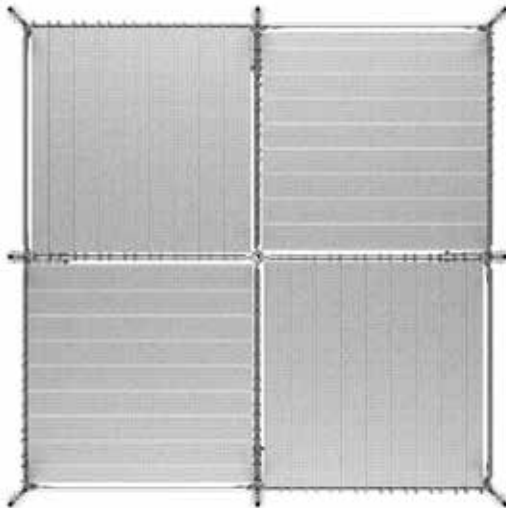
During use, the platform should not experience excessive deflection. Inspect the platform to ensure that truss deflection does not exceed a half inch. Refer to manufacturer's data for allowable plank/platform deflection. Failure to take corrective measures may result in property damage, serious injury, and even death.



SINGLE PLATFORM



STANDARD PLATFORM



PLANK LAYOUT



SUPPORTING SAFEDECK FROM A STRUCTURE

When SafeDeck trusses are used in a cantilevered application, the system must be supported by attaching the scaffold to the overhead structure with either tube and clamp, cables, or other suitable connections. The overhead structure must be approved to support the intended loads imposed by the SafeDeck system. The clamps must always be installed in compliance with the manufacturer's specifications.



PROPER BEAM CLAMP INSTALLATION

MATERIAL/EQUIPMENT STORAGE

Overloading the scaffold can result in property damage, serious injury, or even death. A competent person shall inspect SafeDeck components, including connections and joints, prior to each work shift. It is good practice to store materials over the trusses adjacent to the vertical members of the platforms.

When placing objects on the SafeDeck platform, materials shall be placed with care and not dropped creating an impact or shock load.

SAFEDECK INSPECTION

Prior to expanding the SafeDeck platform, the truss system and all components shall be inspected. All parts should be free moving and in the proper working condition. Hinges shall be free of any visual damage or corrosion. If there any issues with a component, the component is to be marked and removed from service. Failure to inspect components prior to use can result in property damage, serious injury, or even death.

As with other scaffold systems, the SafeDeck system requires regular inspection by a competent person. The SafeDeck system must be inspected prior to each work shift. Hinges and wedge assembly parts can become worn over time. Look for damaged or bent components, corrosion, and loose fitting bolts. Verify that other products used in conjunction with the SafeDeck system are compatible with SafeDeck prior to installation. Damage can occur to the galvanized finish through improper handling and corrosive environments. The components should be regularly inspected for finish defects.

PLATFORM DISASSEMBLY

Prior to dismantling any portion of a scaffold utilizing SafeDeck material, a competent person shall verify the structural integrity of the system. Failure to inspect the scaffold can result in property damage, serious injury, or even death.

Dismantling can be performed by reversing the process of erecting the platform. Be careful during plank removal that builders are not positioned outside the limits of the completed platform. If builders are exposed to leading-edge falls, personal fall arrest systems are required. A competent person shall determine proper anchorage points. All anchorage points must be designed by a qualified person.

Be aware that smaller starter platforms can lift up if not secured properly to the overhead structure during dismantling operations.



SAFEDECK SAFETY GUIDELINES

This SafeDeck System Technical Manual provides vital and safe direction for the erection, dismantlement, or modification of scaffold utilizing the SafeDeck system.

Warning: Serious injury or death can occur from failure to comply with these guidelines and applicable safety requirements of Federal, State, and local regulations prior to installation or dismantlement of SafeDeck components.

GENERAL GUIDELINES

1. Competent or qualified personnel are responsible for the safety of all persons while erecting, dismantling, and using SafeDeck.
2. Modification of any SafeDeck component is strictly prohibited.
3. All competent and qualified personnel are required to be familiar with and trained on the proper use and loading of the SafeDeck system prior to the beginning of each project.
4. Prior to erection of a SafeDeck platform, all personnel are required to wear proper PPE and have established proper anchorage points for fall arrest systems.
5. A competent person must evaluate all potential jobsite hazards prior to the start of work on any SafeDeck project.
6. Do not install SafeDeck near electrical power sources prior to consulting with the plant, facility owner, or electrical contractor.
7. If exposed to the possibility of a fall during the erection of a platform, properly attach fall protection to an approved anchorage point.
8. Fall protection is required by all users of the SafeDeck system.
4. Inspect all compatible scaffold components used with the SafeDeck system. Tighten all clamps to manufacturer's recommendations.
5. Comply with all SafeDeck assembly instructions.
6. Do not use an unsupported truss system for fall arrest without engineering approval.
7. Ensure SafeDeck trusses are level before the hinged end connector wedges are driven.
8. Once a truss is swung into a 90 degree position, engage truss retaining pins.
9. Secure the area below the SafeDeck working platform from any traffic.
10. Prior to the beginning of each shift, check all clamps and end connectors to ensure they are secured properly.
11. Starter platforms are to be installed under all supported scaffold regulations.
12. Maximum allowable cantilever is 50% of the greatest length of shortest width of the supported starter platform.
13. After the first cantilever platform is supported from structure, the maximum unsupported cantilever is ten (10) feet.

INSTALLATION GUIDELINES

1. The contractor should establish competent and/or qualified personnel who will be responsible for the installation, relocation, and modification of the SafeDeck system.
2. Inspect all equipment prior to use for visual defects. Do not use damaged or modified components/equipment.
3. Before installing beam clamps to the supporting structure, ensure the structure will support the SafeDeck system and imposed loads.

END-USER GUIDELINES

1. A competent or qualified person is required to inspect all system connections prior to the beginning of each shift.
2. Any damaged components must be taken out of service and replaced prior to beginning of shift use.
3. Always load platform in designated loading areas.
4. Always be aware of imposed loads to platform.



5. Load platform with care.
6. (GFCI) tools are required for all electrical tools, lighting, etc.

DISMANTLEMENT GUIDELINES

1. Check structural integrity of the entire platform before beginning disassembly of any portion of a platform.
2. Dismantle the scaffold in reverse order.
3. Do not throw loose components on the deck creating impact load.
4. Do not load the platform with loose components exceeding load capacity.
5. Remove all loose components from platform.
6. Always consider location of a cantilevered section of scaffold to the starter platform.
7. Never stack materials in a manner that would allow them to fall to a lower elevation.