



SAFE-T-STRAP™

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(In Canada and the U.S.A.)

www.safetystrap.com

SAFE-T-STRAP™ HORIZONTAL LIFE LINE SYSTEM

INSTALLATION PROCEDURES

FOR

MASONRY SCAFFOLD ERECTION AND DISMANTLING

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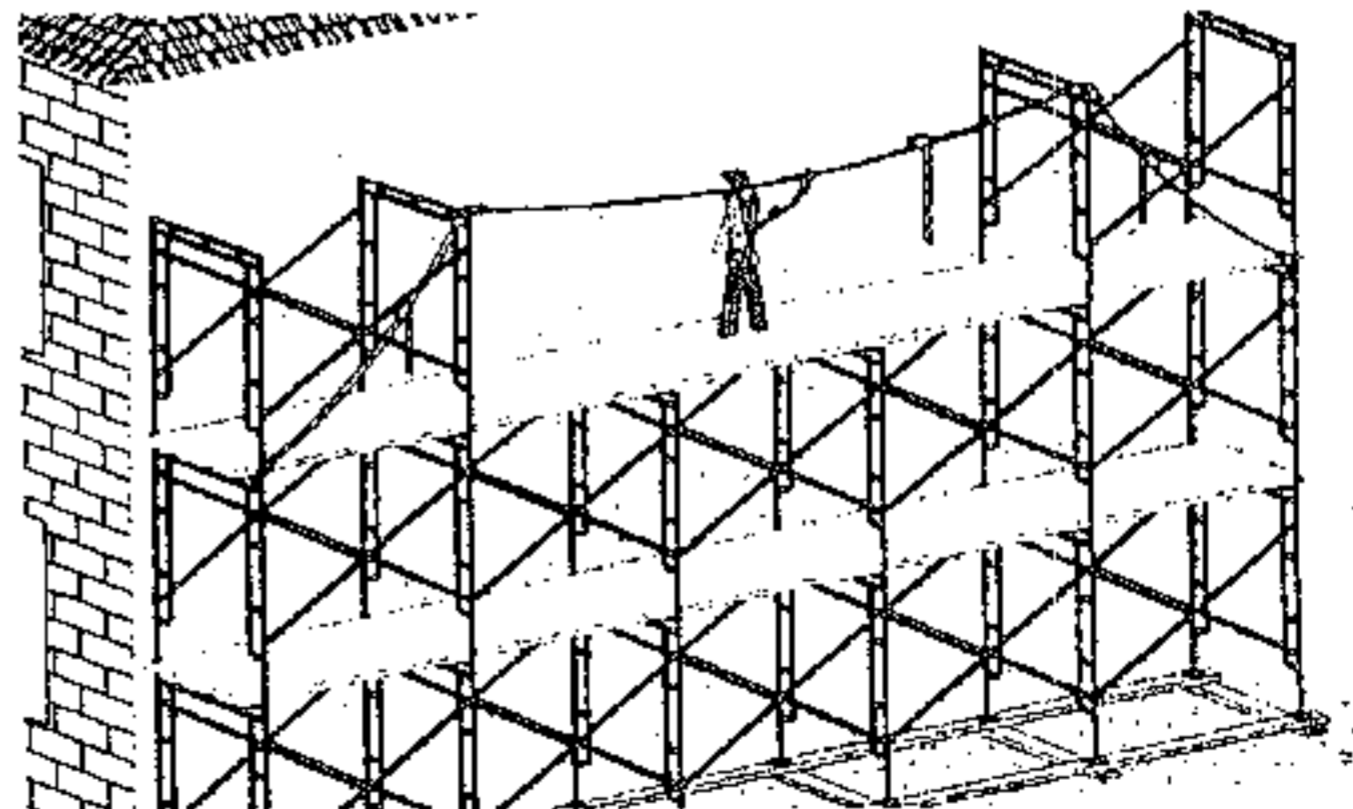
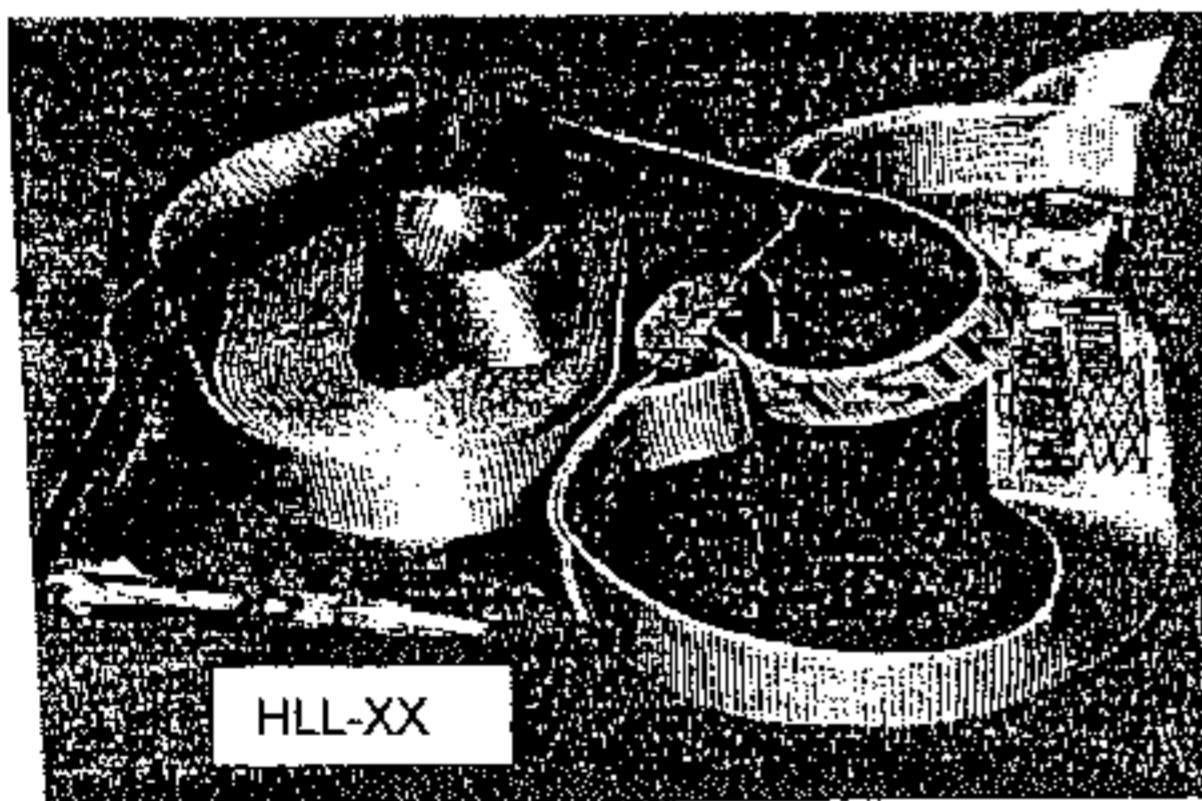
Safe-T-Strap™ Horizontal Life Line System® (patent pending)

Installation Procedures for Masonry Scaffold Erection and Dismantling

The Safe-T-Strap™ Horizontal Life Line System is an ideal solution to personal fall protection for workers erecting masonry frame scaffolds. The Safe-T-Strap™ HLL System is installed on the scaffold frames as the scaffold is being erected to provide a continuous attachment point which will allow complete freedom of movement while erecting or dismantling the scaffold.

DESCRIPTION

The Safe-T-Strap™ Horizontal Life Line System (Model HLL-XX) consists of an engineered polyester webbing fitted with self locking snap hooks and a cam buckle adjuster to allow easy adjusting of length and tension. (See Figure 1 and engineering documentation) For scaffold erection three HLL units are used to provide a guyed horizontal lifeline.



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Safe-T-Strap™ Horizontal Life Line

Figure 1

Used for Masonry Scaffold Erection

Figure 2

Scaffolding Practices

Since the Safe-T-Strap™ Horizontal Life Line System is attached to the scaffold frames while erecting the scaffold it is absolutely crucial that the good scaffolding practices are used including the following:

- Baseplates and mudsills must be properly installed.
- Banana connectors or similar fittings must be used to connect the frames.
- All bracing must be properly installed on every bay.
- Each level must be fully planked (5 planks wide) during erection.
- External ties must be installed progressively to tie the scaffold to the building (consult local safety regulations)

USING THE SAFE-T-STRAP™ HORIZONTAL LIFE LINE

1) Erect the First Two Tiers

Since fall protection is required over 6 feet in height, the first tier of frames (6'-6" walk thru frames) can be erected using traditional scaffolding practices. Install the planks for the first level.

2) Install the Safe-T-Strap™ Horizontal Life Line System

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- Install the short Safe-T-Strap™ HLL at the two end bays of the scaffold by

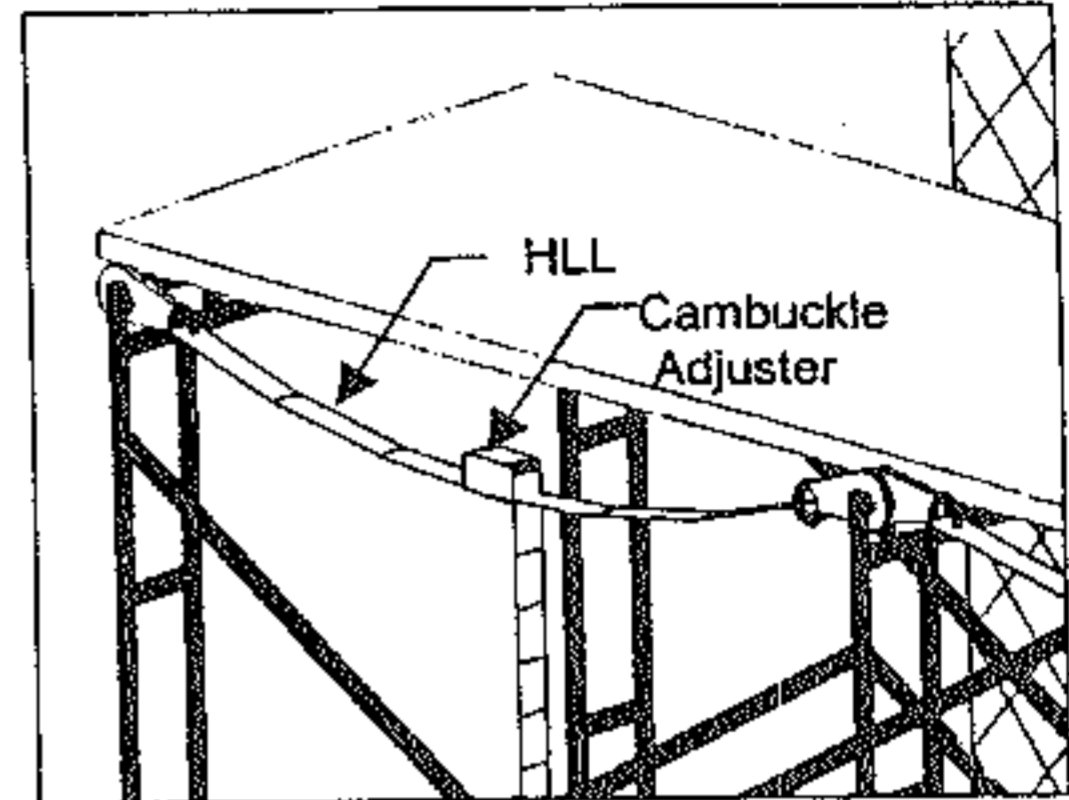
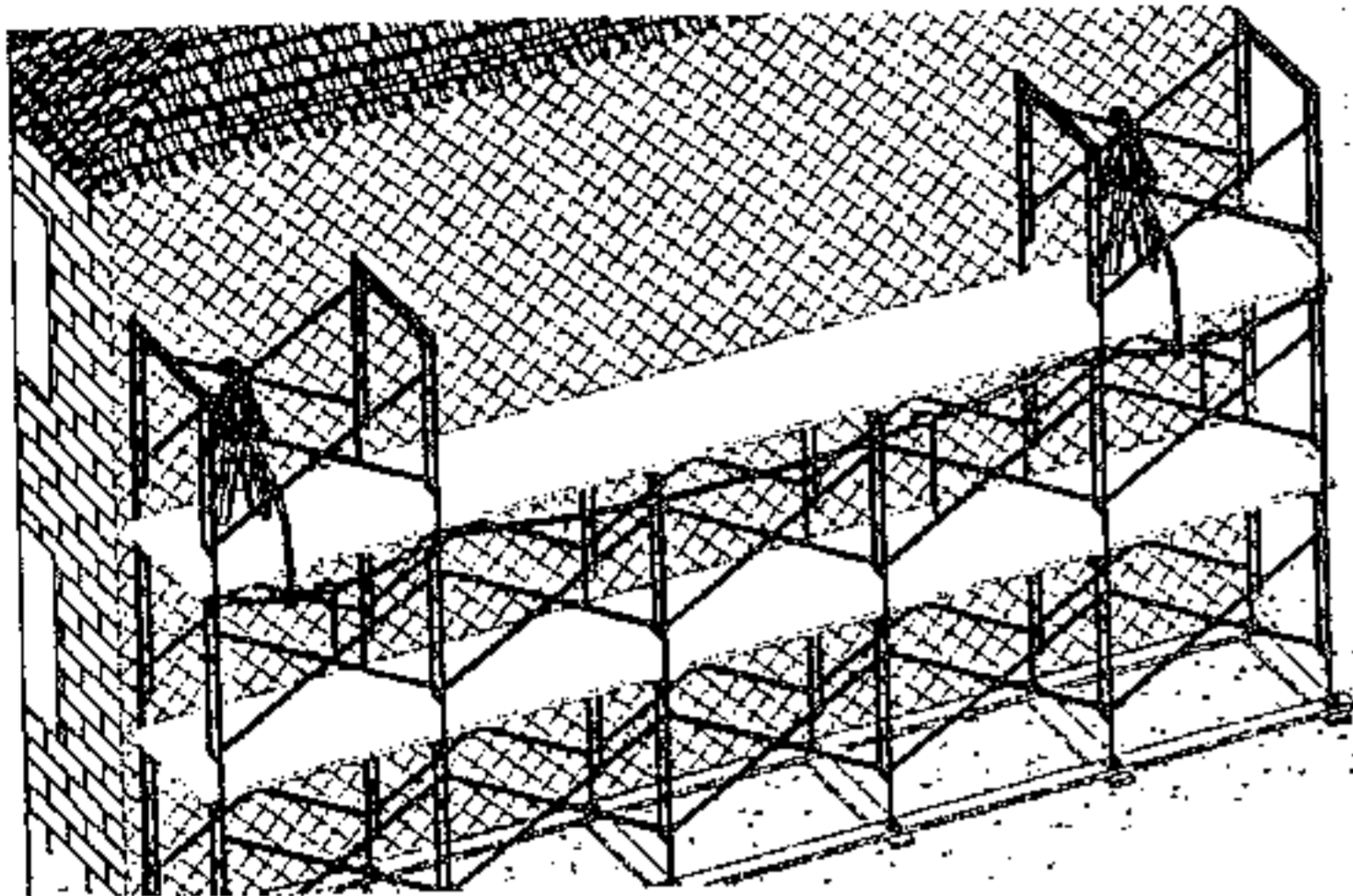
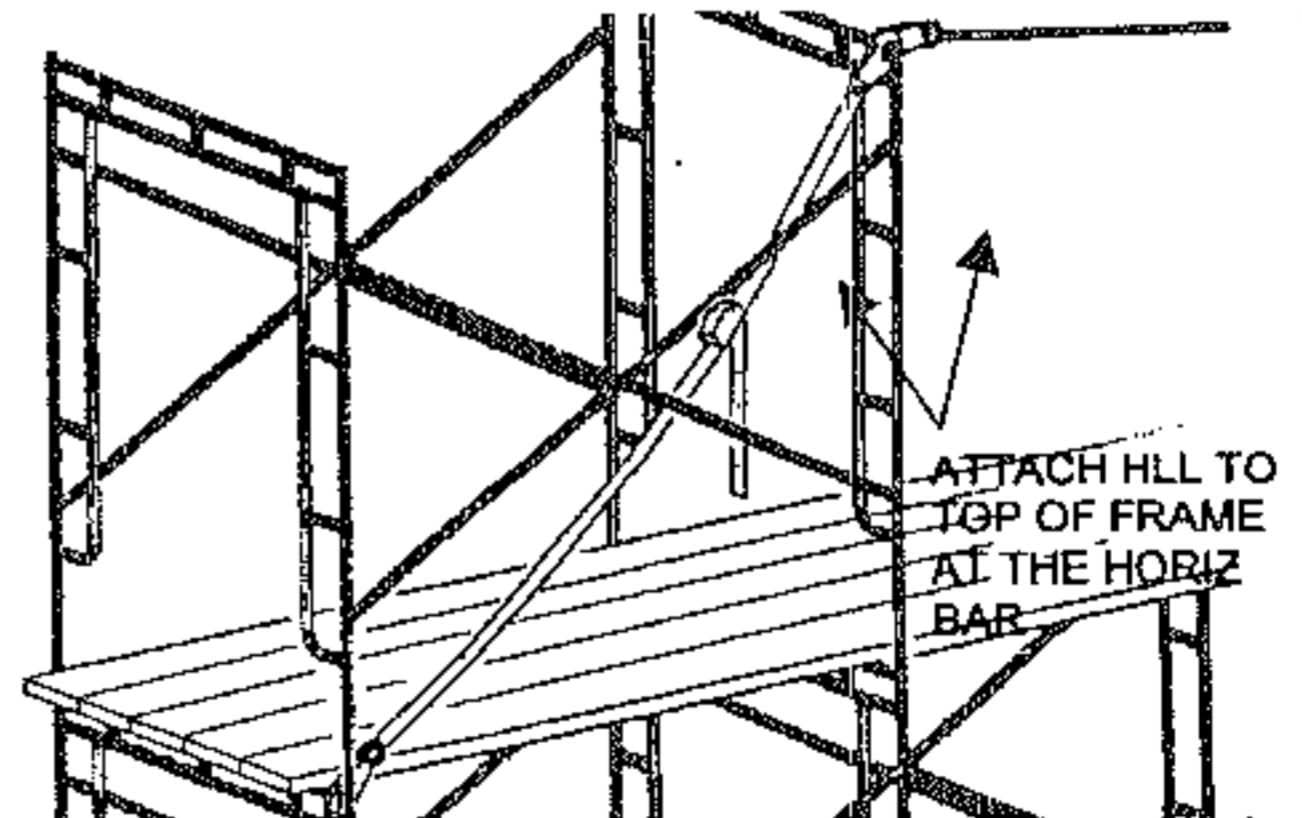


Figure 3

attaching the snap hooks to the horizontal bar of the scaffold frames.

(See figure 3.)

- Attach the snap hook of the lanyard to the HLL at the end bay and then erect the two frames and braces at each end bay of the scaffold. This is



done while connected to the HLL. (See figure 4 below)

Figure 4

Figure 5

- At each end of the scaffold reconnect the HLL to the top of the frame to form a diagonal. (See figure 5 above) You will need to re-adjust the cambuckle to the proper tension.



- Attach the 3 inch snap hooks of the long HLL to the top horizontal bar of the frame at each end of the scaffold. (Note the maximum span of the HLL is 28 feet ie 4 bays at 7 feet)
- Adjust the tension or sag of the Safe-T-Strap™ HLL using the cambuckle adjuster. The minimum sag for 28 feet is approximately 4 inches. Check the tension in the diagonal HLLs and make sure the scaffold frames are plumb.

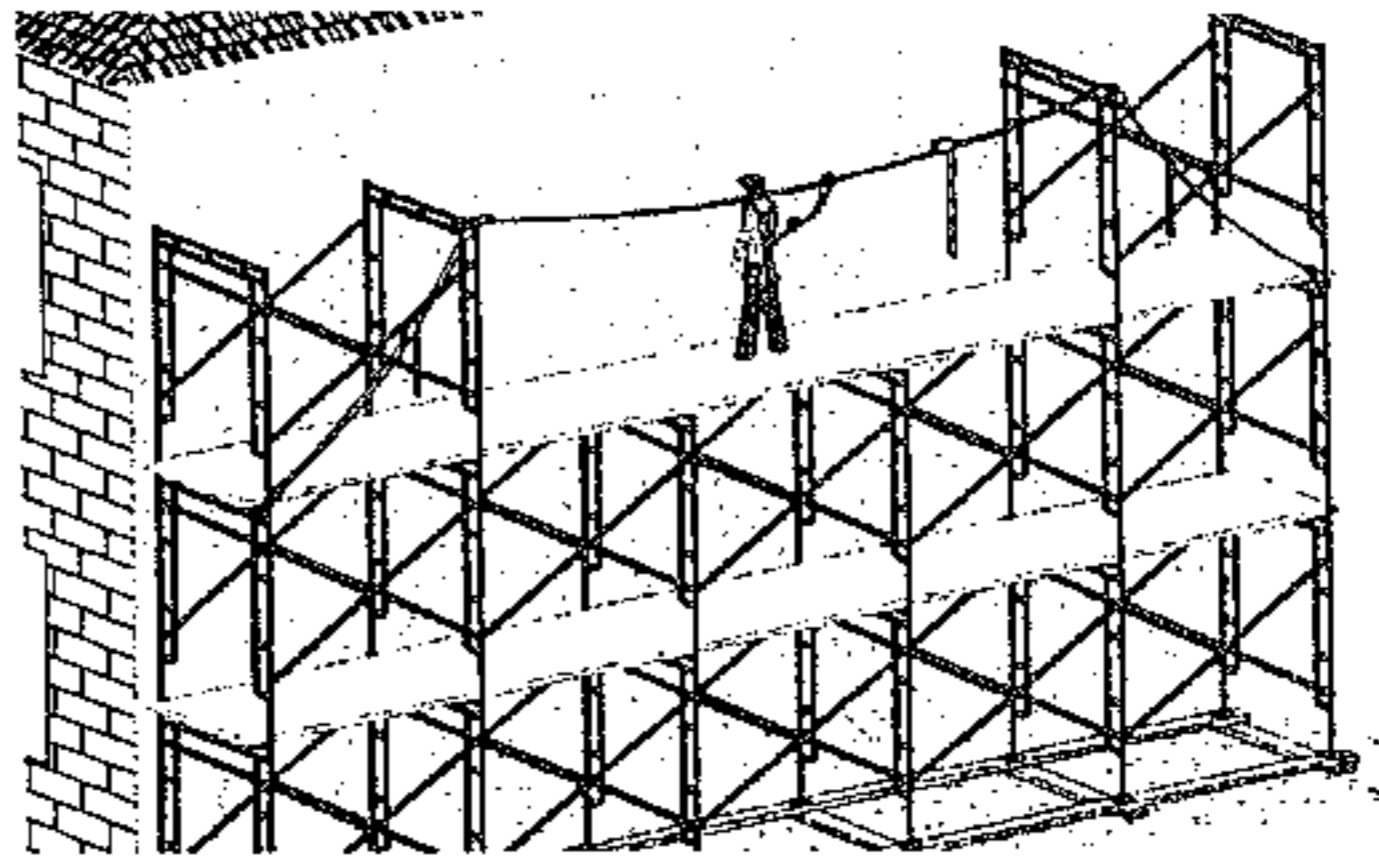


Figure 6

3) Install the Infill Frames

- Once the HLL has been properly installed it can be used with the Safe-T-Strap™ lanyard (Model LHLL-03) or equivalent. (See figure 6) Make sure the lanyard has a 3" self locking snap hook to allow the lanyard to slide along the length of the HLL.
- Attach the 3" self locking snap hook of the lanyard to the HLL and check that it is free to slide along its length. The worker will now have total freedom of movement on the platform.
- The remaining frames and braces can now be installed in the traditional manner.

4) Install Planks for the Next Level

Planks for the next level can be installed from the level below while connected to the Safe-T-Strap™ HLL if guardrails have not been installed.

5) Installing the Next Tier



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Repeat steps 2 to 5 above moving the Safe-T-Strap™ HLL up each level as the scaffold progresses in height. Note: Make sure scaffold is stabilized to the building as per good scaffolding practices and local safety regulations.

General Notes

The Safe-T-Strap™ HLL can be used with the Safe-T-Strap™ lanyard (Model LHLL-03) or equivalent. Make sure the lanyard is not longer than 5 feet in length and has a 3" self locking snap hook to allow the lanyard to slide along the length of the HLL.

The lanyard must be attached to a properly fitted full body harness using a self locking snap hook.

Note

In the event of a fall arrest of a worker using the Safe-T-Strap™ Horizontal Life Line, the entire system should be returned to Safe-T-Strap for re-certification before using the system again.

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CONSULTING ENGINEERS

SAFE-T-STRAP
HORIZONTAL LIFELINE SYSTEM FOR
SCAFFOLD ERECTION & DISMANTLING

TEST REPORT

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1-Purpose of Test

The purpose of the load test is to determine whether 3- 2" wide Safe-T- Strap with snap hooks at each end and cam buckle adjusters, connected to walk-through scaffold framing, would provide fall protection to workers erecting and dismantling a scaffold and sustain the fall arrest forces of a worker attached to that static line.

Testing was conducted on the site of a residential unit under construction in Bowmanville on June 12, 2000 witnessed by the undersigned.

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2-Test Set-Up & Procedure

The tested scaffold was 6- walk-through frames @ 7'-0" spacing. Two tiers were erected, planked and braced except for the mid section which was missing the X – bracing.

The subject scaffold had the following deficiencies:

- 1- None of the frames were nailed to the mudsill.
- 2- The frames and bracing members were corroded in some areas and contained various nicks and bent members. One bracing member was not connected at its end.
- 3- The tiered frames were not pinned to each other
- 4- The 2 x 10 planks were not cleated.
- 5- The bracing was missing at the mid section.

A Safe-T-Strap fall arrest line made of 2" nominal width polyester with a minimum specified tensile strength of 8000lb. webbing with a cam buckle adjuster and a double locking 5000 lb. capacity snap hook attached to the line by stitched loops was attached at each end to the 3 rd. tier scaffold frames at the 2nd. & 5th. frames.

Two additional Safe-T-Strap fall arrest lines with the same specifications were connected between that 3rd. tier frame and the outer frames of the 2nd. tier.

The cam buckle adjusters were used to taut the lines and a lanyard was attached mid span of the horizontal static line.

The lanyard was adjusted to 7'-0" length and attached to 225 lbs. of weight placed on the center planks. The designed free fall distance was therefore 7'-0"





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3-Test Results

Test 1:

The 225 lb. weights were pulled at from ground level and allowed to free-fall.

The sag in the center static line was measured to be 5'-2".

The 2nd. & 5th. 3 rd. tier frames deflected towards the center of the scaffold but there were no signs of damage to the frames.

One 2nd. tier end frame had pulled out of it's housing but no damage to the members was sustained.

The scaffold base plates had shifted approximately 2 inches from their original position on the mudsill.

The scaffold, the Safe-T-Strap horizontal lines and the hardware were examined and found not to exhibit any signs of distress or failure.





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Test 2:

The end frame was re-inserted in its housing.

The scaffold was subjected to another dynamic load test with the safety straps connected to the 2nd. tier exterior frames at platform level.

This test represents the tie-off lines for workers erecting the frames of the 3rd. tier, prior to the overhead static line is installed.

The 225 lb. weights were pulled at from ground level and allowed to free-fall.

The distance from the top of the platform planks to the center of the weights was measured after the test to be 11' 2"

The same 2nd. tier end frame had pulled out of it's housing but no damage to the members was sustained.

The scaffold base plates had shifted a further 2 inches from their position on the mudsill.

The scaffold, the Safe-T-Strap horizontal lines and the hardware were examined and found not to exhibit any signs of distress or failure.





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4-Conclusion

The Safe-T-Strap horizontal static line connected to the members of a walk-through scaffold frame in accordance with SAFE-T-STRAP procedures and the scaffold installed in accordance with the manufacturer specifications and instructions and the requirements of the Occupational Health & Safety Act & Regulations, will safely arrest the force generated in the fall arrest of a worker attached to that line.

The maximum span of the horizontal static line is be limited to 30' between the connecting scaffold frames.

A mid point sag in the horizontal line of 6" is recommended

A worker attached to the horizontal static line static must wear a full body harness attached to a lanyard with a maximum length of 4'

A competent person must inspect the scaffold, Safe-T-Straps and hardware before each use.

Only one worker shall be attached to the line. An additional static line must be installed if a second worker is required.

Prepared by:



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June 20, 2000

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