

Fall Protection Guidelines

Masonry Scaffold Erection Procedures

Masonry and Allied Trades
Labour-Management
Health and Safety Committee



Ministry
of
Labour

Ministère
du
Travail



March 28, 2001

Mr. Rick Van Ininger
Chairperson, Management
Masonry and Allied Trades
Labour-Management
Health & Safety Committee
86 Mack Avenue
Scarborough, Ontario
M9L 1M9

Dear Rick:

We acknowledge receipt of your revised submission on the Masonry Scaffold and Erection Procedures as amended March 9th, 2001.

It is our understanding that the proposal presented in 'good faith' serves as a guideline only to aid employers in fulfilling their responsibility to develop procedures for continuous fall protection during scaffold erection. This will form the basis for an industry-wide guideline that addresses industry-recommended safe work procedures and a method of complying with the regulation during the erection and dismantling of scaffolds as of January 1, 2001 (see Section 26 of O. Reg. 213/91 [as amended by O. Reg. 145/00]).

The procedure in the revised submission appears to provide fall protection in accordance with section 26 of Ontario Regulation 213/91 for Construction Projects.

Should you require any further assistance or clarification of the contents of this letter, please don't hesitate to call me at 416-326-7776.

Yours truly,

A handwritten signature in black ink, appearing to read "Mike Chappell".

Mike Chappell
Provincial Coordinator (A)
Construction Health and Safety
Occupational Health and Safety Branch
400 University Avenue, 7th floor
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TOTAL P. 02

Introduction

The following procedures were developed in response to changes to Section 26 of the construction regulation (Ontario Regulation 213/91). The information is presented in good faith as a guideline only to help employers fulfill their responsibility to develop procedures for continuous fall protection during scaffold erection. Research into the subject is ongoing. As new developments arise they will be incorporated in this document.

These procedures were developed for masonry walk-through scaffold, using 6-foot 6-inch frames at 7-foot centres and 2 x 10 wooden planks. The procedures are based on the following assumptions:

- All scaffolds are assembled using good scaffold practices.
- All scaffold materials are hoisted mechanically to the erector by a forklift or other lifting device, independent of the scaffold.

The employer must ensure the following conditions.

- All work must be carried out in accordance with the *Occupational Health and Safety Act and Regulations for Construction Projects*.
- All scaffold components must be maintained in good condition.
- All fall-arrest equipment—harnesses, lanyards, rope grabs, shock absorbers, vertical and self-retracting lifelines—must meet Canadian Standards Association (CSA) standards.
- All fall-arrest equipment must be used in accordance with manufacturers' instructions.
- The user must inspect all fall protection equipment daily. Any damaged equipment should be taken out of service immediately.
- Access to the scaffold and movement of people between scaffold levels must be in accordance with Section 70 of the construction regulation (O.Reg. 213/91). Where it is not feasible for erectors to use a ladder while installing and dismantling scaffolds, climbing the frames will only be permitted when the workers are protected at all times in accordance with Section 26 of the construction regulation (O.Reg.213/91).
- All horizontal lifelines must be designed by a professional engineer. A stamped drawing of the horizontal lifeline system must be available on site at all times. This drawing may be a standard or custom design and must

- show the arrangement of the system including the anchorage or fixed support system
- indicate the components used
- state the number of workers that can be safely attached to the system
- set out detailed instructions for installation or erection
- indicate all design loads for the system.

Before using any procedures in this document, contractors must satisfy themselves that the procedure will suit their circumstances. Any deviation from the procedures outlined here is entirely the contractor's responsibility. Because of the inherent dangers in scaffold erection and dismantling it is the employer's responsibility to take every precaution reasonable in the circumstances for the protection of workers at all times.

July 2001

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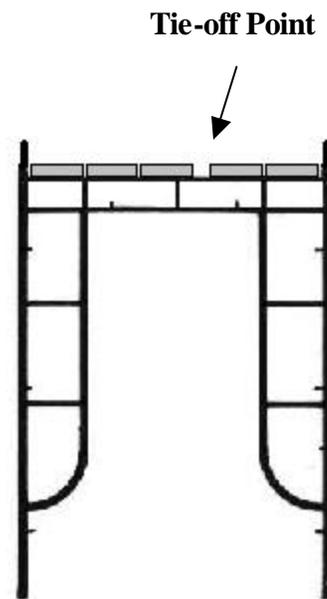
To comment on the document, or to obtain information or training, contact

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Erection Tying to Adjacent Frame

This system is best suited to a relatively short run of scaffold where the installation of a static line would take too long compared to the time actually required to erect the lift. The system may also be used for a single tower (two frames) where one frame is butted up against an existing wall and there is no danger of the erector falling between the frame and the wall.

To ensure 100% fall protection, the system requires two lanyards (5-foot and 6-foot) with shock-absorbers.



Erection Procedure

Step 1

- Place first and second level of scaffold in position and brace fully.
- Place planks on second level, but leave a gap in the planks sufficient to allow a lanyard to be attached to the frame at a point close to the centre of the platform.
- To prevent bottoming out, the tie-off point must be at least 300mm from the outside edge of the scaffold. Most frames have a spacer in the top truss and this will prevent the lanyard hook from sliding outwards.

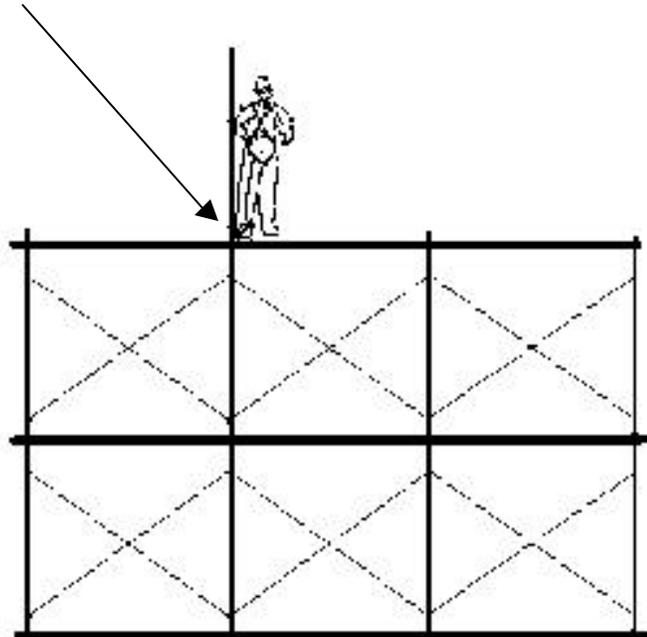
Step 2

Before accessing the second level, connect the 5-foot lanyard to the second frame from the end on the second level at the centre of the top chord. This may be done by either looping the lanyard over the planks from underneath and then climbing the frame or by climbing a ladder and attaching to the frame before accessing the scaffold.

Step 3

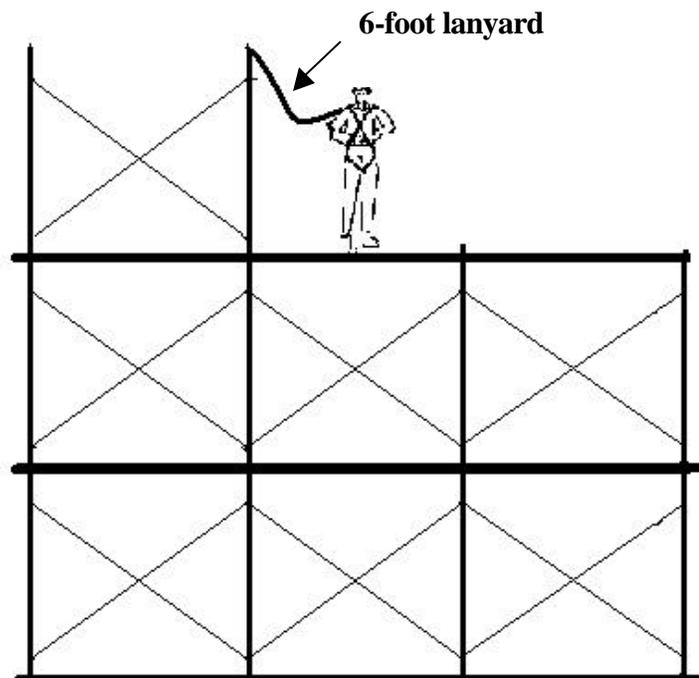
Place the frame on the third level directly over the tie-off point and install connector pins. Tie off to the top of this frame with the 6-foot lanyard at the midpoint of the frame.

**Erector is tied here
with 5-foot lanyard**



Step 4

Place all frames within reach and pin and brace fully.



Step 5

Transfer tie-off point to the next frame, maintain tie-off at all times, and continue process until lift is complete.

Notes

- The 6-foot lanyard cannot be used at foot level at the top of the second level because a fall would result in bottoming out.
- If a guardrail is installed as the scaffold is erected it will enable the erector to walk freely on the level after it has been completed.
- For further levels of scaffold, Steps 2-5 may be repeated or another method of fall protection such as an engineered horizontal lifeline may be used.
- To dismantle the scaffold, follow the procedure in reverse. All other components of scaffold erection such as horizontal bracing, guardrails, connections, and tie-ins must be included in the process as the scaffold goes up.

Scaffold Erection: Horizontal Lifeline (above three frames)

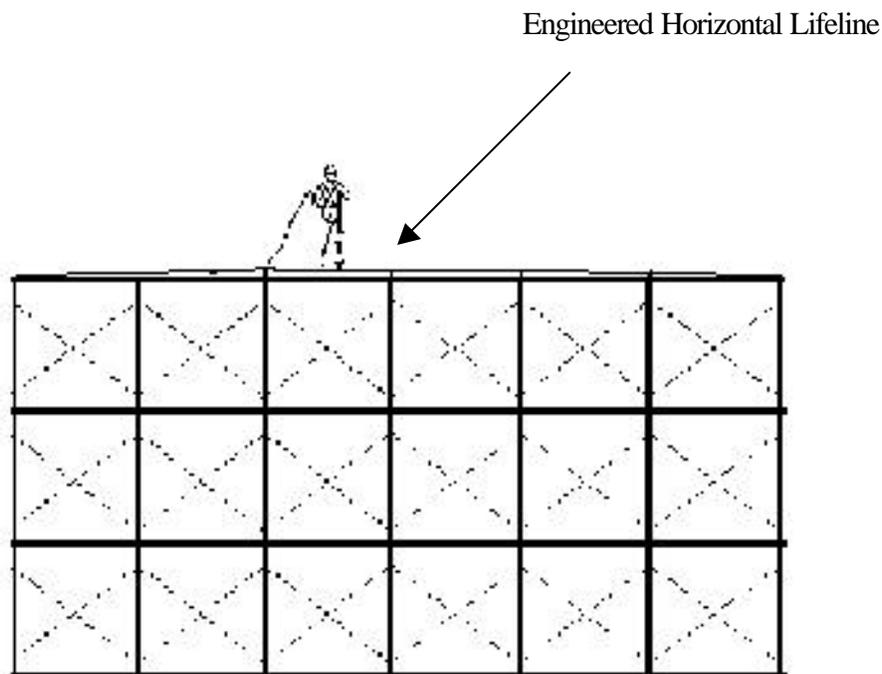
This system is to be used only above the third tier of scaffold. To erect the first three levels a procedure such as tying to the adjacent frame (see pages 4-6) can be used.

Erection using a horizontal lifeline can be used for any length of scaffold run. For long runs, intermediate anchors may be necessary for the horizontal lifeline, as determined by the design engineer.

The system uses an engineered horizontal lifeline anchored at both ends of the scaffold run. The lifeline is secured at the centre of the top chord of the end frames and lies at foot level along the length of the scaffold. The lifeline must be arranged so that sag is kept to a minimum and there is no potential for a person attached to the lifeline to bottom out in the event of a fall.

The level should be fully planked along its entire length. To secure the lifeline a narrow gap is left between the planks at each end. The lifeline should cross the centre plank diagonally from end to end, so the lifeline runs along the top of the deck.

The erector's lanyard is attached in such a way that it will not snag any of the planks as the erector walks along.



Erection Procedure

Step 1

Erect first, second, and third levels by tying to the adjacent frame as explained on pages 4-6 of this document. Place planks on top of third level.

Step 2

While standing on the second level, the erector places the horizontal lifeline system in position.

Step 3

While climbing to the next level, the erector attaches lanyard to lifeline before stepping onto the platform. A 5-foot lanyard with shock absorber is recommended. Follow manufacturer's instructions regarding attachment hardware.

Step 4

Place frames and braces on this level. Place planks on level overhead.

Step 5

Repeat Steps 2-4 until scaffold reaches desired height.

Notes

- All other components of scaffold erection such as horizontal bracing, guardrails, connections, and tie-ins must be included in the process as the scaffold goes up.
- If a guardrail is installed as the scaffold is erected it will enable the erector to walk freely on the level after it has been completed.

Scaffold Erection: Vertical Lifeline

This system is best suited to relatively short runs of scaffold. It can be used on longer runs, provided sufficient lifelines are installed. Either retractable or vertical lifelines may be used. Retractable lifelines are preferable because, used correctly, they eliminate the possibility of freefall.

With a vertical lifeline, a rope grab must be used with a short shock-absorbing lanyard. When the erector is higher than 3 metres up, the lanyard must be connected to the rope grab above shoulder height at all times.

Erection Procedure

Step 1

Access the structure using a ladder or other method and attach a vertical lifeline to a suitable anchor extending to the ground. Depending on the length of scaffold run, more than one lifeline may be required to reduce the possibility of a swing-fall hazard.

Step 2

Place first level of frames on mudsills and brace fully.

Step 3

Using ladder, climb to top of first level and place second level frames. Pin and brace fully. Place planks at top of second level.

Step 4

Access the next level by climbing a ladder or the frames. An erector climbing the frames must be attached to a lifeline while climbing. An erector climbing a ladder must connect to the lifeline before stepping onto the scaffold platform. Repeat Step 4 until scaffold has reached desired height.

Notes

- It is recommended that braces and planks be placed from the outside in, so as not to interfere with the lifeline
- All other scaffold components such as horizontal bracing, tie-ins, and guardrails must be installed as the scaffold is erected.
- To dismantle the scaffold, follow the procedures in reverse.

