



HEALTH, SAFETY & ENVIRONMENTAL MANUAL  
**WORKING AT HEIGHTS RESCUE PLAN**

**A working at heights rescue plan template is included at the end of this section.**

**PROCEDURES**

This document details 3 types of rescue procedures:

- **Ground Rescue** for a worker who has fallen and is suspended in a harness- Using powered elevating work platforms (PEWP), ladder or scaffold assist.
- **Assisted Rescue** for a worker who has fallen and is suspended in a harness: DBI Sala Rollgliss R550 Device assist.
- **Self-Rescue** for a tower crane operator descending from the crane platform to ground: DBI Sala Rollgliss R550 Device self-rescue.

All types require an emergency response that must be initiated by the project supervisor:

**Emergency Response**

- If you see a suspended worker or an operator performing self-rescue, call for help immediately from other workers via voice or cell phone.
- Call 911 and ask for emergency assistance.
- The worker may have suffered injuries during the fall and may need medical attention.
- When workers are suspended in their safety harnesses for long periods, they may suffer from suspension trauma.
- Suspended workers may panic if they are not rescued quickly.
- The events that led to the fall may create additional risks that need to be addressed.
- If the worker is held in a position that limits blood flow for as little as 3.5 minutes they can succumb to serious and even fatal problems relating to blood pooling in the lower legs. See “Suspension Trauma” below for more details.
- During the rescue, interact with the suspended worker on a regular basis to monitor their well-being. If they can move their legs, encourage them to find something to kick against, lift their knees into a sitting position or use suspension trauma straps on their harness, if possible.

**Suspension Trauma**

After an arrested fall, the fallen worker remains suspended in mid-air from their full body harness, awaiting rescue. In most cases, the worker is not injured and can alter body position within the harness to be more comfortable.

Unfortunately, a worker suspended in a near upright position with the legs dangling in a harness of any type is subject to what has come to be known as “suspension trauma”. This is one of the reasons that the fall protection plan must include rescue procedures.

During a fall arrest circulation of blood is reduced because the legs are immobile, and the worker is in an upright position. Gravity pulls the blood into the lower legs, which have a very large storage capacity. Enough blood eventually pools in the legs, reducing the return blood flow to the right side of the heart. This causes blood supply problems for both the heart and the brain. Normally the person faints at this point and falls to the ground. Now that the person is horizontal, blood from the legs flows back to the heart and on to the rest of the body.

While suspended in a harness however, the worker cannot fall into a horizontal position. The problem is that they are being held vertical while motionless. Fall victims can slow the onset of suspension trauma by pushing down forcefully with the legs, by positioning their body in a horizontal or slightly leg-high position, or by standing up. However, the design of the harness, the attachment points used, and the presence of fall injuries may prevent these actions.

The suspended worker faces several problems:

- The worker is suspended in a near upright posture with legs dangling;
- The safety harness straps exert pressure on leg veins, compressing them and reducing blood flow back to the heart; and



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Rescue must happen quickly to minimize the dangers of suspension trauma. According to information summarized in the July 2008 issue of the *Journal of Occupational and Environmental Medicine*, suspension trauma begins within 3.5 to 10 minutes in most subjects, with a few very fit subjects developing symptoms after 30 minutes. This time increases significantly if the suspended person can move their legs against resistance during suspension.

Symptoms have been described as starting with a feeling of general physical discomfort, then intense sweating, nausea, dizziness, and hot flashes. Symptoms progress to difficulty breathing, increasing heart rate, and progressively worsening heart function. Eventually the person loses consciousness. A person who is motionless and suspended in a harness is considered to be a medical emergency and a rescue must be performed quickly.

If a worker is suspended long enough to lose consciousness, rescue personnel must be very careful in handling such a person. The heart's inability to tolerate the abrupt increase in blood flow to the right side of the heart after removal from the harness is life threatening.

Current recommended procedures are to take from 30 to 40 minutes to move the victim from a kneeling to a sitting to a laying down position. All suspended victims will receive emergency medical attention.

### **Ground Rescue**

Attempt a Ground Rescue if the worker is suspended at an accessible height with an accessible ground surface. Ground Rescue is always the safest option when available. If a Ground Rescue is not possible, perform a **Non-Ground Rescue** detailed below.

GROUND RESCUE method can be determined in this order:

- A. Scissor or Boom Lift (PEWP)
- B. Ladder or Scaffold

#### **A. Scissor or Boom Lift (PEWP)**

1. Position the elevating work platform underneath the suspended worker.
2. Ensure that the elevating work platform has enough lifting capacity to safely support all workers likely to be on the platform.
3. Ensure that all the required personal protective equipment for rescuers is being used (full body harness, attached to the designated tie off point on the platform).
4. Bring the elevating work platform up until the suspended worker safely touches the floor of the platform.
5. Once the suspended worker is safely on the floor of the elevating work platform, release the fall protection harness assembly from the lanyard or lifeline and connect the worker's full body harness to the elevating work platform for the descent of the platform (it may be necessary to have a new lanyard available for the worker – the old shock absorbing lanyard may have been destroyed during the fall arrest action).
6. Once the worker has been brought to a safe location, administer First Aid, and treat the person for suspension trauma and any other injuries.
7. Provide assistance to emergency responders as needed.

#### **B. Ladder or Scaffold**

- worker must be conscious and appears to be alert and;
  - worker has control over their arms and legs
1. Place a securely fastened ladder or scaffold (rolling or portable) under the suspended worker to allow the worker access to it in a safe, controlled manner.
  2. If possible, use a second worker positioned on another securely fastened ladder, or on the scaffold platform, to ensure that the suspended worker positions himself safely.
  3. Always check to ensure that the scaffold platform is not being overloaded. Guide the worker or assist them down the ladder or scaffold.
  4. If the lifeline restricts movement, assist the worker as required.



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5. Once the worker has been brought to a safe location, administer First Aid, and treat the person for suspension trauma and any other injuries.
6. Provide assistance to emergency responders as needed.

### **NON-GROUND RESCUE**

If the worker is suspended at a height not accessible via elevated work platform (PEWP), ladder or scaffold, the **DBI Sala Rollgliss R550** must be deployed. It can be found in the yellow protective case onsite. All devices must be inspected each day before use. **This system is only to be used by competent workers who have training in its operation and understand the manufacturer user instructions.**

### **Assisted Rescue Procedure - DBI Sala Rollgliss R550**

1. Find a suitable anchor point to attach the Rollgliss R550 unit by carabiner.
2. Deploy Petzl rope protector over the edge of the building to protect the rope.
3. Lower snaphook on the lifeline to victim and use rescue pole to connect to sternal or dorsal D-Ring.
4. Raise the victim slightly using the rescue wheel to allow removal/disengagement of fall arrest subsystem.
  - Secure the Free End of the lifeline with the R550 Device's Pigtail and Cam Cleats to prevent unintentional descent.

**UNDER NO CIRCUMSTANCES SHALL THE SUSPENDED WORKER'S HARNESS BE DISCONNECTED FROM THEIR LIFELINE OR ANCHOR POINT BEFORE THE WORKER IS SAFELY ON A SECURE SURFACE OR SAFELY ATTACHED TO THE DBI SALA ROLLGLISS R550.**

5. Prepare the Lifeline for Descent
  - Prior to descent, the section of lifeline between the user and the R550 Device must be tightened to remove any slack. Tighten the lifeline by pulling on the free end of the lifeline until slack between the user and R550 Device is removed. Once the lifeline is taut, hold the free end of the lifeline tightly until descent is initiated.
6. Raise/lower victim to safety using rescue wheel/manual descent.
  - Descent may be interrupted by firmly grasping the free end of the lifeline

On some buildings, it may be necessary or more practical to break a nearby window from the inside and pull the suspended worker into the interior of the building. Again, any worker who is exposed to a fall hazard must use the proper fall protection equipment.

7. Once the worker has been brought to a safe location, administer First Aid, and treat the person for suspension trauma and any other injuries.

During and after a rescue, it is important that you NOT allow the victim to lie down, as this can cause a heart attack and multiple organ failure when the deoxygenated blood comes flooding back to the heart. **KEEP THE PERSON IN A KNEELING POSITION, THEN A SITTING POSITION FOR THE FIRST 30 MINUTES AFTER THE RESCUE.**

**ALL WORKERS WHO EXPERIENCE A FALL ARREST/SUSPENSION WILL HAVE A MEDICAL EVALUATION TO DETERMINE THE EXTENT OF INJURIES, IF ANY.**

8. Provide assistance to emergency responders as needed.

### **Self-Rescue for Crane Operator- DBI Sala Rollgliss R550**

When a worker is suspended in a harness, it is important to help rescue them as quickly as possible for the following reasons.

- The worker may need medical attention.



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- When workers are suspended in their safety harnesses for long periods, they may suffer from suspension trauma.
- Suspended workers may panic if they are not rescued quickly.
- The events that led to the fall may create additional risks that need to be addressed.

If crane operators cannot safely climb down during an emergency the **DBI Sala Rollgliss R550** must be used. This is a self-rescue procedure. All devices must be inspected each day before use. The unit can be found in the yellow protective case inside the crane cab. **This system is only to be used by competent workers who have training in its operation and understand the manufacturer user instructions.**

### **Crane Rescue Procedure - DBI Sala Rollgliss R550:**

1. Find suitable anchor point to attach Rollgliss unit by carabiner.
2. Throw the bag with the rope to the ground.
3. Attach the snaphook on Rollgliss lifeline to sternal D-ring or dorsal D-ring on harness.
4. Prepare the lifeline for descent; ensure there is no slack between the D-ring and the Rollgliss unit.
  - Tighten the lifeline by pulling on the free end of the rope until slack between the user and R550 Device is removed. Once the lifeline is taut, hold the free end of the lifeline tightly until descent is initiated.
5. Release free end of Rollgliss lifeline to initiate descent (centrifugal brake allows 2-3 ft/s).
  - Descent may be slowed, interrupted or prevented by using the following methods:
    - a. Slow or interrupt descent by grabbing the free end of the lifeline
    - b. Use the Pigtail while firmly grasping the free end of the Lifeline to provide additional descent control.
6. Once the operator is on the ground and brought to a safe location, administer First Aid, and treat the person for suspension trauma and any other injuries.

During and after a rescue, it is important that you NOT allow the victim to lie down, as this can cause a heart attack and multiple organ failure when the deoxygenated blood comes flooding back to the heart. **KEEP THE PERSON IN A KNEELING POSITION, THEN A SITTING POSITION FOR THE FIRST 30 MINUTES AFTER THE RESCUE.**

**ALL WORKERS WHO EXPERIENCE A FALL ARREST/SUSPENSION WILL HAVE A MEDICAL EVALUATION TO DETERMINE THE EXTENT OF INJURIES, IF ANY.**

7. Provide assistance to emergency responders as needed

### **Post-Rescue Procedure**

All workers must remain onsite in a safe location until the site supervisor notifies them to do otherwise.

**The site supervisor and health and safety representative must ensure the following is completed:**

- Secure the area where the incident occurred.
- If a critical injury or fatality has occurred, immediately notify the Ministry of Labour. The incident scene must not be disturbed.
- Notify management of the incident.
- Quarantine all fall arrest equipment used during the fall for further investigation and inspection.
- Begin the incident investigation:
  - Record all documented statements from employees, witnesses, and others.
  - Save all photographs of the incident.
  - Record all key information such as dates, time, weather, general site conditions, and specific incident locations including sketches of the immediate area, complete with measurements if applicable.
  - Record all documented communications with fire, police, EMS, Ministry of Labour, and any other contractors involved.



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**Management must ensure the following is completed:**

- Review the applicable sections in the Occupational Health and Safety Act (Sec. 51-53) and O. Reg 420 to ensure the Ministry of Labour receives all required notices regarding the occurrence.
- Review and complete the incident investigation.
- Determine whether the rescue procedures were followed as designed. Discuss the incident with workers and the supervisor. Make corrections to the procedures if necessary.
- Replace any needed fall protection equipment.
- Ensure all rescue devices (i.e. DBI Sala Rollgliss) have been removed from service and subsequently inspected by a certified technician to ensure good working order.



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**RESCUE PLAN**

This Working at Heights Rescue Plan is to be communicated to all J-AAR staff on site. All J-AAR personnel must be aware of the rescue procedures on their jobsite and what to expect if a J-AAR employee's fall is arrested.

All J-AAR staff must be aware of the rescue procedures. J-AAR staff are expected to assist in a rescue situation in ways which they are competent and comfortable to carry out. This can include calling 911; helping to secure the scene; meeting EMS at the gate; using rescue devices; administering first-aid; etc. Rescues must be organized and carried out as quickly as possible.

While J-AAR staff may aid in the rescue of other employer's staff on site, this plan is written specifically for the rescue and immediate aftercare of J-AAR employees. This rescue plan must specify the 'Emergency Rescue Team', to be filled out by the site supervisor for each jobsite.

The Final section of this plan is to be completed as part of a debrief, following a rescue.

**Communication:**

J-AAR workers commonly communicate using the following methods. Ensure that before any work is carried out at height, an emergency communication method is established using (circle at least one):

**Direct voice communication**

**Mobile Phone**

**3-Long blasts of Crane Horn**

**Two-way Radios / Headsets**

**Emergency Contact:**

In the event of a rescue, the supervisor will immediately alert the rescue team and first aiders.

**Emergency Services (911)** are to be called immediately regardless of perceived severity. Any worker who has had their fall arrested must be considered injured and treated for suspension trauma. First-aid must also be administered for any secondary injuries.

Address of this site: \_\_\_\_\_

Supervisor: \_\_\_\_\_

Certified First Aider(s): \_\_\_\_\_

Are there any obstructions/hazards which must be accounted for when reaching the worker needing rescue?

Abrasive Edge	Power Sources	Inadequate Anchor Points	Chemical Hazards
Equipment Hazards	High Angle Rescue		
Other:			



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**The Following Equipment Must be Available to J-AAR and Inspected (at least) Monthly:**

- Ladder
- First Aid Kit
- Rollgliss R550
- Rescue-hook

**Other potential Means of Rescue:**

- PEWP
- Manual- Worker pulled to floor.
- Crane/Suspended Access Equipment
- List any additional equipment available on this specific job:

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**Rescuers**

**List all members of Rescue Team. Each member using a Rollgliss device must be trained in its use.**

1.
2.
3.
4.
5.
6.
7.
8.

- Are Rescuers competent in the use of rescue equipment? Yes No
- Plan reviewed? Yes No
- Is rescue equipment appropriate for nature of work? Yes No

**How will incident scene be protected?**

Danger Tape Barriers

Other considerations:



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Supervisor must be notified immediately. Supervisor to notify Management immediately.

Rescue equipment been inspected and ready for use. Add any details below:

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Unusual features of building / structure. Add any details below:

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Other:

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**APPROVAL OF WORK AT HEIGHTS RESCUE PLAN:**

**Supervisor:**

Name (print): \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_





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**Post Rescue Information**

**Type of Rescue Performed:**

Assisted

Self-Rescue

**Method Of Rescue Performed:**

Ladder

PEWP

Manual

Rescue-hook/pulled to floor

Rollgliss R550

Crane/Suspended Access Equipment

**Ensure that the scene is secured, and any hazards created by the rescue team have been accounted for and controlled.**

**APPROVAL OF DEBRIEF:**

**Supervisor:**

Name (print): \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_