
 HEALTH, SAFETY & ENVIRONMENTAL MANUAL	13.9 Asphalt Plant			
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ASPHALT PLANT

For the purposes of this HSE Manual, the asphalt plant is located in the “Materials Group” section, even though it is managed by J-AAR’s Civil Infrastructure division. The plant is an industrial site, however it is located in one of J-AAR’s surface mines and shares many of the same hazards that occur in the mining site, including traffic, conveyors, heavy equipment, and stockpiles.

PURPOSE

The purpose of this plan is to outline the responsibilities, roles, and procedures designed to limit the exposure workers have to hazards.

PROCEDURES

General

- Only perform work you are competent and trained to do.
- Unsafe conditions and situations must be reported to the plant supervisor immediately.
- Visitors must report to the plant office.
- All walkways, stairways, access / egress points, and access to emergency equipment are to be always kept clean and free of obstructions (remove debris, snow, ice)
- Keep walkways, and stairs clear of tripping hazards (i.e. electrical cords, hoses, tools)
- Truck drivers must always remain in the cab of the truck and be visible to the plant operator / loader operator during loading.
- Ensure adequate lighting is maintained.
- Keep designated storage areas free from clutter. Keep stacked items accessible.
- Ensure areas housing electrical equipment and panels are locked and secured, and only accessed by authorized personnel.
- Ensure all chemicals are stored correctly and identified. Consult SDS for specific instructions.

PPE

General PPE requirements for the plant are discussed in the Personal Protective Equipment section in Part 1 of this program. Task specific PPE must be discussed with plant supervision as well as consulting any relevant safety data sheets. However, the following PPE must be worn as a minimum:



- Hardhat
- Safety footwear
- Safety clothing (vest)

Workers must wear all PPE listed in the SDS for the specific hazardous products that they are to handle.

Safety Board

The safety board is located in the plant office and has all the required documentation and forms posted. The health and safety team will update the board as needed. Any required SDS’s will also be available in the plant office.

A first aid kit, spill kit, eyewash and fire extinguisher are available in the plant office.

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Traffic Control

A traffic control plan has been designed for the site. The details of the plan are posted on the safety board and in the scalehouse for reference by all employees and visitors. The traffic plan will be reviewed at least annually.

Vehicles and Equipment

All information and policies for heavy equipment operation and vehicles onsite can be referenced in Part 3 - Materials, Section 3.7.

Guards and Conveyors

All information and policies for guards and conveyors can be referenced in Part 3 -Materials, Section 3.5

Stockpiles

All information and policies for stockpiles can be referenced in Part 3 -Materials, Section 3.9.

Confined Spaces

Confined spaces must have signage indicating the hazard and be secured from access. Refer to the Confined Space section in this HSE Manual for more details.

Plant Maintenance

A schedule of maintenance activities has been developed and is available to be completed in a hard copy format or on HCSS Inspections. The maintenance inspections are categorized as follows:

- Daily inspection
- Weekly inspection
- Monthly inspection
- 6-month inspection
- Annual inspection



SAFE WORK PRACTICES

Work at Heights

This plan applies to all plant areas where a worker is required to wear fall protection equipment and where any fall may be arrested. It must be reviewed before the worker is exposed to a fall hazard.

General

- Working at heights requires specialized training. Do not carry out this work if you are not properly trained.
- Working at heights is considered a critical task by J-AAR. A job hazard assessment must be completed before commencing work.
- Any unsafe conditions shall be reported to your supervisor immediately.

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- If possible, protection from heights by a guardrail system is considered J-AAR's best practice.
- If a guardrail system is not practicable then try to protect yourself with a travel restraint system. Fall arrest systems are a last resort.
- If your anchor points are not engineered, ensure they are capable of absorbing 8 kilonewtons (1798 pounds) of force from a static load.
- Inspect all components of your travel restraint or fall arrest system before every use. If any component is found to be defective, immediately tag it and remove it from service.
- If a worker has their fall arrested, initiate rescue, call 911, and your supervisor immediately.
- The annual maintenance work being carried out at the plant requires a power elevated work platform (PEWP). Workers operating this equipment must be competent.
- The PEWP is required as it is the main means of rescue (PEWP rescue procedures attached).
- While most work at the plant has been designed as fall restraint/restricting, the PEWP is also the means of rescue for a worker who may have suffered a medical emergency.
- All workers in a PEWP must adhere to WAH requirements. This includes a lanyard without a shock absorber and operator training.

Guardrails

- Guardrails must consist of a top rail, mid rail, and toe board.
- The top rail must be between 0.9m and 1.1m above the surface.
- The mid rail must be located between the top rail and the toe board.
- The toe board must extend from the surface at least 89mm.
- The guardrail must be located no more than 30mm from the edge of the surface.
- Guardrails must meet the force requirements laid out in the regulation.
- Posts may only be 2.4m apart.

Travel Restraint

- Travel restraint systems prevent the worker from reaching a potential fall.
- The system must be configured in such a way that when fully extended, the worker cannot reach the edge.

Fall Restricting



- A fall restricting system still exposes a worker to a potential fall.
- However, the fall is limited to 0.6m (2 feet) or less.

Fall Arrest

- A fall arrest system aims to reduce the severity of injury by stopping a fall before the ground.
- If a worker has their fall arrested, the MLITSD must be informed in writing within 48 hours.

Rescue Plan

- There must be a site-specific rescue plan in place if a fall may occur.

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- Do not begin work with the potential for a fall without a rescue plan. See plan below.

SAFE WORK PROCEDURES

Planning

- Working at Heights requires specialized training. Ensure all workers involved in the task are properly trained.
- Conduct a job hazard assessment. Working at heights is considered a critical task.
- Calculate any fall distances/swing radius for fall arrest.
- Ensure that all PPE/WAH equipment identified in the hazard assessment is available.
- Inspect all PPE and WAH equipment before use each day, anything found to be defective shall be tagged and removed from service immediately.
- Ensure there is a working at heights rescue plan in place and all workers know their assigned roles/responsibilities for any fall that may occur.
- The preferred method of control for tasks being done at heights is guard rails. Only if installing guard rails is not practicable, may other methods be used.
- Following guard rails, travel restraint is preferred.
- Lastly consider fall arrest.

Work at Heights at the Asphalt Plant



- All workers participating in WAH must have a valid Working at Heights Training certificate.
- Other than guardrails, fall protection at the plant has been designed as fall restricting.
- Inspect all WAH equipment before use each day. Any equipment found to be defective shall be tagged and J-AAR supervision must be notified immediately.
- Ensure that a Powered Elevated Work Platform (PEWP) is available on-site for rescue if required. Operator training is required.
- All J-AAR workers performing work at heights at the plant must wear a harness equipped with a front D-ring as well as a dorsal D-ring.

Ladder Access

- All ladders at the plant which may be used as an access point for WAH have been equipped with fall restricting systems. These must be used while ascending and descending the ladder.
- The system is connected to the worker via a front D-ring on their harness.
- Once at the top of any ladders at the plant, workers are protected by a guard rail system and may disconnect without additional tie off.

Maintenance in the Bins

- While workers are doing maintenance activities in the bins and are protected via the guard rail, harnesses must be worn and connected to SRL's with retrieval at all times.

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- While the bins are not considered confined space – unless welding is taking place inside – these are required to rescue a worker if necessary.
- The J-AAR asphalt plant lock-out plan must be reviewed and adhered to, at all times while performing maintenance activities.
- There must be at least one worker at the entrance of the bins during maintenance activities to initiate a rescue if required.

Work Above the Guardrails

- If performing work above the guardrails, 100% tie off is required at all times. A sliding beam anchor must be attached to the TOP side of the I-beam and the worker must be tied off using a leading-edge P-SRL.
- The placement of the beam anchor is crucial for the fall restricting system to function properly. It must be placed at the marked location on the I-beam.
- Proper placement eliminates the risk of a fall greater than two feet from all edges except the western edge. There is the potential for a fall of greater than two feet when walking across the work platform.
- When work above the guardrail is complete the sliding beam anchor must be removed and brought back to the storage area.

If a Fall is Arrested

1. Put the rescue plan into effect
2. Call 911
3. Inform J-AAR supervision
4. Make sure no other workers are put in harm's way while carrying out the rescue
5. Ensure a debrief takes place with all workers involved
6. Inform the Ministry within 48 hours per O. Reg 420/21

End of Task



- Ensure all PPE/WAH equipment is safely stored per the manufacturer's instructions.
- Housekeeping as required.

RESCUE PROCEDURE

Someone is found Suspended in a Fall Arrest System

The roles of the emergency rescue team must be determined at mobilization and the designation sheet must be completed and posted in the workplace to avoid confusion.

1. Notify the J-AAR supervisor immediately. They will implement the site-specific rescue procedure.
2. Call 911
3. Once the emergency response team has arrived at the scene everyone not involved in the rescue procedure must vacate the area. Having too many people around will only cause congestion and confusion during the rescue process and may impede EMS' ability to get to the area.

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Power Elevated Work Platform (PEWP) Rescue

- Routine annual maintenance activities should not be carried out unless there is an adequately sized PEWP available to use for rescue, unless an alternative has been planned.
- If a PEWP is available on site, and a member of the rescue team is trained in its use and operation, this should always be the first option for rescue, unless it is not practical to do so.
- The rescuer must never expose themselves to a fall hazard. They shall be wearing a harness with lanyard while operating the PEWP.

If A Worker Has Fallen Over the Guardrail

1. Position the PEWP in an area where the basket can reach the suspended person.
2. A rescue member must call 911 and wait for them at the gate/clearly marked intersection.
3. Slowly raise the basket of the PEWP towards the suspended person until they are within the guardrails.
4. Attach the second lanyard/SRD to the rescued worker and secure it to the PEWP.
5. Remove the original fall protection device from their D-ring.
6. Carefully lower the basket to the ground.
7. Once at ground level administer first aid.
8. Monitor the rescued person until EMS arrives.
9. Have another member of the rescue team secure the scene and danger tape it off.

If A Worker Has Suffered and Injury/Health Issue and Cannot Descend the Ladder

1. Call 911 if required and wait for them at the gate/clearly marked intersection.
2. Position the PEWP next to the guardrail.
3. Assist or lift the casualty into the basket of the manlift.
4. Carefully lower the basket to the ground.
5. Once at ground level administer first aid.
6. Monitor the rescued person until EMS arrives.

If No PEWP is Available

1. Slide the 50' SRL with Descent along the I beam to directly above the fallen worker.
2. Attach the SRL to the worker's dorsal D-ring.
3. Use the rescue function of the SRL to raise the worker enough that the brake on the P-SRL disengages.
4. Remove the P-SRL from the beam clamp. Be careful to ensure that it does not strike the worker when released.
5. Carefully lower the worker to the platform below, then to the ground. Use a tag line if necessary to keep the worker from coming into contact with any hazards.

Suspension Trauma

If someone has had their fall arrested by a fall arrest system, there is a high potential for them to suffer from suspension trauma/orthostatic intolerance. This is a serious condition which may result in death. The vertical position which the suspended person remains in for a long period of time after having their fall



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arrested can lead to pooling of blood in the legs. A prolonged/poorly executed rescue may result in the suspended person suffering cardiac arrest.

Equipment such as harness relief straps can be utilized as a first step in the prevention/delay of suspension trauma. They allow the suspended person to shift their weight from one leg to the other and keep their blood from pooling.

Anytime a workplace party has their fall arrested the MLITSD must be notified. Follow the reporting procedure laid out in O.Reg. 420/21.

JOB HAZARD RISK ASSESSMENT

Initial HIRA Score	Hazards	Controls	Residual HIRA Score
20	Inadequate Travel Restraint	<ul style="list-style-type: none"> Workers must be competent in the tasks assigned to them The distance between the anchor and edge must be calculated when assembling a travel restraint system Proper WAH training Correct equipment used Other factors like sources of heat/extreme cold/tying off below the D-ring, must be taken into account when selecting travel restraint equipment 	10



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20	Inadequate Fall Arrest	<ul style="list-style-type: none"> • Workers must be competent in the tasks assigned to them • The fall distance and swing radius must be calculated when assembling a fall protection system • A rescue plan must be developed • Proper WAH training • Correct equipment used • Other factors like sources of heat/extreme cold/tying off below the D-ring, must be taken into account when selecting fall protection equipment 	10
20	Falls	<ul style="list-style-type: none"> • PPE, which is CSA approved and appropriate for the task must be worn by a competent worker at all times they are exposed to a fall hazard • Conduct a hazard assessment before beginning work to determine the correct fall protection needed for the specific task • Proper WAH training 	10
20	Improper equipment usage/installation	<ul style="list-style-type: none"> • Guardrails installed correctly in accordance with the Regs. • Anchors selected must be either engineered or capable of withstanding the forces outlined in the Regs. • Using fall equipment properly w/ WAH training • Proper WAH training 	10



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20	Lack of Inspection	<ul style="list-style-type: none"> • WAH PPE shall be visually inspected before every use and formally inspected at least monthly • Equipment like SRL's need to be revalidated at least annually depending on usage • Always consult the manufacturer's instructions for revalidation periods 	5
20	Lack of Training	<ul style="list-style-type: none"> • Workers must have valid, Ministry approved Working at Heights training if using fall protection devices. 	5
20	Lack of Planning	<ul style="list-style-type: none"> • Workers must be competent for the tasks assigned to them • Working at heights rescue plans must be available before starting work where a fall may occur • Rescue equipment must also be available and in good condition before beginning work 	5