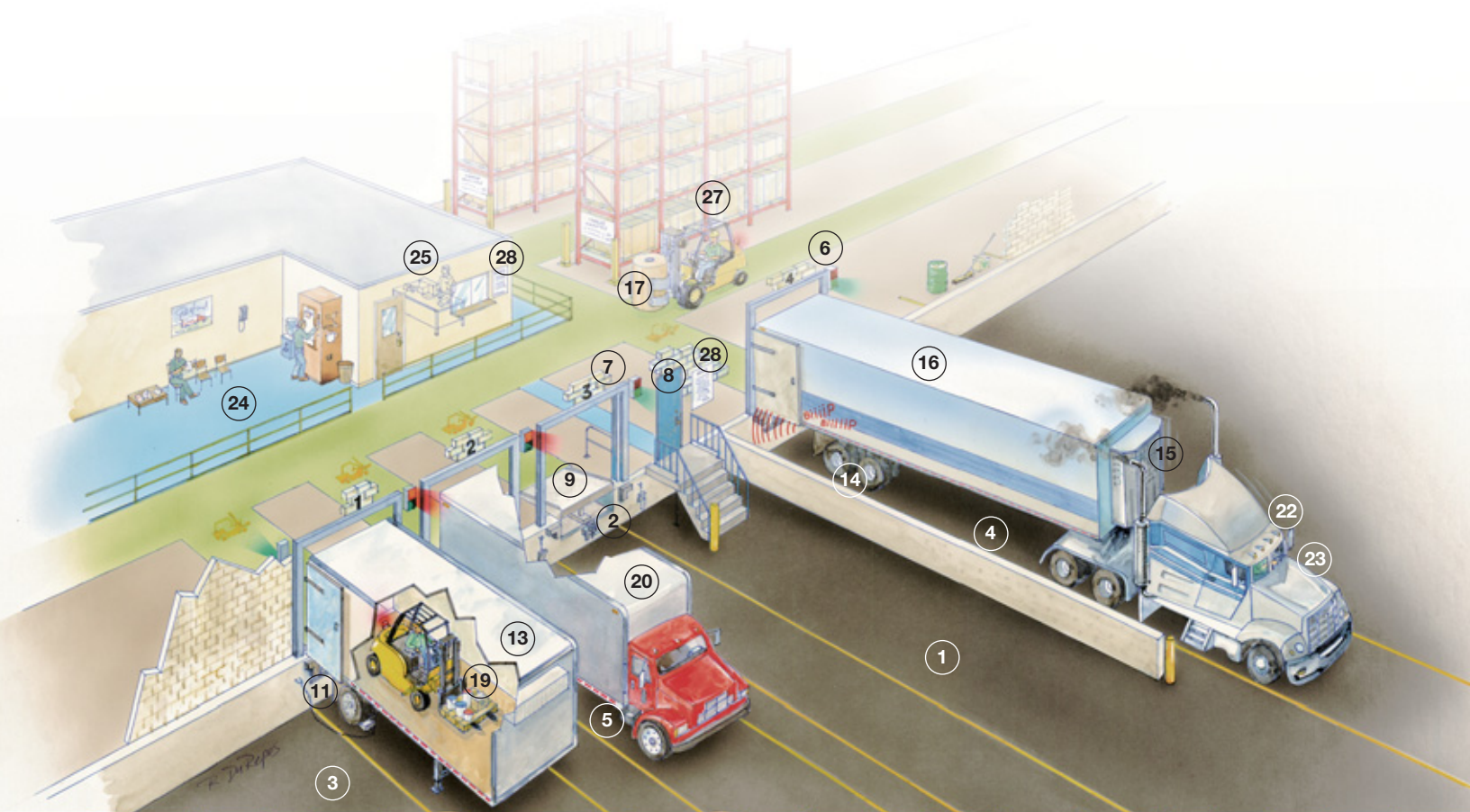


Safety on loading docks

Questionnaire related to *The Doc-Quais* computer-based tool

R-530



QUESTIONNAIRE



Safety on loading docks

What is the safety level on your company's loading docks?

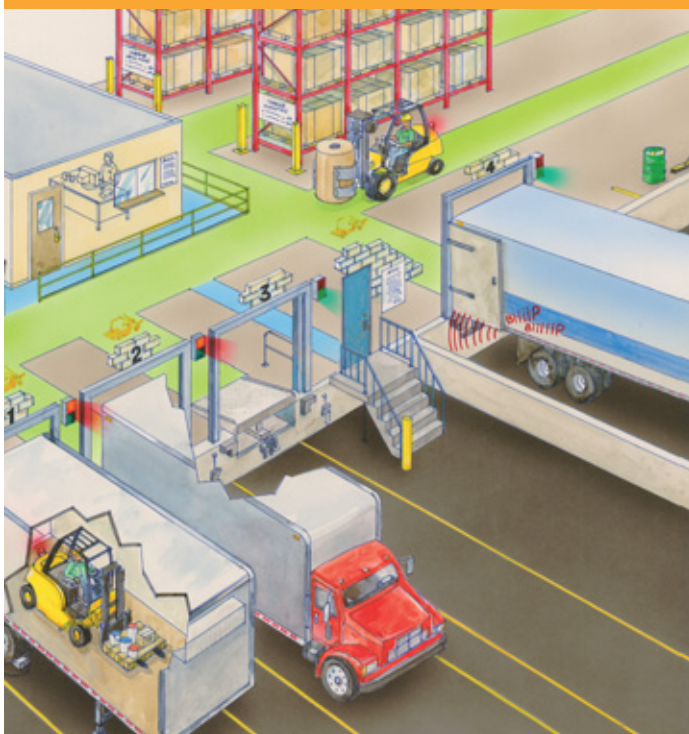
This questionnaire allows you to prepare your answers so that you can use *The Doc-Quais computer-based tool*.

It therefore presents:

- **30 simple questions**, whose answers identify the characteristics and the situation on your loading docks. Answers 1 and 3 are intermediate possibilities to help show subtle differences in your answers.
 - **5 possible ratings** for each question, explaining the different possible choices of answers.
 - **17 explanatory notes** for questions requiring more details. These questions follow the icon «💡».
- The explanatory notes are located at the end of the document.

Once the questionnaire has been completed, the results can be **transferred to the software program**, so that it can automatically analyze the answers and **calculate an initial safety level** for your loading docks, for the three main risks (unscheduled departure, slipping, and tipping).

Then, the software interactively produces an **adapted evaluation** of the efficiency of the different possible **restraint measures** for your loading docks.



Yard

1 Nature of yard's pavement

- 4 = The yard is paved with asphalt or concrete or includes a special wheel plate and is in good condition.
- 3 = Intermediate result between answers 4 and 2.
- 2 = The pavement is made of gravel or is in poor condition.
- 1 = Intermediate result between answers 2 and 0.
- 0 = The pavement is covered with sand or dirt.

2 Condition of pavement near loading dock (ice, snow, sand, debris)

- 4 = The pavement is always clean: free of ice, snow, sand or debris.
- 3 = Intermediate result between answers 4 and 2.
- 2 = The yard is not always clean: ice, snow, sand or debris are not always properly removed. Abrasives may be used in winter, but not systematically.
- 1 = Intermediate result between answers 2 and 0.
- 0 = Ice, snow, sand or debris accumulate in the yard.

3 Condition of yard in winter (snow removal)

- 4 = Snow cannot accumulate in the yard between the trucks (closed interior dock).
- 3 = Intermediate result between answers 4 and 2.
- 2 = Snow removed is fast and efficient so that snow accumulation is limited.
- 1 = Intermediate result between answers 2 and 0.
- 0 = Frequent significant snow accumulation.

4 Yard's slope

- 4 = The yard is slightly inclined (10% or more) towards the dock. The lowest level of the yard is therefore next to the dock.
- 3 = Intermediate result between answers 4 and 2.
- 2 = The yard is perfectly flat.
- 1 = Intermediate result between answers 2 and 0.
- 0 = The yard has a descending slope (10% or more). The highest level of the yard is therefore next to the dock.

Docks

5 Space between two parked trucks at dock (doors)

- 4 = There are more than 112 centimetres [44"] between two parked trailers.
- 3 = Intermediate result between answers 4 and 2.
- 2 = There are less than 76 centimetres [30"] between two parked trailers.
- 1 = Intermediate result between answers 2 and 0.
- 0 = There are less than 61 centimetres [24"] between two parked trailers.

6 Number of doors on dock

- 4 = There is only one door.
- 3 = Intermediate result between answers 4 and 2.
- 2 = There are 5 to 10 doors.
- 1 = Intermediate result between answers 2 and 0.
- 0 = There are more than 20 doors.

Docks (cont.)

7 Door numbering

- 4 = All the doors are clearly identified outside and inside; the numbers are always visible and are not confusing.
- 3 = Intermediate result between answers 4 and 2.
- 2 = The identification of the doors can be confusing or is not always clearly visible by the drivers (in the shadows, obstacles, hidden, etc.).
- 1 = Intermediate result between answers 2 and 0.
- 0 = The doors are not identified.

8 Greatest distance to closest exterior access door

- 4 = There are less than 5 metres [16'] between the exterior access door and the farthest trailer.
- 3 = Intermediate result between answers 4 and 2.
- 2 = There are approximately 20 metres [66'] between the exterior access door and the farthest trailer.
- 1 = Intermediate result between answers 2 and 0.
- 0 = There are more than 50 metres [164'] between the exterior access door and the farthest trailer.

9 Height difference between dock and trailer

- 4 = The trailer's floor and the dock are at the same height or the trailer's floor is higher.
- 3 = Intermediate result between answers 4 and 2.
- 2 = The trailer's floor is 15 centimetres [6"] below the level of the dock floor.
- 1 = Intermediate result between answers 2 and 0.
- 0 = The trailer's floor is 30 centimetres [12"] or more below the level of the dock floor.

10 Size of dock leveler lip's support area

- 4 = The lip covers the trailer floor by more than 30 centimetres [12"].
- 3 = Intermediate result between answers 4 and 2.
- 2 = The lip covers the trailer floor by 10 to 15 centimetres [4" to 6"].
- 1 = Intermediate result between answers 2 and 0.
- 0 = The lip covers the trailer floor by less than 5 centimetres [2"].

Trucks and Trailers

11 Presence of rear impact guards (ICG bars)

- 4 = Almost all trailers arriving at the dock are equipped with rear impact guards.
- 3 = Intermediate result between answers 4 and 2.
- 2 = 75% of the trailers arriving at the dock are equipped with rear impact guards.
- 1 = Intermediate result between answers 2 and 0.
- 0 = Less than 50% of the trailers arriving at the dock are equipped with rear impact guards.

12 Overall condition of trailers

- 4 = Almost all trailers arriving at the dock are of recent manufacture and in very good condition (brakes, floor, walls, etc.).
- 3 = Intermediate result between answers 4 and 2.
- 2 = Most trailers arriving at the dock are in good condition (brakes, floor, walls, etc.).
- 1 = Intermediate result between answers 2 and 0.
- 0 = Many trailers arriving at the dock are relatively old and in rather poor condition (brakes, floor, walls, etc.).

13 Lengths of trailers

- 4 = Almost all trailers arriving at the dock measure 16.2 metres [53'] in length or more, or are walk-in vans.
- 3 = Intermediate result between answers 4 and 2.
- 2 = Most trailers measure between 11 and 13.7 metres [36' and 45'].
- 1 = Intermediate result between answers 2 and 0.
- 0 = Trailers measuring 9.75 metres [32'] or less sometimes come to the dock.

14 Nature and condition of trailer suspension during transshipment activities

- 4 = Trailer air-ride suspension is always deactivated or there are no trailers with air-ride suspension.
- 3 = Intermediate result between answers 4 and 2.
- 2 = Some trailers have air-ride suspension that is not always deactivated.
- 1 = Intermediate result between answers 2 and 0.
- 0 = Most trailers have air-ride suspension that is not deactivated.

15 Presence or absence of truck (attached to trailer) during transshipment operations

- 4 = All transshipment activities are performed with a tractor hitched to the trailer or in walk-in vans.
- 3 = Intermediate result between answers 4 and 2.
- 2 = Most transshipment activities are performed with a tractor hitched to the trailer or in walk-in vans.
- 1 = Intermediate result between answers 2 and 0.
- 0 = Most transshipments are performed without a hitched tractor.

16 Number of trailers loaded/unloaded at peak hours

- 4 = Three trailers or less are transshipped per hour during the busiest period.
- 3 = Intermediate result between answers 4 and 2.
- 2 = Six trailers are transshipped per hour during the busiest period.
- 1 = Intermediate result between answers 2 and 0.
- 0 = Ten trailers or more are transshipped per hour during the busiest period.

Forklifts and Loads

17 Combined mass of lift truck-transported load

- 4 = The combined mass of the lift truck and the heaviest load is less than 6,500 kg [14,300 lbs].
- 3 = Intermediate result between answers 4 and 2.
- 2 = The combined mass of the lift truck and heaviest load is approximately 8,500 kg [18,700 lbs].
- 1 = Intermediate result between answers 2 and 0.
- 0 = The combined mass of the lift truck and heaviest load exceeds 12,000 kg [26,500 lb].

18 Lift truck moving speed when entering/exiting trailers

- 4 = Lift trucks move at the speed of a slow walk (approximately 3 km/h or 1.86 mph).
- 3 = Intermediate result between answers 4 and 2.
- 2 = Lift trucks move at the speed of fast walk (approximately 6 km/h or 3.73 mph).
- 1 = Intermediate result between answers 2 and 0.
- 0 = Lift trucks about at the speed of a runner (approximately 10 km/h or 6.21 mph).

19 Number of lift trucks simultaneously loading same trailer (co-activity)

- 4 = Only one lift truck carries out transshipment activities on each trailer.
- 3 = Intermediate result between answers 4 and 2.
- 2 = Two lift trucks or more can occasionally do transshipment activities on the same trailer.
- 1 = Intermediate result between answers 2 and 0.
- 0 = Two lift trucks or more can often do transshipment activities on the same trailer.

Transshipment Activities

20 Duration of trailer docking period

- 4 = Trailers are transshipped in less than 30 minutes.
- 3 = Intermediate result between answers 4 and 2.
- 2 = Trailers are transshipped in approximately two hours.
- 1 = Intermediate result between answers 2 and 0.
- 0 = Trailers can remain at the dock for many hours, sometimes even days.

21 Time available for lift truck operators' activities

- 4 = Lift truck operators have ample time for each transshipment. This activity is generally not subject to any time constraints.
- 3 = Intermediate result between answers 4 and 2.
- 2 = Lift truck operators are sometimes subject to time constraints or have little time for each transshipment.
- 1 = Intermediate result between answers 2 and 0.
- 0 = Lift truck operators are subject to very demanding time constraints in order to complete all the required

22 Responsibility for trailer positioning/removal

- 4 = Most trailers are moved by a shunter or only by a few drivers who are very familiar with the company and the dock's operating regulations.
- 3 = Intermediate result between answers 4 and 2.
- 2 = Trailers are moved by the drivers, who are reasonably familiar with the company and the dock's operating regulations.
- 1 = Intermediate result between answers 2 and 0.
- 0 = Trailers are moved by the drivers, who are sometimes rather unfamiliar with the company and the dock's operating regulations.

23 Proportion of drivers leaving with same trailer

- 4 = A driver usually leaves with the same trailer that he or she parked at the dock.
- 3 = Intermediate result between answers 4 and 2.
- 2 = One driver leaves one time in two with a different trailer than the one that he or she parked at the dock.
- 1 = Intermediate result between answers 2 and 0.
- 0 = A driver generally never leaves with the trailer that he or she parked at the dock.

24 Management of drivers during transshipment activities

- 4 = Drivers are under the constant and direct supervision of a transshipment supervisor or the lift truck operator who is carrying out the transshipment activities on their truck.
- 3 = Intermediate result between answers 4 and 2.
- 2 = Drivers usually wait in a predetermined area (their tractor, a waiting room, etc.) but are not under the constant and direct supervision of a transshipment supervisor or of the lift truck operator who is carrying out the transshipment activities on their truck.
- 1 = Intermediate result between answers 2 and 0.
- 0 = The transshipment supervisor and the lift truck operator are generally unaware of the comings and goings of the driver.

25 Role of dispatcher, coordinator, planner or foreman

- 4 = The dispatcher plays a key role in information management, both for the lift truck operators and the drivers. His responsibilities are never delegated to, or taken on by someone else. It is the dispatcher's role to give drivers the authorization to leave.
- 3 = Intermediate result between answers 4 and 2.
- 2 = The dispatcher plays a key role in information management, both for the lift truck operators and the drivers. His responsibilities are occasionally delegated to, or taken on by other people.
- 1 = Intermediate result between answers 2 and 0.
- 0 = There is no dispatcher, or his role is generally vague; he and the lift truck operators (or other people) share the responsibilities according to need.

26 Delayed departure authorization

- 4 = *Delayed departure authorization never occurs.*
- 3 = *Intermediate result between answers 4 and 2.*
- 2 = *Delayed departure is sometimes authorized.*
- 1 = *Intermediate result between answers 2 and 0.*
- 0 = *Most of the departure authorizations are delayed.*

27 Level of training and experience of dock-assigned lift truck operators

- 4 = *Lift truck operators are given detailed, periodically updated training by a qualified person. Lift truck operators have good experience with loading docks.*
- 3 = *Intermediate result between answers 4 and 2.*
- 2 = *Lift truck operators are given informal training. When hired, they have some experience with loading docks.*
- 1 = *Intermediate result between answers 2 and 0.*
- 0 = *Lift truck operators receive no training and their experience in this field is very limited.*

28 Quality of rules and procedures pertaining to dock activities

- 4 = *There are formal, written procedures concerning most of the possible situations at the loading dock. These regulations and procedures are well known by the people who are assigned to dock activities.*
- 3 = *Intermediate result between answers 4 and 2.*
- 2 = *There are formal, written procedures describing routine work but there are no procedures for unusual situations (trailer of an unusual type, incompatibility between restraint measure and incoming truck, etc.). These procedures are relatively well known by the people who are assigned to dock activities.*
- 1 = *Intermediate result between answers 2 and 0.*
- 0 = *There are no formal procedures or these procedures are not well known by the people who are assigned to dock activities. Instead, certain ways of doing things have developed over time.*

29 Respect of rules and procedures by establishment's employees

- 4 = *Regulations and procedures are generally respected during all shifts and by all the people concerned. The company tolerates no violation.*
- 3 = *Intermediate result between answers 4 and 2.*
- 2 = *Regulations and procedures are not always respected. A degree of flexibility is sometimes tolerated.*
- 1 = *Intermediate result between answers 2 and 0.*
- 0 = *Regulations and procedures are often by-passed and this situation is generally tolerated.*

30 Respect of rules and procedures by drivers who arrive at the docks

- 4 = *All the drivers arriving at the loading dock know the company's procedures well and generally comply with them without intervention being necessary.*
- 3 = *Intermediate result between answers 4 and 2.*
- 2 = *Most drivers know the company's procedures but it is often necessary to intervene to ensure that they comply with them.*
- 1 = *Intermediate result between answers 2 and 0.*
- 0 = *Many drivers don't know the procedures and it is very often necessary to intervene to ensure that they comply with them.*

**Question 2 Condition of pavement near loading docks (ice, snow, sand, debris)**

Near the loading docks means the zone where the truck's rear wheels are generally located (approximately the first three metres from the loading dock doors). For a better evaluation of this aspect, the drainage system, the slope of the pavement, the presence of ruts and weather protection are considered.

Anything that may be found under the wheels needs to be considered.

If there are ruts, water can accumulate there and freeze.

Similarly, if drainage is poor or poorly positioned and the slope is rising (inclined towards the loading docks), water can be found under the wheels. Ice will probably never be present when loading docks are indoors and heated (or at least where the temperature remains above 0°C).

The orientation of the loading docks can also have some impact. Loading docks oriented northwards will receive less sun; ice will melt more slowly than when the loading docks are oriented southwards. These situations were observed in several companies. Note that shade from buildings must also be taken into account.

Question 5 Space between two parked trucks at dock (doors)

What interests us here is the width of the space (between two trailers, between one trailer and a wall...) so that a person can position a wheel chock under the trailer's rear wheels.

Question 7 Door numbering

If the loading dock has only one door, give a rating of 4.

If the loading dock has only two doors, give a rating of 2 or more, depending on the quality of the signage.

Signage can be qualified as "good" if it is visible at all times (when the doors are open or when the doors are occupied by trucks, etc.) and when its numbers or letters are sufficiently large in size for the drivers to identify them easily in the yard.

Question 8 Greatest distance to closest exterior access door

This is the distance that a person will have to travel to reach a pedestrian door providing access to the loading docks when getting out of the truck or after having placed the wheel chocks under the trailer's wheels.

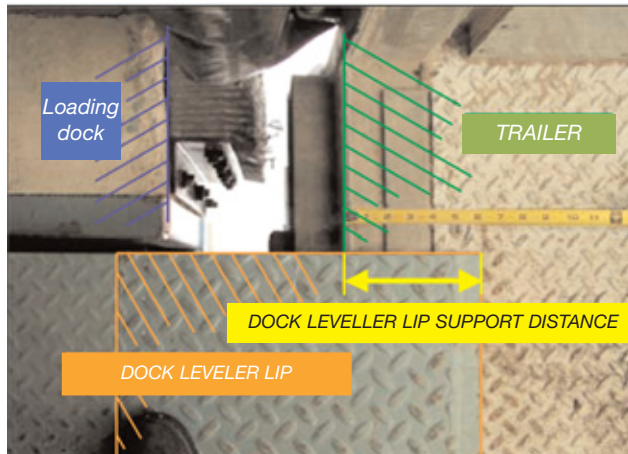
Question 9 Height difference between dock and trailer

This question is used to qualify the impact produced by sudden descent of the lift truck into the trailer. If the incline is gradual (gentle slope) due to the length of the dock leveller, give a rating of 4, regardless of the difference in height.



Question 10 Size of dock leveler lip's support area

The distance desired is not the length of the lip itself, but the useful support distance on the floor of the trailer. The photograph below shows how to measure this length.



The lip support distance represents the possible advance distance for the trailer without the lip tipping and creating a dangerous space between the loading dock and the trailer.

Question 12 Overall condition of trailers

This question indirectly evaluates the condition (quality of construction and level of deterioration) of the rear impact guards (ICC bars), walls, floor, trailer support legs and brakes.

Question 13 Lengths of trailers

If rating 0 applies, it has priority. Walk-in vans must be considered as 16.2-metre [53'] trailers.

Question 14 Nature and condition of trailer suspension during transshipment activities

There are different ways of deactivating air-ride suspension, the most common being to deactivate the suspension before transshipment activities. However, some companies install a device directly on their trailers to stop movement caused by sagging of the suspension. Note that the simple fact of unhitching the tractor from the trailer does not always deactivate the suspension, although this is the case with several models of trailers.

Question 22 Responsibility for trailer positioning/removal

A "very familiar" driver is a company employee or a driver who works almost exclusively for the company and knows the operating rules at the loading docks very well.

Question 23 Proportion of drivers leaving with same trailer

If a shunter is responsible for moving the majority of the trailers, give a rating of 4.

Question 24 Management of drivers during transshipment activities

The rating chosen must be greater than or equal to the rating for question 22 (Responsibility for truck positioning/removal), regardless of the context because an unsupervised driver on the loading docks can act dangerously or in a way that does not comply with the rules in force. However, a very familiar driver (question 22) knows the procedures and restraint devices and creates less risk when left unsupervised on the loading docks.



Question 25 Role of dispatcher, coordinator, planner or foreman

Dispatcher means coordinator, planner or foreman, namely the person or persons who manage the loading dock activities, mainly relating to communication with the drivers and to management of the lift truck operators. If there is no dispatcher, coordinator, planner or foreman, but a lift truck operator has been designated for this role, consider this lift truck operator as a dispatcher. If no one is designated as dispatcher, coordinator, planner or foreman, give a rating of 1.

Question 26 Delayed departure authorization

A delayed departure authorization consists of giving the driver or the shunter, before the end of the transshipment activities, authorization to leave with his trailer within a certain period of time. For example: "Come and get your trailer in 20 minutes." "It will be ready after lunch." "It will be finished at 11 a.m.", etc.

Question 27 Level of training and experience of dock-assigned lift truck operators

If the training is done through the buddy system, by experienced and qualified people, and the lift truck operators have some experience, give a rating of 3. Take into account only the experience as a lift truck operator on loading docks.

Question 29 Respect of rules and procedures by establishment's employees

Note that rules and procedures may differ from one shift to another.

The question helps determine whether the procedures, rules and good practices used in the company, and particularly on the loading docks, are respected.

Question 30 Respect of rules and procedures by drivers who arrive at the docks

If a shunter does all the trailer positioning, if he positions all the trailers of unfamiliar drivers, meaning that only familiar drivers or the shunter move the trailers, give a rating of 4.

Otherwise, what means are used so that the procedures for the carriers are respected?

Do agreements exist between the company and the carriers to ensure that the safety rules for transshipment activities are respected? How are the procedures transmitted to the drivers? Is proper understanding of the procedures ensured (in the case where the shunter is not the person who positions the trailers)?

Do you want to know more about the safety of your loading docks?
Do you want to know in detail about existing restraint measures?
It's possible!

The IRSST has developed a simple, user-friendly and interactive computer tool that helps you improve the safety of your loading docks even more.

This tool is used to answer the 30 questions described above so that your loading docks and the activities that take place on them can be more precisely characterized. An initial automatic analysis of the answers calculates the initial safety level of your loading docks for the three main risks (unscheduled departure/slipping/tipping). Then, the software allows the interactive evaluation of the real efficiency of the different possible restraint measures for your loading docks and automatically calculates the new safety level.

The tool:

- *calculates the initial safety level based on the answers to the 30 questions*
- *calculates the real improvement of the restraint measures chosen in relation to the answers*
- *verifies that the measures chosen are compatible and efficient for your loading docks*
- *calculates the new safety level of your loading docks in relation to the three risks, following the improvements made*

Finally, the software produces a detailed report of your situation. This report can help you to choose among the possible restraint measures and to follow up on the improvements to be made to your loading docks.

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For more information

Report R-381: www.irsst.qc.ca/files/documents/PublIRSST/R-381.pdf
Appendices 1 to 13 of report R-381: www.irsst.qc.ca/files/documents/PublIRSST/RA1-381.pdf to
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