QPA
Providing Essential Materials

QPA Member

Guidance Note

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Transport Safety Series 5

The trade association for all aggregates, asphalt, ready-mixed concrete, mortar, silica sand and lime

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Prevention of falls from vehicles within the aggregates industry

Introduction

This guidance note aims to help ensure best practice across member companies. It will be regularly revised to reflect new innovations which further control risk e.g. from ideas generated by the annual QPA Awards. It is intended that in future developments the scope also will be widened.

It is recommended that sites have clear signage at their entrances and at their weighbridges that reinforce the message that climbing onto loaded vehicles is prohibited.

A number of industry activities are considered and a hierarchy of control measures described which if applied will significantly reduce the falls from height risk.

What is the reasoning behind the need for this Guidance Note?

- Moral
- Legal
  - Health and Safety at Work Act 1974
  - Quarry Regulations 1999
  - Management of Health and Safety at work regulations 1999
  - Working at height regulations 2005
  - Road Traffic Act
  - Minerals Planning (including Conditions; Agreements)
- Cost
  - Insurance
  - Fuel economy
- QPA
  - Hard target
  - Sheeting policy (Annex 1)

Loading companies, Hauliers and Receiving companies have a shared responsibility for safety in transport operations.

Scope

- Tippers
- Tippers with grabs
- High-sided articulated tippers
- Drop sided flat beds < 7,500kg GVW

Underlying Principle

Working at height should be avoided.
If not avoidable, then a process of risk minimisation must be applied and be recorded in documentation such as Safe Systems of work, risk assessments, Permit to work or point of work risk assessment.

Sheeting/Unsheeting

It is already the situation that for vehicles over 7500kg GVW most companies insist that their company fleet, franchisees, owner drivers and hired-in fleet, have sheeting operated from the ground or cab. However, occasional hired-in and collect customers present some challenges, and the following hierarchy of control measures should be applied. Whenever a driver or other person sheets or unsheets outside of the cab, a designated area should be afforded which gives protection from passing traffic, (both road vehicles and mobile plant). This area should be well lit and under coverage by CCTV so that standards of use can be monitored.

Hierarchy:-

(A) Leave the Load Unsheeted

Subject to local planning conditions, this may only be permitted for loads with a grading greater than 150mm.
High sided articulated vehicles may travel unsheeted if there is at least 2 metres freeboard inside the vehicle. However a powered or mechanical system must be used if fitted.

(B) Powered Systems

(Tarpaulin or netting type)
These are in two variants - front to back and side to side. Being powered, the hazards associated with manual handling are also

reduced. Also if the control is in the cab, then many of the hazards associated with site conditions such as impact by vehicle, slip trip and fall or having material fall on the driver are also controlled. If the controls are radio controlled the driver can select a place of safety before operating the equipment. It is recommended that powered sheeting systems be interlocked so as to prevent them being operated when the vehicle is in motion.

(C) Mechanical Systems

Here the material is applied by the use of tools such as winches, winding handles or ropes via manual effort. The ground surface of the area must be kept free of ice and spillages which could cause the driver to slip over whilst pulling the ropes tight. Extra care must be taken to choose a suitable location affording shelter in high winds to avoid injury caused by sail effect.

(D) Manual Systems

(i) From the ground

In this case the height hazard is controlled, but it is vitally important that the conditions of eyelets and ropes are regularly checked as many injuries have occurred due to these failing and the driver falling backwards. The driver needs to be fit enough to throw the draw ropes over the load without injury. The ground surface of the area must be kept free of ice and spillages which could cause the driver to slip over whilst pulling the ropes tight. Extra care must be taken to choose a suitable location affording shelter in high winds to avoid injury caused by sail effect.

If throwing a rope over the thrower must ensure that there are no personnel in the area where the rope will land. The use of a goal post (see fig) can ease the lift of the tarpaulin over the load.

With hot asphalt extra care must be taken to ensure that there is no material entrained in the sheet which could drop down and burn the person.

(ii) From a pair of sheeting platforms

Whilst sheeting platforms do make manual sheeting easier it is difficult to design platforms for all truck dimensions. Also there is a downside that they can make it easier for a driver to climb on to the load, which can be addressed by observation, supervision and auditing. Platforms should have edge protection with top rail, mid rail and toe board all of the way around. They should be either side of the vehicle.

(iii) From a single sheeting platform

Constructed as in (ii) above but a written assessment and system of work which respects the Working at Height regulations must be completed and approved by the unit manager.

(iv) With a harness system

Unless all drivers that will use such a system have been trained, and the harness station is under permanent supervision then this is unlikely to be used by many drivers. This is only an option in units with very high traffic throughput and regular drivers. The equipment will need testing as per other site lifting equipment. Supervision and an emergency plan are essential during use, in order to initiate a rescue should a person activate the fall arrest device, therefore combating the risk of suspension trauma.

(E) Reject Loading the Truck

Unless the task can be carried out as per A B C or D above the haulier should be turned away.

Maintenance & Repairs to vehicle sheeting system

It is the case that most member companies prohibit drivers or others maintaining or repairing sheeting systems on company property unless adequate facilities exist. In the event of a breakdown the load should be either tipped off or one journey made under concession before arranging repair at a commercial vehicle garage. If a repair is carried out on site then a method statement and risk assessment will be needed to cover the activity.

Overloading adjustment

Overloaded vehicles (either GVW or axle weight exceeded) should return to the stockpile and tip excess material off. No one should be allowed to climb onto a loaded vehicle to manually remove excess load.

Depending on the type of over load problems, sites may consider the use of a 360° excavator arm, ideally fitted with a clamshell grab and mounted onto a platform which affords an unrestricted view into the rear of any body size, to reposition the load or to remove overloaded material. Correct selection of mobile plant used in the loading operation (height of reach, capacity, weighloader) together with competent plant operators will help prevent these problems in the first place.

Trimming

The trimming of material should be carried out by the shovel operator before allowing the tipper to leave the loading point. The shovel operator must take great care not to either damage the side of the vehicle or the suspension system by over vigorously tamping down the load with the bucket hydraulics. If material needs to be cleared from the top lip of the body after loading, then this is to be carried out either from the ground or from a suitable platform by dragging a suitable tool across the top lip to remove loose material. Correct selection of mobile plant used in the loading operation (height of reach, capacity) together with competent plant operators will help prevent these problems in the first place. Climbing onto the product to make adjustments is not sanctioned and would be a clear breach of the QPA policy.

Cleaning inside vehicle body

The cleaning out of tipper bodies may be

required when differing products are to be transported or whenever a 'sticky' material hangs inside the body.

It may be possible to wash any 'stuck' material from the rear of the body by raising the body enough to allow the material to be washed out by the driver standing behind the vehicle using a powered pressure hose.

The use of an excavator fitted with a smooth edged ditching bucket may be used, if available.

Another method is the fitting of a vibrator to the tipper body. This works in the same way as if fitted to a material hopper. However, the fitting of body vibrators requires an amount of trial and error to find the most suitable point for body resonance.

The least desirable option is for a person to enter the body but this can only be achieved once a 'Safe System of Work' has been devised. Methods have been devised incorporating the use of step ladders which have an element that pivots over the body lip and then continues inside the body. (This method has been seen as a previous Best Practice Entry). It is important to note that any system which requires a person to enter a vehicle body will require specific training and supervision.

The use of "quicksilver coating " on the base and sides of a vehicle can prevent sticking and hence the need to enter a vehicle in the first place.

Splitting a load

If a dividing medium is required it may only be placed from the ground, remotely or from a designated designed for purpose platform. Alternatively consideration should be given to only despatching split loads with no physical divider and requiring the customer to accept the cross contamination risk.

Applying grit or release agent

Suitable methods include spraying from an overhead bar system, spraying from the ground or from a designated platform. NB PPE required to protect from chemical effect and eye impact as per manufacturers MSDS. Throwing material in by shovel through an open tailgate is NOT recommended due to associated musculoskeletal injury risk.

Inspection & sampling of product/temperature

There should be a system that prevents the vehicle moving off whilst sampling or other activity on the vehicle is in progress. (e.g. removal of keys, choking, barriers).

Remotely powered operated sampling devices are the preferred technique such as hydraulic mini grab bucket, or auger system.

If these are not practicable on a given site then a platform should be made available that enables the sampling to take place. This should have top, mid and toe protection and safe access to the load e.g. extending walkway or drawbridge.

Vehicle repair or maintenance at height

The only repairs or maintenance at height that should be being carried out on a working site (other than in a designated area) are those that effect the vehicle safety standards e.g. removing asphalt from a windscreen or changing a bulb in a beacon. In each case access will need to be planned and a point of work risk assessment or similar be carried out to minimise the falling risk.

Truck Mixers

Falling from vehicles is a significant cause of workplace transport injuries and employers have a legal duty to prevent falls.

Access onto vehicles should be restricted to those people who have to work on them.

Where work at height is unavoidable, platforms or gantries should be provided. If platforms are provided instructions on their proper use should be given, their use should be monitored and there should be a sufficient number for the work required. A harness system should also be installed to protect people working at height.

Access to the rear of truck mixers should be via site fixed steps or stairs leading to a platform.

Access by using fixed steps or stairs should be placed at the rear of the truck mixer as close to the drum entrance as possible. (see QPA Sharing Good Practice Awards 2005, Page 7 – Transport on highway access for drum mixers from CEMEX).

These should be of sound construction, properly maintained and securely fixed; be vertical or slope inwards towards the top if possible and have horizontal rungs that give plenty of foothold.

Work at height on vehicles should, where possible, be carried out in a designated place, away from passing traffic and pedestrians and sheltered from strong winds and bad weather and are carried out with some form of on site monitoring to ensure that safe working practices are carried out. Extra care needs to be taken in wet or icy conditions.

Vehicles should be parked on level ground with the parking brake on and the ignition key removed.

Suitable PPE should be worn at all times and a risk assessment carried out prior to any work being undertaken.

If entry to the barrel is made a Permit to Work will also be required.

Cross Reference

15.1 HSE Workplace Transport Safety HSG 136
15.2 HSE Managing vehicle safety in the Workplace INDG 199
15.3 DoT Safety of loads on Vehicles Code of practice ISBN 011 552547 5
15.4 QPA Vehicle standards (to follow)
15.5 QPA Innovations series
15.6 QPA www.safequarry.com

Note

A common theme for working at height with vehicles in quarrying is that the area for the work should be selected with care and in all cases be away from traffic routes.