ULTIMATE SAFETY

ARTIC TIPPER GUIDANCE - PREVENTING OVERTURNS


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DAF

DRIVING SAFETY

ULTIMATE SAFETY

Lafarge Tarmac loads approximately 8500 deliveries each week on articulated vehicles. The safe delivery of product on articulated tippers involves all elements of the business – from the vehicle owner, operator and driver as well as the loading site and the customer site.

This booklet is to assist all parts of the business in understanding, reviewing and addressing the use of tipping vehicles – and ensuring that every part of the process is carried out safely.

Safety starts with you.

STOP & THINK!

THE LAW

The health and safety at work act 1974 legislates for the responsibilities regarding health and safety.

If a driver fails to discharge a load or operate a tipping vehicle safely, both the operator and driver may be responsible for seriously injuring themselves or others, perhaps even fatally.

Both the operator and driver could potentially be contravening health and safety law.

Employers, owners and managers have a responsibility to provide and maintain safe systems of work, and to take reasonable and practicable precautions to ensure the health and safety of all workers and members of the public who may be affected by their activities.

They should ensure safe systems of work for discharging a load and operating tipping vehicles are understood, and procedures are in place to check they are followed.

All drivers, including the self-employed, have a responsibility for their own health and safety, and that of other people who could be affected by their actions.

FACTORS

In most circumstances, there are usually a combination of factors that come into play when a vehicle overturns:

- Distribution of the load within the vehicle (product to the side can unbalance the vehicle)
- Condition of the product (wet/frozen/sticky loads are often a factor in overturns)
- Ground conditions (camber, uneven/soft ground, slopes)
- Position of the vehicle (Artic unit must be in line with the trailer)
- Specification of the vehicle (some designs of vehicle are more prone to overturns than others)
- Maintenance of the vehicle (tyre pressure and suspension can affect stability)
- Behaviour of the driver (following correct procedures)
- Extreme weather conditions – high winds can cause an additional hazard.

It is important that as a business we understand the responsibilities we all have to reduce the potential for overturns.

DRIVING SAFETY

OWNER

OWNERS & OPERATORS

- Owners and operators have a responsibility to operate well maintained and suitable vehicles.
- The guide to safe working practices from IRTE (Institute of Road Transport Engineers) suggests that the influence of vehicle maintenance on vehicle overturns can be significant

  "The tipping body and its attachments are highly stressed pieces of equipment and fundamental to the safety and integrity of the vehicle, therefore any damage or excessive wear may adversely contribute to an already dangerous situation if the vehicle is unstable or unsafe. Typical examples of often overlooked problems affecting the integrity of the body include, damage to the structure caused by loading machines, and thinning of the floor due to the constant effect of the load acting as an abrasive whilst being discharged, or indeed abuse to the structure during operational stress.

  A standard format inspection sheet that can accommodate variations in design should be developed and completed as part of each routine vehicle inspection"
- Owners/Operators have a legal responsibility to ensure that they have in place a safe system of work, and that it is followed. Failure to risk assess, and to provide a safe system for their employees would be a contravention of health and safety law.
- Operators who employ drivers must ensure that the drivers are trained and familiar with the controls of the vehicle they are driving.
- Operators should consider how often refresher training is provided, and ensure that drivers who have not operated a tipper for any length of time, are re-familiarised prior to going back to tipper work.
- Operators should also ensure that they choose the right vehicle for the work they are undertaking – see the 'vehicle' section for specifications.

DRIVING SAFETY

LOADING

LOADING POINT/SITE

- Suitability of materials – consider the storage and assessment of product to ensure that we reduce the possibility of material sticking whilst attempting to unload.
- Loading of vehicles – ensure that loading points facilitate the correct loading of product, and that they manage the moisture content of the material to avoid loading wet product that could stick.
- Inspection of loads – ensure that each site has a risk assessed safe area, where drivers can inspect the load inside the vehicle
- Correction of loads – ensure that each site has a procedure for drivers to safely correct the load if they are unhappy with the loading of the vehicle, including a suitable offload location (see guidelines to customers) for any overloaded product.
- Familiarisation of drivers – ensure that all drivers loading product are made aware of the site specific instructions for inspecting and correcting loads.

DRIVING SAFETY

JOURNEY

JOURNEY

- Vehicles are at risk of RTI if they are incorrectly loaded or driven harshly.
- Care should be taken on a journey to avoid:
  - Excessive speed
  - Sharp cornering
  - Soft verges
  - Adverse camber
  - Clipping kerbs

  all of which can contribute to a rollover incident on the highway.

DRIVING SAFETY

VEHICLE

VEHICLE

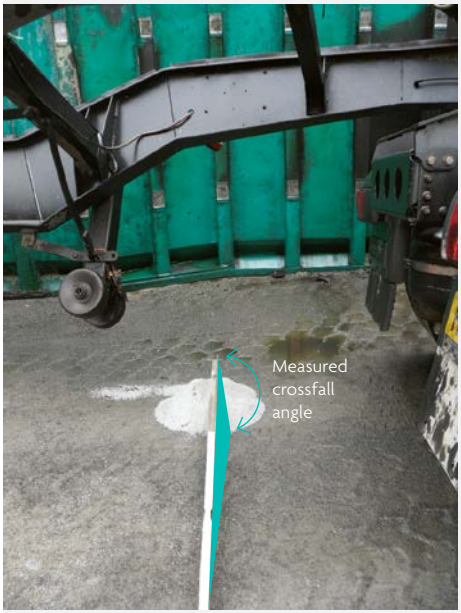
- The vehicle should be well maintained. Operators should ensure that regular inspections are made not only of the chassis but also the tipping equipment, hinge points and chassis stability blocks – as well as the vehicle body.
- Tyre pressures are also influential on stability – and operators and drivers should ensure that tyres are kept inflated to the manufacturer stated pressure to maintain stability for tipping operations.
- Suspension is also key to stability, and constant driving over rough ground can influence the performance of a suspension system. A good maintenance programme and driver awareness can ensure that the suspension is kept at peak performance.
- The IRTE guide to 'tipper stability' indicates that there are 2 standards of vehicle specification. Category 'A' vehicles should be capable of remaining stable when fully loaded and the body fully raised to an angle of 7° on a side slope. A Category 'B' Vehicle must be capable of 5°. Category 'B' vehicles are only intended for use on hard, level surfaces. Operators should ensure that they are aware of the specification of vehicle they are operating – and ensure that they match the correct vehicle for the intended job.
- The fitting of inclinometers can be a useful check. Consideration should be given to the tractor unit staying with the trailer and any interchangability prior to choosing a combination to fit with an inclinometer. The calibration of the inclinometer should also be maintained – and the decision to tip not based solely on the reading. Consideration should be given to interlock mechanisms which are linked to the inclinometer reading.

DRIVING SAFETY

CUSTOMER

RECEIVING SITES/ CUSTOMERS OF TIPPERS: MPA GUIDANCE:

Optimum	Minimum
Hard Surface, concreted or asphalt. Regularly maintained.	Loose but hard surface, made up ground of compacted sub-base, quarry floor maintained.
No surface defects, such as pot holes, level surface with a minimum gradient to allow surface water run off.	No serious defects. Requires regular inspection to maintain surface condition.
No cross falls or longitudinal slopes, except to allow surface water run off.	No visible cross-fall, any slopes must be kept to minimum.
No drains, gullies or kerbs.	Arrangements to ensure that vehicles cannot tip with any wheels on kerbs, drains, gullies or over known underground services.
Adequate area to allow articulated vehicles to position the cab in line with trailer before discharging the load.	Adequate area to allow articulated vehicles to position the cab in line with trailer before discharging the load.
Facilities to keep the tipping area free from spillages, slurry and contamination.	Any spillage, slurry or contamination to be minimal and not interfere with safe tipping. Stockpiles maintained to prevent rear axle distortion.
The tip-off area to have a marked exclusion zone with physical barriers to prevent entry Where there are serious consequences of an overturn and tipping has to be undertaken i.e. next to occupied building, live traffic lane, railway line, on a ramp, etc. Installation of a 'Tipping Restraint Frame'	Suitably located to enable the driver to maintain an exclusion zone around any vehicle whilst carrying out tipping operations. *Note: On Road surfacing / Contracting contracts a exclusion zone may not be available! Therefore extra caution / care should be taken in these circumstances. i.e nobody at the side of the vehicle!*
A means of carrying out effective repairs should the surface become damaged or deteriorate at any stage.	A means of carrying out regular tipping point inspections to maintain minimum standards.



Sites should ensure that the discharge point has a side slope of no greater than 4° to ensure that deliveries can be received safely.

IRTE suggest that uneven loading conditions can be the equivalent of putting a vehicle on a 3° side slope, therefore:

- All sites receiving tipping vehicles should ensure that the ground conditions are suitable.
- Flat, level, solid ground is a must (with no overhead obstructions)
- Stockpiles should be managed to ensure that the back wheels are not being wedged onto material which could put any axle on an angle.
- Drivers arriving on site should be made aware of any site specific requirements/ instructions
- A dynamic risk assessment should be made when there are strong winds.

DRIVING SAFETY

DRIVER

LOOK AFTER YOU ULTIMATE LOOK AFTER YOUR MATE

X No tandem tipping

DRIVER

In a delivery situation, it will be the driver who is ultimately responsible for the final decision to tip. The driver should adhere to the following basic principles:

- Wear your seatbelt. In the event of an overturn there is less likelyhood you will be thrown around the cab
- Drivers should ensure, prior to loading, that their vehicle is not contaminated with any water or previous loads that could contribute to making the product stick within the body
- Drivers should ensure that their vehicle is correctly loaded with even distribution for axle weights and side to side stability
- Drivers should additionally ensure that they inspect their load and follow the site specific procedures for doing so – and for any corrections of loading.
- Drivers should ensure that their vehicle tractor is in line with the trailer prior to commencing a tip
- Driver should ensure that axles are on all level ground
- Drivers should make their own dynamic assessment of a site prior to commencing a tip and if unhappy with any conditions – do not attempt to tip the vehicle.
- Drivers and sites should also ensure that there is an exclusion zone maintained around the vehicle
- No tandem tipping
- Do not jerk the vehicle forwards to agitate a load
- Inclinometers can give a false sense of security – any inclinometer reading should be judged alongside other conditions prior to commencing a tip.

STOP

STOP & THINK!

If it doesn't feel safe – then it probably isn't!!




GLOBETROTTER




RENAULT

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