

INEOS Olefins & Polymers Europe



GUIDELINES FOR TRAFFIC SAFETY AT INEOS O&P SITES

V2

July 2015

FOREWORD

It is INEOS Olefins & Polymers (O & P) Europe policy that safety of operation must be paramount. One of the highest risks for accidents on our sites is traffic by trucks, cars, forklifts and other vehicles. These Guidelines '*Traffic Safety on Ineos O&P sites*' has been prepared to reduce these risks to the absolute minimum.

This document is available on:
<http://www.logisticsmatters.info/>

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LIFE SAVING RULES:

Ineos Group have introduced **7 Life Saving Rules** which are the basis of the Ineos O&P safety standard. In addition, two logistics specific rules must be met at all times.

- No consumption or being under the influence of alcohol or drugs on company property.
- No smoking outside dedicated smoking areas.
- No work on live equipment/machines to commence without authorisation.
- Safety critical devices/interlocks must not be disabled or overridden without authorisation.(e.g. bypassing light curtain bagging line or tipping mechanism truck)
- Persons working at height must use proper fall protection (e.g. life line systems for bulk, safety stairs for packed etc..).
- No entry to confined space without authorisation and gas test (e.g. entry into a silo truck)
- Lifting & hoisting – no unauthorised person to enter the defined danger zone where objects can fall.

Logistics specific rules

- The Forklift-truck segregation rules must be complied with
- The traffic safety rules on our sites must be complied with

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<u>Rev No :</u>	<u>Details of Change</u>	<u>Date</u>
2	Major revision	July 2015

SECTION 1 INTRODUCTION

1.1 Accidents

In the past, Ineos O&P have suffered several accidents involving collisions between trucks and forklifts:

<p>Crossing of two traffic flows (Forklifts bring pallets to bagging line, and trucks leaving the Parking place). Forklift in dead angle of truck. Root Cause: dangerous crossing point - dead angle- driver error</p>	
<p>A forklift driver was loading a container, while reversing from the container the forklift collided with a passing truck. A pallet was obstructing the FL drivers' view. Root Cause: Container loading area too close to traffic route</p>	
<p>While reversing, a Forklift loaded with a pallet collided with a passing truck. Root cause: Pallet storage area too close to traffic route</p>	
<p>A forklift, leaving the warehouse whilst reversing, collided with a passing forklift Rooty cause: Road too close to warehouse gate and inadequate visibility</p>	
<p>Two forklifts collide in warehouse Root cause: inadequate visibility</p>	
<p>Collision between two forklifts at warehouse door. Root cause: inadequate visibility of Forklift leaving the warehouse</p>	

1.2 Reference to other documents

These guidelines aim to improve the traffic safety at the Ineos O&P sites.

The document does not cover the Ineos O&P requirements related to the design of vehicles (trucks and Forklifts), maintenance and driver training, as these are already described in the following Codes of Practice:

- *Code of practice for safe transport of Polyolefins in packed form*
- *Code of practice for safe transport of Polyolefins in Bulk*
- *Guidelines for safe unloading of Polyolefins in Bulk*
- *Code of practice for the safe operation of Forklifts*

1.3 Process for improving traffic safety

The process for improving traffic safety is:

1: Identify the area's with traffic safety issues by

- During a few weeks, or at random, asking truck- and forklift drivers to complete a checklist and analyse the data (see annex 1)
- Identify traffic streams and multiple crossing points (between trucks/ forklifts/ pedestrians and cyclists)
- Carry out a traffic safety audit

2: Set up an improvement action plan which should include as a minimum:

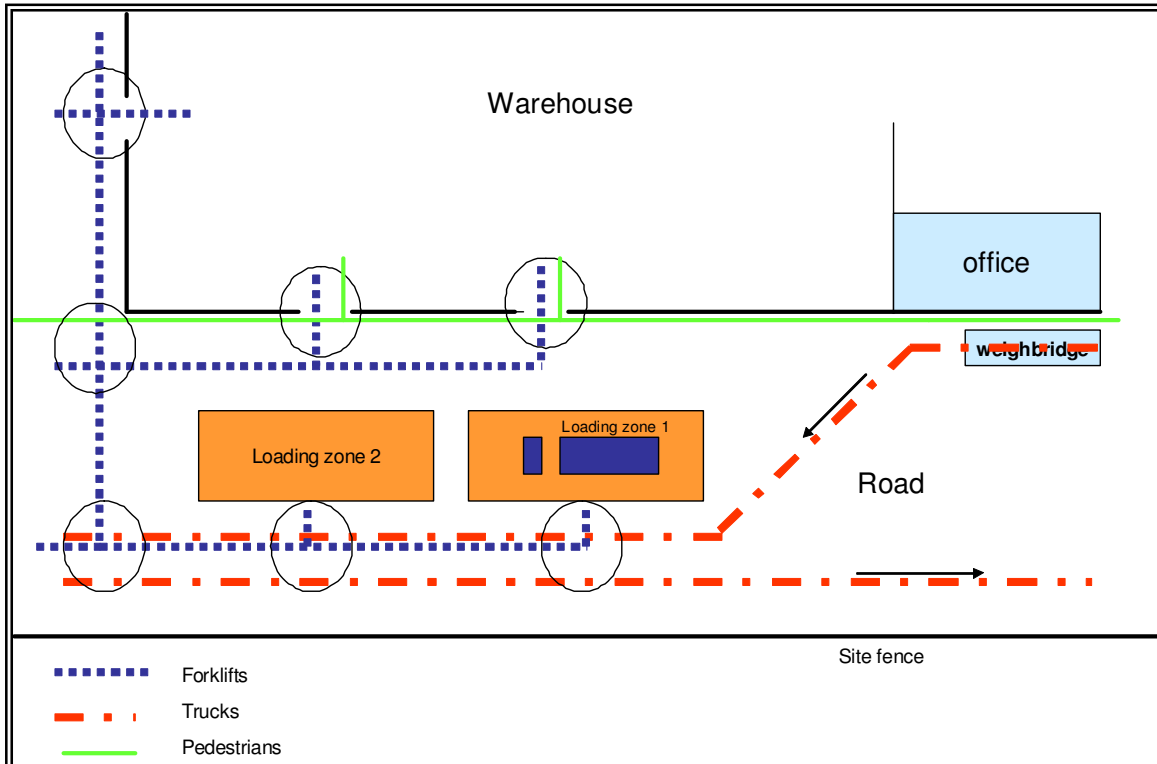
- Traffic rules
- Routings/ parking places
- Site lay out
- Signage
- Instructions drivers

SECTION 2: IDENTIFY TRAFFIC STREAMS AND MULTIPLE CROSSING POINTS

Most traffic accidents on site happen at locations where there are multiple crossings of vehicles/ pedestrians and cyclists.

In order to identify these locations, an assessment of the traffic streams must be done during a defined period and at different times of the day. This will enable to identify the multiple crossing points.

Example:



The aim is to reduce the number of crossing points as far as possible or take appropriate measures to mitigate the risks by

- reviewing the traffic streams
 - e.g.: one way traffic, take other routes, review storage locations
- physical segregation vehicles / pedestrians / cyclists
 - e.g. with barriers
- Improve visibility
 - e.g. install Convex mirrors, keep traffic minimum 3 meters from warehouse gates
- Etc.

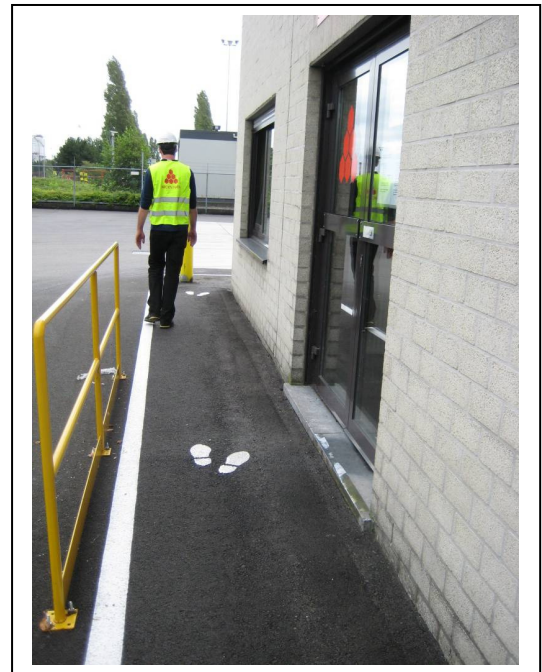
SECTION 3: HOW TO IMPROVE TRAFFIC SAFETY

3.1 Pedestrian and vehicle segregation

- Where possible, pedestrians must be segregated from vehicle traffic through provision of protective barriers and clearly marked separate gangways.



- Road crossing points for pedestrians should be clearly identified, preferably by zebra markings.
- At places where people, leaving buildings, can walk straight onto a busy road, a protective 'chicane' barrier should be provided to prevent people of crossing the road immediately without looking. This can also apply in warehouses.



- Walkways designated for pedestrians only must be indicated by lines on the ground.
- Cycling paths must be clearly indicated by lines on the ground.
- Pedestrians and cyclists must be clearly informed of the routes that have to be taken and of the risks associated with the different types of vehicles that move on the site.

3.2 Traffic routes, traffic flows

Keep traffic routes free from obstructions and where they are unavoidable, ensure that they are clearly marked.

- Route planning should take into consideration the path of the pedestrian and cyclist flows.
- The need for reversing must be minimised through the use of one-way traffic systems that incorporate drive-through loading positions. At places where reversing is needed, additional precautions must be taken like:
 - Keep the zone clear from pedestrians
 - Increase visibility for the driver (e.g. install fixed mirrors)
 - Install a reversing alarm on the vehicle (mandatory on Forklifts, recommended on trucks)
 - Use the assistance of an operator.
- Traffic routes must be wide enough for the safe movement of the largest vehicles
- Traffic routes should take into account the vehicle height. Potentially dangerous obstructions such as overhead cable or pipes need to be protected using goal posts or barriers.
- Traffic routes must be kept away from doors, gates, pedestrian routes and loading/ unloading area's.
- Avoid sharp or blind bends and steep slopes. If these can not be avoided, provide mirrors to improve vision.
- Where possible, keep Forklifts and trucks separated from each other
- Traffic routes must be kept away for at least 3 meters from loading/ unloading zones. If not possible, segregate by means of barrier stones/ plastic cones etc...



- It is recommended to install physical barriers at those locations where drivers tend to deviate from the route or take a shortcut..



- Provide impact protection for vulnerable parts such as lamp posts, vulnerable pipe work and columns.



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- LPG filling stations must be protected from collisions by means of barriers if located close to traffic routes.



- At those places where horizontal swing barriers are used, make sure the barriers can be adequately secured/ locked whether open or shut. Make sure the barriers are made visible by fitting them with a support leg at the end, painting or marking them with alternate red and white bands etc., so that persons do not inadvertently drive into them (additional local lighting may be required).

Example of incident that happened with barrier:

A car driver did not notice a horizontal road barrier which had swung into the path of the oncoming vehicle. The car drove into the open end of the barrier which went through the wind shield and nearly hit the driver's face.

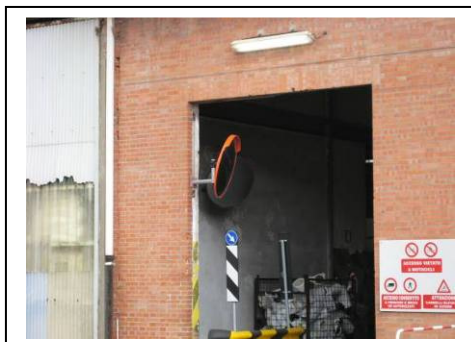


Barrier in closed position

Barrier in half open position. Open end almost not visible to upcoming traffic

3.3 Warehouse gates

- At these locations where it is practically possible, keep routes for trucks away from warehouse doors and gates. If this is not possible, clear warning signs must be in place. As a minimum, a convex mirror must be installed (install low enough to allow ease of viewing but high enough to allow load carrying without being hit). It is recommended to keep 2 meter of space between the traffic lane and the warehouse gate and to install a barrier to protect Forklifts from collisions with pedestrians/ cyclists or trucks when leaving the warehouse. When necessary, take into account that warehouse doors need to be closed.



- It is recommended to install rotating beacons at the warehouse gates which are activated automatically when a FL is approaching the gate



3.4 Signage

- Signs should be clear and unambiguous for both drivers and pedestrians.



- Places at storage locations where pallets are being placed /removed, should be indicated by means of cones.



- Use plastic cones with retractable barrier tape to fence off hazardous area's (e.g. around mobile ramp, at places with heavy Forklift traffic etc..).



3.5 Lighting/ visibility

- Adequate lighting is important to assist drivers detect hazards such as pedestrians and other vehicles. A site check should be done early/ late in the day to assess areas of poor lighting.
- All pedestrians and cyclists should wear High Visibility clothing, especially in warehouses and other area's with vehicle traffic (roads, loading platforms, storage area's..).

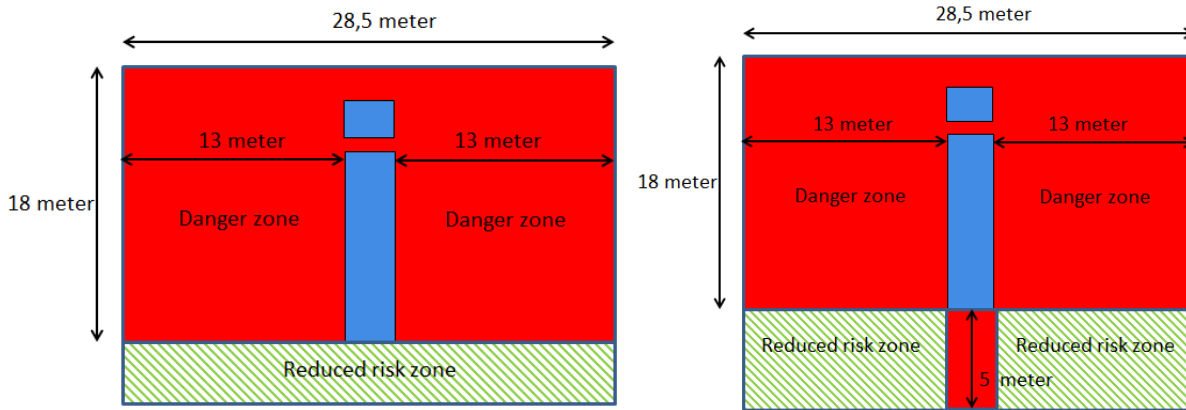
3.6 Loading/ unloading area's

- Loading/unloading area's must allow free and unobstructed access of vehicles with adequate space and without the need to reverse. If reversing is necessary, the driver must get the assistance of an operator.



- Loading/ unloading area's must be away from passing traffic and pedestrians.
- Loading/ unloading area's for packed goods vehicles must provide adequate space for Forklifts to manoeuvre and must be away from traffic routes.
- Unloading area's for silo trucks/ bag In Box containers must be physically segregated from traffic (both trucks and pedestrians) by means of cones, chains or other devices. Around a tipping truck, an exclusion zone (danger zone) must be maintained in which pedestrians, other than the driver, and vehicles are not allowed. See also *Ineos O&P guidelines for safe unloading of polyolefins in BULK*.

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- For Bulk loading bays, a system must be in place which allows communication between the loading operator and the driver (e.g. traffic lights, remote control box..) in order to prevent unauthorised truck departure.



- Packed goods vehicles which are loaded/ unloaded from the back (containers) must be immobilised by using wheel chocks or similar devices (e.g. Rite Hite)

3.7 Floor/ road surface conditions

- All floors/ road surfaces must be firm, even and smooth without potholes and free of spills and dangerous objects, and without steep slopes.
- Roadways should be adequately drained to prevent built up of standing water.
- The floors in the warehouses must be dry. At warehouse gates where rain can make the floor wet, an anti-skid coating is recommended.

3.8 Intersections/ junctions

- Within warehouses, FL drivers should sound the horn when coming at blind corners/ intersections or through gates.
- It is recommended to install BLUE SPOTS on forklifts. Within warehouses these spots give a clear warning sign that a forklift is approaching;



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- There should be enough visibility at junctions and bends to allow drivers and pedestrians to see anything that might be dangerous. Consider the installation of convex mirrors.



- Take appropriate safety measures at crossings where trucks cross forklifts



3.9 Parking places

- Parking places must be clearly identified with signs.
- Parking bays must be clearly identified by surface markings
- Parking places for trucks must have sufficient space for approaching and leaving so that reversing is not necessary.
- Drivers leaving their parked vehicle may not have to cross dangerous area's.
- Trucks arriving at the site outside opening hours, must dispose of a safe parking place where they can not endanger other vehicles, cyclists, pedestrians etc..

3.10 Safety instructions and provision of information to drivers

- Drivers, new to the site should receive a plan of the site indicating the layout of the site, vehicle routes, pedestrian walkways, speed limits, mobile phone use etc...
- Drivers must receive clear instructions that seat belts must be worn when driving on site.
- Regular seat belt checks must be done.
- Important is that drivers or other unauthorised people (visitors) must know where to report for loading/ unloading in order to avoid that they start wandering through the warehouses and other restricted area's.
- The route between the parking place and the place to report to must be kept as short as possible and must be clearly indicated/ signposted.
- Take into consideration to include traffic rules in the safety video.
- Ensure that instructions are issued in all languages that drivers understand

3.11 Access control/ restrictions

- It is important that the presence of unnecessary vehicles on site is eliminated.
- Trucks waiting for unloading/ unloading must remain on a safe parking place as long as possible until the loading/ unloading area is free.
- A system must be in place to avoid that unauthorised people gain access to the warehouses or other restricted area's without permit.
- Where possible, forklift drivers should be informed (e.g. by radio) each time someone wants to enter the warehouse or outside storage location where they are operating.

3.12 Maximum speed

- The maximum speed limit should be set based on a risk assessment and take account of the route layout, the vehicles using the route and the loads being carried. Different area's of the site may require different speed limits.
- The max speed limit must be clearly communicated to all drivers. Signs must be in place.
- Forklifts must be fitted with speed limiters (see COP for safe use of Forklifts).
- At places where drivers tend to drive too fast, the installation of speed limiting devices like humps may be considered. However it must be taken into account that speed humps can not be installed on roads which are used by Forklifts as Forklifts do not have shock absorbers and even the smallest hump in the ground may dislodge the load and cause it to fall).



- Monitor and enforce the speed limit on site (e.g. with speed camera's or speed indication boards).

3.13 Emergencies

- Drivers should receive clear instructions what to do in case of an emergency (route to take, assembly point etc..).

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• APPENDIX 1: TRAFFIC SAFETY CHECKLISTS FOR DRIVERS

Site	
Haulier name	
Drivers name	
Bulk/ Packed	
Date	

1	Did you receive clear instructions on the route to take, where to report for loading and where to load on site ?	
2	Did you receive clear instructions on the site safety rules ? (e.g. maximum speed, use of seat belts, use of mobile phone, etc...) in a language you understand ?	
3	Is the parking place safe, in good condition (no potholes..) with adequate space for manoeuvring ? (no reversing !)	
4	Do you find the walkway between the parking place and the reception building well signposted and safe (away from traffic)?	
5	Did you receive adequate instructions about where to load, the loading process, where to weigh etc.?	
6	Is the route on site clearly marked ?	
7	Is the road condition on site good ? (road surface firm, even, smooth, no potholes, no spills, no dangerous objects etc...)?	
8	Is the route to the loading area unobstructed with enough manoeuvring room (no reversing !) ?	
9	Is the lighting on site sufficient ?	
10	Is there, during the loading process, a good communication between you and the operator ?	
11	Is the loading place safe (no traffic nearby) ?	
12	Do you find the maximum speed limit on site suitable ?	
13	Do you have adequate visibility at intersections ?	
14	Are Forklifts operating safely ? (speed, backing alarm, etc...)	

Are there any other safety concerns about the traffic situation on site ?