

Driver safety at customer sites: bulk delivery 5th edition

CONTENTS

1. **Scope**
2. **Health and Safety targets**
3. **Procedure**
4. **Appendices**

1. SCOPE

Deliveries of cement to customer sites occur on a frequent basis. In some instances customers may receive numerous loads on any given day. Following a series of customer site incidents and near misses, MPA Cement has updated the standard risk assessment used by its members on Customer Sites to ensure that major hazards faced by the driver are being correctly addressed.

This document concentrates on a relatively narrow set of health and safety criteria specific to bulk cement delivery that should be considered as part of a customer's overall risk assessment. Compliance with any guidance set out in this document does not absolve the user from his legal duties under the Health and Safety at Work etc Act 1974 to form his own site specific assessment of his workplaces and operations and to provide accordingly for such matters.



An over-pressurisation incident led to the 'launching' of this filter housing from the top of a silo. If this had landed on anyone, they would have been killed.

2. HEALTH AND SAFETY TARGETS

MPA Cement member companies have agreed the following challenging health and safety targets.

1. An overarching expectation of Zero Harm
2. Interim 5-year Targets (based on 2009 calendar year) of;
 - A 50% reduction in the Lost Time Injury Frequency Rate for Direct Employees by 2014.
 - A 50% reduction in Lost Time Injury numbers for Contractors by 2014.

In order to meet these targets it is essential to reduce the number of incidents suffered by drivers on customer sites.

Following a review of the hazards and accidents associated with the delivery of bulk and bagged products, MPA Cement Member

Companies have identified a number of important safety issues which they believe it is reasonably practicable for all customers to control.

Therefore a standard risk assessment is being introduced to rate how effectively these issues are being addressed by individual customer sites.

- A green rating indicates that the issues have been satisfactorily controlled.
- An amber rating indicates the need to address an issue within an agreed timescale and to implement interim measures in order for deliveries to be made safely.
- A red rating indicates an issue has been identified which renders the site unsafe for delivery. This information will be used to agree an improvement plan where necessary.

3. PROCEDURE

Approaches adopted by MPA Cement Member Companies will vary. Generally, however the risk assessment will be carried out by their risk assessor before deliveries are made to new customers.

Any issues raised by the questionnaire will then be subject to further discussion between the cement company and the customer when specific hazards are identified.

You are also strongly advised to:

1. **Review the items listed in the assessor questionnaire:** and to correct any deficiencies before the Cement Company assessor arrives. Your attention is drawn to issues particular to your site that have a high potential of a red safety rating or where previous failures have occurred.
2. **Review the MPA Guidance to Prevent Over-Pressurisation of Storage Silos:** and ensure that:
 - A correctly sized pressure relief valve and filter are fitted.

- Regular maintenance is carried out on the silo and fittings.
- High level alarms are tested regularly – preferably from ground level.
- All inlet ports are locked when not in use.
- Operating procedures are followed and drivers receive instruction.

Be aware that a badly maintained silo is a potential bomb.

- Filters MUST be in good condition and properly secured.
- Reliable high level alarms can save lives and expensive damage.
- Dust emissions from the silo require urgent attention.
- Automatic shut off valves offer additional protection.

1 General site safety

- 1.1 Has information been provided on the best route to the site that includes any restrictions, for example, on height, weight or parking? GREEN AMBER RED
- 1.2 Is the site entry safe for vehicular access and egress? GREEN AMBER RED

Issue: Risk of trip/slip/falls where tanker driver stands or walks during delivery. This is the most common cause of injury to drivers on customer sites.

- 1.3 Is the ground even and firm? GREEN AMBER RED
- 1.4 Is the ground properly drained, i.e. minimal standing water? GREEN AMBER RED
- 1.5 Is the ground free from slip and trip hazards? GREEN AMBER RED

Issue: To ensure the driver receives adequate information.

Amber sites in sections 1.3, 1.4 and 1.5 must be improved to an agreed short term timescale

- 1.6 On first arrival does the customer provide a site induction and task specific instructions (for example the connection procedure, including the procedures to follow if the operation of filters and alarms are not fully automatic, what to do if an alarm sounds or emissions of dust occur, who to contact in an emergency etc). GREEN AMBER RED
- 1.7 Does the customer provide information on how much space is available in the silo and are any changes to the silo dynamics (e.g. blowing pressures) notified in advance to the cement company so that the driver comes prepared. GREEN AMBER RED

Issue: Vehicles/machinery and equipment. Being struck by a site vehicle is the third most common cause of fatal injury at work in the UK.

- 1.8 Has the customer defined a safe pedestrian access route for our driver to collect keys and deliver paperwork? GREEN AMBER RED
- 1.9 Is our driver's pedestrian-area around their tanker safely segregated from site vehicles such as forklift trucks? (unless the pedestrian area is protected by a permanent physical barrier, there should be a minimum two metre wide exclusion zone around the tanker). GREEN AMBER RED

- 1.10 Does the customer establish an exclusion zone around the cement tanker while it is pressurised within which no operations may take place that could cause damage to the pressure vessel (such as the use of cranes)? GREEN AMBER RED

Issue: Risk of explosion due to rupture of pressurised tank. A pressurised tanker can release 1600 tonnes of force instantaneously if ruptured.

- 1.11 If the cement tanker has to make a reversing manoeuvre, is an agreed safe system in place that excludes pedestrians from the area behind the tanker? GREEN AMBER RED

- 1.12 Is the lighting sufficient for our driver to see where he is going and what he is doing? GREEN AMBER RED
- 1.13 Is there secure fencing around pits or tanks into which our driver could fall? GREEN AMBER RED
- 1.14 Is our driver safe from falling objects from overhead hazards (e.g. conveyor belt systems)? GREEN AMBER RED

Issue: Prevention of falls from height.

- 1.15 If access to the top of tankers is required, is a guard railed fall prevention facility or similar provided? GREEN AMBER RED

2 Customer's silo

Issue: Risk of manual handling injuries when laying additional hoses. Difficulties of protecting lengths of hose from damage. Difficulties of excluding other workers from the danger zone around a length of pressurised hose.

- 2.1 Can the silo inlet connection be reached by one length of hose from the tanker (one hose length = green, two hose length = amber, three hose lengths = red)? GREEN AMBER RED
- 2.2 Is the silo inlet connection between two and a half feet (0.8m) and four feet (1.2m) above ground level and is the inlet pipe angled at 35 to 45 degrees to the vertical? GREEN AMBER RED

Issue: Risk of pipe failure.

- 2.3 Is all pipework between the end of the silo inlet connection and the silo firmly secured, for instance by mounting brackets? GREEN AMBER RED
- 2.4 Is all pipework between the end of the silo inlet connection and the silo made of steel (or suitable equivalent) and does it appear in reasonable condition? GREEN AMBER RED
- 2.5 Is the coupling (and anti-whip device, where fitted) of an appropriate type and in good condition?(because of the risks of leaks and hoses detaching, couplings must be of a proprietary type and not home made) GREEN AMBER RED

Amber sites in sections 2.3 and 2.4 must be improved to an agreed short term timescale

Issue: Risk of over-pressurisation or overfilling.

- 2.6 Is the silo inlet connection clearly identified by a sign/s showing silo number, product identification and discharge procedures? GREEN AMBER RED
- 2.7 Is the silo inlet connection "capped" and "locked", when not in use? GREEN AMBER RED
- 2.8 Is the high level detection system linked to an audible and visual warning, for each silo which can be seen and heard by the tanker driver whilst standing at their controls during delivery? GREEN AMBER RED

Amber Option: For blowing blind when radio link has been set up between tanker and silo.

- 2.9 Are warning lamps and sirens clearly labelled to indicate the alarm condition they are displaying and the silo to which they relate? GREEN AMBER RED
- 2.10 Are the contents of the silo measured and is the driver informed of how much space there is left? GREEN AMBER RED
- 2.11 Is the Customers Pollution Prevention and Control logbook available for inspection? GREEN AMBER RED
- 2.12 Where there is a local limit on maximum allowable pressure, is it clearly displayed? GREEN AMBER RED
- 2.13 Is the silo free of dust emissions during delivery? GREEN AMBER RED
- 2.14 Is discharge free of back pressure? GREEN AMBER RED
- 2.15 If a silo does not have an automatic shut-off valve to prevent overfilling, does the customer instruct the driver to return excess product to the supplier if the high level alarm is triggered? GREEN AMBER RED

After a high level alarm has been tripped, customers sometimes ask the driver to wait on site and make a second attempt to deliver the load once a short period of production has taken place. Some MPA Cement members do not approve of this because of the increased risk of over-pressurisation.

The increased risk factors include the following:

- a. If a high level alarm has been tripped it indicates that the customers method of silo measurement is subject to error.
- b. The driver is unable to calculate how much product is left in the tanker.
- c. The driver is unable to calculate how far above the high level detection he has filled the silo and therefore how much needs to be removed.

In any event the driver will not continue unloading while an alarm sounds. Silo protection systems must be reset and the renewed discharge must be treated as a new delivery.

- 2.16 Where an automatic shutoff valve is fitted; are safe procedures/systems in place that allow the driver to purge the connection hose should the automatic shutoff valve close (for example a manually operated valve). GREEN AMBER RED

2.17 Are there any further comments you wish to make?

Assessor name _____

Signature _____ Date _____

Company _____

Site _____

Site contact _____

Site signature _____ Date _____

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Overall Customer Site Safety Rating GREEN AMBER RED

Explanation _____

Disclaimer

MPA Cement has prepared this document in the interests of promoting a high standard of safety awareness in its industry. Compliance with any guidance set out in this document does not absolve the user from his legal duties under the Health and Safety at Work etc Act 1974 to form his own site specific assessment of his workplaces and operations and to provide accordingly for such matters. Whilst MPA Cement has taken all reasonable care in preparing its guidance neither MPA Cement nor its members will accept any liability in relation to the guidance. Readers are reminded that legislation, official guidance and best industry practice are all subject to change over time. This document was last revised on 10th April 2013.