VISION ZERO
SAFE & WELL EVERY DAY

mpa
essential materials
sustainable solutions

Driver safety at customer sites: bulk delivery 7th edition

INTRODUCTION

Silos used to store mineral powders are not designed to be pressure vessels.

Overpressurisation of silos during deliveries can result in silos rupturing or filter housings being ejected and a significant risk of 'struck by' injuries.

'Struck by flying or falling objects' is one of the MPA's 'Fatal 6'; the high consequence hazards responsible for most of the major injuries and fatalities within the sector. Checking that the measures and controls identified in this document are applied, fitted and functioning correctly will help to eliminate or reduce such risks during pneumatic deliveries of mineral powders. Approaches adopted by MPA member companies will vary, although the validation of safety controls will be undertaken jointly with the customer before the first delivery commences.

- **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 before deliveries commence.**

Any issues identified will be subject to further discussion, although ultimately it is the customers responsibility to correct any deficiencies.

The following safety controls are essential:

- A correctly sized, secured and maintained, pressure relief valve and filter.
- Regular maintenance carried out on the silo and fittings.
- High level alarms visible/audible to the driver and tested regularly – preferably from ground level.
- All inlet ports locked when not in use.
- Operating procedures displayed and enforced.

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

- Dust emissions from the silo require urgent attention.
- **All new silos should be fitted as standard, with automatic shutoff valves which activate in the event of overpressurisation or overfilling. Companies should have upgrade programmes in place to fit automatic shutoff valves to their existing silos.**

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

1 General site safety

GREEN AMBER RED

1.1 Is the approach to the site entry safe for Tanker vehicle access and egress? ☑ ☐ ☐

1.2 Does the site display clear signage / instructions at the site entrance (e.g. driver instructions, directions, speed limits etc)? ☐ ☐ ☐

1.3 Is the onsite approach to the discharge point safe for Tanker vehicle access and egress with minimal vehicle manoeuvring? ☐ ☐ ☐

1.4 Is the ground even and firm? ☐ ☐ ☐

NB Drivers are not authorised to permit the towing of vehicles

1.5 Is the ground properly drained, i.e. minimal standing water? ☐ ☐ ☐

1.6 Is the ground free from slip and trip hazards? ☐ ☐ ☐

1.7 On first arrival does the customer provide

a. a site specific induction? ☐ ☐ ☐

b. task specific instructions (e.g. 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)? ☐ ☐ ☐

c. information on how much space is available in the silo? ☐ ☐ ☐

d. details of who to contact in an emergency? ☐ ☐ ☐

1.8 Has the customer defined a safe pedestrian access route for our driver to collect keys and deliver paperwork (also consider out of hours)? ☐ ☐ ☐

1.9 Does the delivery point allow the driver to maintain a safe exclusion zone around the driver and the pressurised tanker from other site operations and vehicle movements? ☐ ☐ ☐

1.10 If the tanker has to make a reversing manoeuvre, is an agreed safe system in place that excludes pedestrians from the area behind the tanker? ☐ ☐ ☐

1.11 Is the lighting sufficient for our driver to see where they are going and what they are doing? ☐ ☐ ☐

GREEN AMBER RED

1.12 Is there secure fencing/edge protection in place around pits or tanks into which the driver could fall? ☐ ☐ ☐

1.13 Is our driver safe from falling objects from overhead hazards (e.g. conveyor belt systems)? ☐ ☐ ☐

2 Customer's silo

2.1 Can the silo inlet connection be reached by one length of hose from the tanker (one hose length = green, two hose lengths = amber, three hose lengths = 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? ☐ ☐ ☐

2.3 Is all pipework between the end of the silo inlet connection and the silo firmly secured, for instance by mounting brackets? ☐ ☐ ☐

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? ☐ ☐

a. Are the coupling and whip arrester 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) ☐ ☐ ☐

NB A whip arrestor must be used for each delivery

b. Type of connection (Unicone, Stortz or Other)?

c. If Unicone, is the silo connection structurally intact (i.e. no hole drilled to accept padlock)?

d. On Unicone ends, a tail compliance tool must be used and the result (pass/fail) recorded.

2.5 Is the silo inlet connection clearly identified by a sign/s showing silo number, product identification and discharge procedures? ☐ ☐ ☐

		GREEN	AMBER	RED
2.6	Is the silo inlet connection "capped" and "locked", when not in use?	☑	☐	
2.7	Are the overpressure and high level detection systems linked to audible and visual warnings for each silo, which can be seen and heard by the tanker driver whilst standing at ther controls during delivery?	☐	☐	☐
NB	Drivers must stop the delivery if an alarm sounds or if dust emissions occur			
2.8	Are warning lamps and sirens clearly labelled to indicate the alarm condition they are displaying and the silo to which they relate?	☐		☐
2.9	Where there is a local limit on maximum allowable delivery pressure, is it clearly displayed?	☐		☐
2.10	Confirm with the customer that there is a functioning Pressure Release Valve (PRV)?	☐		☐
2.11	Is there is a written maintenance plan for all silo safety controls (e.g. PRV, filter etc) and records that maintenance has taken place.	☐	☐	☐
2.12	Are there regular inspections of silo safety controls (commensurate with the risk) e.g. for evidence of dust emissions etc.	☑	☐	☐

2.13 Are there any further comments you wish to make?

Assessor name

Signature* Date

Company

Site

Site contact

Site signature* Date

FOR OFFICE USE ONLY

	GREEN	AMBER	RED
Overall Customer Site Safety Rating	☐	☐	☐

Explanation

Disclaimer