

MBAA Safety Toolbox Talk



Grain Dust Handling / Grain Handling Safety

Overview

The primary safety concern with grain handling is grain dust as it is a respiratory irritant and is an explosion hazard. It is a requirement of OSHA Occupational Safety & Health Standards (29 CFR 1910.272) that employers develop a written housekeeping program to prevent explosions and fires, as well as protect employee health.

Risks of Grain Dust

Grain dust is an explosion hazard and every step should be taken to prevent dust accumulation as well as remove any possible sources of sparks or ignition. Grain dust is an irritant to respiratory and nasal passages as well as to eyes. Dust is a regulated air contaminant under EPA regulations. There are three things to control – dust build-up, dust migration and ignition sources.

Grain Receiving

When receiving grain from a truck and trailer or a rail car it is important to physically inspect the grain being delivered. Things to check for in addition to QA tests can include: pests (insects, rodents and birds), water damage, aroma, and appearance. Shipping seals should be intact and bill of lading information should be verified. Delivery should be inspected for in-transit damage and/or loss. When receiving grain from a truck, the hose attaching the vehicle to the building should be grounded.

Dust Collection

Dust collection systems should be properly designed to follow good manufacturing practices for a sanitary environment and guard against fire and explosion. Accumulated dust should not exceed 1/8th of an inch and should be removed regularly. A way to check if

cleaning is sufficient is to take a digital photo, with flash, while equipment is running – if you see dust dots cleaning is needed more frequently. Dust accumulation could be an indicator that the dust collection system is not functioning properly. Dust collection systems installed after March 1988 must be located outside the facility or inside the facility, protected by explosion suppression systems.

Preventive Maintenance

Augers, elevators, mills and other malt handling equipment should undergo regular inspections and cleanings as part of a preventive maintenance program. This is critical to prevent possible ignition sources. Proper lockout, tag out (LOTO) procedures should be followed when doing maintenance or cleaning on equipment. More Information: [MBAA LOTO TBT](#)

Proper Tools

All possible ignition sources should be kept away from grain handling areas. Only non-sparking tools should be used. Electric forklifts should not be used in rooms where grain is stored or handled. Propane forklifts, pneumatic tools and hand tools that are safe should be used. Wiring and electrical equipment should be suitable for hazardous locations. Vacuums should be pneumatic, not electric and should use grounded hoses.

Explosion Suppression

Silos, auger tubing, mills, bucket elevators and other equipment should all be properly grounded to prevent static electric build up. Segments of grain conveying tubing should be connected with Victaulic couplings. Grain should flow over magnets before entering mills to remove any ferrous material that could cause a spark. Explosion vents should be present in

malt handling systems to allow explosions to pass safely out of the building, minimizing risk to equipment and people. Rooms where mills and grain handling equipment are located might be equipped with instruments that can detect an explosion and doors that slam shut in such an event. Hot work, such as welding, should not be done in grain storage areas without taking proper hot work precautions. More Information: [MBAA Hot Work TBT](#)

Employee Safety

Employees should be trained on safe work practices as well as be provided with and wear proper PPE when handling grain such as dust masks and safety glasses. More Information: [MBAA TBT Dust Masks vs. Respirators](#)

Employees might be required to lift 50-55 lb. bags of grain up and pour them into a mill or bag drop. Safe lifting practices should be followed such as lifting with your legs, not your back. Mills and bag drops might be at heights near chest level so care should be taken not to lift bags into “the red zone.” When hoisting super sacks care should be taken to not stand directly under them. Conveyors, augers, mills and other hazard areas should have proper guarding around them.

Links

- [OSHA Standards For Grain Handling Facilities](#)
- [MBAA TBT Dust Masks vs. Respirators](#)
- [MBAA Hot Work TBT](#)
- [MBAA LOTO TBT](#)

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<http://www.mbaa.com/brewresources/brewsafety>