

TriOak Foods Bin Entry and Cleanout Procedures

All Tri-Oak Foods Grain Locations

Purpose:

As part of our grain operation, storage bins must periodically be emptied and cleaned out. This Bin Entry and Cleanout Procedure has been developed to provide a safe consistent process for all of our locations.

Responsibilities:

The Grain Operations Manager is responsible for compliance and implementation at all sites when bins are being cleaned out. In addition, it is the responsibility of every employee working in the bin cleaning process to make sure that:

- 1) They have received training in the TriOak Bin Entry and Cleanout Procedures
- 2) They follow the procedures.

Bin Entry Procedures

Top entry into grain bins is strictly prohibited. All entries into grain bins at TriOak Foods Grain sites will be made at floor level from doors on the side of the bins. Entry will only be made once the following hazards have been identified as being eliminated by a Site Manager and documented on the Bin Entry/Cleanout Permit:

Atmosphere conditions: Prior to physical entry by a TriOak employee, atmosphere monitoring equipment will be inserted thru the door to test the atmosphere inside the grain bin to confirm that it will sustain human life. Initial atmosphere readings are to be documented on the Bin Entry/Cleanout Permit. In the event that the Site manager recognizes any potential atmosphere hazards in the bin associated with grain going out of condition, continual atmosphere monitoring will be required and need to be documented every 30 minutes on the back of the Bin Entry/Cleanout Permit.

Engulfment: Site managers will shine a flash light in and look into the structure through the open door to make sure that a hung up/bridged grain condition does not exist. The manager will also confirm that conditions do not exist that will allow an entrant to sink into the grain mass above waist level. The Site Manager must note that conditions are safe for entry on the Bin Entry/Cleanout Permit. In the event that a potential for engulfment is recognized, the Site Manager will consult with TriOak Management in Oakville and jointly come up with an entry plan to mitigate the risks. All steps taken will be documented on the back of the Bin Entry/Cleanout Permit.

Specific Job Duties:

Entry Supervisor: Ideally the Site Manager serves as the Entry Supervisor for all bin entries and fills out the Bin Entry/Cleanout Permit. This person can also serve as the Observer/Attendant and as the Entrant. The Entry Supervisor is responsible to make sure that all forms of communication are tested prior to entry and in working order for the duration of the entry. This person must be familiar with the equipment used during the entry process and know emergency shutdown procedures. All individuals filling this role need to be clearly trained on and follow this policy.

Observer/Attendant: This individual is responsible for observing the Entrants while they are inside the Grain Bin. This person should have visual, radio, or voice contact with the entrants at all times. The Observer/Attendant must remain at the entrance of the grain bin for the entire time that the Entrants are inside the bin. This person is responsible for monitoring the condition of the entrants and for initiating emergency communication in the event that something goes wrong either via cellphone to 911 or by two-way radio to the office. This person must be familiar with the equipment used during the entry process and know emergency shutdown procedures. All individuals filling this role need to be clearly trained on and follow this policy.

Entrant: This person must be familiar with the equipment used during the entry process and know emergency shutdown procedures. All individuals filling this role need to be clearly trained on and follow this policy. All entrants in grain bins are responsible for recognizing the hazards associated with entry and take measures to limit their exposure. This applies specifically when working in extreme temperatures and dusty conditions.

Note – The same individuals can be listed on the permit as Entrants and Observers so as to allow for switching in and out of duties to share the work load.

Bin Cleaning Procedures

- 1 A Bin Entry/Clean Out Permit will be completed prior to entry.
- 2 TriOak will always have at least 3 people on site during cleanout operations, with one being a Site Manager. One of the three at all times will be a trained observer.
- 3 All personnel must fully understand the equipment that they will be using.
- 4 Sweeps will be guarded and have attachment to move them that allows personnel to move sweeps from more than 7' away. Alternatively, when applicable, sweeps will be driven by remote control drive units.
- 5 All personnel will wear steel toe shoes, hand, and eye protection while inside grain bins.
- 6 All personnel will have 2-way communication attached to them during cleaning.
- 7 Extraction and emergency equipment will be at site during cleaning.
- 8 We will at all times adhere to the Sweep Auger Safety Principles listed below.

Ten Sweep Auger Safety Principles

Below is the list of Sweep Auger Safety Principles that OSHA, at the National Office level, has agreed to, and which should now serve at least as “guidance” to the industry for how to perform sweep auger operations in compliance with the Grain Standard:

1. In accordance with 29 CFR 1910.272, no employee shall enter a grain bin until after completion of a bin entry permit, which confirms there are no engulfment and/or atmospheric hazards present inside the storage bin, or unless the employer or the employer’s representative who would otherwise authorize the permit remains present during the entire entry. The grain bin hazard evaluation shall be completed by a qualified person.
2. Before entering the bin to set up or dig out the sweep auger, the subfloor auger and the grain entry points must be controlled by the entrant.
3. Before operating the sweep auger, the grate/guard on the sub-floor auger must be in place and secured.
4. Employees operating the sweep auger cannot walk on the grain, if the depth of the grain presents engulfment hazard.
5. It shall require that the sweep auger is provided with guards and covers per the manufacturers’ design, and the only unguarded portion of the sweep auger is the point of operation.
6. A rescue trained and equipped observer, in accordance with 1910.272(g), must always be positioned outside the storage bin monitoring the activities of all workers inside the bin.

7. If a worker is to enter the bin while the sweep auger is energized, the employer must utilize engineering controls within the grain bin to prevent workers from coming into contact with the energized sweep auger. The use of only administrative controls without the use of an engineering control is not a sufficient means of worker protection.

Acceptable engineering controls may include:

- Sweep auger equipped with an attached guard which prevents the workers contact with the unguarded portion of the auger in accordance with 1910 subpart O.
- Sweep auger equipped with a control mechanism, such as a dead-man switch or other similar device, which will allow for the sweep auger's operation only when the operator is in contact with device. If this method is utilized as a means of



worker protection,

the worker must be positioned at least seven feet from the auger at all times it is energized; moreover, if worker(s) in addition to the operator of the sweep auger are in the bin, additional engineering controls (such as those described in section 7 of this criteria) must be used to protect those worker(s).

- Portable guardrails are permissible, provided they are placed at least seven feet behind the sweep auger. Note: the use of a warning line, or other easily removable device, other than a portable guardrail, is not considered sufficient engineering controls.
8. The auger must be provided with a positive speed control mechanism or bin stop device that prevents the uncontrolled rotation of the sweep auger.
 9. Workers are prohibited from using their hands, legs other similar means to manipulate the sweep auger while it is operating.
 10. If maintenance/adjustments are necessary to the sweep auger, the sweep must be unplugged, with the person making the adjustments maintaining the control of the plug, or locked-out in accordance with lock-out/tag-out procedures.

Practical Application of the Sweep Auger Safety Principles

As part of the settlement negotiations that resulted in the Ten Sweep Auger Safety Principles, the cited employer also developed and submitted for OSHA's review and approval a specific Sweep Auger Policy that included actual, practical engineering and administrative controls the employer intended to use at its facilities. Below is a non-exhaustive list of the engineering and

administrative controls that OSHA affirmatively approved as being consistent with the Ten Sweep Auger Safety Principles:

1. Safety Handle: A handle of at least seven feet in length attached to the back of the sweep auger that is equipped with a Dead Man Switch or Kill Switch.
2. Attached Standard Railing: A Standard Railing mounted to the Sweep Auger with protective covering (such as snow fence) attached across the back of the Standard



Railing.

The size of openings in the protective covering will conform to the allowable dimensions set forth in Table O in OSHA's machine guarding standard.

3. Portable Standard Railing: A portable, self-supported Standard Railing set in place behind the Sweep Auger, again with protective covering attached across the back of the Standard Railing.
4. Operator Enclosure: A portable enclosure made of Standard Railing inside of which the Sweep Auger Operator can be stationed with a Dead Man Switch or Kill Switch while the Sweep Auger is Operating. Alternatively, other electrical controls may be used as long as they shut off the sweep auger when the employee steps outside the enclosure.
5. Operator Stand: A stand inside the grain bin mounted to the bin wall or elevated from the grain bin floor above the moving parts of the Sweep Auger, from where the Sweep Auger Operator can operate and/or observe the Sweep-Cleaning Operations. The Sweep Auger Operator shall have access to a Dead Man Switch or Kill Switch. Alternatively, other electrical controls may be used as long as they shut off the Sweep Auger when the employee dismounts the stand.
6. Light Curtain: When it is demonstrated to be a feasible option, a light curtain may be installed with a triggering distance of seven feet around the sweep auger, which would shut off the sweep auger whenever an employee moves within the triggering distance.”