



Grain Handling Safety Coalition

Criteria for Sweep Auger Alternative Protection Bin Specific Abatement Measures (SAM)

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. The grain bin hazard evaluation shall be completed by a qualified person.
Producers - use the bin entry permit as a reference guide to check for hazards.
2. Before entering the bin to set up or dig out the sweep auger, the subfloor auger and the grain entry points must be de-energized and locked out. **Commercial facilities MUST have LOTO procedures. Producers - LOTO is a BEST PRACTICE!**
3. Before operating the sweep auger, the grate/guard on the sub-floor auger must be in place and secured. **Grates - refer to 1910 Subpart O - 1910.217 Table O-10 - Distance of Opening from Point of Operation including maximum width of opening shown at end of document.**
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. **Commercial facilities MUST have observer. Producers - This is a BEST PRACTICE!**
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:

- a. 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.
- b. 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).

- c. 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.

Table O-10 – Distance of Opening from Point of Operation including maximum width of opening

Distance Between Protective Covering and Moving Parts of Equipment	Maximum Vertical Opening (Horizontal Openings are Unlimited)
½ to 1 ½ inches	¼ inches
1 ½ to 2 ½ inches	⅜ inches
2 ½ to 3 ½ inches	½ inches
3 ½ to 5 ½ inches	⅝ inches
5 ½ to 6 ½ inches	¾ inches
6 ½ to 7 ½ inches	⅞ inches
7 ½ to 12 ½ inches	1 ¼ inches
12 ½ to 15 ½ inches	1 ½ inches
15 ½ to 17 ½ inches	1 ⅞ inches
17 ½ to 31 ½ inches	2 ⅞ inches
31 ½ inches to less than 7 feet	6 inches
More than 7 feet	Protective covering not required

*SAMs are part of a settlement reached between OSHA and Western Grain Marketing and can be found at http://www.osha.gov/SLTC/grainhandling/western_final.pdf. A May 3, 2013 Memorandum to OSHA regional offices further clarifies the OSHA policy on sweep augers. https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=29219 .

These references should be used as a guide to abatement of similar hazards.

** The comments in **color** have been added by GHSC and are not a part of the official settlement agreement.