

**Basic First Responder Training for Incidents Involving
Grain Storage and Handling Facilities
Minimum Core Competencies**

At the completion of this training participants should be able to:

1. Identify the typical types of confined spaces found in agricultural workplaces and the typical hazards associated with each.
2. Describe the national scope and significance of the problem of entrapments, engulfments, asphyxiations, entanglements, asphyxiations, falls, and electrocutions that occur at grain/feed storage, processing, and handling facilities.
3. Identify the general types of potential emergencies that could potentially occur at grain storage and handling facilities.
4. Explain the difference between OSHA exempt versus non-exempt facilities and how this may influence the first response strategies and the role of both volunteer and paid first responders, including specialized tactical rescue teams.
5. Identify the two relevant OSHA standards that apply to first responders at the scene of an entrapment, engulfment, asphyxiation, entanglement, fall, or electrocution located at a grain storage, handling, transport or processing facility.
6. Identify work practices that reduce the risk of agricultural confined space-related emergencies.
7. Describe the rights that workers have under OSHA to file a complaint regarding unsafe working conditions.
8. Describe the basic nature and characteristics of free flowing agricultural material including weight, bulk density, angle of repose, funnel flow, plug flow, and avalanche and crusting potential.
9. Describe the basic operation of typical grain storage structures and how grain/feed flows through them.
10. Describe the vulnerability of free flowing agricultural materials to go out-of-condition and how the presence of spoiled grain and feed increase the risk of entrapment, engulfment, entanglement, and respiratory distress.

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11. List the common factors that contribute to the potential for entrapment, engulfment, asphyxiation, entanglement, falls, or electrocutions at grain/feed storage, handling, and processing operations.
12. List the seven most common categories of flowing grain/feed entrapments and engulfments.
13. Identify the most significant hazards to emergency first responders at the scene of an entrapment, engulfment, asphyxiation, entanglement, asphyxiation, fall, or electrocution at a grain/feed storage, handling, or processing operation, including:
 - Secondary entrapment
 - Falls
 - Exposure to toxic atmospheres and airborne grain dust
 - Exposure to energized electrical components
 - Heat stress
14. Describe the importance of pre-planning for emergencies at grain storage and handling facilities, and compliance with established standard operating procedures.
15. Identify essential personal protective equipment that should be used by emergency first responders at the scene of an entrapment, engulfment, asphyxiation, entanglement, fall, or electrocution at a grain/feed storage, handling, or processing facility.
16. List the initial steps that should be taken by the first responder upon arriving at the scene of an entrapment, engulfment, asphyxiation, entanglement, fall, or electrocution at a grain/feed storage, handling, or processing operation.
17. List the key rescue equipment that has proven beneficial at the scene of an entrapment, engulfment or entanglement inside a grain/feed storage structure.
18. Identify appropriate and inappropriate anchor points on or around grain/feed storage structures, and how the lack of an adequate anchor point can influence rescue strategies.
19. Describe the types of injuries that a victim could experience due to entrapment, engulfment, asphyxiation, entanglement, fall, or electrocution in or around grain/feed storage, handling, and processing facilities.
20. Demonstrate the use of a grain containment device, such as a grain rescue tube, in free flowing grain to extricate a partially buried victim.
21. Describe the various strategies for rapid removal of grain/feed from a storage structure to expedite rescue or recovery.

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22. Describe the procedures for safely cutting of a corrugated steel bin panel to expedite the removal of a grain bin's contents.
23. Describe the potential for structure failure due to a rapid removal of grain/feed from a grain storage structure or due to compromising the integrity of the structure due to inappropriate cutting of supporting components.
24. Demonstrate the process of lockout/tagout of unloading equipment on grain storage structures.
25. Describe the difference between a sweep auger, stirrator auger, and an infloor unload auger, and the hazards involved with both.
26. Describe the basic strategies for responding to an electrocution.
27. Describe the primary hazards associated with clean-up and recovery operations following a rescue attempt.
28. Describe the role that a grain vacuum machine could play to expedite a rescue or recovery from grain/feed.
29. Describe the hazards associated with using a grain vacuum machine.
30. Identify sources of supplemental resources related to responding to an entrapment, engulfment, asphyxiation, entanglement, asphyxiation, or fall at a grain/feed storage, handling, or processing facility.