



Grain Dryers

What are Grain Dryers and How do They Work?

Grain dryers are becoming increasingly common throughout our agricultural communities. This poses an increased risk to our rural fire departments and responding emergency crew due to the risks of various utilities and hazards involved, as well as the lack of knowledge and ability to handle a emergency incident with a dryer.

Grain dryers are large structures that take in grain after being harvested and lowers the moisture content to a more acceptable standard for proper storage and spoilage prevention. You may find three different types of grain dryers, but they all dry grain in a similar fashion. The wet grain enters the dryer from a grain truck or grain bin and flows through outside paneled walls of the dryer. Air is blown in and heated from 120 to over 200 degrees Fahrenheit, depending on the type and moisture content of the grain. The hollowed center of the dryer holds the heated air which is pushed through small permeable holes within the side walls holding the grain. As the grain is dried and the moisture evaporates, the grain drops into the internal auger at the bottom of the dryer, pushing the grain into air blown lines to be stored in a designated grain bin for storage and cooling.

Types of Grain Dryers

Tower



Mixed Flow



Batch



Hazards with Grain Dryers

Grain dryers can be placed in unique locations and differ from farm to farm. Where one grain dryer may be highly accessible to your personnel and equipment, may be difficult at another.

Electricity and natural/LP gas are the main utilities involved in a grain dryer, and can be hazardous if not properly controlled.

Grain running into and out of a dryer fire increases the risk of smoldering grain spreading to other grain bins.

Lastly, it's important to be aware of possible overhead wires running to the dryer and other nearby structures on the farm.

How to Respond?

When responding, it's best to order everything you possibly need en route vs ordering your resources when on scene, including mutual aid. Also, having knowledge of the available farm resources can assist you in moving grain or other equipment out of the way.

Shutting off the power and gas to the dryer, as well as the grain flowing into and away from the dryer is crucial to controlling the fire. Remember lock out, tag out procedures!

Identify where your personnel can access the dryer safely so the dryer can be emptied of the burning grain and be extinguished outside of the dryer.

Prevention is Key

Work together with farmers in your community that have grain dryers and develop a pre-incident plan. Utilizing tools such as Farm MAPPER can assist your department in understanding where the hazards, access points, and utility shut offs are located, improving your efficiency and safety during the emergency response.

Response Checklist ✓

- ☐ Natural Gas or LP Shut Off
- ☐ Electrical Shut Off
- ☐ Lock Out Tag Out
- ☐ Over head wires?
- ☐ Consider collapse zone for tower units
- ☐ Identify ability to access dryer with personnel and/or equipment

Units Required ✓

- ☐ Command
- ☐ Engines
- ☐ Tenders (non hydrant)
- ☐ Truck Co.
- ☐ EMS/Rehab
- ☐ Farm Resources i.e. skid steer to move grain and other equipment in the way
- ☐ Mutual Aid?

Prevention ✓

- ☐ Work with farmers to develop a pre-incident fire plan
- ☐ Pre-plan and map farm with Farm MAPPER
- ☐ Talk with farmers in your community to better understand their grain dryer