



Annual concrete grain storage

Sample checklist

The following information may be collected and verified for each concrete grain storage structure at the property and stored in a centralized location.

**Designation/
name of structure** _____

Date of construction _____

**USDA warehouse
diagram (bin chart)** Showing bin layout and bushels per foot _____

Vendors

- General contractor _____
- Purchase agreement _____
- Concrete engineer _____
- Concrete contractor _____
- Equipment installation contractor _____
- Geotechnical firm _____

Plans

- Foundation plans _____
- Wall reinforcing plans _____
- Roof reinforcing plans _____

Equipment

- Flow diagram _____
- Equipment list and age _____
- Equipment capacities _____

Operations

- Structure erector/designer operational manual _____
- Written fill procedures _____
- Written emptying procedures _____
- Written fan operation procedures _____
- Written maintenance procedures _____
- Written bin entry procedures _____
- Written lock-out/tag-out procedures _____

Inspections

- Photo documentation during construction _____
- Photo documentation of last significant remodel/repair _____
- Date of last inspection _____
- Previous inspection report _____

Maintenance

- Record of past maintenance _____
- Dates _____
- Activities _____
- Contractors involved _____
- Photos _____

Site training

- Site plan map with evacuation route clearly posted _____
- Topic and date of last site training _____
- Number of previously trained employees still at location _____

Annual inspection when empty

The following information should be collected and verified for each concrete grain storage structure on the property annually at a time when the structure is empty.

**Designation/
name of structure** _____

Date of inspection _____

Foundation Identify and document any foundation cracks _____
Verify that water flows away from the foundation _____
Verify the foundation is level _____
Identify and document areas of differential settlement _____

**Boots and
reclaim tunnels** Dry _____
Clean _____
Free of signs of structural cracking and differential movement _____

Silo walls Identify and document any wall cracks _____
Identify and document areas of exposed reinforcing steel _____
Identify and document areas of new worsening of old cracking or past repairs _____

Roof Identify and document areas of keyway cracking _____
Verify that water is not ponding on roofs _____
Verify that the roof is not leaking _____
Verify that roof overhangs are uniform _____

Openings Inspect reclaim tunnel for cracks at and near gate openings _____
Inspect overhead bin floors for cracks at and near gate openings _____
Inspect wall openings for cracks at and near wall openings _____

Equipment Operate the following to assure proper function
Aeration fans _____
Ventilation and exhaust fans _____
Discharge gates, sumps and/or slides _____
Reclaim conveyors _____
Distributors, valves and diverters _____
Sweep auger and/or Kanal type unloading systems (if installed) _____
Bucket elevators _____
Fill conveyors _____
Manlift _____

Safety equipment

Motor, equipment, and drive assembly guarding in place _____
What types of hazard monitoring equipment in place? _____
All hazard monitoring equipment operating properly _____
All means of egress properly labeled and structurally sound _____
Points of entry (ladders, doors, cages etc.) properly protected to prevent trespassing _____

Housekeeping

Update and review written housekeeping plan to assure it is appropriate _____
Verify housekeeping plan is being implemented _____
Verify that all spouts and conveyors are in good condition and “dust tight” _____
Verify that grain is not actively leaking from the structure _____
Verify that grain is not actively leaking from grain handling equipment _____

Greasing and lubrication

Update and review written greasing and lubrication plan to assure it is appropriate and being adequately implemented _____
Where bearings require sufficient greasing to cause grease to be expelled from the bearing assembly assure that all expelled grease is cleaned away to prevent build-up near rotating components _____

Training

Provide annual refresher training for proper loading and unloading of structure _____
Provide annual refresher training on lock-out/tag-out procedures _____
Provide annual refresher training on bin/silo entry procedures _____

Miscellaneous

Verify all elevated landings, walkways and ladders are structurally stable _____
Verify that grain is not/has been leaking from silo to silo _____
Verify that pieces of concrete have not been found in the grain removed from the structure _____
Verify the condition and quantity of any carry-over grain that may still be present within the structure _____
 Age of carry-over grain _____
Verify there are no visible signs of grain stuck on the inside of the silo walls, this could be an indication of water leaks or grain management problems _____

Annual inspection when full

The following information should be collected and verified for each concrete grain storage structure on the property annually after they have been filled as a follow-up to the inspection when empty.

**Designation/
name of structure** _____

Date of Inspection _____

**Foundation
Movement** The foundation and any foundation cracking or movement that may have been present prior to filling look generally the same after filling with grain _____
Visible indications of differential settlement (tipping or leaning) are not observed _____

**Silo walls
and openings** No visible indications of new cracking or widening of existing cracking _____
No visible wall bulging or deformation _____

**Equipment
operation** All previously tested equipment operates functions as desired after loading _____

Roof Check the bin roof for leaks _____

Housekeeping Verify that grain is not actively leaking from the structure _____
Verify that grain is not actively leaking from grain handling equipment _____

**Fall protection
(if applicable)** Fall protection anchorage is sound _____
Fall protection lanyard and harness inspections are current _____



**For assistance with risk management services or safety resources,
contact us at RMSolutions@nationwide.com or 1-800-260-1356.**