Safeguarding storage bins

ANNUAL STEEL STORAGE BIN CHECKLIST
ASSET FILE FOLDER

The following information should be collected and verified for each steel bin at the property and stored in a centralized location:

Date of Construction

USDA Bin Designation

Vendors

- General Contractor
- Purchase Agreement
- Concrete Engineer
- Concrete Contractor
- Bin Manufacturer
- Warranty
- Bin Erector

Plans

- Foundation Plans
- Construction Manual
  - Bin Model Number
  - Bin Diameter
  - Bin Eave Height
  - Bin Capacity in Bushels

Operations

- Bin Owners/Operators Manual
- Written operational procedures for bin loading
- Written operational procedures for fan operations
- Written operational procedures for bin unloading including clean-out procedures
- Written maintenance procedures for bin
- Written lock-out-tag-out procedures
- Written bin entry procedure

Inspections

- Photo documentation of bin during construction
- Initial inspection report prior to filling
- Annual inspection reports of bin with photos

Maintenance

- Record of maintenance conducted
  - Date
  - Activity
  - Contractor
  - Photos
INITIAL INSPECTION PRIOR TO FILING

The following information should be collected and verified for each steel bin prior to filling for the first time:

**Date of Inspection**

**Foundation**
- Verify foundation dimensions match design drawings
- Identify and document any foundation cracks
- Verify water flows away from the bin
- Verify water flows away from the foundation
- Verify bin is tight to the foundation
- Review transit readings to verify foundation is level

**Walls**
- Verify all panel bolts in place
- Clean-up all loose bolts
- Verify all anchor bolts are tight and vertical (no angled anchor bolts)
- Verify all wall wind rings are tight
- Verify all sweep ring bolts are tight and vertical
- Verify bin stiffeners that land on aeration tunnels are properly supported (vertical support installed between bin stiffener anchor plate and bottom of aeration tunnel)

**Roof**
- Verify all roof wind rings are tight
- Verify roof to sidewall connection
- Verify roof mounted equipment is properly secured

**Openings**
- Auxiliary sumps chained and padlocked
- Man access doors properly secured
- Equipment entry doors properly braced and secured

**Equipment**
- Operate all the following equipment:
  - Grain Aeration Fans
  - Exhaust Fans
  - Sumps / Slide Gates
  - Reclaim Conveyor
  - Power Distributor
  - Sweep Auger
  - Side Draw Gates
  - Fill System

**Training**
- Provide training for grain handling employees on proper loading of metal bin and any special requirements for first time filling of bin
- Provide training for grain handling employees on proper unloading of metal bins
# ANNUAL INSPECTION AT CLEAN OUT

The following information should be collected and verified for each steel bin at the time it is emptied each year:

## Date of Inspection

<table>
<thead>
<tr>
<th>Foundation</th>
<th>Identify and document any foundation cracks ________________________________</th>
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<tbody>
<tr>
<td></td>
<td>Verify water flows away from the bin ______________________________________</td>
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<td></td>
<td>Verify water flows away from the foundation ______________________________</td>
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<tr>
<td></td>
<td>Verify foundation is level _____________________________________________</td>
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<td></td>
<td>Verify bin is tight to the foundation ____________________________________</td>
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<tr>
<td></td>
<td>Check all anchor bolts are tight ________________________________________</td>
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<td>Document any apparent movement of stiffener anchors ______________________</td>
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<thead>
<tr>
<th>Walls</th>
<th>Verify bin stiffeners are attached and plumb _____________________________</th>
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<tbody>
<tr>
<td></td>
<td>Check bin for rust ______________________________________________________</td>
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<tr>
<td></td>
<td>Check for bent or damaged bin corrugated panels __________________________</td>
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<td></td>
<td>Check for missing, loose or broken bin bolts _____________________________</td>
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<td></td>
<td>Check to see if any bin bolts are on the ground around the bin ____________</td>
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<tr>
<td></td>
<td>Verify all wall wind rings are tight _____________________________________</td>
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<tr>
<th>Roof</th>
<th>Verify all roof wind rings are tight _____________________________________</th>
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<tbody>
<tr>
<td></td>
<td>Check the bin roof connections __________________________________________</td>
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<tr>
<th>Openings</th>
<th>Check man access doors and equipment entry doors for damage ________________</th>
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<tr>
<th>Equipment</th>
<th>Verify condition of all the following equipment:</th>
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<tbody>
<tr>
<td></td>
<td>Grain Aeration Fans ____________________________________________________</td>
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<tr>
<td></td>
<td>Exhaust Fans __________________________________________________________</td>
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<td></td>
<td>Sumps / Slide Gates __________________________________________________</td>
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<td></td>
<td>Reclaim Conveyor ______________________________________________________</td>
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<td></td>
<td>Power Distributor ______________________________________________________</td>
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<td></td>
<td>Sweep Auger __________________________________________________________</td>
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<td></td>
<td>Side Draw Gates ______________________________________________________</td>
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<td>Fill System __________________________________________________________</td>
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<tr>
<th>Training</th>
<th>Provide annual refresher training for grain handling employees on proper loading and proper unloading of metal bins ______________</th>
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<tbody>
<tr>
<td></td>
<td>Provide annual refresher training on lock-out-tag-out procedure __________</td>
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<td></td>
<td>Provide annual refresher training for bin entry procedure ________________</td>
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<tr>
<th>Record any maintenance activities conducted</th>
<th>Date _______________________________________________________________</th>
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<tr>
<td></td>
<td>Activity __________________________________________________________</td>
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<td>Contractor ________________________________________________________</td>
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<td>Photos ____________________________________________________________</td>
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<tr>
<th>Miscellaneous</th>
<th>Document the condition of the bin and foundation - review and photograph</th>
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