Platform

Grain Bin Installation and Storage Instructions

Original Instructions
New in this Manual

The following changes have been made in this revision of the manual:

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1. Introduction

This manual describes how to assemble a Westeel Platform.

Before assembling, please read this manual. Familiarize yourself with the process and the necessary precautions for efficient and safe assembly.

Everyone present at the assembly site is required to be familiar with all safety precautions.

Keep this manual available for frequent reference and review it with new personnel. Call your local distributor or dealer if you need assistance or additional information.
2. Safety

2.1. Safety Alert Symbol and Signal Words

This safety alert symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of injury or death, carefully read the message that follows, and inform others.

**Signal Words:** Note the use of the signal words **DANGER, WARNING, CAUTION,** and **NOTICE** with the safety messages. The appropriate signal word for each message has been selected using the definitions below as a guideline.

- **DANGER** indicates an imminently hazardous situation that, if not avoided, will result in serious injury or death.
- **WARNING** indicates a hazardous situation that, if not avoided, could result in serious injury or death.
- **CAUTION** indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.
- **NOTICE** indicates a potentially hazardous situation that, if not avoided, may result in property damage.

2.2. General Safety

**YOU** are responsible for the **SAFE** assembly and installation of the platform. **YOU** must ensure that you and anyone else who is going to assemble/install the platform understands all procedures and related **SAFETY** information contained in this manual.

Remember, **YOU** are the key to safety. Good safety practices not only protect you, but also the people around you. Make these practices a working part of your safety program. All accidents can be avoided.

- It is the platform assembler and installation personnel’s responsibility to read and understand **ALL** safety instructions, safety decals, and manuals and follow them when assembling, operating, or maintaining the equipment.
- Only experienced personnel who are familiar with this type of assembly and installation should perform this work. Untrained assemblers/installers expose themselves and bystanders to possible serious injury or death.
- Do not modify the platform in any way without written permission from the manufacturer. Unauthorized modification may impair the function and/or safety, and could affect the life of the platform. Any unauthorized modification of the platform will void the warranty.
- Follow a health and safety program for your worksite. Contact your local occupational health and safety organization for information.

2.3. Personal Protective Equipment

The following Personal Protective Equipment (PPE) should be worn when installing the equipment.
2. SAFETY

Safety Glasses
- Wear safety glasses at all times to protect eyes from debris.

Coveralls
- Wear coveralls to protect skin.

Hard Hat
- Wear a hard hat to help protect your head.

Steel-Toe Boots
- Wear steel-toe boots to protect feet from falling debris.

Work Gloves
- Wear work gloves to protect your hands from sharp and rough edges.

2.4. Safety Decals
- Keep safety decals clean and legible at all times.
- Replace safety decals that are missing or have become illegible. See decal location figures that follow.
- Replaced parts must display the same decal(s) as the original part.
- Replacement safety decals are available free of charge from your distributor, dealer, or factory as applicable.

2.5. Decal Installation/Replacement
1. Decal area must be clean and dry, with a temperature above 50°F (10°C).
2. Decide on the exact position before you remove the backing paper.
3. Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.
4. Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
5. Small air pockets can be pierced with a pin and smoothed out using the sign backing paper.
2.6. Safety Decal Locations and Details

Replicas of the safety decals that are attached to the platform and their messages are shown in the figure(s) that follow. Safe operation and use of the platform requires that you familiarize yourself with the various safety decals and the areas or particular functions that the decals apply to, as well as the safety precautions that must be taken to avoid serious injury, death, or damage.

Figure 1. Safety Decals
SAFETY INSTRUCTIONS

- Read operator’s manual and all safety decals before assembling, using, or servicing bin.
- Close/latch all access doors when not in use.
- Do not alter or modify bin structure.
- Replace any damaged components only with factory made components.
- This bin should only be used to store free flowing, granular material, unless specifically designed and marked otherwise.
- When filling, use top filler cap and direct material to center of bin.
- Do not over-fill bin. Material should not be in contact with or place pressure on roof sheets.

SAFETY INSTRUCTIONS

ENTRAPMENT HAZARD

Never enter the bin when loading or unloading grain.

If you must enter the bin:
1. Shut off and lock out all power.
2. Use a lifeline, safety harness, and have an observer outside before entering the bin.
3. Wear proper breathing equipment or a respirator.
4. Avoid the center of the bin.

Failure to heed these warnings could result in serious injury or death.

Keep clear of all augers. DO NOT ENTER this bin!

If you must enter the bin:
1. Shut off and lock out all power.
2. Use a safety harness and safety line.
3. Station another person outside the bin.
4. Avoid the center of the bin.
5. Wear proper breathing equipment or respirator.

Failure to heed these warnings could result in serious injury or death.
To prevent serious injury or death:
• Do not climb ladder if damaged, wet, icy, greasy, or slippery.
• Maintain good balance by having at least three points of contact at all times.

FALLING HAZARD
To prevent serious injury or death:
• Do not climb ladder if damaged, wet, icy, greasy, or slippery.
• Maintain good balance by having at least three points of contact at all times.

FALLING HAZARD
To prevent serious injury or death:
• Do not climb ladder if damaged, wet, icy, greasy, or slippery.
• Maintain good balance by having at least three points of contact at all times.

When equipped with aeration system, to prevent roof and/or bin damage:
• Use a minimum 1 square foot (0.1m²) opening for each 1000ft³/min (30m³/min) of air.
• Ensure all roof vents are open and unobstructed.
• Discontinue use of aeration fan if roof vents become obstructed with ice.

NOTICE
When equipped with aeration system, to prevent roof and/or bin damage:
• Use a minimum 1 square foot (0.1m²) opening for each 1000ft³/min (30m³/min) of air.
• Ensure all roof vents are open and unobstructed.
• Discontinue use of aeration fan if roof vents become obstructed with ice.

Part Number: 8110–0066
Part Number: 8110–00136
Part Number: 8110–01090
3. Before You Begin

3.1. Bin Design and Capacity

Standard Westeel Grain Bins are designed for:

1. Non-corrosive free-flowing materials up to 55 lbs/ft³ (880 kg/m³) average compacted bulk density.
2. Maximum horizontal gusted wind speed of 94 mph (151 km/h)
3. Zero seismic activity

**Note**
Seismic resistance in grain bins varies with height and diameter. Many standard designs have significant seismic capabilities. Designs can be reviewed and/or modified to reflect local seismic requirements.

4. Roof loading capabilities vary with diameter, peak load and snow load.
   a. Peak Loads – standard peak loads follow. **Upgrades are available.**

<table>
<thead>
<tr>
<th>Size</th>
<th>Type of Roof</th>
<th>Load (lbs)</th>
<th>Load (kg)</th>
</tr>
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<tr>
<td>15' to 24'</td>
<td>non-structural</td>
<td>4000 lbs</td>
<td>1814 kg</td>
</tr>
<tr>
<td>27' to 48'</td>
<td>non-structural</td>
<td>5000 lbs</td>
<td>2268 kg</td>
</tr>
<tr>
<td>51' &amp; 54'</td>
<td>non-structural</td>
<td>8000 lbs</td>
<td>3629 kg</td>
</tr>
<tr>
<td>48' to 108'</td>
<td>structural</td>
<td>20,000 lbs</td>
<td>9072 kg</td>
</tr>
</tbody>
</table>

b. Roof Snow Loads (RSL) – at the above stated standard peak loads, standard RSLs vary with diameter and range from 16 psf (78 kg/m²) to 45 psf (220 kg/m²). **Upgrades are available.**

**Note**
The correlation between ground snow load (GSL) and roof snow load (RSL) for grain bin designs vary with jurisdictions. In the US GSL = 2 x RSL. In Europe GSL = 1.25 x RSL. In Canada the correlation between GSL and RSL varies and is site specific.

3.2. Foundation Design and Loads

The foundations for the stiffened bin models are based on 4000 lbs. per sq. ft. (192 kPa) soil bearing capacity. All foundation designs use 3000 lbs. per sq. in. (21 MPa) ultimate compressive strength (after 28 days) for concrete and 43,500 lbs. per sq. in. (300 MPa) re-bar. The foundation designs included in this manual are suggestions only, and will vary according to local soil conditions. Westeel will not assume any liability for results arising from their use.

**Important**
Foundation should be uniform and level. Level should not vary by more than ¼" over a span of four feet under the bottom ring angle. Any variance from level must be shimmed under upright base assembly. If being utilized to support a full floor aeration system, this levelness requirement should extend across the complete floor area.
3.3. Site and Assembly

Unless otherwise specifically provided in writing, Westeel does not take responsibility for any defects or damages to any property, or injury to any persons, arising from or related to any site or assembly considerations, including but not limited to:

- Bin location and bin siting
- Soil conditions and corresponding foundation requirements (note that the examples provided in manuals are for specifically stated soil conditions)
- Bin assembly (Westeel recommends the use of qualified bin installers; contact Westeel for information on installers in your area)
- Field modifications or equipment additions that affect the bin structure
- Interconnections with neighboring structures
- Compliance with all applicable safety standards, including but not limited to fall restraint systems (ladders or other systems). Local safety authorities should be contacted as standards vary between jurisdictions.

3.4. Methods of Installation

The recommendations for assembling and installing Westeel grain bins must be closely followed to achieve the full strength of the bin and to achieve adequate weather sealing. The product warranty is void if:

1. Wall sheets and/or uprights not specified for a given tier are used.
2. Foundations are found to be inadequate or out-of-level.
3. Anchor bolts (cast-in-place, drill-in, chemical type or other) are found to be inadequate.
4. Off-center loading or unloading is used. (This does not apply to the use of approved side unloading systems.)
5. Materials stored are not free-flowing or have a compacted bulk density greater than 55 lbs/ft³ (880 kg/m³).

If using bin jacks during assembly, always lift on an upright. Choose a hoist with a adequate capacity for the expected empty bin deadload. Make sure the rated capacity of the hoist is not exceeded.

3.5. Cutting Openings in Wide-Corr® Grain Bins

This section provides instructions for cutting openings to accommodate fan transitions, unloading augers and roof vents.

**General Rules for Cutting openings**

1. Never cut any uprights, roof ribs, or wall sheet bolted vertical seams to create an opening.
2. Openings shall be located so equipment being installed won't interfere with any bin components/accessories.
3. Openings shall be minimized as much as possible for structural integrity of grain bins.
4. Corners in openings shall be cut with minimum radius of 1/8" to reduce stress concentration.
5. Openings shall be sealed all the way around for all weather conditions.
6. Instructions shall be followed closely to avoid damage to bin structure.
7. Except cutting openings described below, any other modification to Westeel bins shall be approved by a professional engineer.
Openings for Fan Transitions of Aeration Floors
1. Consult aeration floor installation instructions for information on Planning floor layout.
2. Openings shall be centered to a wall sheet in horizontal direction.
3. Opening shall be cut as tight as it can be for the transition to go through and shall have no more than 1/4" gap on any side to the section of a fan transition going through a bin wall.
4. Opening height for fan transition shall be limited to 12.5" inches from bottom edge of a bottom wall sheet.
5. Opening width shall not exceed 46.5" for stiffened bins and 72.5" for unstiffened bins.
6. Vertical support shall be required to support load above opening.
7. Bottom angles may be cut flush to the sides of an opening to form part of opening.

Openings for Unloading Augers of Wide-Corr® Bins with Full Floor Aeration
1. Consult aeration floor installation instructions for information on Planning floor layout.
2. Openings shall be centered to a wall sheet in horizontal direction.
3. Openings shall be cut as tight as it can be for unloading auger to go through and shall have no more than 1/4" gap to auger flange section on any side.
4. Opening height for any auger shall be limited to 12.5" from the bottom edge of a bottom wall sheet.
5. Vertical flange of a bottom angle may be cut flush to sides of an opening to form part of opening.

Openings for Roof Vents in Roof Sheets
1. Openings shall be centered between roof ribs and have 2.5" minimum distance between edge of opening and base of a roof rib.
2. Openings can be square, rectangular, or round.
3. Openings shall be the same size as the inlet opening of a vent being installed.
4. Any side of a square/rectangular opening shall have a maximum length of 18" and a circular opening shall have a maximum diameter of 24".

3.6. Critical Assembly Requirements

To ensure a successful, safe and reliable outcome you must comply with the following assembly techniques and practices:
1. Comply with all local code and jurisdictional requirements applicable to your platform installation.
2. Design and build foundations with the necessary strength for the loads they must support, and for local soil conditions. Westeel foundation guidelines are based on specific stated conditions and may not be applicable to local conditions.
3. Your foundation must provide uniform and level support to the structure being supported. Surface imperfections causing gapping must be remedied. This may involve, but not be limited to a) grouting under the bottom ring of a non-stiffened bin or tank, and b) shimming under the uprights of a stiffened bin or tank, or under the legs of a hopper.
4. Make sure that the proper hardware is utilized for all bolted connections. If a shortage occurs, do not substitute. Take the necessary steps to obtain the proper hardware. Make sure nuts are tightened to the required torque values as specified in the appropriate assembly manual.
5. Comply with all assembly instructions provided in the appropriate assembly manual to make sure your whole platform is constructed safely. **Important: Do not deviate from the wall sheet and upright layouts provided.**

6. Before anchoring your structure to its foundation, make sure the structure is round. The maximum variation from perfect roundness is 3/4” on the radius. Locate anchor bolts toward the outside of the anchor bolt holes (away from the circle) to permit the incremental expansion that can occur with the initial filling.

7. When installing roof stiffening rings, if it is necessary to shorten the stiffening ring tubes, shorten them as little as possible. Initially the nuts on the expanders should be centered and as close together as possible. When tightening, share the amount of take-up between expanders such that the nuts remain centered, and the amount of engagement between all expanders on the same ring is equalized.

8. If extending an existing bin or tank, ensure that the foundation is adequate for the increased loads it must support.

9. If installing an existing bin on a hopper, make sure the bin is designed for a hopper application, and that the foundation is capable of withstanding the substantial point loads that the hopper legs apply. If uprights are present, make sure that they are supported.

10. Make sure that an integral end-to-end connection exists between all mating uprights. Successive uprights must not overlap.

11. Vertical tolerances between uprights and wall sheets are tight. This can be affected by “jacking” techniques, which can allow the tolerance to grow or shrink depending on the technique used. The gapping between successive uprights must be monitored to ensure that upright holes align with wall sheet holes.

12. If catwalks are being installed on the structure, upright catwalk upgrades are likely required. The upgraded stiffeners must be installed in the correct locations to support the intended catwalk loads. Also, the structure must be properly oriented to ensure the eventual correct alignment between the catwalks and the supporting uprights. Finally, the connectors that tie into the uprights and support the catwalks are best installed during assembly of the structure. See the catwalk assembly manual for additional details.

### 3.7. Product Storage

**Rust on Galvanized Parts**

1. White rust forms when moisture is allowed to collect on galvanized surfaces that have yet to develop the durable zinc oxide layer. This zinc oxide layer naturally occurs as the surface interacts with carbon dioxide, and is characterized over time by the dull grey appearance that weathered galvanized surfaces get.

2. Parts that are not well ventilated or well drained can collect water between surfaces and develop white rust.

3. White rust is not a structural concern if its development is stopped in the early stages. A light film or powdery residue can occur after a period of heavy rainfall or a short time of improper storage. If white rust has started to develop, separate parts and wipe off any moisture. Next, using a clean cloth, apply a thin layer of petroleum jelly or food-grade oil to the entire part.

4. If moisture is left on parts, this white rust can become more aggressive and turn into red rust. Red rust can cause degradation in the material and become a structural concern. Any parts that have red rust should be replaced immediately.

**Storage Guidelines**

- Keep all bundles dry before assembly of the bin.
- Start assembly as soon as possible.
- Do not lay bundles on the bare ground. Raise all bundles 6” to 8” off the ground on wood blocks or timbers. (See Detail A in **Figure 2 on page 15**.)
• Store curved wall sheets ‘hump-up’. (See Detail A in Figure 2 on page 15.)
• All other bundles material should be placed so that they are well sloped to promote good drainage. (See Detail B in Figure 2 on page 15.)
• Roof sheets must be elevated at least 12" at the small end of the sheets. (See Detail B in Figure 2 on page 15.)
• Temporary storage can be provided by erecting a simple framework supporting a waterproof tarp. (See Detail C in Figure 2 on page 15.)
• All bin boxes, ladder boxes and hardware boxes should be stored inside. These are not waterproof, and will deteriorate in normal weather conditions, allowing moisture to contact the parts inside.

Figure 2. Product Storage

If Parts Become Wet
1. If parts become submerged or wet, the bundles should be opened as soon as possible, sheets or material separated and dried. Keep separated until assembly.
   Brace parts properly so as to avoid damage or injury from material falling when in storage. (See Detail D in Figure 2 on page 15.)
2. Any boxed parts that become wet should be dried and stored in a new box that is free of moisture.
3. In addition to wiping down wall sheets, a food-grade oil can also be applied with a clean, lint-free cloth. This will assist in preventing any further moisture from contacting the galvanizing on the steel. Due to safety concerns with installation and use, Westeel does not recommend the use of oil on other parts such as roof sheets and safety ladders.

3.8. Grain Bin Use

• Do not off-center unload a grain bin. It is imperative to unload from the center of the bin first, until as much grain as possible has been removed, and only then proceed to unload from the next closest unload gate to the center. Continue utilizing the unload gates in succession from the center towards the outside. Gate control mechanisms should be clearly marked and interconnected to prevent an external gate from being opened first.
• The only exception to center unloading is when a properly designed and installed side draw system is utilized. However, as bins tend to go out of round when employing side draws, the bin must be completely emptied before refilling.
• When unloading a bin with a mobile auger through a properly designed auger chute, the entry end of the auger should be pushed into the center of the bin before the auger is engaged. Slower rates of flow are preferable and should not exceed the capacity of an 8" auger.
• Ensure that the inner door panels of grain bin doors are completely closed and latched before filling the grain bin.
• Never enter a loaded grain bin for any reason. Grain can be a killer.
3.9. Ladder-Stair Usage

The WESTEEL Ladder/Stair in grain bin is designed to provide access to the roof for inspection and maintenance purposes only. Excessive weight can cause component failure. The Ladder/Stair is not designed to support the transport of heavy apparatus from the ground to the roof. The user should not carry more than 30 lbs of tools and equipment on his person. No more than one person should stand on the same ladder rung, stair tread or platform at the same time. No more than two persons should occupy the ladder/staircase at the same time.

3.10. Important Notes

- Westeel does not provide a foundation design for this product, and is not liable for any damages or injuries related to inadequately designed or constructed foundations. Customers must contract professional services for all foundation design and construction work.

- In order to maintain your wall sheets in good condition separate sheets and allow air circulation between them. Store sheets in a dry place. Do not store sheets with sheet ends pointing upwards.

- To keep an even pressure on walls, the bin must always be unloaded from the centre.

- Contact local power officials for minimum power line clearance.

- See Section 3.6 – Critical Assembly Requirements on page 13 for mandatory siting and assembly requirements.

- Store only non-corrosive, free-flowing materials up to 55 lbs/ft³ (880 kg/m³) average compacted density in Westeel bins.

- Tighten all bolts to the recommended torque settings.

- Do not locate grain bins close to high buildings, which might cause snow to fall onto or build up on the roof of the grain bin. Consider future expansion and allow space for loading and unloading of the bin. Your dealer and local government agricultural consultants can help you plan your storage system for maximum efficiency.
4. Preparation

4.1. Check Shipment

Unload the parts at the assembly site and compare the packing slip to the shipment. Ensure that all items have arrived and that none are damaged.

Report damaged parts or shortages immediately to the delivering carrier, followed by a confirming letter requesting inspection by the carrier, if required. Order any replacement parts immediately to ensure that assembly will not be held up by missing parts. All parts will be charged for and credit will be issued by party at fault. No credit will be issued if freight bills are signed as received in good condition.

4.2. List of Tools and Equipment

Use quality tools and equipment. Use them safely, and correctly, for their intended use. Tools for this application should include:

Tools
• Electric or pneumatic (air) impact tools
• Power drill and drill bits
• Sockets (multiple 9/16" and 1/2" sockets recommended)
• Large-pocket carpenter pouch
• 8" (20 cm) metal punches (for aligning bolt holes)
• Step and extension ladders, construction grade
• 6-point wrenches (Imperial, box end)
• Metal-cutting saw suitable for cutting roof rings and wind rings
• Scaffolding
• Centre-post bin stand
• Crane and/or bin jacks

Minimum Recommended Safety Equipment
• A properly-stocked first-aid kit
• Eye, foot, head, and hand protection (safety glasses, steel-toed boots, hard hat, work gloves)
• Cable, chain, or rope to tie-off bin or jacks in case of wind
• Body harness and lifeline (for use where falling hazard exists)
• Ground fault interrupt protected electrical hook-ups

4.3. Order Optional Equipment

Optional equipment such as unloading augers, aeration equipment, anchor bolts, foundation sealant, external ladders, safety cage and platforms, etc., should all be on site and checked before assembly starts. Plan your installation in advance. For details, see assembly instruction supplied with optional equipment.
5. Assembly

Before continuing, ensure you have completely read and understood this manual’s Safety section, in addition to the safety information in the section(s) below.

5.1. Assembly Safety

⚠️ WARNING
- Do not take chances with safety. The components can be large, heavy, and hard to handle. Always use the proper tools, rated lifting equipment, and lifting points for the job.
- Carry out assembly in a large open area with a level surface.
- Always have two or more people assembling the platform.
- Make sure you have sufficient lighting for the work area.
- Tighten all fasteners according to their specifications. Do not replace or substitute bolts, nuts, or other hardware that is of lesser quality than the hardware supplied by the manufacturer.
- Stay away from overhead power lines and other obstructions during assembly. Contact with power lines can cause electrocution.
- Do not work in high winds.
5.2. OSHA Compatible (for North America) Suggested Ladders, Cages and Platform Layouts

Westeel OSHA Compatible ladders are one component of the OSHA ladder system, which also requires a fall arrest system. When ordering these ladder kits for an OSHA system, it is the purchaser’s responsibility to ensure that they have all the components required for an OSHA compliant system, including the fall arrest system. The following layouts show platforms situated at the top-right of the first ladder segment. They can also be assembled in a mirror image configuration.

Figure 3. OSHA Compatible (for North America) Suggested Ladders, Cages and Platform Layouts

CAGE BRACE BAR SHOWN AS DIAGONAL LINE
Figure 3  OSHA Compatible (for North America) Suggested Ladders, Cages and Platform Layouts (continued)
5.3. ANSI (for North America) Suggested Ladders, Cages and Platform Layouts

The following layouts show platforms situated at the top-right of the first ladder segment. They can also be assembled in a mirror image configuration.

Figure 4. ANSI (for North America) Suggested Ladders, Cages and Platform Layouts
Figure 4  ANSI (for North America) Suggested Ladders, Cages and Platform Layouts (continued)
5.4. EN ISO 14122 (for Europe) Ladders, Cages and Platform Layouts

The following layouts show platforms situated at the top-right of the first ladder segment. They can also be assembled in a mirror image configuration.

This product has been designed and tested according to EN ISO 14122.

Note
The EN version, shown here, has the ladder extending to the bottom of the bin. The bottom cage section utilizes a standard hoop configuration.

Figure 5. Ladders, Cages and Platform Layouts — 5 to 14 Tiers

PLATFORM – GRAIN BIN 5. ASSEMBLY
Figure 6. Ladders, Cages and Platform Layouts — 15 to 20 Tiers
Figure 7. Ladders, Cages and Platform Layouts — 21 to 27 Tiers
5.5. Planning the Location of Ladder Components

Important
Timing (assembling components in the correct order and relative position) is very important when assembling ladders, eaves rails, roof stairs or roof ladders, platforms and inside ladders, and other bin components. Consideration must be given to this during the planning stages, before assembly of the bin is initiated.

Consider the following:

Inside Ladders
The inside ladder sections bolt to existing holes in the horizontal seams of the wall sheets, which are spaced at a consistent 9 3/8". The inside ladders should also be centered on the roof panel that contains the inspection hatch opening. This roof panel should be centered on the horizontal wall sheet hole that will be the center of the inside ladder sections. Spinning the top ring angles and roof sheets relative to this location on the wall sheets may be required to achieve optimum fit-up.
Roof Stairs or Roof Ladders
The external ladder sections bolt to existing holes in the horizontal seams of the wall sheets. The roof stairs, or roof ladders, bolt to the ribs of roof panels, and are positioned to the right or left of the inspection hatch. The hatch should be centered on the inside ladders, if present. It may also be desirable to position the roof stairs, or roof ladders, relative to some external elements such as overhead conveyors, or catwalks.

The roof panel that the roof stairs / roof ladders are bolted to must be centered (as much as possible) to the center of the external ladder and eaves rails. To achieve optimum fit-up, it may be necessary to spin the top ring angles and roof sheets relative to the wall sheets, to align this roof panel relative to the intended location of the external ladder.

Uprights
Stiffened bins must be given additional consideration since the external ladder/platform combinations must be mounted on either side of a stiffener location. On a stiffened wall sheet the upright locations can be identified by the line of vertical holes set in from either end. (See Figure 9 on page 28.)

Timing Considerations
For fully featured bins containing external ladders, eaves rails, platforms, roof stairs or roof ladders, and inside ladders, the following is an example of the timing considerations that should be undertaken prior to the construction of the bin.

1. Select the location of the various ladder components relative to external elements such as conveyors or catwalks.

2. Select the location of the various ladder components relative to other bin elements such as stencil sheets, door openings, remote vent opener, etc.

3. Determine the upright location that the external ladder sections and platforms will be centered on. During the initial assembly phases mark these locations on the top ring of wall sheets. For non-stiffened bins this is not a consideration.

4. Determine if the inspection hatch is located on the right or left side of the external ladder sections.

5. Locate the top ring angles and roof panels relative to this position such that the roof panel containing the inspection hatch is centered, as much as possible, on the hole in the wall sheet that is the center of the inside ladder sections. In general, the center of the inside ladder sections should be 37 ½” (or 4 horizontal wall sheet spaces @ 9 3/8”) to the right or left of the center of the external ladder sections.

6. In the absence of an internal ladder, center the roof panel to which the roof stairs or roof ladders are being bolted to, on the center of the external ladder sections.

Note
North American layouts are shown throughout this document, unless otherwise noted.
If there is a ladder/platform combination, it is necessary to position the consecutive sidewall ladder runs on either side of an upright. The proper side wall bolt holes are illustrated below for a ladder positioned to the left of the upright. The mirror image of these holes can be used if the ladder is on the right side of the upright.

**Figure 8. Ladder Location**

CENTER THE SIDEWALL LADDER ON THE ROOF LADDER, OR ROOF STAIRS, AS MUCH AS POSSIBLE ON STIFFENED BINS. THE POSITION OF THE SIDEWALL LADDER RELATIVE TO THE UPRIGHTS CAN BE IMPORTANT (SEE BELOW). IT MAY BE NECESSARY TO POSITION THE ROOF RELATIVE TO THE UPRIGHTS WHEN INITIALLY ASSEMBLING, TO AVOID INTERFERENCE WITH THE UPRIGHT

WHERE A LADDER MEETS A PLATFORM, IT WILL BE NECESSARY TO CUT THE LOWEST RUNG OUT OF THE LADDER SECTION, TO PREVENT INTERFERENCE WITH THE PLATFORM

IF PRESENT, INSIDE LADDERS SHOULD BE CENTERED ON THE INSPECTION HATCH

If there is a ladder/platform combination, it is necessary to position the consecutive sidewall ladder runs on either side of an upright. The proper side wall bolt holes are illustrated below for a ladder positioned to the left of the upright. The mirror image of these holes can be used if the ladder is on the right side of the upright.

**Figure 9. Ladder Attachment Points**

LADDER ATTACHMENT POINTS

PLATFORM ATTACHMENT POINTS

UPRIGHT LOCATION
5.6. Side Wall Platform Installation

5.6.1 Platform Structure to Bin Wall Connection

**Important**
Platform can be installed on either side of the ladder. Illustrations show platform on the right side of ladder when facing the bin.

**Note**
It is advisable to bolt the platform to the bin wall before attaching the bottom ladder section that continues upward. It will be necessary to cut about 11” off of the bottom of this ladder section to fit. The two lower ladder clips will also need to be moved up 12” to a higher corrugation and drilled in.

**Figure 10. Platform Installation**

1. Bolt three ladder clips (234501) to the bin at the locations as shown on the wall sheet in Figure 9 on page 28.
2. Bolt the angle post (234642) to the ladder clips with 3/8” x 1” bolts.
3. The platform to wall connection angle (234621) bolts to the bin 3 horizontal hole spacings away from the angle post with two 3/8” x 1” bolts.

4. Bolt cross member 2 (234613) to the platform to wall connection angle.

5. Bolt the angle brace (234619) to cross member 2 and platform to wall connection angle.

6. Attach the toe board (234614) to the angle post.

7. Bolt the corner post to the toe board.

8. Bolt the angle brace (234619) to the corner post and angle brace.
5.6.2 Platform Plank to Platform Structure

1. Attach cross member 1 (234612) and cross member 3 (234615) to the platform plank (234611) using 3/8” x 1” bolts.

**Figure 11. Platform Plank and Cross Members**

2. Bolt the platform plank and cross members to the toe board and cross member 2.

CROSS MEMBER 1 – P/N 234612

CROSS MEMBER 3 – P/N 234615

3/8” x 1” BOLT

3/8” NUT

PLATFORM PLANK – P/N 234611

TOE BOARD – P/N 234614
Figure 12.  Bolting Together the Platform

1. Attach cross member 1 (234612) and cross member 3 (234615) to the platform plank (234611) using 3/8" x 1" bolts.

2. Bolt the platform plank and cross members to the toe board and cross member 2.

3/8" x 1" BOLT

CROSS MEMBER 1 – P/N 234612
PLATFORM PLANK – P/N 234611
3/8" x 1" BOLT

CROSS MEMBER 3 – P/N 234615

CROSS MEMBER 2 – P/N 234613
PLATFORM PLANK – P/N 234611
3/8" x 1" BOLT
CORNER POST – P/N 234641

FOR BINS 21' AND LARGER ALIGN PLATFORM PLANK WITH HOLES ON CROSS MEMBER 2
FOR 15' & 18' BINS ALIGN PLATFORM PLANK WITH THE SLOTS ON CROSS MEMBER 2

TOE BOARD – P/N 234614
5.6.3 Corner Channel to Platform

1. Bolt the corner channel (234643) to the platform plank and cross member 1.
2. Attach the platform plank to the corner post and angle post using 3/8” x 1” bolts.

Figure 13. Bolting the corner channel to the platform
5.6.4 Hand Rails and MidRails to Platform

1. Bolt on the two tube rails – long (234165) to the corner channel and corner post at the hand rail and mid rail hole locations. Use 3/8” x 1” bolts for these connections, as illustrated.

2. Repeat this process with the two tube rails – short (234164) between the corner post and the angle post.

3. On the side of the platform that tie into the ladder safety cages the upper cage to platform band (234622) bolts to the corner channel using two 3/8” x 1” bolts.

4. The lower cage to platform band goes into the slot located on cross member 1 and bolts to the corner channel.

**Figure 14. Hand Rails and Mid Rails to Platform Detail**
5.6.5 Platform to Safety Cage

1. The cage to platform band bolts to the ladder safety cage hoops (234161). The cage to platform band is punched for various bin diameters. Use the holes or slots that fit best.

2. Use 44” vertical bars (234516) to enclose the space between the safety cage and platform.

Figure 15. Bolt the cage to the platform
5.7. Ladder Platform - EU-234608

In order to assemble the European version of the ladder platform, the standard platform assembly given should be followed until the channel post (234643) and corner post (234641) are assembled. The top most ladder clip (234501) should be left unbolted (bolt later). Follow the instructions given from there on for the assembly of the European version.

5.7.1 Extension Posts to Angle and Channel Post

1. Bolt on the short angle extension posts (234646) on the corner post (234641) and angle post (234642).
2. Attach the long angle extension post (234645) to the channel post (234643). Use 3/8” x 1” bolts for all connections.

Figure 16. Bolting on extension posts
5.7.2 Tube Rails to Platform

1. Bolt on the tube rail – long (234165) and tube rail – short (234164) to the corner channel and to the corner posts and extension angles using 3/8” x 1” bolts.

2. Bolt on a ladder clip (234501) at the connection point between the extension post and angle post. Bolt another ladder clip above it on the extension post. The top ladder clip will require a hole to be drilled in the bin wall sheet where it will be attached.

Figure 17. Bolting the tube rails to the platform
5.7.3 Safety Cage and Support Arm to Platform

1. On the side of the platform that ties into the ladder safety cages, the upper cage to platform band (234622) bolts to the extension post bolted to the corner channel. The lower cage to platform band goes into the slot located on cross member 1 (234612) and bolts to the corner channel.

2. The cage to platform band bolts to the ladder safety cage hoops (234161). The cage to platform band is punched for various bin diameters. Use the holes or slots that fit best.

3. Use a 44” vertical support (234516) to enclose the space between the safety cage and platform. The cage hoop and vertical support are not part of the platform package.

4. The hand rail (234149) and hand rail splice (234150) are joined using self-drill screw to form a support arm. One end of the support arm will attach to the long angle extension post (234645) and the other to the bin wall via support arm brackets (234518). The length of the support arm must be adjusted according to varying bin diameters to provide optimal support.

Figure 18. Bolting the safety cage and support arm to the platform
5.7.4 Ladder to Platform Connection - EN Version

Figure 19. Ladder to platform connection

- **NOTE:** Ladder and cage extends 2 tiers above platform base.

- **DETAIL A (VIEW FROM BACK OF ASSEMBLY):**
  - Use two cage-to-platform bands (234622) to bridge between adjacent cage hoops.
  - Support arm bracket (234518) bolts onto the bin at a convenient location.
  - Vertical supports (234515) 40” spacing, bottom section only.
  - Vertical supports (234514) 48” spacing, top section only.
  - Long extension angle (234645) bolts onto the cage to platform band (234622).
  - Extension brackets 234644 (these locations only).
  - Vertical supports (234516) 44” spacing.

**PLATFORM – GRAIN BIN 5. ASSEMBLY**
5.8. Top Platform for Use with Wall Ladders - 234607

The top platform will be at the eave of the bin and can be accessed using the wall ladders. Planning the location of the ladder and the top platform is important for easier assembly and to avoid interference. The position of the sidewall ladder relative to the uprights is important. The attachment points of the ladder and the top platform to the bin are shown in the layout. The attachment points that do not lie on the wall sheet seams will be field drilled.

Figure 20. Top platform attachment points

5.8.1 Top Platform Assembly

1. Follow the instructions in Section 5.6 – Side Wall Platform Installation on page 29 up to the assembly of handrail and mid-rails. On the angle post (234642) there will be only two ladder clips (234501) bolted 44” apart. The third ladder clip will be used on the cage hoop assembly for the top platform.

2. The extension post angle short (234646) will be bolted to the channel post (234643) and the cage-to-platform band (234622) bolted to the extension post angle.

3. The third cage-to-platform band will be bolted onto the platform plank (234611) using 3/8” x 1” bolts and equivalent nuts. An additional bolt hole is required to be field drilled as shown.

4. A support arm (234504) will be bolted onto the angle post (234642) and a support arm bracket (234518) is attached to the support arm that will bolt onto the roof sheet rib.

See Section 5.8.2 – Cage Assembly for Top Platform on page 41 for top platform cage assembly details.
Figure 21. Top platform assembly

5.8.2 Cage Assembly for Top Platform

The top platform will require a special ladder cage assembly. The top two cage sections will be assembled differently compared to the standard cage sections to accommodate installation of the top platform. Once the top two sections are assembled, the standard installation instructions can be followed to complete rest of the cage assembly.

1. The top cage section uses 48” vertical cage supports, the second section uses 40” vertical supports, and all remaining sections use 44” vertical supports.

2. The cage hoop (234161) adjacent to the top platform base is installed approximately 8” below the standard position of the hoop as shown. A ladder clip (234501) is bolted onto that cage hoop which connects it to the bin wall.

3. The top ladder clips must be moved down 4” below the top wall sheet seam.

4. Three of the vertical supports extend to the cage section below and overlap with the next set of vertical supports. In case the next cage section has a larger cage hoop (234162) at the bottom, the next set of vertical supports must be installed on the inside i.e. behind the extended vertical supports. The lower end of the vertical supports must be pulled out and bolted to the inside of the larger bottom cage hoop.
The top platform will require a special ladder cage assembly. The top two cage sections will be assembled differently compared to the standard cage sections to accommodate installation of the top platform. Once the top two sections are assembled, the standard installation instructions can be followed to complete rest of the cage assembly.

1. The top cage section uses 48" vertical cage supports, the second section uses 40" vertical supports, and all remaining sections use 44" vertical supports.
2. The Cage Hoop (234161) adjacent to the top platform base is installed approximately 8" below the standard position of the hoop as shown. A Ladder Clip (234501) is bolted onto that cage hoop which connects it to the bin wall.
3. The top ladder clips must be moved down 4" below the top wall sheet seam.
4. Three of the Vertical Supports extend to the cage section below and overlap with the next set of vertical supports. In case the next cage section has a larger cage hoop (234162) at the bottom, the next set of vertical supports must be installed on the inside i.e. behind the extended vertical supports. The lower end of the vertical supports must be pulled out and bolted to the inside of the larger bottom cage hoop.

The cage assembly and the top platform assembly connect using the Cage-to-Platform Bands (234622). These bands have a number of slots and holes for easy assembly with the cage hoop (234161). When securing the platform support arms to the roof make sure the support arm brackets (234518) are bolted to the ribs of the roof.
5.8.3 Top Platform to Ladder Cage Connection

Figure 23. Top Platform to Ladder Cage Connection
5.9. Inter-Bin Platform (234630)

This is a platform that extends between two adjacent bins that are close together. The length of the platform as delivered is 57”. However, it can be easily shortened in 8” increments (to 49” or 41”) to accommodate a closer bin spacing. The platform can be configured in a couple of ways to accommodate different applications. It can be used in place of the normal bin platform (234610) and will mate with a wall ladder, or circular stair. It can also be used as a catwalk between adjacent bins.

5.9.1 Assembly Instructions for Standard Ladder Application

For use when mating the platform to a wall ladder

1. Plan the location of the platform relative to wall ladders, roof ladders or stairs, bin openings, uprights on a stiffened bin, etc. Preferably the platform sits between the uprights and does not straddle them. Some allowance may be needed to accommodate the overhang of the roof sheets.

2. Cut detail for side entry. When used with a ladder, and entry to the platform is from the side, two of the long hand rails (234628) must be shortened as illustrated (do not confuse with long stringer). The cut detail provided is for a platform mounted to the right of the ladder, when facing the bin. The toe board (234633) must also be cut for ladder entry.

Figure 24. Adjustment for Ladder Side Entry

Note

The illustration above does not show square holes which are found in some of the parts, and which are intended for other applications.

3. Cut detail for shorter applications. If a shorter platform length is required, in order to fit between the bins, certain members can be shortened as per the cut detail provided. These include both long stringers (234631), all four long rails (234628), the tread angle (234632) and the toe board (234633). The longest possible length that will fit between the bins should be utilized. There is enough adjustment on the bin mounting brackets to accommodate the up to 8” shortfall that could occur when shortening the length. It is necessary to plan out the relationship of the platform with the mating ladder or stair as this will determine which end of the parts should be cut. The cut detail provided is for a platform mounted to the right of the ladder, when facing the bin.
Figure 25. Adjustment for Length

4. Assemble the frame members as shown. All stringers are normally placed with the long leg pointing upwards and the short leg pointing inwards except for the long stringer on the ladder or stair side. Point the long leg of this stringer down and the short leg inwards. Place the long stringers on top of the short stringers (234635) such that the long stringers are resting on the short stringer. At this time also lay the tread angle on top of the long stringer on the platform entry side as shown. Secure in each corner with the hardware provided.

Figure 26. Assemble the frame members

5. Secure the frame to the two bins. (This step can be delayed until the platform assembly is complete if necessary).

The platform frame is secured to the bin sidewall braces (234634) at the locations shown.
5. ASSEMBLY

PLATFORM – GRAIN BIN

Note
If waiting until the platform assembly is complete before mounting, leave off the outside treads in order to access the appropriate bolt holes.

The braces can be moved relative to the frame using the slotted holes to fit into the space between the two bins. However, the space between the bins and the platform should be roughly equal on each end. Two braces should be mounted on each bin and the braces should be mounted directly across from each other at roughly the same height. The braces can be secured to the bin at 2” height increments using the holes provided in the wall braces. At least two bolts should secure each brace to the bin walls by locating and drilling holes through the crest of adjacent corrugations.

Note
If attempting to mate to a sidewall ladder and cage system, the bottom two holes in the wall brace should align with the second and third corrugation below a horizontal wall seam as shown.

Figure 27. Secure the platform to the bin

6. Bolt on the treads (C10445) into the tread angle and opposite long stringer.
6. Bolt on the treads (C10445) into the tread angle and opposite long stringer.

7. Bolt on the handrail posts (234629) at all four corners and on the entry side of the platform as shown.

8. Bolt on hand rails and mid rails (long – 234628 & short – 234627). Also bolt on toe board (234633).
Figure 30. Bolt on the hand rails and mid rails

9. If mating to a cage system, the cage to platform bands (234622) extend from the handrail post to the cage hoops as shown. They will need to be cut to length to match the specific installation.
Figure 31. Mating to a cage system

The following variations are possible:

- If using the platform to directly access a ladder, roof stair, etc., and not as a stand-off, the short hand rails and mid-rails can be left off on one, or both ends.

- If accessing the platform off of the ends (and not the side as outlined above), the one long stringer can be flipped around and installed the same as the other three with the long leg pointing upwards. For this configuration the tread angle (234632), the toe board (234633), one handrail post (234629) and four short rails (234627) would not be required. Also the two long rails would not need to be cut as required for side entry. All other installation procedures remain as per above.

- If desirable, and if the short stringers (234635) pose a tripping hazard for a walk through application, they can be flipped around and assembled with the long leg pointing downwards. However, in this case the wall braces will not work as illustrated above. An alternative, and acceptable, means of securing the platform to the bins will need to be developed.
5.9.2 Assembly Instructions for Standard Spiral Stair Application

For use when mating the platform to a wall ladder

The inter bin platform assembly instructions for the mating of a spiral stair to the inter-bin platform are essentially the same as when mating to a ladder with the following changes. Again the detail and illustrations are provided as if the platform is mounted to the right of the spiral stair, when facing the bin.

Planning

Consideration of the location of the platform and spiral stairs is similar to that provided in the ladder section, and in the spiral stair manual. The spiral stairs span half a tier so the connection to the platform should occur at either a full tier location (along the horizontal wall sheet seams) or at a half tier location (midway between the horizontal wall sheet seams).

Cut Detail

The square holes towards the center of two long handrails (234628) are used for the attachment of the spiral stairs. Use these to locate the cut line as shown. The toe board (234633) does not need to be cut for this application. The inner and outer stair stringers (234140 & 234141) must also be prepared as shown. Note: The cut detail for shortening the platform to fit between two bins remains as provided in the ladder section.

Figure 32. Cut Detail

Platform Assembly

The assembly of the platform is the same as for the ladder section except that the one extra handrail post (234629) that is on the entry side of the platform is bolted to the square holes towards the center of the long stringer (234631) as shown.
Figure 33. Platform Assembly

Stair Attachment
The modified upper stair stringers bolt into the holes on the handrail posts as illustrated. The stair handrails are bolted into the handrail posts as well. The balance of the stair installation does not change.
Figure 34. Stair Attachment

Orientation

The top spiral stair section should be attached to the grain bin at the standard bolt locations as provided in the spiral stair manual. Once attached, the platform needs to be fitted to the stair, and bolted to the bin. Holes will need to be drilled through the bin sidewall to accommodate the attachment braces (234634). It may be preferable to put the slotted holes on the attachment brace against the bin wall (as shown) to permit the drilling on the crest of a corrugation. Two holes should be drilled through the wall for each brace. The platform can then be bolted to the braces using one of the four holes located in the other leg of the brace, and through the hole on the bottom surface of the mating short stringer (234635). **Insure that the platform is fixed solidly to the wall sheets of both adjacent grain bins.**
**5.10. Commercial Door Access Platform (234640)**

The commercial door access platform utilizes the inter-bin platform (234630) with a few additional parts.

**Note**

The commercial door access platform can be installed to the right or the left of the ladder. The preferred location is to the right of the ladder and the instructions and illustrations provided are for a right hand installation.

**Planning**

The commercial door is only installed in stiffened commercial bins so consideration of the location of uprights is required. As per the planning instructions that are provided for the ladder installations, the ladder sections for tall bins alternate back and forth across an upright location. Meanwhile the commercial doors are installed such that they are centered between two adjacent uprights. For the commercial door access platform to work as per the following installation instructions, the ladder sections must be on the opposite side, and adjacent to, an upright that is located beside the door (as shown in the illustrations).

While the platform is designed to be installed to the right or left of the door, the swing of the door is fixed. If possible, it is preferable to locate the door to the right of the ladder, as is illustrated in the accompanying instructions.

The insertion of the door access platform has the potential to interfere with the regular ladder and platform intervals. Consideration must be given to the number of tiers between adjacent platforms. There should be at least three vertical tiers between platforms to avoid interference.
Figure 36. Wall Sheets and Brackets

Assembly Instructions

1. The assembly of the Inter-Bin Platform (234630) is as per the specific instructions provided for the platform with the following additional points.
   a. In this case the platform is not spanning between two adjacent bins. It is intended to be installed lengthwise across the front of the commercial door.
   b. There is no need to shorten any of the parts.
   c. When assembling the platform the long stringers (234631) and one of the short stringers (234635) are installed with the long leg pointing upwards. The short stringer that is adjacent to the ladder, or entry side, should be installed such that the long leg is pointing down. The tread angle (234632) is not required for this installation.
d. The attachment to the bin is different and will be explained later. The sidewall braces (234634) are not required for this installation.

e. Only three handrail posts (234629) are required for this installation. They are located at the three platform corners that are not adjacent to the ladder. The two long handrails (234628) across the back of the platform, away from the door, can also be bolted on at this time. Do not bolt on the short handrails. Special instructions as to their attachment will be provided later, as well as the connection to the ladder cage assembly.
Assembly Instructions:

1. The assembly of the Inter-Bin Platform (234630) is as per the specific instructions provided for the platform with the following additional points.
   - In this case the platform is not spanning between two adjacent bins…it is intended to be installed lengthwise across the front of the commercial door.
   - There is no need to shorten any of the parts.
   - When assembling the platform the long stringers (234631) and one of the short stringers (234635) are installed with the long leg pointing upwards. The short stringer that is adjacent to the ladder, or entry side, should be installed such that the long leg is pointing down. The tread angle (234632) is not required for this installation.
   - The attachment to the bin is different and will be explained later. The sidewall braces (234634) are not required for this installation.
   - Only three handrail posts (234629) are required for this installation. They are located at the three platform corners that are not adjacent to the ladder. The two long handrails (234628) across the back of the platform, away from the door, can also be bolted on at this time. Do not bolt on the short connection to the platform.
   - It may be desirable to bolt the platform onto the bin at this time. However this step is being delayed until later to illustrate the potential for interference that some of the parts may have on the operation of the door. Once this potential is understood, and an installer understands the positioning of the platform relative to the door, he may choose to attach the platform now.

2. Two short handrails (234627) are bolted to the two handrail posts that are furthest away from the ladder. Two handrail post extensions (234636) must also be bolted on at this time utilizing the same pickup holes as shown. The third post extension can also be bolted to the third handrail post as illustrated.

Figure 39. Handrail Posts
3. Two more short handrails and two long handrails are bolted to the post extensions as shown. Note that the long handrails are located further away from the bin to permit clearance for the swing of the door.

**Figure 40. Attaching handrails to posts**

4. There are seven attachment points between platform components and the bin wall. Two of these attachment points utilize the platform attachment clips (234637). The center hole on the flange of a clip bolts into the wall sheet bolt holes illustrated earlier. Once the platform is positioned, the top two holes on the other end of a clip bolts into two of the square holes located on the face of the long platform stringer closest to the wall. The clips can also be rotated 180° around the single center bolt to permit alignment with the closest set of square holes. **Position the platform such that the bolt holes in the handrail post (234629) away from the ladder and closest to the door, are adjacent to, and aligned with the holes in the corner of the door (see illustration).** There should be no interference between the opening of the outer door pan to at least 90 degrees and the handrail post extensions. When the platform is located properly, bolt the platform attachment clips into the closest available square holes in the stringer. Again, the clips can be rotated to aid in the alignment. There may be interference with the head of the bolt securing the platform treads to the platform stringer. This bolt can be removed. Secure the second clip to the closest aligning square holes in a similar fashion.
5. Two other connections between the platform and the bin involve braces (234619) that extend from the bottom (second hole) of the handrail posts, down to the next horizontal wall sheet seam, as illustrated. The connection with the wall sheets is made using the L-brackets (234518) as shown. The attachment point to the horizontal wall sheet seam should be directly below the handrail posts. On some bin models it may be necessary to drill holes midway between existing holes located along the horizontal seam. Once properly installed the platform should be level.

Figure 42.  Bracing the platform

6. The remaining three connections between the platform and the bin are made utilizing ladder wall brackets (234501) at the locations illustrated. Two of these are located at the corner bolt holes in the door that are farthest away from the ladder. These wall brackets bolt directly into the mating post extensions as shown. The third wall bracket is used to fix the top of the post extension that is closest to the ladder. It is
used in conjunction with two L-brackets (234518), and the final short handrail (234627) as illustrated. Bolt the wall clip to a mating hole along the wall sheet horizontal seam that aligns with this location. Once installed, the platform should not interfere with the normal opening and closing of the outer door pan.

Figure 43. Connecting ladder brackets

7. Tie in the ladder cage system. This is done at the three locations illustrated using the cage to platform bands (234622). One end of the bands is attached at the back of the ladder cage hoops. The other ends of the bands are attached to the platform using holes in the bands that align with the mating platform holes. (The holes used vary depending on the curvature of the bin wall sheets. Pick holes that do not distort the normal run of the cage.) The top two bands mate with holes located in the handrail post extensions, and the bottom band picks up on a single hole in the closest handrail post. Vertical cage bars (234516) bolt between the bands to enclose the area. Note that the half cage hoop in the middle cage section must be removed in order to permit access to the platform. The upper and lower cage hoops remain complete.
Figure 44.  Tie in the ladder cage system

8. Insert the ladder segment (234500) underneath the door. It may be necessary to cut the ladder to fit between the door and the platform such that the ladder does not interfere with the swing of the outer door pan. The ladder attaches to the bin wall using four ladder wall brackets (234501) as per normal ladder installations. Center the ladder on the door opening and grind any sharp edges that may have occurred during the cutting of the ladder. It will be necessary to drill four mating holes onto the crest of wall sheet corrugations.
Figure 45. Insert the ladder segment underneath the door

Table 2. 234640 Commercial Door Access Platform Parts List

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>234630</td>
<td>Inter-Bin Platform Package</td>
<td>1</td>
</tr>
<tr>
<td>234627</td>
<td>Short Handrail</td>
<td>1</td>
</tr>
<tr>
<td>234619</td>
<td>Angle Braces</td>
<td>2</td>
</tr>
<tr>
<td>234518</td>
<td>Ladder Support Arm Brackets</td>
<td>4</td>
</tr>
<tr>
<td>234622</td>
<td>Cage to Platform Bands</td>
<td>1</td>
</tr>
<tr>
<td>234500</td>
<td>Ladder Segment</td>
<td>1</td>
</tr>
<tr>
<td>234501</td>
<td>Ladder Brackets</td>
<td>7</td>
</tr>
<tr>
<td>234636</td>
<td>Handrail Post Extensions</td>
<td>3</td>
</tr>
<tr>
<td>234637</td>
<td>Platform Attachment Clip</td>
<td>2</td>
</tr>
</tbody>
</table>
6. Appendix

6.1. Parts Lists

6.1.1 Platform Package - 234610

Table 3. Platform Package - 234610
Intended as part of OSHA/ANSI package or as a standoff to access a hatch or door.

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>234611</td>
<td>PLATFORM PLANK</td>
<td>1</td>
</tr>
<tr>
<td>234612</td>
<td>CROSS MEMBER 1</td>
<td>1</td>
</tr>
<tr>
<td>234613</td>
<td>CROSS MEMBER 2</td>
<td>1</td>
</tr>
<tr>
<td>234614</td>
<td>TOE BOARD</td>
<td>1</td>
</tr>
<tr>
<td>234615</td>
<td>CROSS MEMBER 3</td>
<td>1</td>
</tr>
<tr>
<td>234641</td>
<td>CORNER POST</td>
<td>1</td>
</tr>
<tr>
<td>234164</td>
<td>ANGLE RAIL (SHORT)</td>
<td>2</td>
</tr>
<tr>
<td>234619</td>
<td>ANGLE BRACE</td>
<td>2</td>
</tr>
<tr>
<td>234642</td>
<td>ANGLE POST</td>
<td>1</td>
</tr>
<tr>
<td>234621</td>
<td>PLATFORM-TO-WALL CONNECTION</td>
<td>1</td>
</tr>
<tr>
<td>234622</td>
<td>CAGE-TO-PLATFORM BAND</td>
<td>2</td>
</tr>
<tr>
<td>234643</td>
<td>CHANNEL POST</td>
<td>1</td>
</tr>
<tr>
<td>234501</td>
<td>WC CLIP (EXTERIOR)</td>
<td>3</td>
</tr>
<tr>
<td>234609</td>
<td>LADDER PLATFORM HDWE BAG</td>
<td>1</td>
</tr>
</tbody>
</table>

6.1.2 Platform Insert Package - 234565

Table 4. Platform Insert Package - 234565
Intended to be used with ladder and cage packages where a rest platform and an offset in the ladder is required. Package includes all parts from platform package 234610 plus parts shown in the following table.

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>234500</td>
<td>LADDER SECTION</td>
<td>1</td>
</tr>
<tr>
<td>234501</td>
<td>LADDER CLIP</td>
<td>4</td>
</tr>
<tr>
<td>234162</td>
<td>HOOP-BOTTOM</td>
<td>2</td>
</tr>
</tbody>
</table>
### 6.1.3 Ladder Platform - EU – 234608

**Table 5. Ladder Platform - EU – 234608**

Intended to be used with ladder and cage packages for the European version of the ladder platform.

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>234610</td>
<td>WC LADDER PLATFORM PACKAGE</td>
<td>1</td>
</tr>
<tr>
<td>234645</td>
<td>EXTENSION POST ANGLE LONG</td>
<td>1</td>
</tr>
<tr>
<td>234646</td>
<td>EXTENSION POST ANGLE SHORT</td>
<td>2</td>
</tr>
<tr>
<td>234501</td>
<td>LADDER WALL CLIP</td>
<td>1</td>
</tr>
<tr>
<td>234164</td>
<td>TUBING RAIL (SHORT)</td>
<td>1</td>
</tr>
<tr>
<td>234165</td>
<td>TUBING RAIL (LONG)</td>
<td>1</td>
</tr>
<tr>
<td>234149</td>
<td>HAND RAIL</td>
<td>1</td>
</tr>
<tr>
<td>234150</td>
<td>HAND RAIL SPLICE</td>
<td>1</td>
</tr>
<tr>
<td>234131</td>
<td>SLFDRILL SCREW 12-14 x .75 ZN (12)</td>
<td>1</td>
</tr>
</tbody>
</table>

### 6.1.4 Top Platform for Use with Wall Ladders - 234607

**Table 6. Top Platform for Use with Wall Ladders - 234607 Parts**

Intended to be used with ladder and cage packages for a platform at the eave to access inspection hatch or roof stair or ladder.

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>234610</td>
<td>WC LADDER PLATFORM PACKAGE</td>
<td>1</td>
</tr>
<tr>
<td>234646</td>
<td>EXTENSION POST ANGLE SHORT</td>
<td>1</td>
</tr>
<tr>
<td>234622</td>
<td>CAGE-TO-PLATFORM BAND</td>
<td>1</td>
</tr>
<tr>
<td>234504</td>
<td>SUPPORT ARM</td>
<td>1</td>
</tr>
<tr>
<td>234518</td>
<td>SUPPORT ARM BRACKET</td>
<td>2</td>
</tr>
</tbody>
</table>
### 6.1.5 Inter-Bin Platform Package - 234630

Used to span between two adjacent grain bins.

#### Table 7. Inter-Bin Platform Package Parts List - 234630

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>234627</td>
<td>SHORT RAIL</td>
<td>4</td>
</tr>
<tr>
<td>234628</td>
<td>LONG RAIL</td>
<td>4</td>
</tr>
<tr>
<td>234629</td>
<td>HANDRAIL POST</td>
<td>5</td>
</tr>
<tr>
<td>234631</td>
<td>LONG STRINGER</td>
<td>2</td>
</tr>
<tr>
<td>234632</td>
<td>TREAD ANGLE</td>
<td>1</td>
</tr>
<tr>
<td>234633</td>
<td>TOE BOARD</td>
<td>1</td>
</tr>
<tr>
<td>234634</td>
<td>BRACE</td>
<td>4</td>
</tr>
<tr>
<td>234635</td>
<td>SHORT STRINGER</td>
<td>2</td>
</tr>
<tr>
<td>234622</td>
<td>CAGE TO PLATFORM BAND</td>
<td>2</td>
</tr>
<tr>
<td>C10445</td>
<td>STAIR TREAD</td>
<td>7</td>
</tr>
<tr>
<td>235943</td>
<td>3/8&quot; x 1.0&quot; HEX BOLT (BAG OF 50)</td>
<td>2</td>
</tr>
<tr>
<td>235951</td>
<td>3/8&quot; NUT (BAG OF 100)</td>
<td>1</td>
</tr>
<tr>
<td>198944</td>
<td>PLATFORM MANUAL</td>
<td>1</td>
</tr>
</tbody>
</table>
6.2. Platform Parts Identification

234164 – Platform Tube Rail (30" Long)
234165 – Platform Tube Rail (37-3/4" Long)
234622 – Platform to Ladder Cage Band
234612 – Platform Cross Member 1
234621 – Platform to Wall Connection
234642 – Platform Angle Post
234641 – Platform Corner Post
234643 – Platform Channel Post
234646 – Extension Post Angle Short (24-3/4" Long)
234645 – Extension Post Angle Long (54-1/2" Long)
234518 – Ladder Support Arm Bracket

234501 – Ladder Wall Clip

234504 - Ladder Support Arm (1" Dia x 34-3/4" Long)

234149 – Handrail (1.25" Dia x 34" Long)

234150 – Handrail (1" Dia x 17" Long)
6.3. Inter-Bin Platform Parts Identification

- 234622 – Platform to Ladder Cage Band
- 234627 – Short Rail
- 234628 – Long Rail

- 234629 – Handrail Post
- 234631 – Long Stringer
- 234632 – Tread Angle

- 234633 – Toe Board
- 234634 – Brace
- 234635 – Short Stringer

C10445 – Stair Tread
6.4. Additional Parts for Commercial Door Access Platform

234636 – Handrail Post Extension

234637 – Platform Clip
7. Limited Warranty: Westeel Grain Bin Products

Westeel – Ag Growth International ("Westeel") warrants products that it has manufactured and/or that are branded with its name (the "goods") subject to the following terms and limitations, (the "warranty"): 

Duration of Warranty

This warranty will run from the date of purchase from the dealer or distributor, authorized by Westeel. The duration of the warranty is limited as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Galvanized Bins</td>
<td>5 years</td>
</tr>
<tr>
<td>EasyFlow2</td>
<td>24 months</td>
</tr>
<tr>
<td>Westeel Fans</td>
<td>36 months</td>
</tr>
<tr>
<td>Floors</td>
<td>12 months</td>
</tr>
<tr>
<td>Catwalk</td>
<td>12 months</td>
</tr>
<tr>
<td>Bulk Feed Tanks</td>
<td>24 months</td>
</tr>
<tr>
<td>SeedStor-K Cones</td>
<td></td>
</tr>
<tr>
<td>Paint</td>
<td>12 months</td>
</tr>
<tr>
<td>Structural</td>
<td>30 months</td>
</tr>
<tr>
<td>Elite Cones</td>
<td></td>
</tr>
<tr>
<td>Paint</td>
<td>30 months</td>
</tr>
<tr>
<td>Structural</td>
<td>10 years</td>
</tr>
<tr>
<td>WESTEEL cones</td>
<td></td>
</tr>
<tr>
<td>Paint</td>
<td>No Warranty</td>
</tr>
<tr>
<td>Structural</td>
<td>12 months</td>
</tr>
<tr>
<td>Smooth Wall Bins</td>
<td></td>
</tr>
<tr>
<td>Paint</td>
<td>60 months</td>
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<tr>
<td>Structural</td>
<td>10 years</td>
</tr>
<tr>
<td>Commercial Smooth Wall Bins</td>
<td></td>
</tr>
<tr>
<td>Paint</td>
<td>12 months</td>
</tr>
<tr>
<td>Structural</td>
<td>10 years</td>
</tr>
</tbody>
</table>

Limitation of Remedies Replacement

Within the warranty period, Westeel will replace the goods and/or original manufactured components thereof which are found, to Westeel’s satisfaction, to be defective. Westeel is not responsible for direct, indirect, special, consequential, or any other damages of any kind, including personal injury to any individual, howsoever caused, including caused by transportation of the goods for repair or replacement.
Procedure for Obtaining Service

In the event of a warranty claim, the purchaser must complete any and all information required by Westeel in order to properly assess or investigate the claim. Westeel will not be responsible for the removal of any of the goods found to be defective, or transportation charges to and from Westeel’s authorized dealer or distributor, or for installation of any replacement goods and/or parts furnished under the warranty.

Limitations as to Scope of Warranty

The warranty does not extend to defects or damage caused, in whole or in part, by:

1. use of a kind and/or to a degree not reasonably expected to be made of the goods;
2. improper storage of the goods both prior to and after purchase;
3. damage caused by, or in the course of, installation or assembly;
4. any use of the goods which is not an intended use as specified in Westeel’s published product literature, or otherwise specified by Westeel in writing;
5. any equipment attached to or used in conjunction with the goods;
6. any field modifications or substitutions to original bin components;
7. inadequate ventilation or any other circumstance not in keeping with proper maintenance and/or use of the goods;
8. Acts of God, accident, neglect or abuse of the goods by the purchaser and/or any other individual or entity; or
9. Any use or installation inconsistent with Westeel’s Standard Disclaimers.

Limitations as to Manufacturer

The warranty does not cover products sold by Westeel that are not manufactured by Westeel. In those circumstances, the purchaser is referred to the manufacturer of those products.

Limitation of Implied Warranties and Other Remedies

To the extent allowed by law, neither Westeel nor its dealers, nor any company affiliated with Westeel makes any warranties, representations, or promises as to the quality, performance, or freedom from defect of any Product covered by this Warranty.

WESTEEL HEREBY DISCLAIMS, TO THE EXTENT APPLICABLE, ANY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. A PURCHASER’S ONLY REMEDIES IN CONNECTION WITH THIS WARRANTY ARE THOSE SET FORTH IN THIS WARRANTY. IN NO EVENT WILL WESTEEL, ITS DEALERS, OR ANY COMPANY AFFILIATED WITH WESTEEL BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES.

Some jurisdictions do not allow waivers of certain warranties, so the above waivers may not apply to you. In that event, any implied warranties are limited in duration to ninety (90) days from delivery of the products. You may also have other rights which vary from jurisdiction to jurisdiction.

Exclusive Warranty

This warranty is the only warranty provided by Westeel and all other warranties and/or commitments, whether express or implied and no matter by whom made, statutory or otherwise, are subsumed and replaced by it and are of no legal effect. If any provision of the warranty is held by a court of
competent jurisdiction to be void or unenforceable, in whole or in part, such provision shall be deemed severable and will not affect or impair the legal validity of any other provision of the warranty.