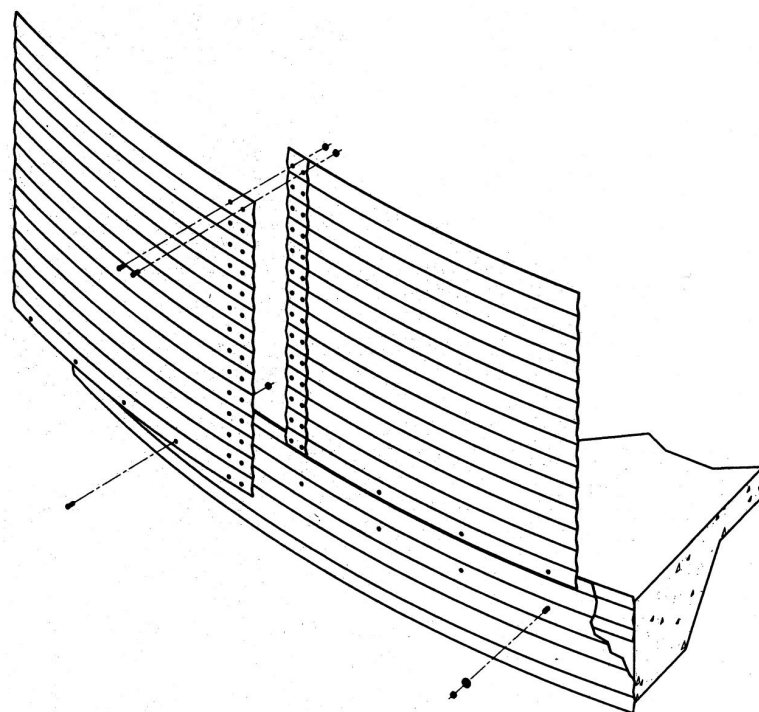




WC Sealform

Wide-Corr® Farm Series Grain Bin Installation and Storage Instructions

Original Instructions



Read this manual before using product. Failure to follow instructions and safety precautions can result in serious injury, death, or property damage. Keep manual for future reference.

Part Number: 198826 R16

Revised: Dec. 2018

New in this Manual

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

Description	Section
Updated Safety Decal Locations	2.6. Safety Decal Locations and Details on page 7

CONTENTS

1. Introduction	4
2. Safety.....	5
2.1. Safety Alert Symbol and Signal Words.....	5
2.2. General Product Safety	5
2.3. Personal Protective Equipment.....	5
2.4. Safety Decals	6
2.5. Decal Installation/Replacement	6
2.6. Safety Decal Locations and Details	7
3. Before You Begin	10
3.1. Bin Design and Capacity	10
3.2. Foundation Design and Loads	10
3.3. Site and Assembly	10
3.4. Methods of Installation.....	11
3.5. Cutting Openings in Wide-Corr® Grain Bins	11
3.6. Critical Assembly Requirements	12
3.7. Product Storage.....	13
3.8. Grain Bin Use.....	14
3.9. Important Notes	14
4. Preparation	16
4.1. Check Shipment.....	16
4.2. List of Tools and Equipment.....	16
4.3. Order Optional Equipment.....	16
5. Assembly	17
5.1. Assembly Safety	17
5.2. Sealform Kit Contents	17
5.3. Materials List	18
5.4. Foundation Specifications	19
5.5. Foundation Diagrams	20
5.6. Concrete Form Assembly	21
5.7. Anchor Bolt Placement Diagrams	25
5.8. Aeration Pit and Unloading Accessory Installation.....	27
5.9. Using Bin Jacks with Sealform.....	29
6. Limited Warranty: Westeel Grain Bin Products	32

1. Introduction

This manual describes how to assemble a Westeel WC Sealform.

Before assembling the sealform, 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.



Indicates an imminently hazardous situation that, if not avoided, will result in serious injury or death.



Indicates a hazardous situation that, if not avoided, could result in serious injury or death.



Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.



Indicates a potentially hazardous situation that, if not avoided, may result in property damage.

2.2. General Product Safety

YOU are responsible for the **SAFE** use and maintenance of your sealform. **YOU** must ensure that you and anyone else who is going to work around the sealform 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 sealform owner, operator, and maintenance personnel's responsibility to read and understand **ALL** safety instructions, safety decals, and manuals and follow them when operating, or maintaining the equipment.
- Owners must give instructions and review the information initially and annually with all personnel before allowing them to operate the sealform. Untrained users/operators expose themselves and bystanders to possible serious injury or death.
- The sealform is not intended to be used by children.
- Use the sealform for its intended purposes only.
- Do not modify the sealform 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 sealform. Any unauthorized modification will void the warranty.



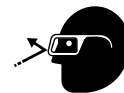
2.3. Personal Protective Equipment

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



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.

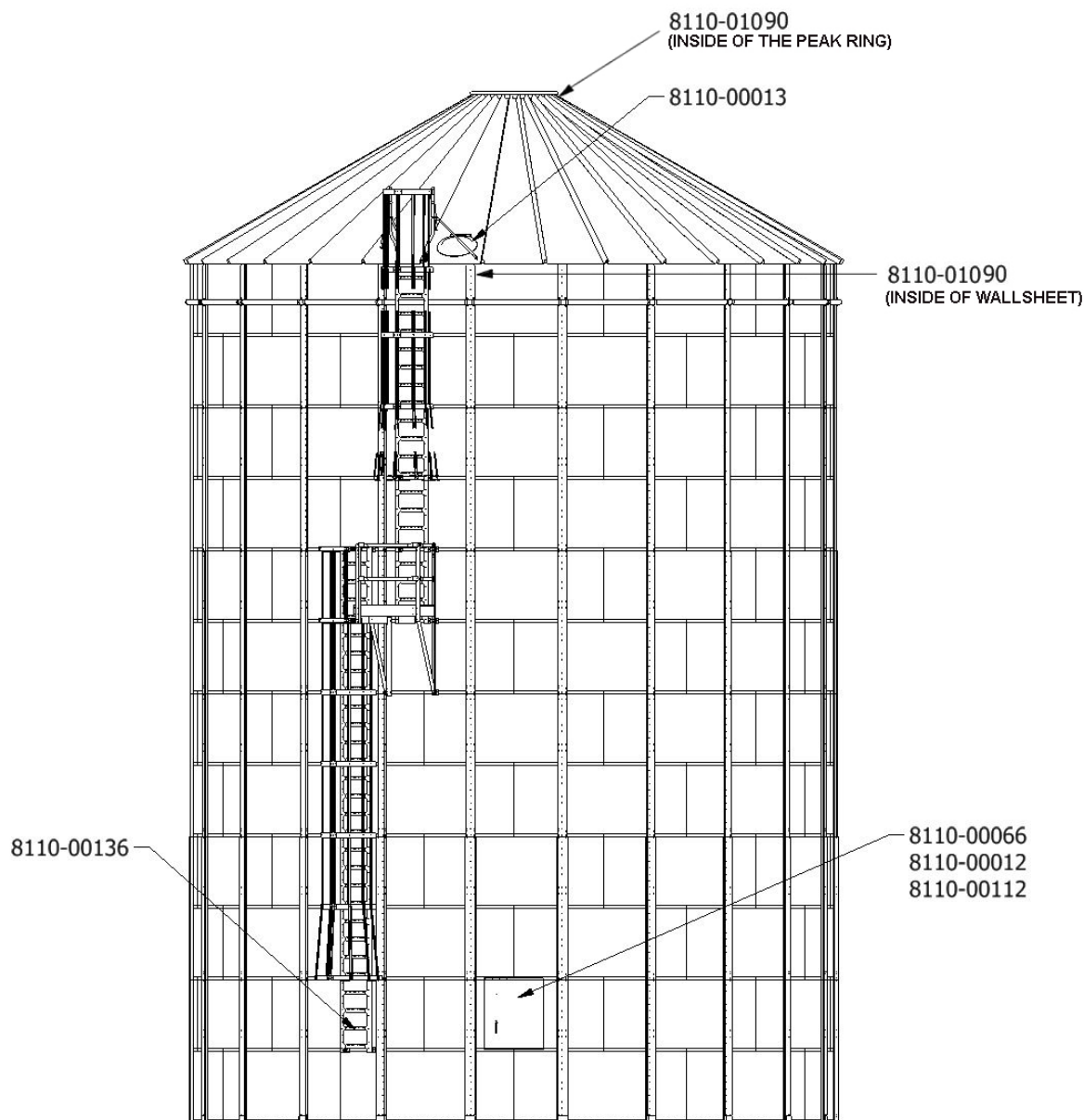
2.5. Decal Installation/Replacement


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 sealform and their messages are shown in the figure(s) that follow. Safe operation and use of the sealform 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






! WARNING	
	
SAFETY INSTRUCTIONS <ul style="list-style-type: none"> • 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. 	

Part Number: 8110-00012

! WARNING	
	
ENTRAPMENT HAZARD <p>Never enter the bin when loading or unloading grain.</p> <p>If you must enter the bin:</p> <ol style="list-style-type: none"> 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. <p>Failure to heed these warnings could result in serious injury or death.</p>	

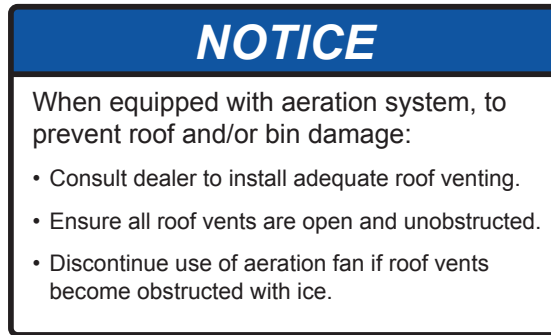
Part Number: 8110-00013

! WARNING		
		
Rotating flighting could kill or dismember.	Flowing material could trap and suffocate.	Crusted material could collapse and suffocate.
Keep clear of all augers. DO NOT ENTER this bin! <p>If you must enter the bin:</p> <ol style="list-style-type: none"> 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. <p>Failure to heed these warnings could result in serious injury or death.</p>		

Part Number: 8110-00112



Part Number: 8110-00136



Part Number: 8110-00066



Part Number: 8110-01090

3. Before You Begin

3.1. Bin Design and Capacity

These 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. Seismic zone 2a (U.B.C. 1997).
4. Roof Loading

Snow Load		Peak Load			
		15' — 24' bins		27' — 48' bins	
Imperial	Metric	Imperial	Metric	Imperial	Metric
15.0 lbs/ft ²	.72 kPa	4000 lbs.	17.8 kN	5000 lbs.	22.2 kN
24.0 lbs/ft ² (when optional roof stiffening rings installed)	1.15 kPa (when optional roof stiffening rings installed)				

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 sealform 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 sealform 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

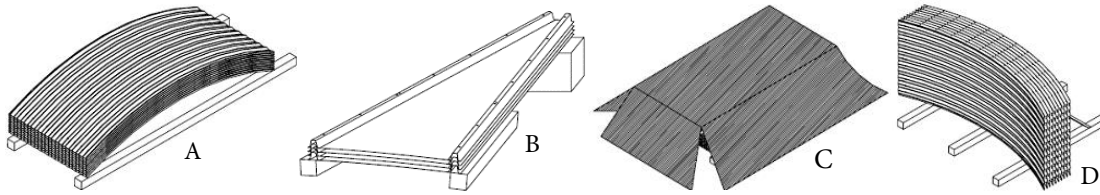
Rust on Galvanized Parts

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 14.](#))
- Store curved wall sheets ‘hump-up’. (See Detail A in [Figure 2 on page 14.](#))
- 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 14.](#))
- Roof sheets must be elevated at least 12" at the small end of the sheets. (See Detail B in [Figure 2 on page 14.](#))
- Temporary storage can be provided by erecting a simple framework supporting a waterproof tarp. (See Detail C in [Figure 2 on page 14.](#))
- 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 14.](#))

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. 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. For information on foundation design requirements, refer to [Section 3.2. – Foundation Design and Loads on page 10.](#)
- 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 12](#) for mandatory siting and assembly requirements.
- Store only non-corrosive, free-flowing materials up to 55 lbs/ft³ (800 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 sealform.
- 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. Sealform Kit Contents

Table 1. 16" Sealform Kit Contents

Bundle/Pail	15'	18'	21'	24'	27'	30'
	237700	237701	237702	237703	237704	237705
Wall Sheet Bundle	237720	237721	237722	237723	237724	237725
Hardware Pail	237740	237740	237741	237742	237743	237740 237742

Table 2. 32" Sealform Kit Contents

Bundle/Pail	15'	18'	21'	24'	27'	30'	33'	36'	42'	48'
	237710	237711	237712	237713	237714	237715	237716	237717	237718	237719
Wall Sheet Bundle	237730	237731	237732	237733	237734	237735	237736	237737	237738	237739
Hardware Pail	237740	237740	237741	237742	237743	237740 237742	237741 237742	237741 237743	2x 237743	237741 237742 237743



5.3. Materials List

Table 3. Materials List

Bundle	Item	Part Number	16" or 32" Sealform Model									
			15'	18'	21'	24'	27'	30'	33'	36'	42'	48'
16" Wall Bundles	16" Wall Sheet	237750	5	6	7	8	9	10	-	-	-	-
	Thrust Ring	237752	5	6	7	8	9	10	-	-	-	-
32" Wall Bundles	32" Wall Sheet	237751	5	6	7	8	9	10	11	12	14	16
	Thrust Ring	237752	5	6	7	8	9	10	11	12	14	16
Hardware Pails	Leveling Bracket	235587	36	36	42	48	54	84	90	96	108	144
	Anchor Bolt 3/8 x 8"	235801	66	66	84	104	144	170	188	228	288	332
	Nylon Nut 3/8"	193808	70	70	90	110	150	180	200	240	300	350
	Hex Nut 3/8" - Bag 100	235951	-	-	1	1	1	1	2	2	2	3
	Hex Nut 3/8" - Bag 300	235950	1	1	1	1	1	2	2	2	2	3
	Flat Washer 3/8" - Bag 75	235957	1	1	2	2	2	3	4	4	4	6
	Hex Flange Screw 3/8" x 1" - Bag 50	235943	4	4	5	5	-	9	10	5	-	10
	Hex Flange Screw 3/8" x 1" - Bag 325	235941	-	-	-	-	1	-	-	1	2	1
	Center Pivot	235311	1	1	1	1	1	2	2	2	2	3
	Wear Angle	235324	1	1	1	1	1	2	2	2	2	3
	Installation Manual	198826	1	1	1	1	1	2	2	2	2	3

5.4. Foundation Specifications

1. Choose a site which is well drained and has a minimum soil-bearing capacity of 3700 lbs per sq. ft. (177 kPa). If soil-bearing capacity is not known, consult a local engineering consultant.
2. Use a minimum of 4" to 6" (100-150 mm) of well compacted coarse gravel below slab and ring footing.
3. Use 3000 psi (20 MPa) concrete, and 43500 psi (300 Mpa) re-bar.
4. Make sure the foundation is level.
5. 15" re-bar end laps included in weights. Standard length assumed to be 20 ft. (6 m); add 15" (380 mm) for each additional lap if using shorter lengths; for 10M add .3 kg.; for #3 imp. add .5 lb; for #4 imp. add .8 lb.

Table 4. Foundation Specifications Tables

16" SEALFORM - MINIMUM CONCRETE & RE-BAR REQUIREMENT														
Model Size	Concrete Volume		Number of Rectangle Ties (per form)	Number of Diagonal Ties (per form)	Footing Dimensions					Metric Re-bar (10M)		Imperial Re-bar		Wire mesh for centre pad (sq. ft.)
	(cubic yards)	(cubic metres)			"H" (in.)	"W" (in.)	"a" (in.)	"b" (in.)	"c" (in.)	curb & ties (ft)	curb only (ft)	#4 for curb (ft)	#3 for ties (ft)	
15'	5	4	16	50	14.75	20	10	16	14	540	320	320	220	220
18'	7	5.5	19	66	14.75	23	10	19	14	640	400	380	260	280
21'	9.5	7.5	22	84	14.75	26	10	22	14	760	460	440	320	380
24'	12	9	25	104	14.75	28	10	24	14	880	500	500	380	490
27'	14.5	11	28	144	14.75	30	10	26	14	1040	580	560	480	630
30'	17.5	13.5	31	170	14.75	32	10	28	14	1160	640	620	540	750
32" SEALFORM - MINIMUM CONCRETE & RE-BAR REQUIREMENT														
Model Size	Concrete Volume		Number of Rectangle Ties (per form)	Number of Diagonal Ties (per form)	Footing Dimensions					Metric Re-bar (10M)		Imperial Re-bar		Wire mesh for centre pad (sq. ft.)
	(cubic yards)	(cubic metres)			"H" (in.)	"W" (in.)	"a" (in.)	"b" (in.)	"c" (in.)	curb & ties (ft)	curb only (ft)	#4 for curb (ft)	#3 for ties (ft)	
15'	7	5.5	16	50	20.75	20	16	16	20	580	320	320	260	220
18'	10	7.5	19	66	20.75	23	16	19	20	700	400	380	340	280
21'	13	10	22	84	20.75	26	16	22	20	820	460	440	400	380
24'	16	12.5	25	104	20.75	28	16	24	20	960	500	500	480	490
27'	19.5	15	28	144	20.75	30	16	26	20	1150	580	560	610	630
30'	23.5	18	31	170	20.75	32	16	28	20	1300	640	620	680	750
33'	27.5	21	35	187	20.75	34	16	30	20	1440	700	680	760	900
36'	32	24.5	38	216	20.75	36	16	32	20	1600	780	760	840	1080
42'	42	32	44	266	20.75	40	16	36	20	1870	880	860	1030	1450
48'	54	41	51	320	20.75	44	16	40	20	2500	1070	1040	1410	2000

Note

1. 10M rebar spaced on 12" centers can be used in place of the wire mesh for the middle pad. This is not shown in the rebar totals.
2. Pre-fabricated rectangular and diagonal ties can be purchased directly from Westeel. Rectangular ties are not available for 36', 42', or 48' diameter Sealforms.
3. Pre-fabricated rectangular ties come in half pieces. For example, for the 15' Sealform 32 pieces are needed to make 16 rectangular ties.



5.5. Foundation Diagrams

Figure 3. WC Sealform Foundation Cross Section

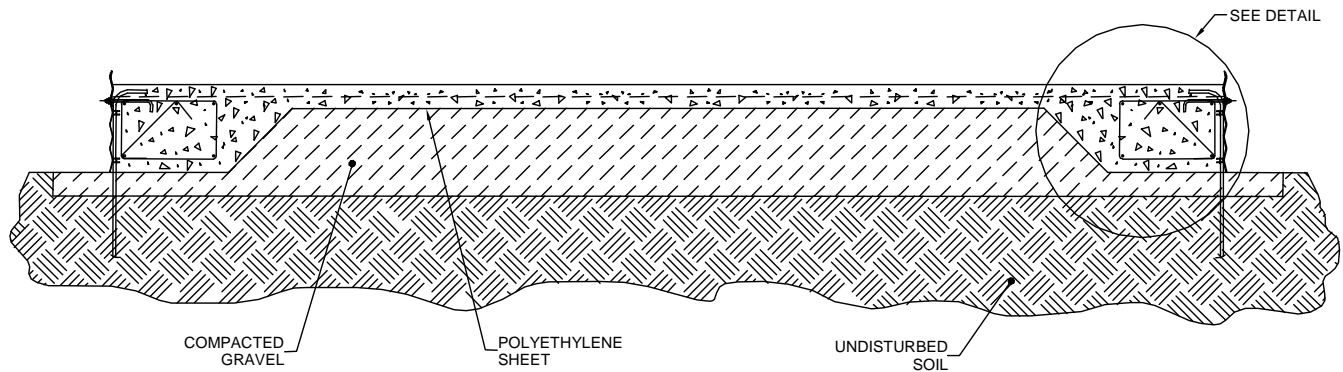
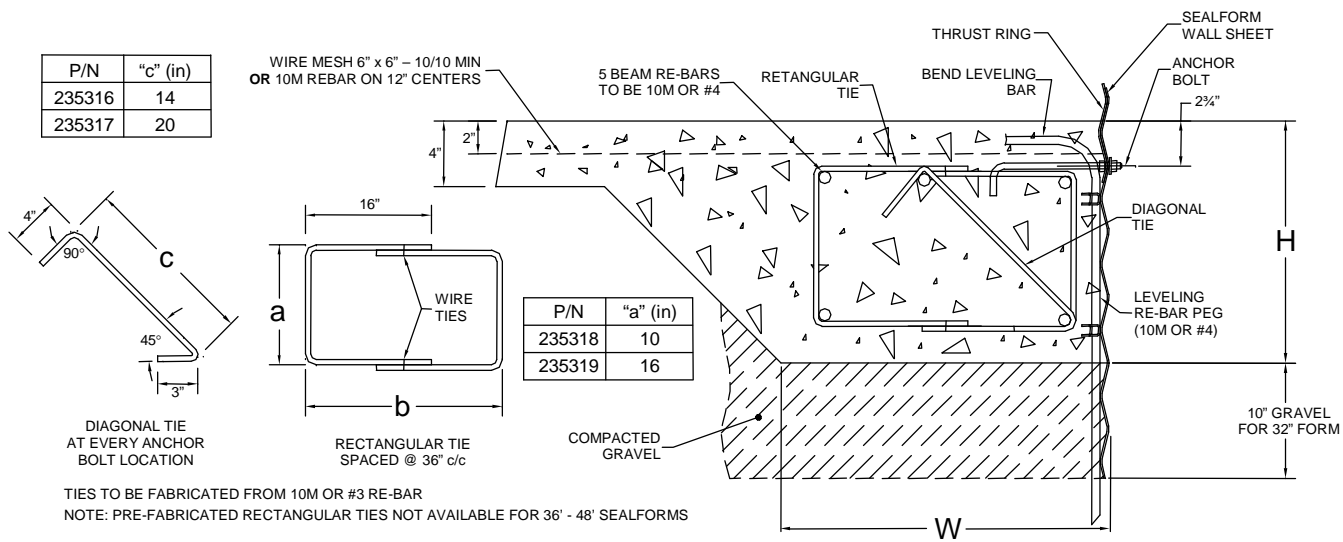


Figure 4. WC Sealform Foundation Rebar Layout



5.6. Concrete Form Assembly

1. Remove the top soil within radius A specified in [Table 5 on page 22](#).
 2. Replace the topsoil with compacted gravel as shown in [Section 5.5. – Foundation Diagrams on page 20](#).
 3. Cut a screeder board (2 x 4 or 2 x 6) to the dimensions shown in [Figure 5 on page 21](#) and [Table 5 on page 22](#).
 - a. Make sure the screeder board is straight for best results.
 - b. If necessary, strengthen the screeder by applying 1x4 board (over 75% length of the screeder).
 - c. Fasten the center pivot and rebar scribe to the screeder as shown in [Figure 5 on page 21](#).
 - d. Drive a 24" piece of 10M or #4 re-bar into the ground where center point of the bin will be.
 - e. Rotate the screeder bar around the center point, using the re-bar to mark a circle.

This will provide a starting layout for form assembly.

 - f. Place the screeder assembly over the center pin and drive it in until level when end of the peg is just scraping the gravel base.
 - g. Use a level as shown in [Figure 5 on page 21](#) and level the gravel around the footing location as necessary.
4. Remove the rebar scribe from the screeder and fasten the wear angle as shown in [Figure 5 on page 21](#).

Figure 5. Screeder Dimensional Diagram

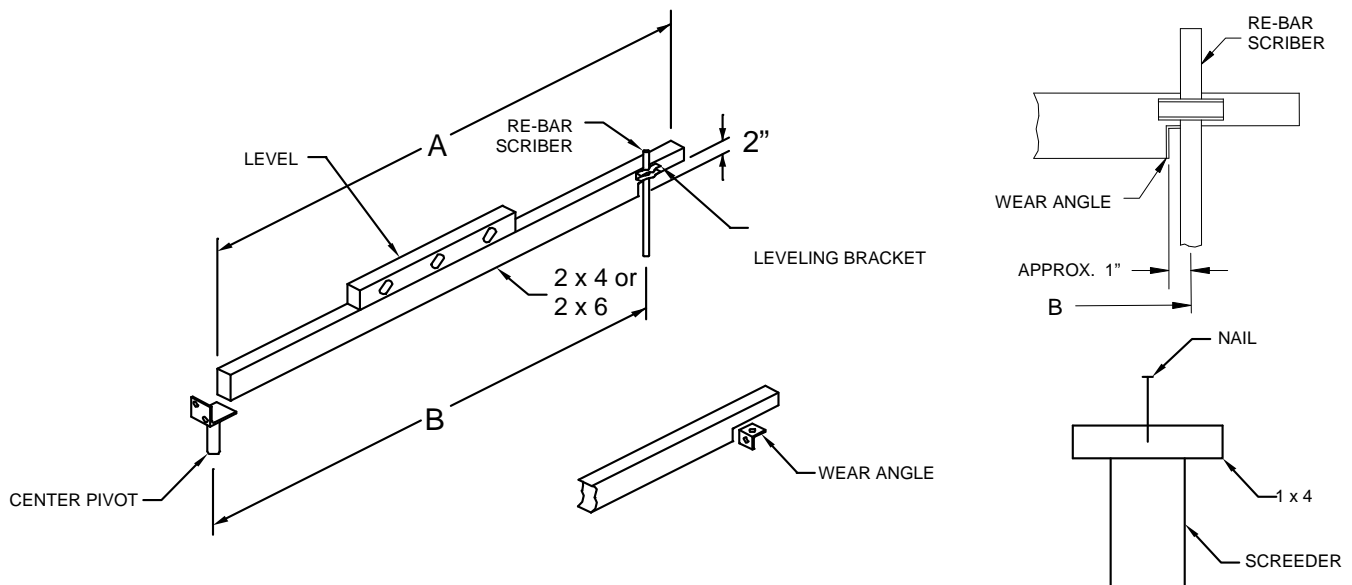
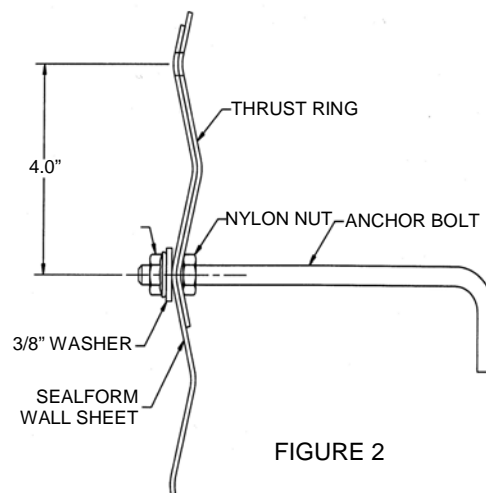


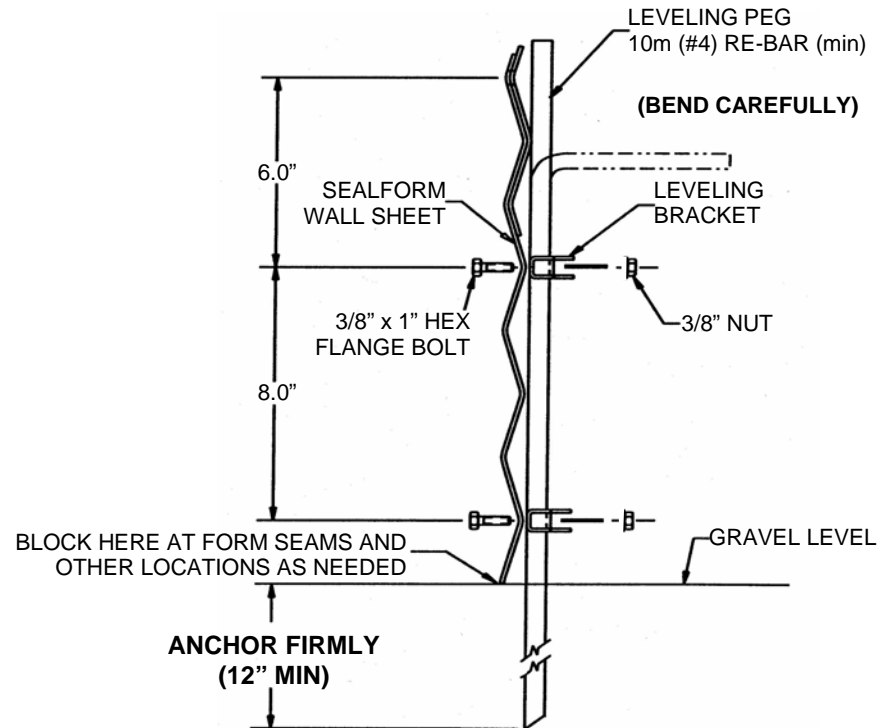
Table 5. Screeder Dimensions

SEALFORM MODEL		15'	18'	21'	24'	27'	30'	33'	36'	42'	48'
Screeder Size		2 x 4	2 x 4	2 x 4	2 x 6	2 x 6	2 x 6	2 x 6	2 x 6	2 x 6	2 x 6
Dimensions	A	8'	10'	11'	13'	14'	16'	17'	19'	22'	25'
	B	89 1/2"	107 3/8"	125 3/8"	143 1/4"	161 1/8"	179"	197"	215"	250 5/8"	286 1/2"

5. Assemble the wall sheets and thrust rings.
 - a. Make sure the thrust ring seam falls in the middle of the wall sheet.
 - b. Make sure the thrust ring goes inside
 - c. For now, leave the anchor bolt holes in the thrust ring empty, as shown in [Section 5.7. – Anchor Bolt Placement Diagrams on page 25](#)
6. Using drift pins, make sure that all top horizontal seam holes in the sealform wall sheet and thrust ring are aligned.
7. Tighten all bolts.
8. Place all anchor bolts as shown in [Figure 6 on page 22](#) and in [Section 5.7. – Anchor Bolt Placement Diagrams on page 25](#).
 - a. Make sure to use proper hardware (nut & washer).
 - b. Do not overtighten.

Figure 6. Anchor Bolt Detail

9. Position the form so the screeder can rotate freely around the entire form.
 - a. Mount the leveling brackets to the form sheets.
 - b. Drive a 28" piece of re-bar through the leveling brackets as shown in [Figure 7 on page 23](#).

Figure 7. Leveling brackets with rebar

- c. Use a 44" piece for a 32" form.
- d. Make sure that the re-bar can slide freely.
- e. Check the form roundness and adjust if necessary.
- f. Bend or drive the leveling rod down to clear the screeder movement, ensuring that the form wall sheets do not move out of round or off level.

Note

Levelling rods must be firmly anchored in the ground to prevent form shifting.

10. Using the screeder, level the form at approximately quarter points around the circumference.
 - a. Lock the form in place by tightening the leveling brackets.
 - b. If the center pin is too low adjust its height to match the sealform wall sheet height.
 - c. Repeat the leveling procedure at the remaining brackets.
 - d. If necessary, readjust. Extra care in this step will give best results.
11. Once the form is leveled, block the form sheets up to prevent any shifting while pouring.
12. Place all re-bars and wire mesh as per foundation specifications shown in [Section 5.4. – Foundation Specifications on page 19](#) and [Section 5.5. – Foundation Diagrams on page 20](#).
 - a. Support re-bars in numerous places with small stones or pieces of concrete, ensuring there will be at least two inches of concrete under the bottom rebars.
 - b. Bend the leveling pegs over as shown in [Section 5.5. – Foundation Diagrams on page 20](#).
 - c. Add any additional forming or re-bar required for accessories (i.e. aeration, unload auger, etc.) at this point.

Note

For aeration pit accessory installation (Aeration Fan and Unloading Auger) see [Section 5.8. – Aeration Pit and Unloading Accessory Installation on page 27](#).

13. Pour the concrete carefully so that the form is not disturbed.
 - a. Level the concrete with the screeder, rotating around the center pivot.
 - b. Double check that the form is level all round before and after pouring concrete. Any shifting of form will cause bin to fit poorly or not at all.
14. Allow the concrete to cure at least three weeks (21 days) before proceeding with bin assembly.
15. Retighten nuts on all anchor bolts to 50 ft-lb torque after the concrete has cured for 28 days.
16. Assemble the bin as per the installation manual.
17. If bin jacks are used, refer to [Section 5.9. – Using Bin Jacks with Sealform on page 29](#) for suggestions.
18. For easy placement of the bin over the form, leave all bolts loose on the vertical wall sheet seams (last tier).
19. Fasten the bin with appropriate hardware (grade 8 bolts) as per the bin assembly manual.

Note

Shifting of the form during pouring can make bin installation difficult or impossible. Warranty cannot be provided in this situation.

Important

- **DO NOT FILL UP BIN BEFORE CONCRETE HAS FULLY CURED FOR 28 DAYS!**
- **FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN CATASTROPHIC BIN FAILURE.**

5.7. Anchor Bolt Placement Diagrams

Figure 8. 15' to 24' Diameter Concrete Forms

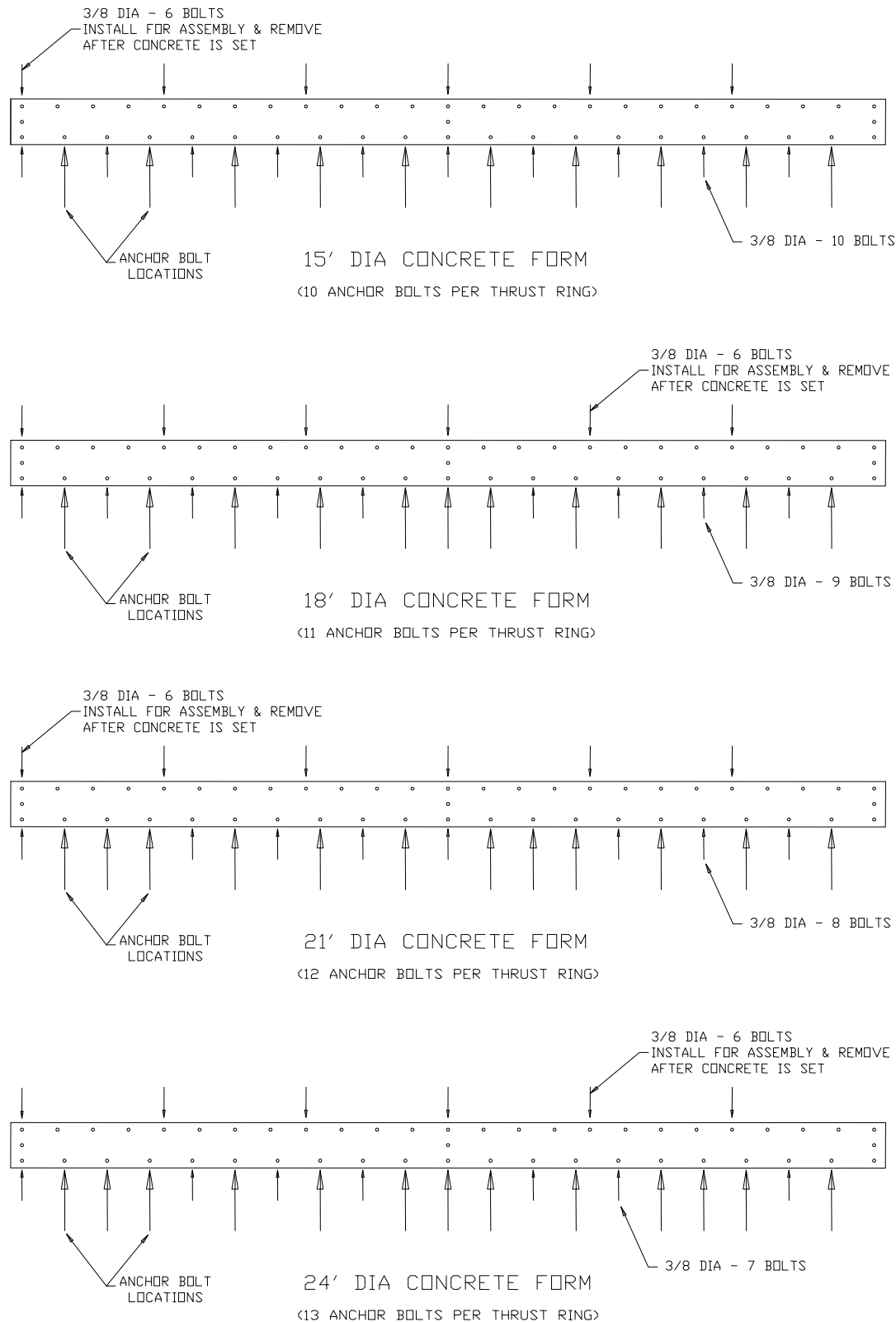
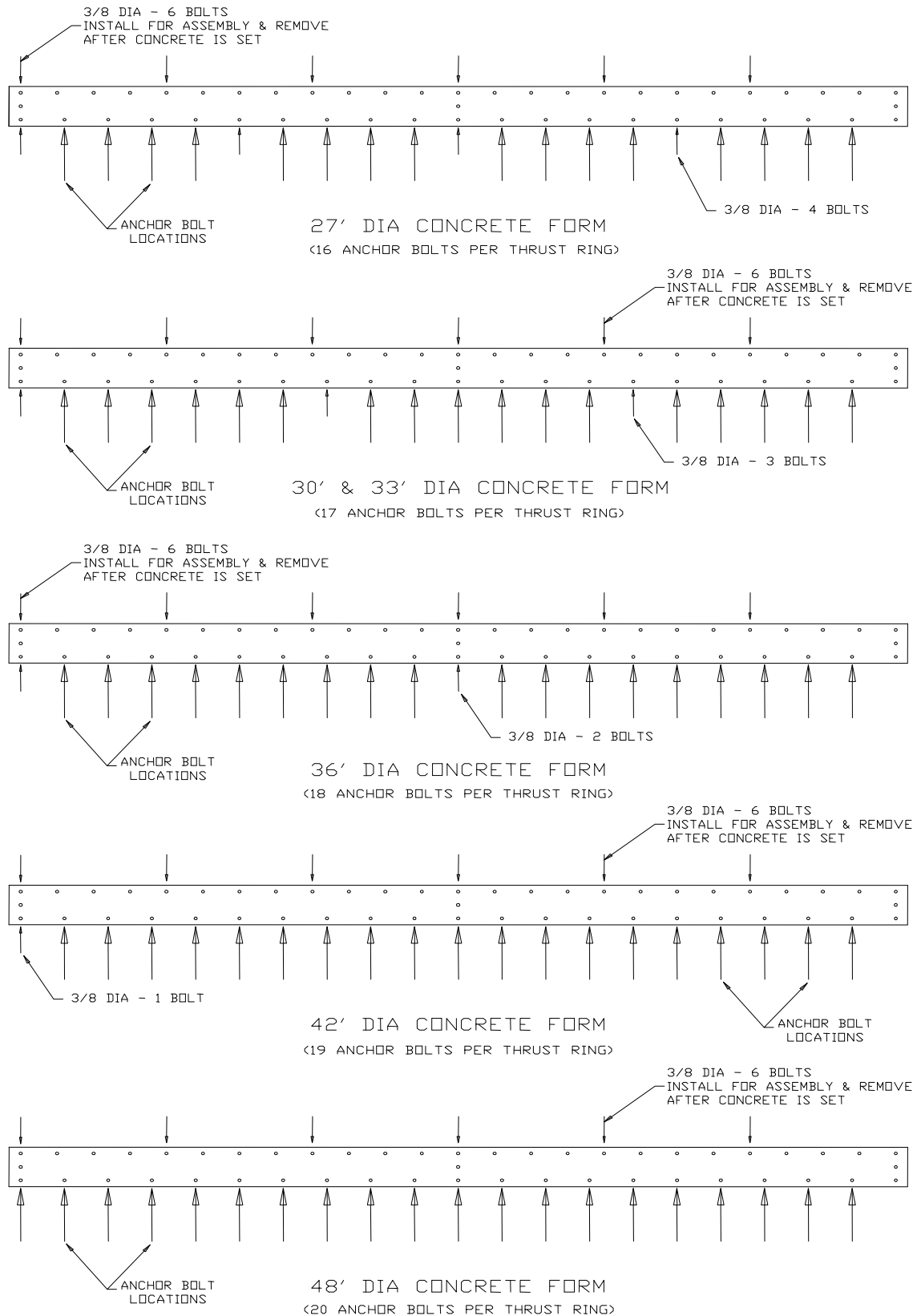


Figure 9. 27' to 48' Diameter Concrete Forms

5.8. Aeration Pit and Unloading Accessory Installation

1. After the concrete form wall sheet has been assembled, determine the location of the aeration fan transition and/or unloading auger.

Note

The fan transition can only be located between leveling pegs.

2. Cut openings in the wall sheet and thrust ring as shown in [Figure 10 on page 27](#) and [Figure 11 on page 27](#).

The sizes shown are for typical unload augers and fan transitions. Always use the measurements of the actual auger flange and transition outlet.

- a. Keep the wall sheet continuous at the top and bottom.
- b. The opening for the unloading auger allows installation of 6", 8" or 10" augers.

Figure 10. Typical unloading auger opening

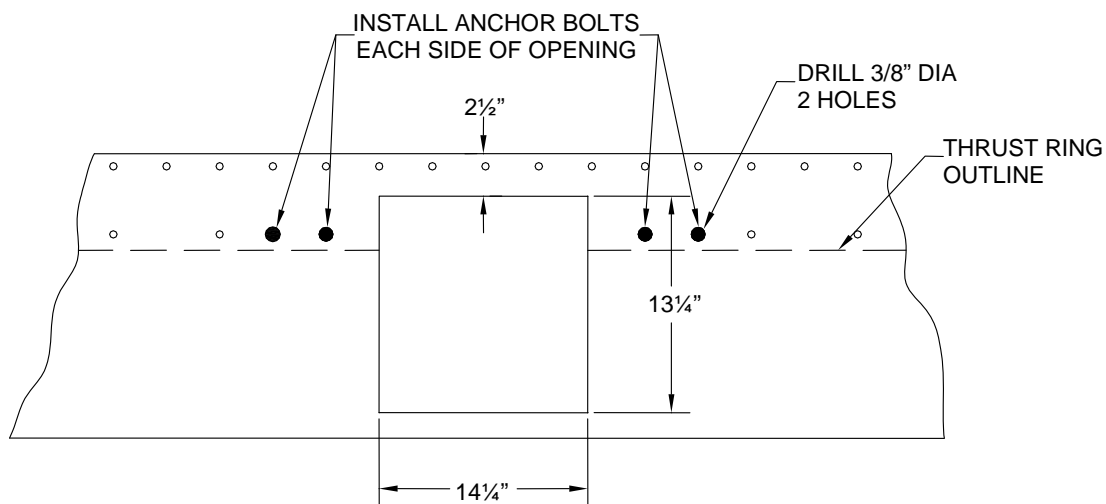
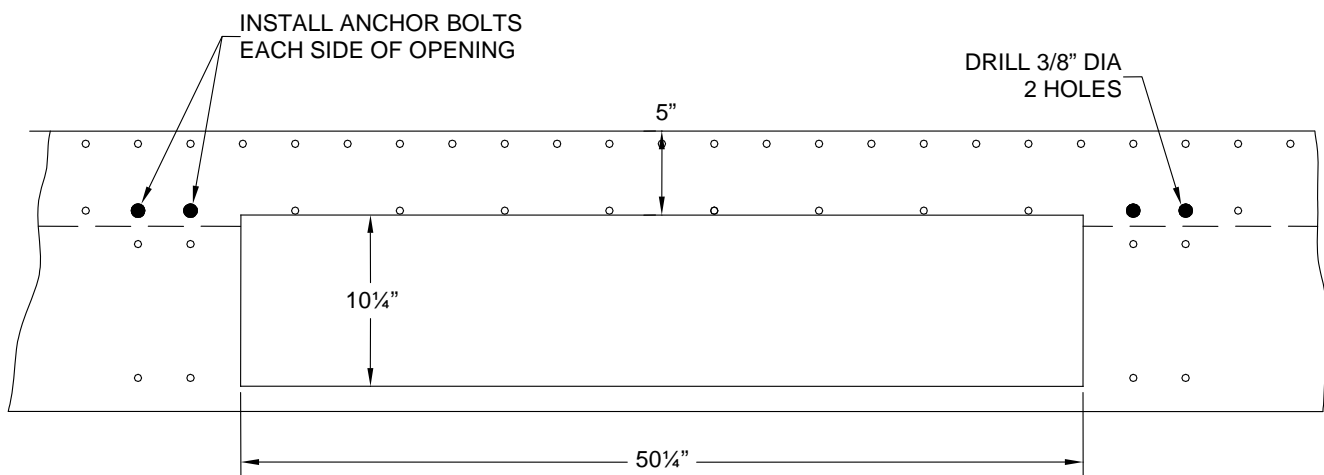


Figure 11. Typical aeration fan transition opening



3. Drill additional 3/8" diameter holes as per [Figure 11 on page 27](#).
4. Install two anchor bolts at each side of the opening.
5. Make sure the sealform concrete footing has the required minimum dimensions at the opening.

Refer to [Section 5.4. – Foundation Specifications on page 19](#) and [Section 5.7. – Anchor Bolt Placement Diagrams on page 25](#).

Note

Take note of the 4" ledge at the fan transition.

6. Install the fan transition in the opening and fasten it to the wall.
Caulk around the transition to seal any gaps.
7. Place rebar as shown [Figure 11 on page 27](#) and [Section 5.5. – Foundation Diagrams on page 20](#).

Figure 12. Locations of rebar and ties

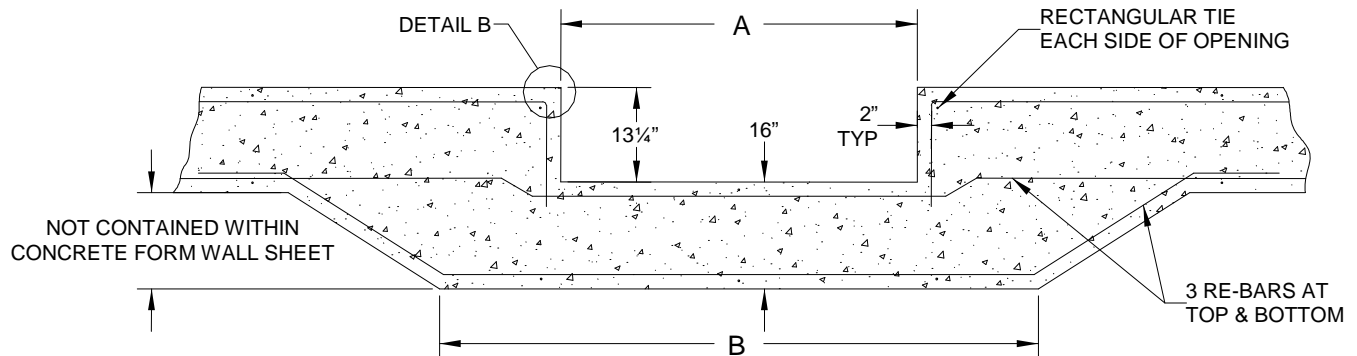
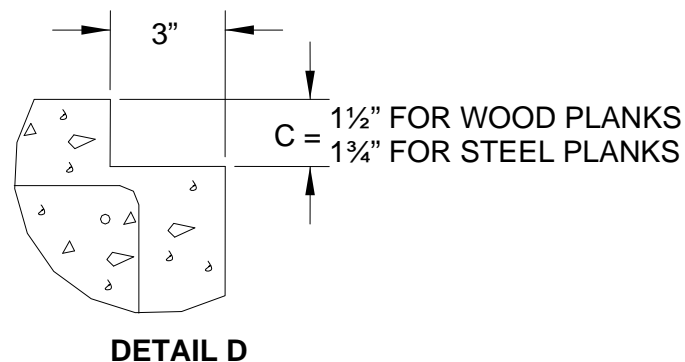


Table 6. Dimensions for transitions

Application	Dimension	
	A	B
Unloading Auger	12 1/4"	40"
Fan Transition	50"	80"

Figure 13. Detail B

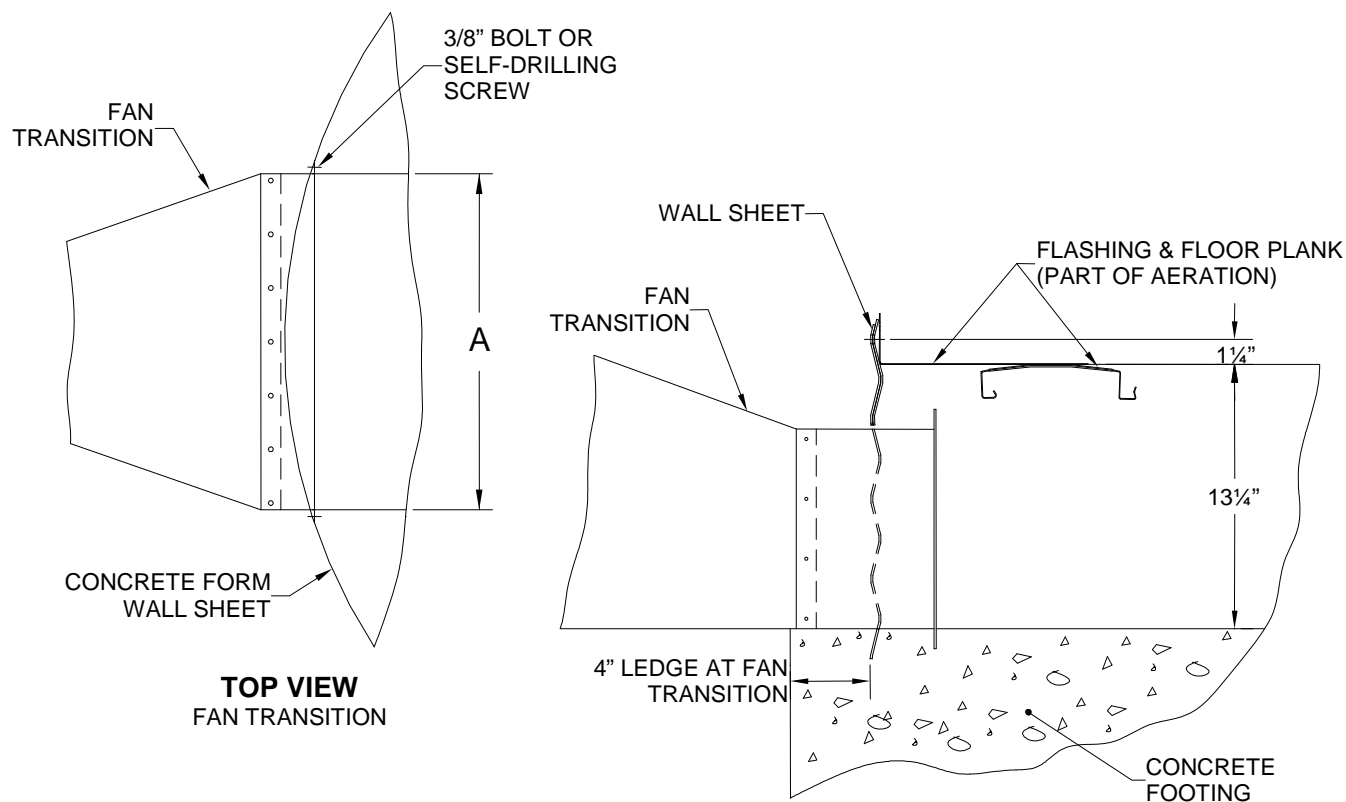


8. Make sure all diagonal ties are installed.
9. Install all anchor bolts as per appropriate diagram in [Section 5.7. – Anchor Bolt Placement Diagrams on page 25](#).
10. Level the entire form. (Refer to [Section 5.6. – Concrete Form Assembly on page 21](#).)
11. Assemble the aeration pit according to the aeration pit installation manual.
12. Carefully pour the concrete, making sure the form is not disturbed.

13. Level the concrete with the screeder.

14. Make sure the concrete flows under the fan transition, as shown in [Figure 14 on page 29](#).

Figure 14. Fan transition top view and assembly



5.9. Using Bin Jacks with Sealform

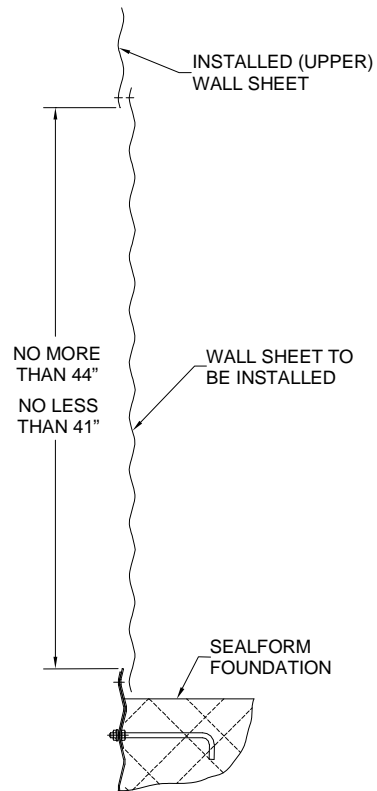
Westeel suggests employing one of the following two alternate methods while using bin jacks for bin installation over the sealform.

Method 1

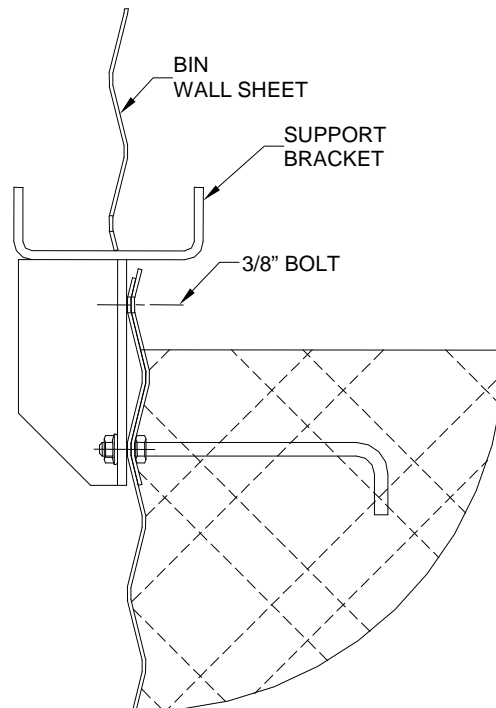
1. Lift the bin 41" to 44" over the sealform as shown in [Figure 15 on page 30](#).
2. Install wall sheets from inside the bin with hand-tight vertical seams bolts.

This allows lifting the bin again for the assembly of the next tier and resting the bin on the concrete while repositioning the bin jacks.

3. Make sure wall sheets in the last tier overlap the sealform wall sheet.

Figure 15. Lift the bin 41" to 44"**Method 2**

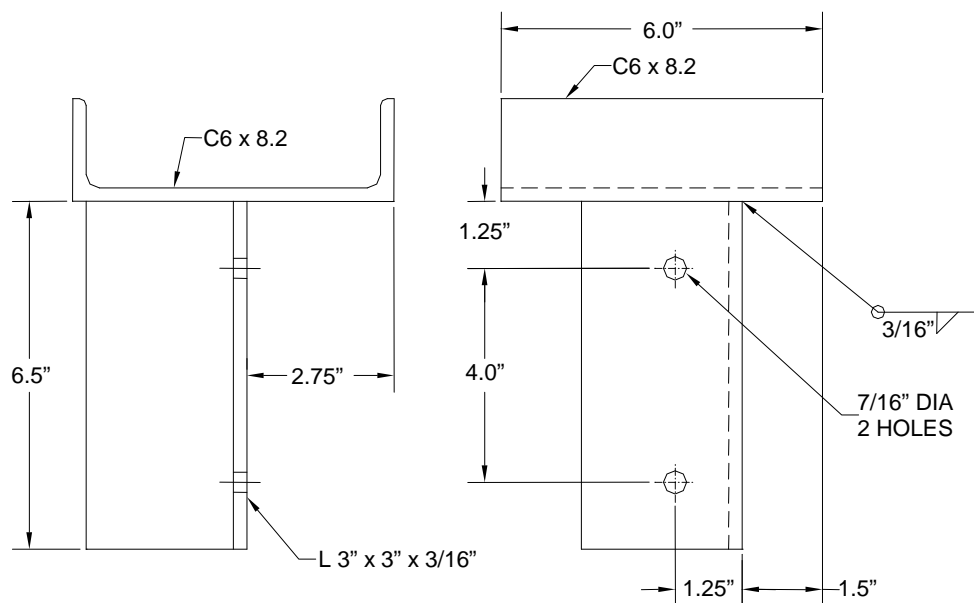
1. Fabricate and use support brackets. (Three per wall sheet as shown in [Figure 16 on page 31.](#))

Figure 16. Using support brackets

2. Rest the bin on support brackets in order to reposition bin jacks.
3. Remove support brackets and attach the bin to the sealform.
4. Tighten all nuts on anchor bolts to 50 ft-lb torque.

Note

Dimensions of the support bracket are shown in [Figure 17 on page 31](#). Support brackets are not included, but are available on special order.

Figure 17. Support bracket dimensions (in inches)

6. 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:

Galvanized Bins	5 years
EasyFlow2	24 months
Westeel Fans	36 months
Floors	12 months
Catwalk	12 months
Bulk Feed Tanks	24 months
SeedStor-K Cones	
Paint	12 months
Structural	30 months
Elite Cones	
Paint	30 months
Structural	10 years
WESTEEL cones	
Paint	No Warranty
Structural	12 months
Smooth Wall Bins	
Paint	60 months
Structural	10 years
Commercial Smooth Wall Bins	
Paint	12 months
Structural	10 years

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.





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