

# Model 3652

# JANUS

INTERNATIONAL

Last updated: 09.04.13

## Part 1- GENERAL

### 1.01 DESCRIPTION-

1.01.01 Type: Continuous sheet rolling door Model 3652 as manufactured by Janus International, Temple, GA. Available in sizes up to 18'0" x 20'0".

1.01.02. Mounting: To be interior or exterior face mounted on a prepared jamb on steel, concrete or filled block surface.

1.01.03. Related Work: Preparation of opening, miscellaneous or structural steel, iron work, access panels, master keying cylinders, finish or field painting, electrical wiring, conduit, disconnecting switches are in the scope of the work of other sections or trades.

1.02 QUALITY ASSURANCE- Qualifications of Manufacturer: Products utilized in this section shall be manufactured by an organization who regularly engages in the production of similar products and has a proven history of successful manufactured products acceptable to the Architect, such as Janus International Corporation.

1.03 GUARANTEE- All doors and components specified herein shall be guaranteed to be free of workmanship and defect for a period of 1 year.

1.04 CERTIFIED WINDLOAD RATING - For 12'0" opening width, design wind load rating is +36.0 / - 40.0 PSF. Ratings vary for other opening widths. Rates valid on opening heights through 20'0". (Consult Janus for specific applications.)

## Part 2- PRODUCT

### 2.01 CURTAIN—

2.01.01 Sheets: Continuous 20" corrugated sheets roll formed from 26 gauge ASTM A 653 Grade 80 full hard steel and lock seamed together. Reinforced with nylon wind locks spaced on alternating corrugations and attached with rivets.

2.01.02 Finish: Galvanized and pre-painted with Super Durable Polyester paint guaranteed with a 40 year film integrity warranty to not crack, peel, flake, split, delaminate or blister. Additional guarantee up to 25 years against fading or changing color based on color chosen.

2.01.03 Bottom Bar: Roll formed clear acrylic coated galvanized steel reinforced with a 2" x 1-1/2" - 12 gauge galvanized angle that extends fully into the guides.

2.01.04 1-1/2" wide nylon strips attached on each end of both the front and back of the curtain to control stretch and reduce wear.

2.01.05 Wind locks: Made of black nylon spaced every other corrugation.

### 2.02 WEATHERSTRIPPING—

2.02.01 Black PVC bulb-type astragal affixed to the bottom bar assembly provides positive contact with the floor.

2.02.02 (Optional) Side draft stop attaching to guide leg.

2.02.03 (Optional) Black flexible neoprene top draft stop with 2" lip attached to curtain.

2.02.04 (Optional) 4" Header seal attached to header.

2.03 BARREL ASSEMBLY— Galvanized coil steel fabricated in a 12" diameter spiral formation to enclose spring counterbalance system and provide full span curtain weight support. Attached galvanized drums are furnished with grease-filled, shielded radial ball bearings at rotating points around the axle.

2.04 SPRING COUNTERBALANCE— Factory lubricated, oil tempered, helical torsion springs located inside the barrel made of wire conforming to ASTM A 229. Springs are attached the steel axle tube by means of a welded spring clip. Axle tube provided is sufficient size to carry curtain load and spring torque. Spring cycle life of 15,000.

2.05 SUPPORT BRACKETS— Galvanized and reinforced one-piece 12 gauge formed steel brackets.

2.06 SPRING TENSIONER— External mounted cam action tension retaining device allows for field adjustment of spring tension on all springs.

2.07 GUIDE ASSEMBLY— Universal mounted guides rolled formed from 14 gauge galvanized steel. 2" guide depth. Removable galvanized door stop at the top of each guide.

### 2.08 OPERATION—

2.08.01 Universal 5.7:1 cast iron reduced drive hand operated chain hoist standard for all doors over 10'0" x 10'0".

2.08.02 (Optional) Electric operator (furnished by vendor) with electric 72 tooth sprocket operator kit for door adaptation.

2.09 LOCKING MECHANISM— Dual steel bottom bar slide locks suitable for pad locks (provided by others) mount to the inside angle of the bottom bar. Chain keeper guide mounted to wall for chain operation doors.

2.10 HOOD (Optional) — Fabricated from 20 gauge steel and reinforced with end caps and roll formed edges. Manufactured square.

2.11 FINISH— Non-galvanized surfaces, excluding axle tube, to consist of shop coat of rust inhibitor primer.

## Part 3- EXECUTION

3.01 INSTALLATION— To be performed by an authorized Janus representative or professional door installer in accordance with the Janus International installation standards, instructions and recommendations.

### HEAD ROOM REQUIREMENTS

Opening Height	Vertical Headroom	Horizontal Headroom
Thru 8'0"	20"	20"
Over 8'0" thru 10'0"	21"	21"
Over 10'0" thru 14'0"	21½"	21"
Over 14'0" thru 16'0"	22"	21"
Over 16'0" thru 18'0"	22"	22"
Over 18'0" thru 20'0"	22"	22"

### SIDE ROOM REQUIREMENTS

	Operation	Guide	Outside of Bracket Tensioner End	Outside of Bracket Drive End	Outside of Hand Chain Drive	Each End of Axle
Push Up		2-1/4"	3-7/8"	3-7/8"	---	6-3/4"
Reduced Drive Chain		2-1/4"	3-7/8"	3-7/8"	5-3/8"	6-3/4"
**Electric		2-1/4"	3-7/8"	5-3/8"	---	6-3/4"

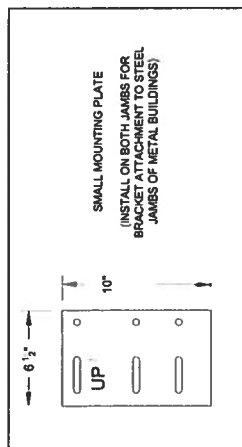
\*Vertical head room: the space above the clear opening on the same face of wall (header).

\*Horizontal head room: the amount of space required off of the wall to which the door is fastened.

\*Side room: the amount of space required on each side away from the opening along the face of the wall.

\*\*Excludes electric operator.

- NOTES
1. OPERATION TYPE MAY BE PUSH-UP, HAND CHAIN OR ELECTRIC.
2. FOR CRITICAL FITS TO REDUCED AVAILABLE HEADROOM OR BROOMROOM CLEARANCES, CONSULT FACTORY.
3. CLEARANCES SHOWN ARE MAXIMUMS. LESSER CLEARANCES MAY BE POSSIBLE.
4. UNLESS OTHERWISE NOTED, DOORS SHALL BE PROVIDED WITH SLIDE LOCKS AT EACH END OF BOTTOM BAR, ENGAGING GUIDES IN THE LOCKED POSITION.
5. ALL OPENING PREPARATION, ELECTRICAL POWER AND FIELD PAINTING SHALL BE PROVIDED BY OTHERS.
6. CURTAIN FINISH SHALL BE SILICONE POLYESTER PREPANT OVER GALVANIZED GRADE #8 STEEL.
7. GUIDES, BRACKETS, BOTTOM BAR ANGLE AND HEAD STOPS ARE ZINC COATED.
8. MAXIMUM OPENING SIZE: 16' 0" X 20' 0"
9. UNLESS NOTED, THIS IS A TYPE OF ACCESS APPROVED W/ROD PRODUCT. PRODUCT EVALUATIONS AND SPECIFICATIONS ARE AVAILABLE FROM THE MANUFACTURER, KAPPA-CEL.
10. PRODUCT LISTINGS AVAILABLE FROM THE MANUFACTURER, KAPPA-CEL, DEPARTMENT OF INSURANCE (TO: PRODUCT ENGINEER, 1000 WEST 10TH AVENUE, SUITE 100, DENVER, COLORADO 80202, TEL: 303.733.0500).

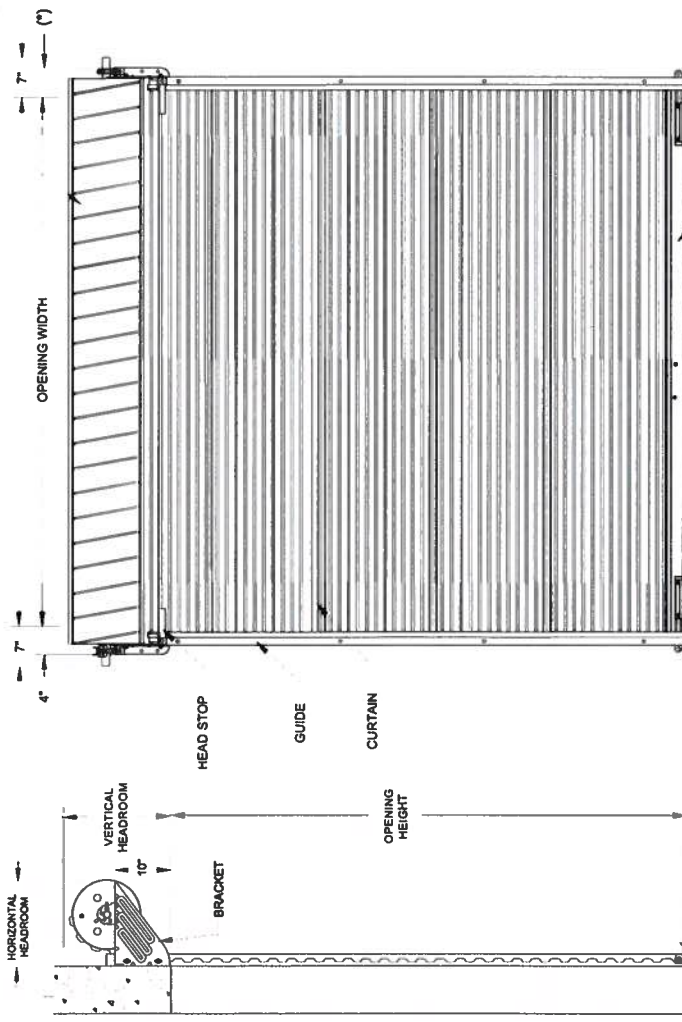


**BRACKET ATTACHMENT**  
CONCRETE/MASONRY: POWERS WEDGE-BOLT,  $\frac{3}{8}$ " X  $1\frac{1}{2}$ " LONG  
STEEL: HEX BOLT, GR.5,  $\frac{3}{8}$ " - 16 X  $1\frac{1}{2}$ " LONG

FOR PUSH-UP OPERATION.....4"  
FOR HAND CHAIN OPERATION.....6"  
FOR ELECTRIC OPERATION.....5 1/2"  
FOR OUTSIDE OF CHAIN DRIVE.....6 1/2"  
NOTE: RIGHT SIDE DRIVE SHOWN

## BARREL ASSEMBLY

OPENING HEIGHT	VERTICAL HEADROOM	HORIZONTAL HEADROOM
THRU 8'-0"	20"	20"
OVER 8'-0" THRU 10'-0"	21"	21"
OVER 10'-0" THRU 14'-0"	21 1/2"	21"
OVER 14'-0" THRU 16'-0"	22"	21"
OVER 16'-0" THRU 18'-0"	22"	22"
OVER 18'-0" THRU 20'-0"	22"	22"



**BOTTOM BAR ASSEMBLY**

26 GA CURTAIN PANEL DETAIL

00000000

COMMERCIAL DOOR SERIES: 3652

CUSTOMER NUMBER

DATE:

CUSTOMER NAME:	CONTACT:
3	3

PROJECT NAME:

11/15/2023

PLANT:

0000-0001-9786-4044

1000

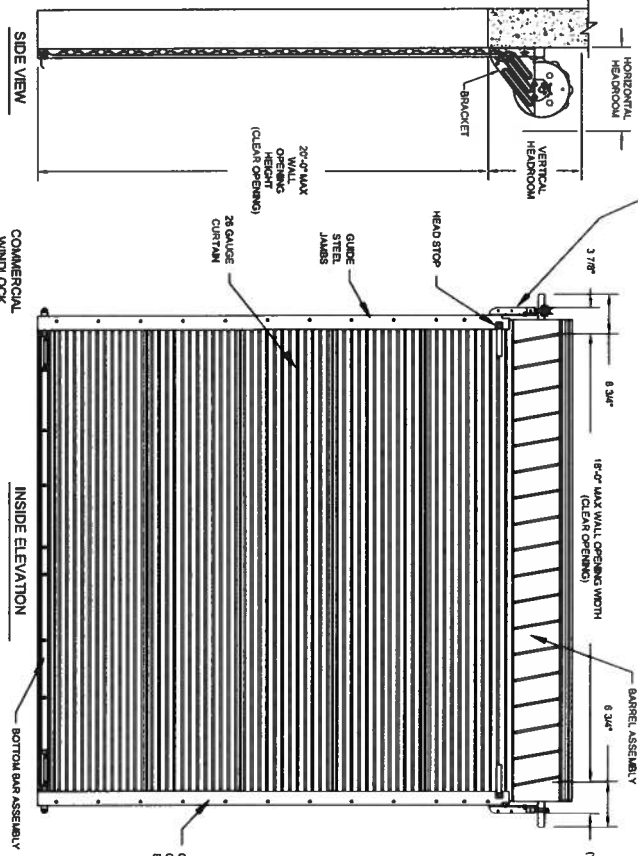
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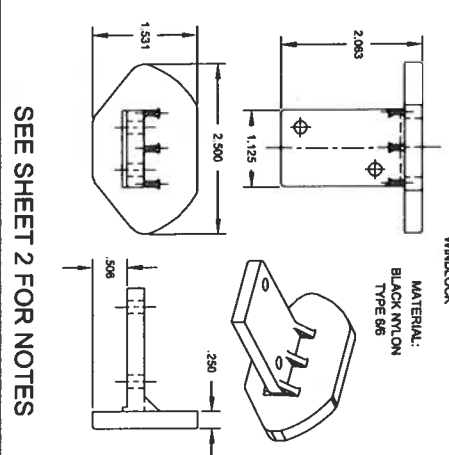
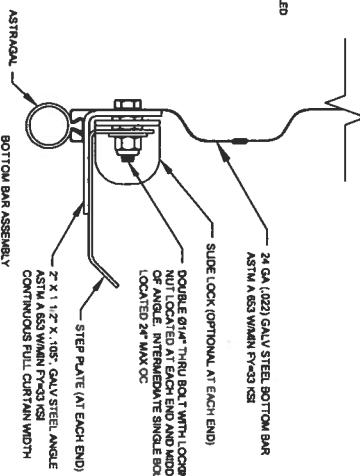
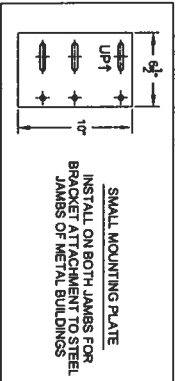
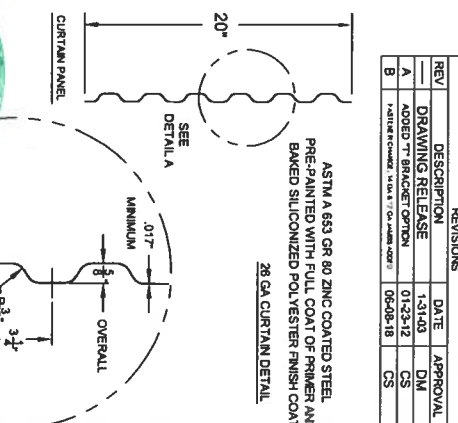
BRACKET ATTACHMENT  
CONCRETE-FILLED BLOCK: DEFAULT: SCREW-BOLT 1/2" X 1 3/4" LONG  
STEEL: HEX BOLT 1/2" X 3/4" X 1 1/4" LONG OR 3/8" X 1 3/4" LONG  
TYPE 23 WIND-LOADING SCREW

(\*) FOR PUSH-UP OPERATION: 1 7/8"  $\pm$  1/8"  
FOR ELECTRIC OPERATION: 2 3/8"  $\pm$  1/8"  
NOTE: RIGHT SIDE DRIVE SHOWN



HEADROOM REQUIRED		
OPENING HEIGHT	VERTICAL HEADROOM	HORIZONTAL HEADROOM
THRU 8'-0"	17"	19"
OVER 8'-0" THRU 10'-0"	19"	21"
OVER 10'-0" THRU 14'-0"	20"	22"
OVER 14'-0" THRU 18'-0"	21"	23"
OVER 18'-0" THRU 20'-0"	22"	24"
OVER 20'-0"	23"	25"

ALLOWABLE TRANSVERSE DESIGN WIND LOADS (PSF)				
MAX DOOR WIDTH	MAX DOOR HEIGHT	DESIGN LOAD POSITIVE (PSF)	DESIGN LOAD NEGATIVE (PSF)	
6'-0"	20'-0"	71.2	78.1	
7'-0"	20'-0"	61.2	68.0	
8'-0"	20'-0"	53.6	59.6	
9'-0"	20'-0"	47.8	53.1	
10'-0"	20'-0"	43.0	47.8	
11'-0"	20'-0"	39.2	43.5	
12'-0"	20'-0"	36.0	40.0	
13'-0"	20'-0"	30.6	34.0	
14'-0"	20'-0"	26.6	29.5	
15'-0"	20'-0"	23.4	26.0	
16'-0"	20'-0"	20.9	23.2	
17'-0"	20'-0"	18.8	20.9	
18'-0"	20'-0"	16.9	18.8	



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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND TOLERANCES ARE:

DECIMAL	FRACTIONS	ANGLES	HOLE DIAMETERS
.XX $\pm$ .03	$\pm$ 1/16"	$\pm$ 1°	UNDER .251
.XXX $\pm$ .005			.251 to .500
			OVER .500
			+.004
			+.006
			+.003
			+.008
			-.003

PART NUMBER	DATE	APPROVALS	DATE
W/1000	NA		
APPROVED	NA		
DATE OF REVISION	NA		
CHECKED	2-1-11		
BECKY NELSON			
DATE	2-21-11		
APPROVED			
DON MILLS			
DATE	2-21-11		

Digitally signed by John E. Scates P.E.  
Date: 2018.06.18 15:27:21 -0500

John E. Scates, P.E.  
2550 King Arthur Blvd.  
Suite 124  
Lewisville, TX 75056  
FL PE 51737

Professional Engineer's seal provided only for verification of windload construction details.

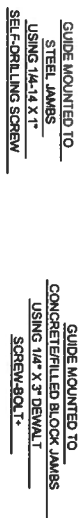
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CERTIFIED WIND LOAD RATED  
26 GA SERIES 3652 DOOR ASSEMBLY  
MAX SIZE 18'-0" X 20'-0"

SCALE: NONE

SHEET: 1 OF 2





1. THIS ROLL-UP DOOR SYSTEM IS DESIGNED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE AND THE INTERNATIONAL BUILDING CODE. THE REQUIRED DESIGN WIND PRESSURES FOR A DOOR IN ANY EXISTING BUILDING SHALL BE DETERMINED IN ACCORDANCE WITH SECTION 1609 OF THE FLORIDA BUILDING CODE AND THE INTERNATIONAL BUILDING CODE. THE REQUIRED DESIGN WIND PRESSURES FOR A DOOR DETERMINED IN ACCORDANCE WITH SECTION 1609 OF THE IBC OR WITH THE LOCAL BUILDING CODE IN EFFECT FOR THE SPECIFIC LOCATION.
2. THIS ROLL-UP DOOR HAS BEEN SUCCESSFULLY TESTED ACCORDING TO THE UNIFORM STATIC AIR PRESSURE TEST PER ANSI/ASMA A-108 TO SHEET Y RESIST A POSITIVE AND NEGATIVE WIND LOAD AS NOTED BELOW. A TEST LOAD OF 13.5 X SHEET Y RESIST A POSITIVE AND NEGATIVE WIND LOAD AS NOTED BELOW.

3. WIND LOADS FOR BUILDING OPENINGS SHALL BE DETERMINED BY A PROFESSIONAL ENGINEER USING WIND SPEED AND DESIGN CRITERIA. THIS DOOR MAY BE USED WHERE THE DESIGN LOAD MEETS OR EXCEEDS THE DESIGN LOAD FOR THE BUILDING OPENING.

4. SUPERIMPOSED LOADS ON THE JAMBS FROM THIS DOOR ARE DESIGNED AS  $V_x$  AND  $V_y$  HEREIN. CONTRACTORS SHALL HAVE BUILDING ENGINEER VERIFY ADEQUACY OF BUILDING STRUCTURE TO RESIST SUPERIMPOSED LOADS  $V_x$ ,  $V_y$ .

5. DOORS SHALL BE CLOSED AND HAVE PROVIDED LOCK MECHANISMS ENGAGED AT THE TIME OF A WIND EVENT.

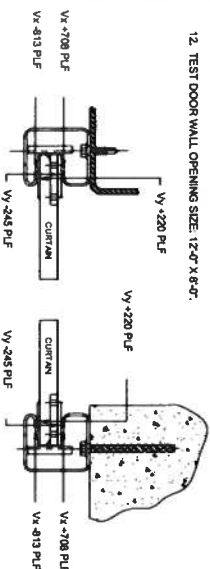
B. FOR HOLLOW BLOCK, FILL ALL CELLS @ ANCHOR WITH 200

### SPECIFICATIONS.

10 DOOR OPERATION TYPE TO BE PUSH-UP, HAND CHAIN, OR ELECTRIC

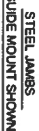
11. GUIDE TO JAMB ATTACHMENT FASTENERS IN WALL OPENING AREA BEGIN 4" FROM

**12. TEST DOOR WALL OPENING SIZE: 12'-0" X 6'-0".**



**LH GUIDE MOUNT SHOWN**

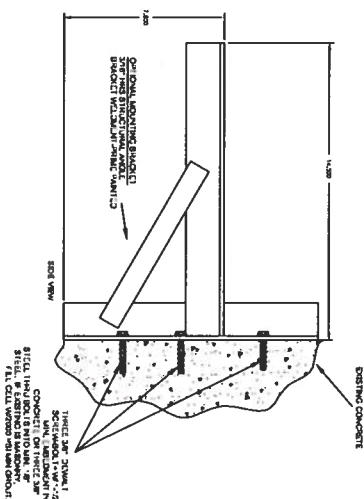
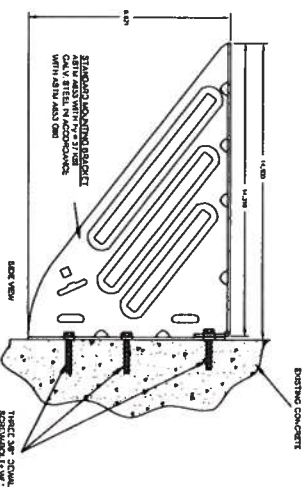
**SUPERIMPOSED LOAD DIAGRAM**



OPENING WIDTH	SLIP	CURTAIN SHEET WIDTH	BACK TO BACK OF GULDES
57'-0"	3/8"	OPENING WIDTH + 2.3/8"	CURTAIN SHEET WIDTH + 2.3/8"
> 57'-0"	1/2"	OPENING WIDTH + 2.1/8"	CURTAIN SHEET WIDTH + 2.1/8"
> 8'-0" SLIP/CLIP	2.1/2"	OPENING WIDTH + 2.3/8"	CURTAIN SHEET WIDTH + 1.3/8"

**CONCRETE/FILLED BLOCK JAMBS**  
**RH GUIDE MOUNT SHOWN**

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<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND TOLERANCES ARE:</p>									
DECIMAL	FRACTIONS	ANGLES	HOLE DIAMETERS						
.XX ±.03	± 1/16"	± 1°	UNDER .251	*.004					
.XXX ±.005			.251 to .500	+.005					
			OVER .500	+.003					
				+.008					
			DIMENSIONS						
			APPROVALS						
			DRAWN: BECKY NELSON			DATE: 2-1-11			
			CHECKED: DOON MILLS			DATE: 2-21-11			
			APPROVED: DOON MILLS			DATE: 2-21-11			
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<p><b>CERTIFIED WIND LOAD RATED</b> 26 GA SERIES 3652 DOOR ASSEMBLY MAX SIZE 18'-0" X 20'-0"</p>									
<p>SIZE: <b>B</b> DRAWING NUMBER: <b>T1014</b> REV: <b>B</b></p>									
<p>SCALE: NONE SHEET: 2 OF 2</p>									



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**CERTIFIED WIND LOAD RATED  
26 GA SERIES 3652 DOOR ASSEMBLY  
MAX SIZE 18'-0" X 20'-0"**

T1014

**SCALE:**  
**NONE**

SHEET 2 OF 2

John F. Scates, Professional Engineer  
3121 Fairgate Dr.  
Carrollton TX 75007  
office (972) 492-9500 | fax (972) 492-0077

June 18, 2018

Janus International  
135 Janus International Blvd  
Temple, GA 30179

Re: Janus Series 3652 Rolling Doors

To Whom It May Concern:

At the request of Janus International, I have reviewed the drawings and tests listed below. This product was tested per ANSI/DASMA 108 and ASTM E330 procedures. The pressure listed on the drawings are the direct result of testing or conservative rational analysis from the actual tests. I have concluded that the construction shown on these drawings comply with the structural requirements of the 6<sup>th</sup> Edition (2017) Florida Building Code. I certify that I meet the requirements of "independence" as detailed in Florida Statutes.

## Drawings

T1014-RevB Series 3652 Door Assembly up to 18'-0" wide.

## Test Report

### Test Reports

Drawing	Certified Testing Lab Report	Test Date
T1014-RevB	CTLA 2058W	02-17-2011

### Test Facility

The test facility was located at:  
CTL  
7252 Narcoossee Rd.  
Orlando, FL 32822

This was an accredited independent laboratory at the time of testing.

The test report was signed by a Florida PE.

Janus Series 3652 Rolling Doors

Static pressure testing was conducted in accordance with ANSI/DASMA 108-05 and ASTM E330-02. The testing also complied with the requirements of ANSI/DASMA 108-2012 and 108-2017. All of these standards are equivalent test procedures to meet the requirements of the FBC for garage doors.

## Calculations

The tested door was 12'-0" width and achieved +36.0/-40.0 psf design. One jamb was 3/16" thick steel while the other was filled CMU block.

The tested design load was extended to other widths using comparative rational analysis. The loads applied to the jambs by the door via direct pressure and end-tension catenary forces were computed using industry standard methods. Results for a variety of width are tabulated on sheet 1 of the drawing. In addition, the computed jamb loads are shown as "Vx" and "Vy" on sheet 2 of the drawing.

The guide fastener spacing for additional steel jamb thicknesses were computed using data from ICC-ES ESR-1976 and ESR-3223 (ITW TEKS screws).

## Installation

### Anchorage Requirements:

The door drawing includes means to attach the door to the building structure as detailed on Sheet 2.

This Evaluation Report does not address design of the wall/jambs themselves, but provides the anticipated jamb loads that will be generated by this product. Vx and Vy, also illustrated on Sheet 2.

## Model Description

This Evaluation is for Series 3652 Rolling Doors by Janus International.

All doors consist of a corrugated steel sheet curtain suspended from a drum roller. The curtain is suspended from a drum roller. Coiling around the drum raises the curtain. The sides of the curtain are constrained from lateral movement along their vertical edges by steel guides that are attached to the door jambs. This constraint provides resistance to wind forces. The wind forces are transferred from the curtain to the guides and then through the attachment elements to the door jamb.

## Series 3652

Door curtains have a thickness of 26 gage (min. 0.017 in.) and are made of ASTM A653 structural steel, grade 80, pre-painted, galvanized steel with a full coat of primer and baked siliconized polyester finish coat. The corrugated sheets are interlocked mechanically

Janus Series 3652 Rolling Doors

to form the curtain. Lap splices are at approximately 20 inches on center vertically in the installed door. The corrugation height is approximately 5/8 inches and the corrugation pitch is 3.25 inches. Style variations include door width, windlocks, and wind load rating.

Two black Nylon windlocks are attached to the curtain at every other corrugation. The windlock were secured with two 3/16" diameter zinc plated steel blind rivets.

### Limitations

The drawings cited above are an explicit part of this evaluation report. The text of this report does not attempt to address all design details, but relies upon the illustrations and text of these drawings and instructions as well.

Each door should be chosen based on the "psf" requirement determined for a specific installation or locale.

The maximum opening width approved with this report is 18 feet.

The maximum door height for is 20'-0" nominal.

Doors narrower than tabulated width are allowed, but carry the same psf as the next greater width in the table.

*The user of this product is reminded that rolling doors can generate substantial catenary forces at the jambs ("Vx"). The building jambs must be designed to withstand these loads in combinations of Vx with Vy(+), and Vx with Vy(-) shown on sheet 2 of the drawings.*

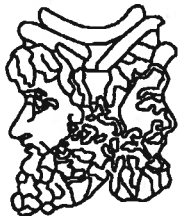
This product is not for use in the Florida High Velocity Hurricane Zone (HVHZ).



Digitally signed by John E. Scates P.E.  
Date: 2018.06.18 15:26:02 -05'00'  
John E. Scates, P.E.  
FL PE #51737

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www.janusintl.com

DOOR INSTALLATION INSTRUCTIONS  
SERIES 3652

800120-0000

**WARNING**

A rolling door is a large heavy object that moves with the help of springs under extreme tension and electric motors. Moving objects and springs under tension and electric motors can cause serious injuries or death. For your safety and the safety of others, follow these instructions.

**CAUTION**

Use proper lifting equipment and correct lifting procedures to avoid damage or injury.

**PUSH-UP OPERATION  
SHOWN**

LEFT TENSION END SHOWN  
RH OPPOSITE

RIGHT DRIVE END SHOWN  
LH OPPOSITE

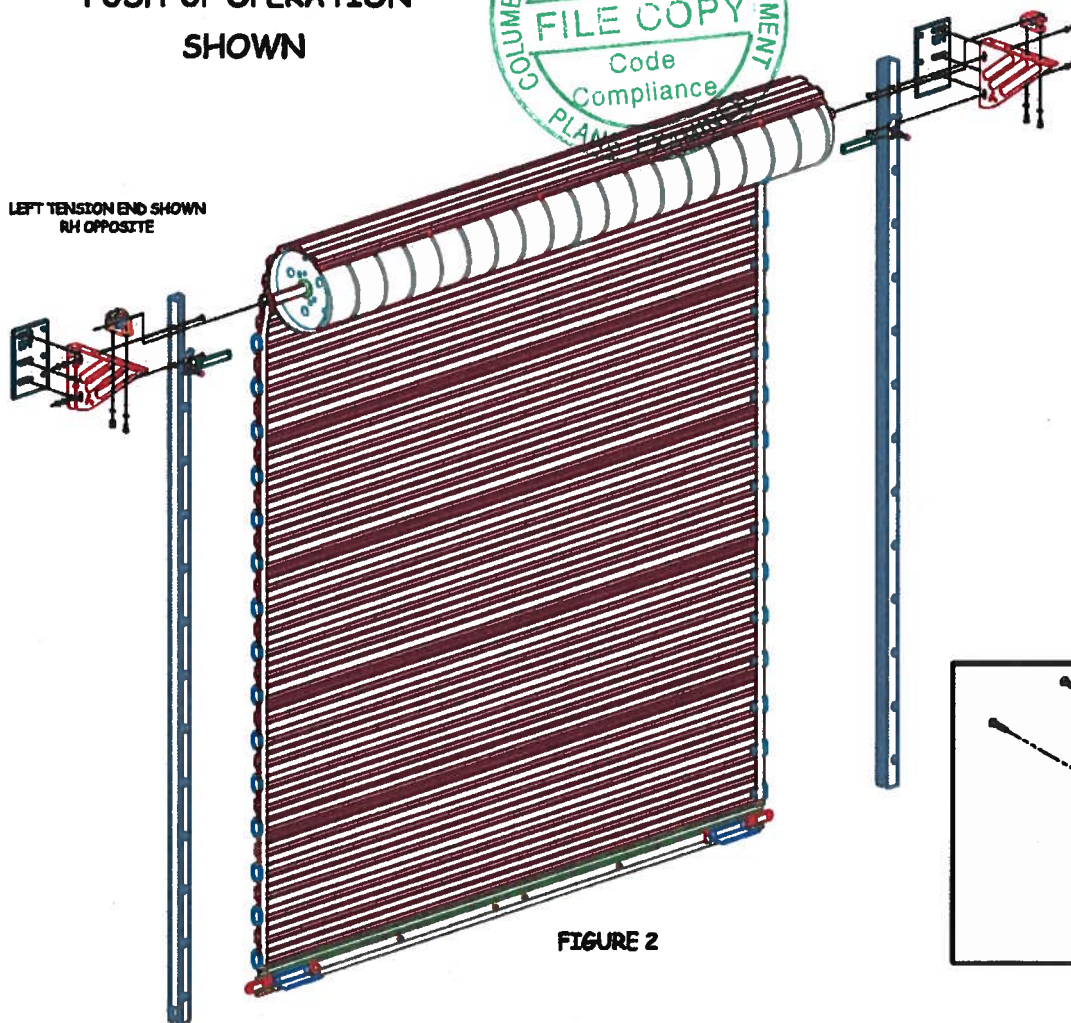


FIGURE 2

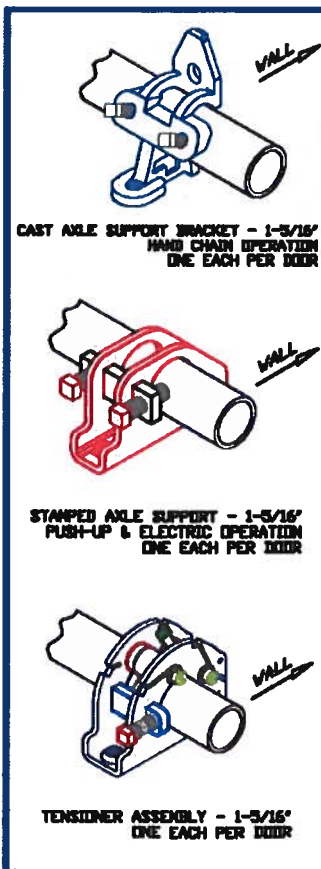


FIGURE 1

**IMPORTANT NOTE:** Do not cut tape and plastic wrap that holds the door in a roll until you are directed to do so in step 14D. Janus International Corporation cannot guarantee or accept responsibility for doors that are not installed as directed. Please read and understand all instructions before beginning the installation process.






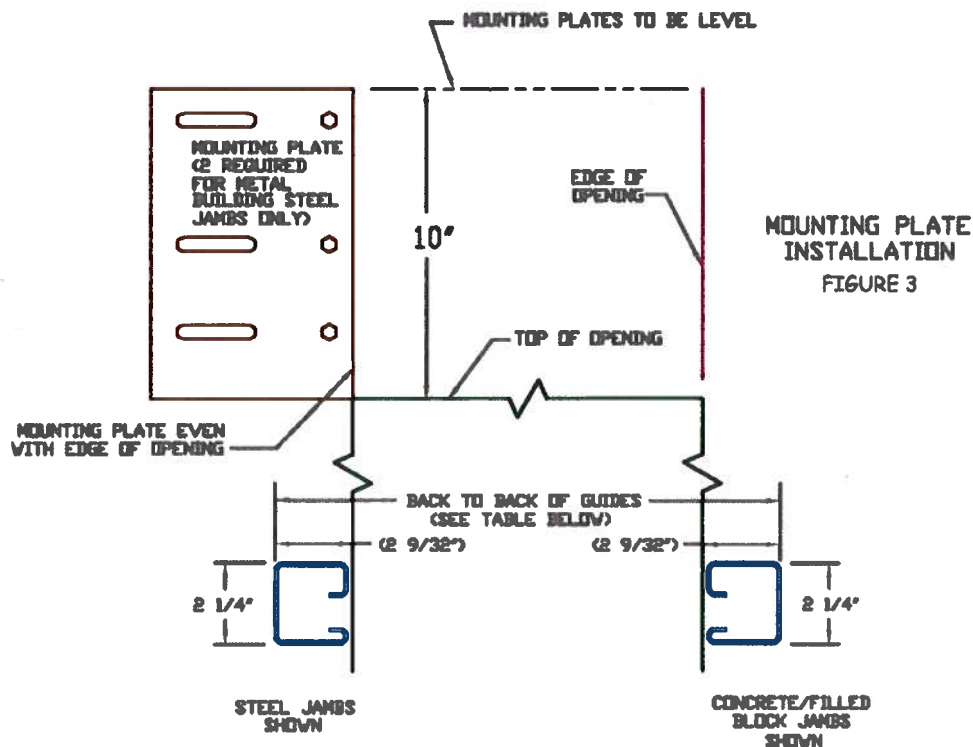
POTENTIAL HAZARD	EFFECT	PREVENTION
	CAN CAUSE SERIOUS INJURY OR DEATH	DO NOT stand or walk under moving door. Keep door in full view and free of obstructions while operating.  DO NOT allow children to operate the door or door controls.
	CAN CAUSE SERIOUS BURNS OR DEATH	Turn off electrical power before removing operator cover. Operator must be electrically grounded.
	CAN CAUSE SERIOUS INJURY OR DEATH	Installation, repairs and adjustments must be made by a trained rolling service door systems technician using proper tools and instructions.  DOOR MUST BE FULLY OPENED WHEN MAKING ADJUSTMENTS.

TABLE 1: Wall Fasteners for Jamb attachment of Brackets and Guides

ITEM	JAMB	FASTENERS	DRELL SIZE
Brackets	Steel	3/8-16 x 1" HWH Type 23 Thd Cutting Screw Or 3/8-16 x 1 1/4" Hex Bolt and Nut	"5" (.348") 7/16"
	Concrete or Filled Block	3/8" x 1 3/4" Powers Wedge-Bolt	Powers 01316
Guides	Steel	1/4-44 x 1" TEK'S Self-Drilling Screw	None
	Concrete or Filled Block	1/4" x 5" Powers Wedge-Bolt OT	ANSI 1/4" x 6" min usable length (8" OAL)



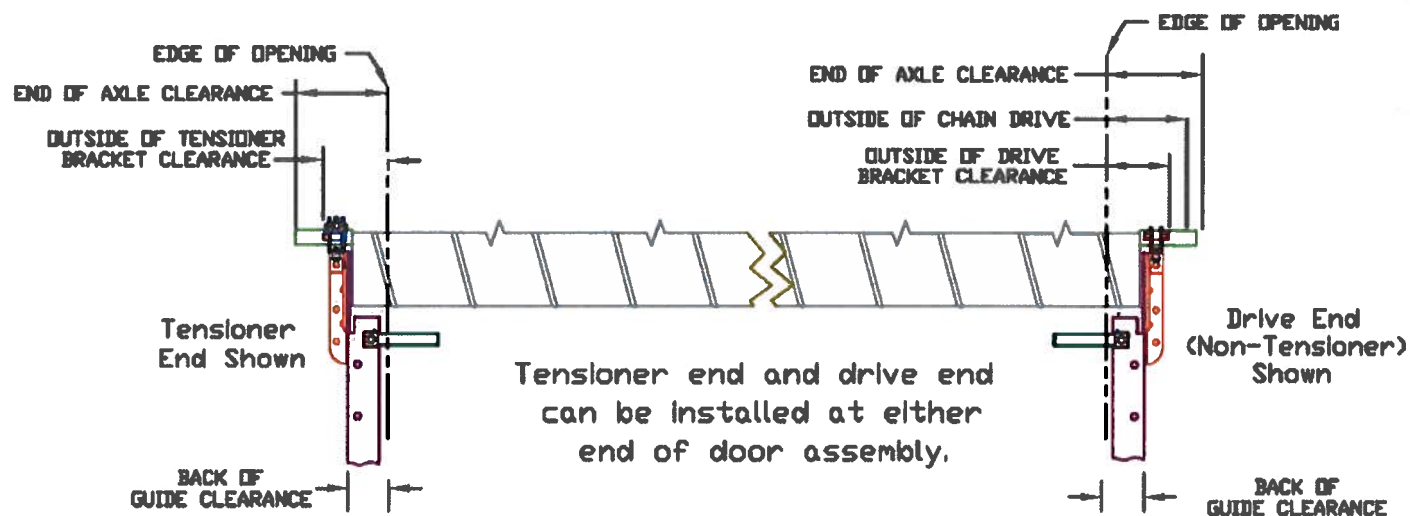
OPENING WIDTH	CURTAIN SHEET WIDTH	BACK TO BACK OF GUIDES
≤7'-0"	OPENING WIDTH + 2 3/16"	CURTAIN SHEET WIDTH + 2 3/8"
>7'-0" ≤9'-0"	OPENING WIDTH + 2 7/16"	CURTAIN SHEET WIDTH + 2 1/8"
>9'-0" ≤18'-0"	OPENING WIDTH + 2 3/4"	CURTAIN SHEET WIDTH + 1 13/16"

**CLEARANCE CHARTS**  
SIDE ROOM REQUIRED\*

FIGURE 5

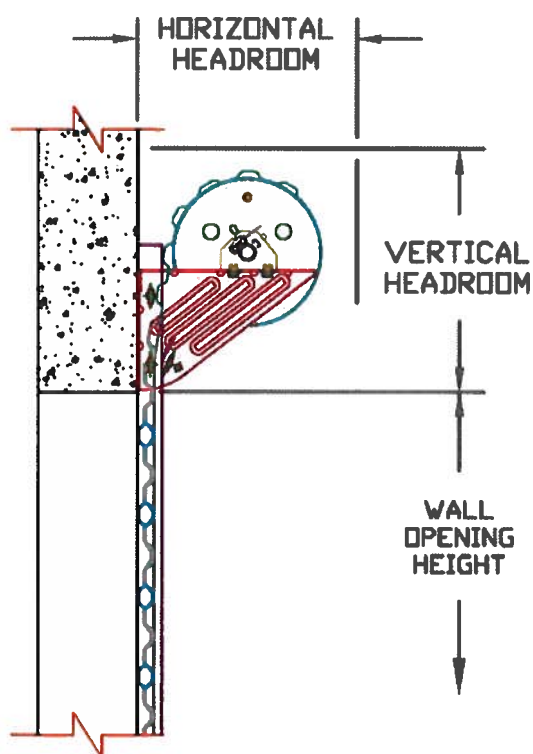
OPERATION	BACK OF GUIDE	OUTSIDE OF BRACKET TENSIONER END	OUTSIDE OF BRACKET DRIVE END (NON-TENSIONER)	OUTSIDE OF HAND CHAIN DRIVE	EACH END OF AXLE
Push-up	2 1/4"	3 7/8"	3 7/8"	—	6 3/4"
Reduced Hand Chain	2 1/4"	3 7/8"	3 7/8"	5 3/8"	6 3/4"
Electric	2 1/4"	3 7/8"	5 3/8"	—	6 3/4"

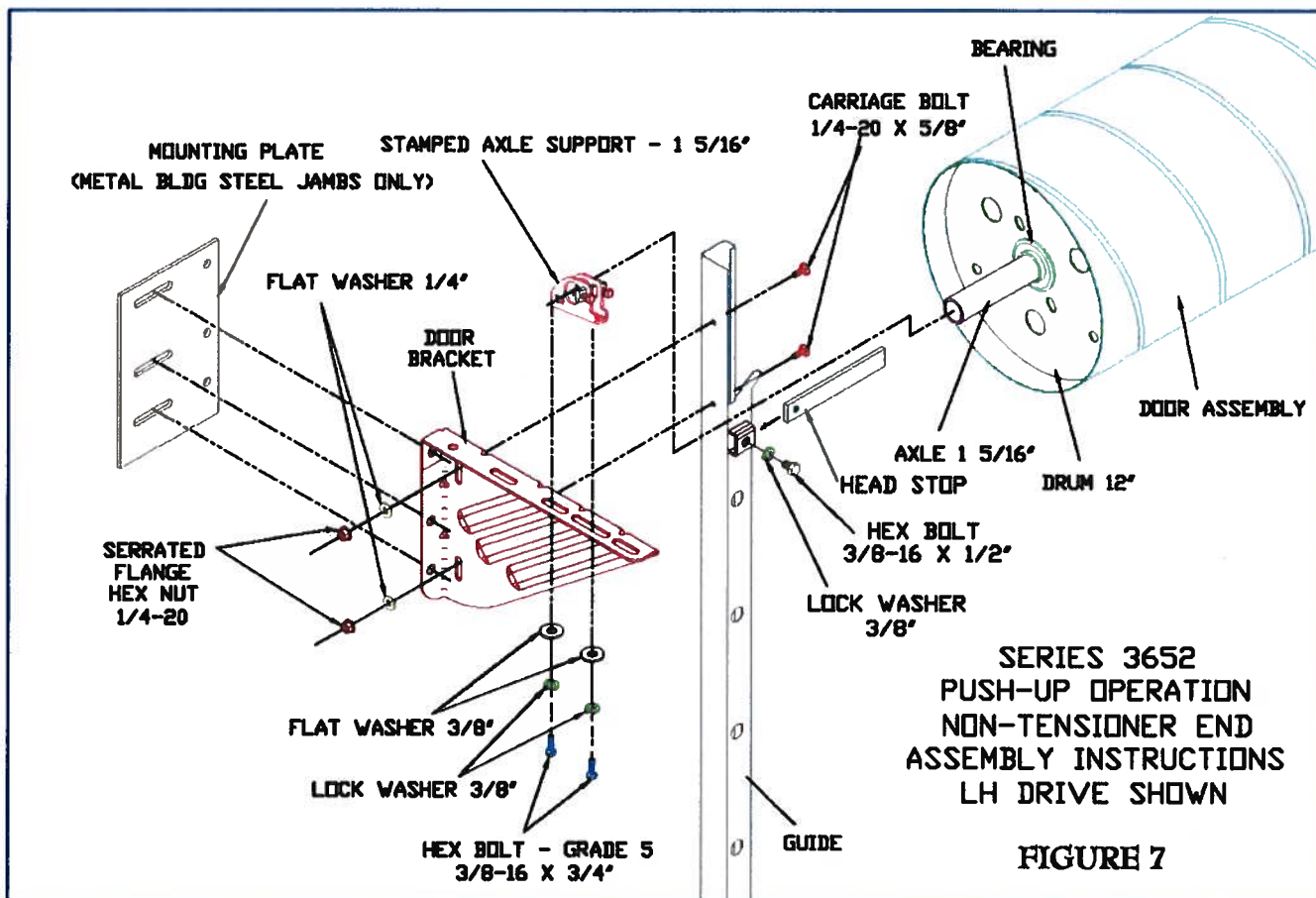
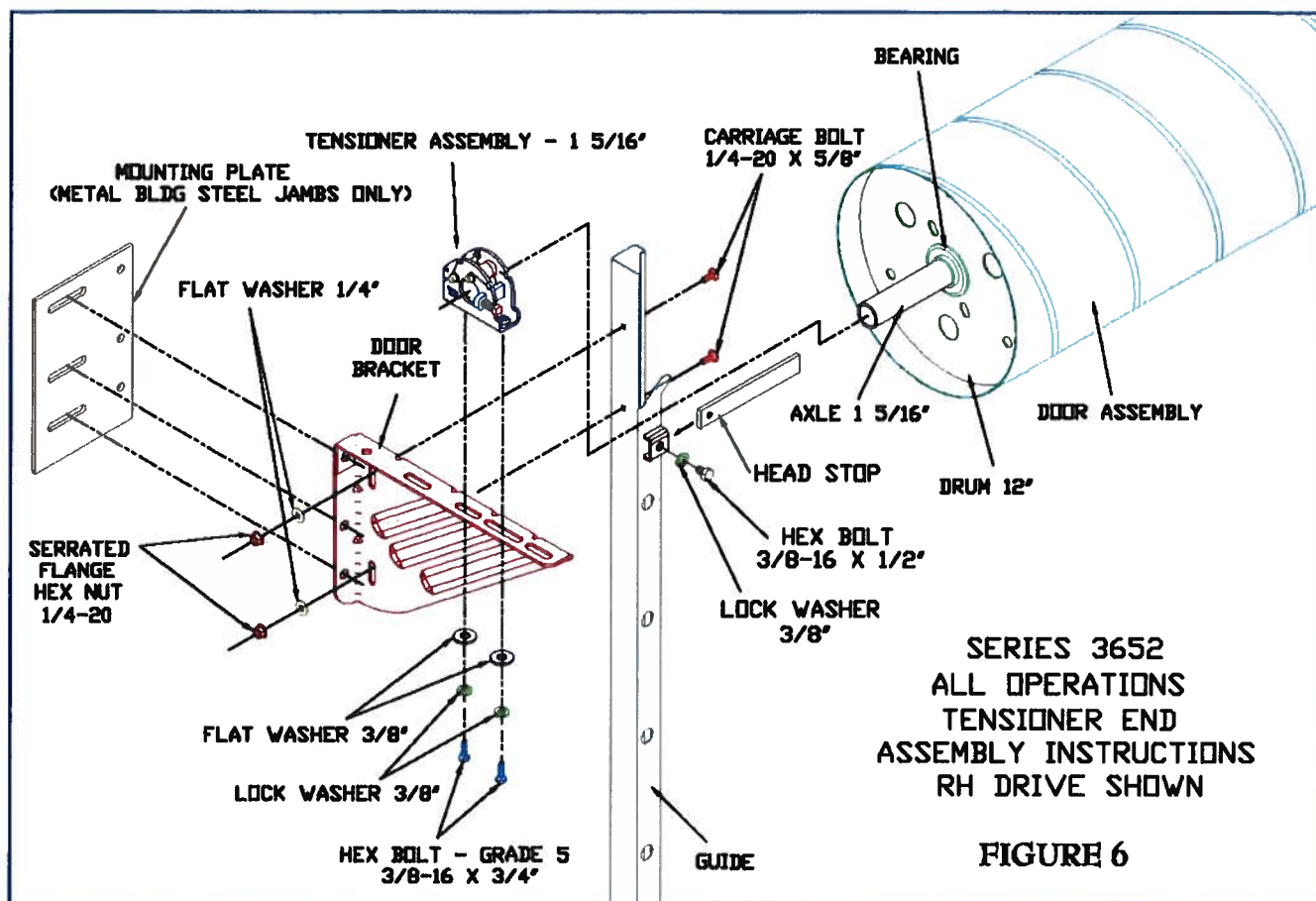
\*Dimensions are taken from edge of opening

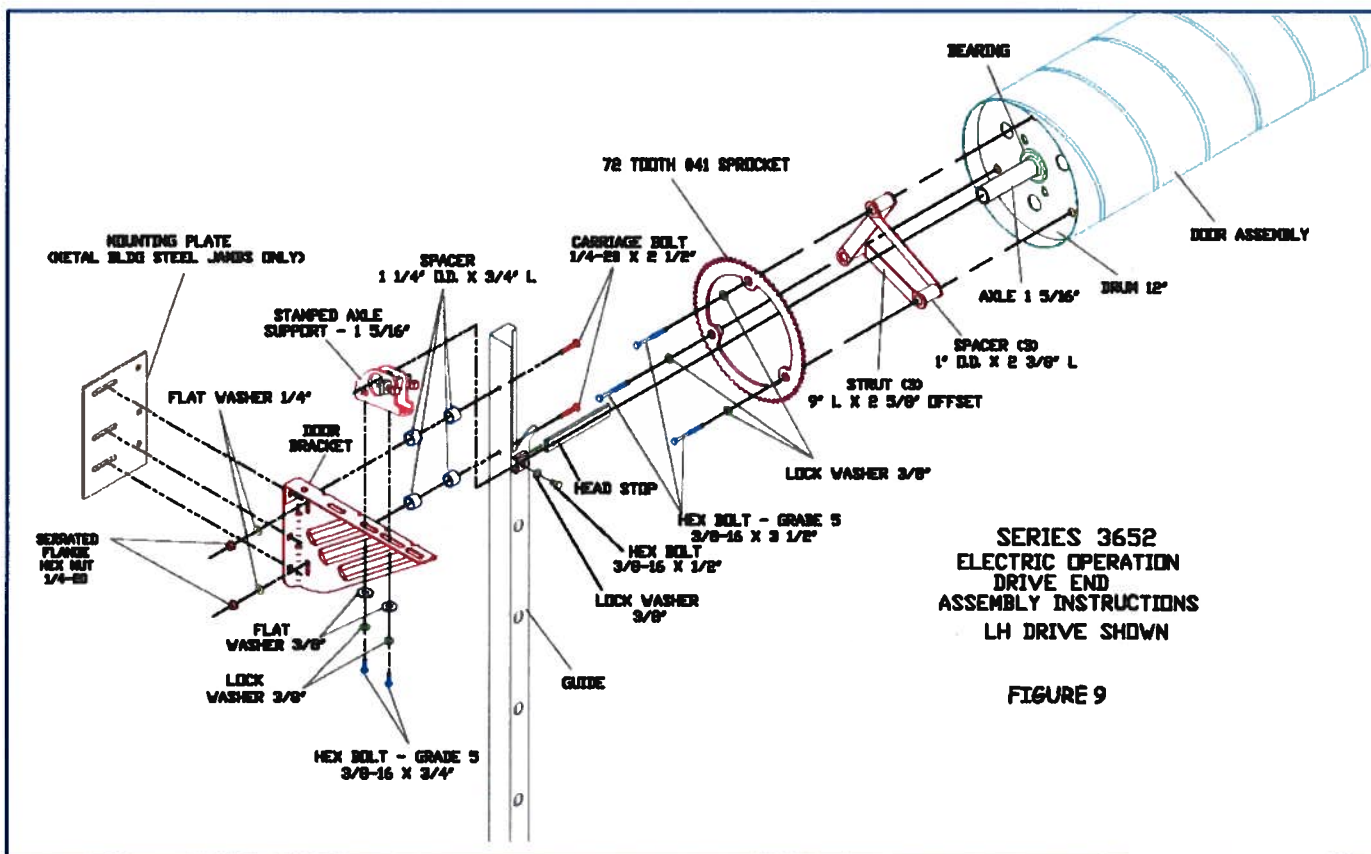
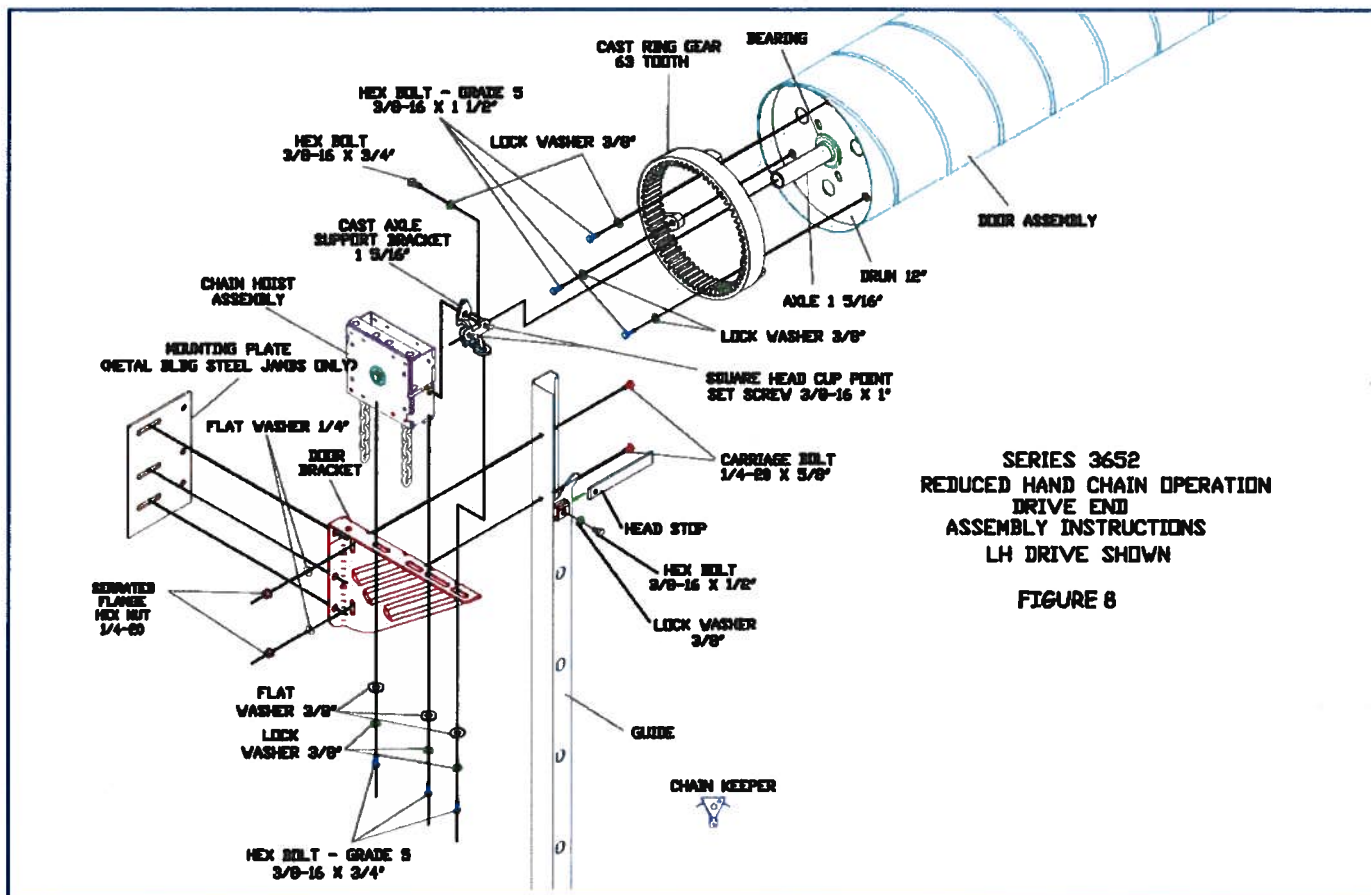


**HEADROOM REQUIRED**

OPENING HEIGHT	VERTICAL HEADROOM	HORIZONTAL HEADROOM
THRU 8'-0"	17'	19'
OVER 8'-0" THRU 10'-0"	19'	21'
OVER 10'-0" THRU 14'-0"	20'	22'
OVER 14'-0" THRU 16'-0"	21'	23'
OVER 16'-0" THRU 18'-0"	22'	24'
OVER 18'-0" THRU 20'-0"	23'	25'









## SERIES 3652

### STEP 1: WALL OPENING

- A. Check wall opening width and height and verify these measurements against size of door to be installed.
- B. Verify that jambs are plumb.
- C. Check floor and header for level.
- D. Check for adequate side clearance at jambs and clearance above and at sides of header. See Clearance charts figure 5 for minimum requirements.
- E. Verify that the guide mounting surface on the jamb is flush.
- F. Make sure all parts required for installation are with the door.

### STEP 2: MOUNTING PLATES

- A. If door will install to metal building steel jambs, mounting plates for the door brackets are required and may be welded or bolted to the jambs.
- B. Top of mounting plates should be located 10" above top of opening and be level with each other. Side of mounting plates should be even with edge of opening. If opening width is off, adjust locations accordingly. See figure 3.
- C. If mounting plates are bolted to jambs, do not use a flat washer between bolt and mounting plate. See figure 3.

**NOTE:** Door drive operation may be installed on either end of door assembly.

### STEP 3: BRACKETS TO GUIDES

- A. Attach door brackets to guides, locating top surface of bracket 2" below top of guide. Use 2 each 1/4-20 x 5/8" carriage bolts, 1/4-20 serrated flange hex nuts and 1/4" flat washers per bracket for tensioner end and the non-tensioner (drive) end for push-up operation. See figures 6 and 7.
- B. For reduced hand chain drive end, install drive bracket with 2 each 1/4-20 x 5/8" carriage bolts, 1/4-20 serrated flange hex nuts and 1/4" flat washers. See figure 8.
- C. For electric operation drive end, install drive bracket with 2 each 1/4-20 x 2 1/2" carriage bolts, 1/4-20 serrated flange hex nuts and 1/4" flat washers. Insert 2 each 1 1/4" O.D. x 3/4" long spacer tubes between guide and bracket at each bolt location. See figure 9.

### STEP 4: GUIDES AND BRACKETS TO JAMB

- A. Brackets and guides must be attached to jambs using fasteners shown in table 1.
- B. The guides should be mounted centered about the opening. Space guides according to table in figure 4. This spacing is measured from back of guide to back of guide. See figure 4. Both guides must be plumb.
- C. Once both guides have been correctly positioned, attach them to the jambs using the appropriate fastener at each hole location. See table 1.
- D. Check top surface of brackets to verify they are level with each other. If they are not, loosen the bracket-to-guide attachment fasteners and slide bracket(s) vertically until level. Tighten bracket-to-guide fasteners.
- E. Install 3 bracket-to-jamb attachment fasteners for each bracket. See table 1.

#### **WARNING**

DOOR CAN FALL IF BOTH BRACKETS ARE NOT SECURELY FASTENED TO THE JAMBS. ALL FASTENERS ATTACHING BRACKETS TO JAMBS MUST FIT SECURELY INTO A STRUCTURAL MEMBER OR SURFACE. IF DOOR FALLS, SERIOUS INJURY OR DEATH AND/OR DAMAGE TO DOOR CAN RESULT.

### STEP 5: TENSIONER END

- A. Using tensioner assembly's spring roll pin located in knurled wheel, rotate upward in the direction that clears the axle.
- B. Slide tensioner assembly over axle, with arrow pointing toward wall. Release pin. See figures 2 and 6.

#### **WARNING**

TENSIONER ASSEMBLY MUST BE ORIENTED ON AXLE WITH THE ARROW POINTING TOWARD THE WALL. IF THIS IS NOT DONE, IT WILL NOT OPERATE AS DESIGNED, WHICH MAY CAUSE SERIOUS INJURY OR DEATH DUE TO THE DOOR SUDDENLY LOSING SPRING TENSION AND RAPIDLY MOVING DOWNWARD.

**STEP 6: PUSH-UP NON-TENSIONER END****SERIES 3652**

- A. Slide stamped axle support over axle, with arrow pointing toward wall. See figures 2 and 7.

**STEP 7: REDUCED CHAIN DRIVE END**

- A. Fasten 63 tooth cast ring gear to drum using 3 each 3/8-16 x 1 1/2" grade 5 hex bolts and 3/8" lock washers.
- B. Install 2 each 3/8-16 x 1" square head setscrews in the threaded holes in the cast axle support bracket. These will be tightened against the axle later.
- C. Slide cast axle support bracket over axle. See figures 2 and 8.

**STEP 8: ELECTRIC DRIVE END**

- A. Locate 3 each 1" O.D. x 2 3/8" long spacer tubes and 9" long x 2 5/8" offset struts between 72 tooth #41 sprocket and drum. Attach sprocket with 3 each 3/8-16 x 3 1/2" grade 5 hex bolts and 3/8" lock washers.
- B. Slide stamped axle support over axle, with arrow pointing toward wall. See figures 2 and 9.

**STEP 9: LIFTING DOOR ASSEMBLY**

- A. Orient door with bottom bar located against the floor.
- B. Lift door assembly using a forklift that has padded forks in order to prevent damage to curtain.
- C. Position door on brackets with tensioner and axle support resting safely on top of bracket flange.
- D. Door should be positioned as close as possible to the header and still be able to rotate and clear bottom bar.
- E. Each end of door should be equal distance from the header and the curtain must be centered in the opening.

**WARNING**

DO NOT ALLOW DOOR ASSEMBLY TO ROLL OFF BRACKETS OR MOVE SIDWAYS OFF EDGE OF BRACKET. IF DOOR FALLS, SERIOUS INJURY OR DEATH AND/OR DAMAGE TO DOOR CAN RESULT.

**STEP 10: TENSIONER END**

- A. Attach tensioner assembly to door bracket using 2 each 3/8-16 x 3/4" grade 5 hex bolts, 3/8" lock washers and 3/8" flat washers. See figures 2 and 6.

**STEP 11: PUSH-UP NON-TENSIONER END**

- A. Attach stamped axle support to door bracket using 2 each 3/8-16 x 3/4" grade 5 hex bolts, 3/8" lock washers and 3/8" flat washers. See figures 2 and 7.

**STEP 12: REDUCED HAND CHAIN DRIVE END**

- A. Attach cast axle support bracket to door bracket using 3/8-16 x 3/4" grade 5 hex bolt, 3/8" lock washer and 3/8" flat washer.
- B. Position chain hoist assembly on door bracket next to cast axle support and attach to door bracket using 2 each 3/8-16 x 3/4" grade 5 hex bolts, 3/8" lock washers and 3/8" flat washers. The spur gear on the hoist will engage with the internal teeth of the cast ring gear on the end of the drum. See figure 8.
- C. Connect cast axle support bracket to side of chain hoist using 3/8-16 x 3/4" hex bolt and 3/8" lock washer. See figures 2 and 8.
- D. Feed hand chain over chain pocket wheel and through hoist. Connect ends of hand chain, being careful not to twist chain. Hand chain may be lengthened or shortened as necessary.
- E. Install hand chain keeper on wall or jamb.

**STEP 13: ELECTRIC DRIVE END**

- A. Attach stamped axle support to door bracket using 2 each 3/8-16 x 3/4" grade 5 hex bolts, 3/8" lock washers and 3/8" flat washers. See figures 2 and 9.

**STEP 14: SETTING SPRING INITIAL TENSION****SERIES 3652****⚠ WARNING**

EXTREME SPRING TENSION CAN CAUSE SERIOUS INJURY OR DEATH. INSTALLATION, REPAIRS AND ADJUSTMENTS MUST BE MADE BY A TRAINED ROLLING SERVICE DOOR SYSTEMS TECHNICIAN USING PROPER TOOLS AND INSTRUCTIONS.

**DOOR MUST BE FULLY OPEN WHEN MAKING ADJUSTMENTS.**

- A. At tensioner end, place pipe wrench around end of axle or 1/2" square drive wrench in end of axle square hole so that pulling down on the handle will rotate the axle to increase spring tension.
- B. Rotate axle 1/2 to 3/4 of a turn by pulling down on wrench. — B. Rotate axle 1-1/2 to 1-3/4 of a turn by pulling down on wrench.
- C. Remove wrench from axle.
- D. While firmly holding the door at the bottom bar, cut the tape and plastic wrap that holds the door in a coil. Direct the bottom bar down into the guides, stopping just past the head stop area.

**STEP 15: HEAD STOPS**

- A. Slide head stop from inside of each guide. See figures 6 through 9.
- B. Secure each head stop to holder with 3/8-16 x 1/2" hex bolt and 3/8" lock washer.

**STEP 16: SLIDE LOCK, STEP PLATE, PULL ROPE**

- A. Lower bottom bar and install slide lock and step plate using 2 each 1/4-20 x 1" hex bolts, 5/16-18 hex nuts, 1/4" flat washers, and 1/4-20 nylon insert hex nuts. Do this at both ends of bottom bar. See figure 1.
- B. Transfer the 1/4-20 x 1/2" carriage bolts and 1/4-20 serrated flange hex nuts that were removed from both ends of the bottom bar to the 2 holes at the center of the bottom bar and angle.
- C. For push-up operation only, install rope in one of the holes at the center of the horizontal leg of the bottom bar angle.

**STEP 17: POSITION DOOR**

- A. Fully open door.
- B. At both ends of the door, slightly loosen all 3/8-16 x 3/4" hex bolts that go through the door bracket and connect to the tensioner, axle support and chain hoist.
- C. Push door assembly as close as possible toward header and still be able to rotate freely. Each end of door should be equal distance from the header and the curtain must be centered in the opening.
- D. Tighten securely all 3/8-16 x 3/4" hex bolts that were loosened in step 17B.
- E. Tighten all 3/8-16 square head setscrews in tensioner and axle support at both ends of door.

**STEP 18: CHECK DOOR OPERATION**

- A. Lower and raise the door to test door operation and balance.
- B. If door is easy to close, but hard to open, increase spring initial tension.
- C. If door is hard to close, but easy to open, decrease spring initial tension.

**STEP 19: ADJUST SPRING INITIAL TENSION****SERIES 3652****⚠ WARNING**

**DOOR MUST BE FULLY OPENED WHEN MAKING ADJUSTMENTS.**

- A. Loosen all 3/8-16 square head setscrews in tensioner and axle support at both ends of door.
- B. At tensioner end, place pipe wrench around end of axle or 1/2" square drive wrench in end of axle square hole so that pulling down on the handle will rotate the axle to increase spring tension.
- C. To increase spring tension, pull down on wrench. The tensioner will automatically grip the axle and hold the new tension setting.
- D. To decrease spring tension, momentarily pull down on wrench and then lift the spring roll pin on the tensioner's knurled wheel. Gently let up on wrench, allowing the axle to rotate to reduce the tension. While holding the new tension, release the tensioner's spring roll pin. The tensioner will now grip the axle and hold the new tension setting.
- E. Tighten all 3/8-16 square head setscrews in tensioner and axle support at both ends of door.
- F. Remove wrench and operate door.
- G. Repeat steps 19A through 19F as necessary.

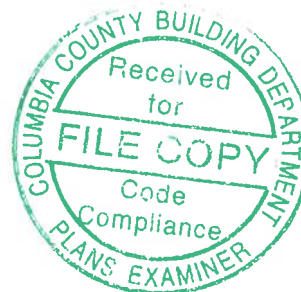
**STEP 20: WARNING LABEL**

- A. Install warning label at a readable height on the drive side door guide or jamb.

**EVALUATION REPORT OF  
UNION CORRUGATING COMPANY  
'29 GA. MASTERRIB PANEL'  
OVER STEEL SUPPORTS**

**FLORIDA BUILDING CODE 6<sup>TH</sup> EDITION (2017)  
FLORIDA PRODUCT APPROVAL  
FL 9557.1-R4  
PANEL WALLS  
SIDING**

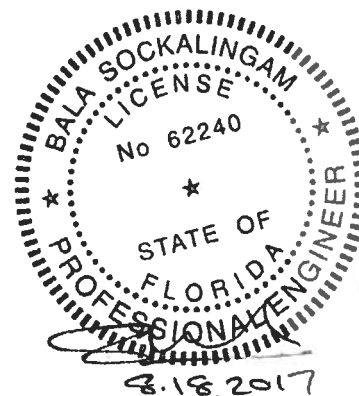
**Prepared For:  
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701 S. King St.  
Fayetteville, NC 28301  
Telephone: (910) 483-0479  
Fax: (910) 483-1091**



**Prepared By:  
Bala Sockalingam, Ph.D., P.E.  
Florida Professional Engineer #62240  
1216 N Lansing Ave., Suite C  
Tulsa, OK 74106  
Telephone: (918) 492-5992  
FAX: (866) 366-1543**

**This report consists of  
Evaluation Report (2 Pages including cover)  
Installation Details (1 Page)  
Load Span Table (1 Page)**

**Report No. C2173-1  
Date: 8.18.2017**





**Manufacturer:** Union Corrugating Company

**Product Name:** MasterRib Panel

**Panel Description:** 36" wide coverage with 3/4" high ribs at 9" o.c.

**Materials:** Minimum 29 ga., 80 ksi steel. Galvanized coated steel (ASTM A653) or Galvalume coated steel (ASTM A792) or painted steel (ASTM A755).

**Support Description:** Min 18 ga., min 50 ksi steel supports. Must be designed by others

**Design Pressure:** +45.35 and -37.7 psf @ support spacing of 48" o.c.  
(Based on testing) (@ 3 span condition with FS = 2.0)

**Panel Attachment:** #12-14 x 1" long self drilling screws with washers  
At panel ends @ 3.5"-5.5"-3.5" o.c. across panel width  
At intermediate @ 9" o.c. across panel width

**Sidelap Attachment:** 1/4"-14 x 7/8" long SDS with washer @ 24" o.c.

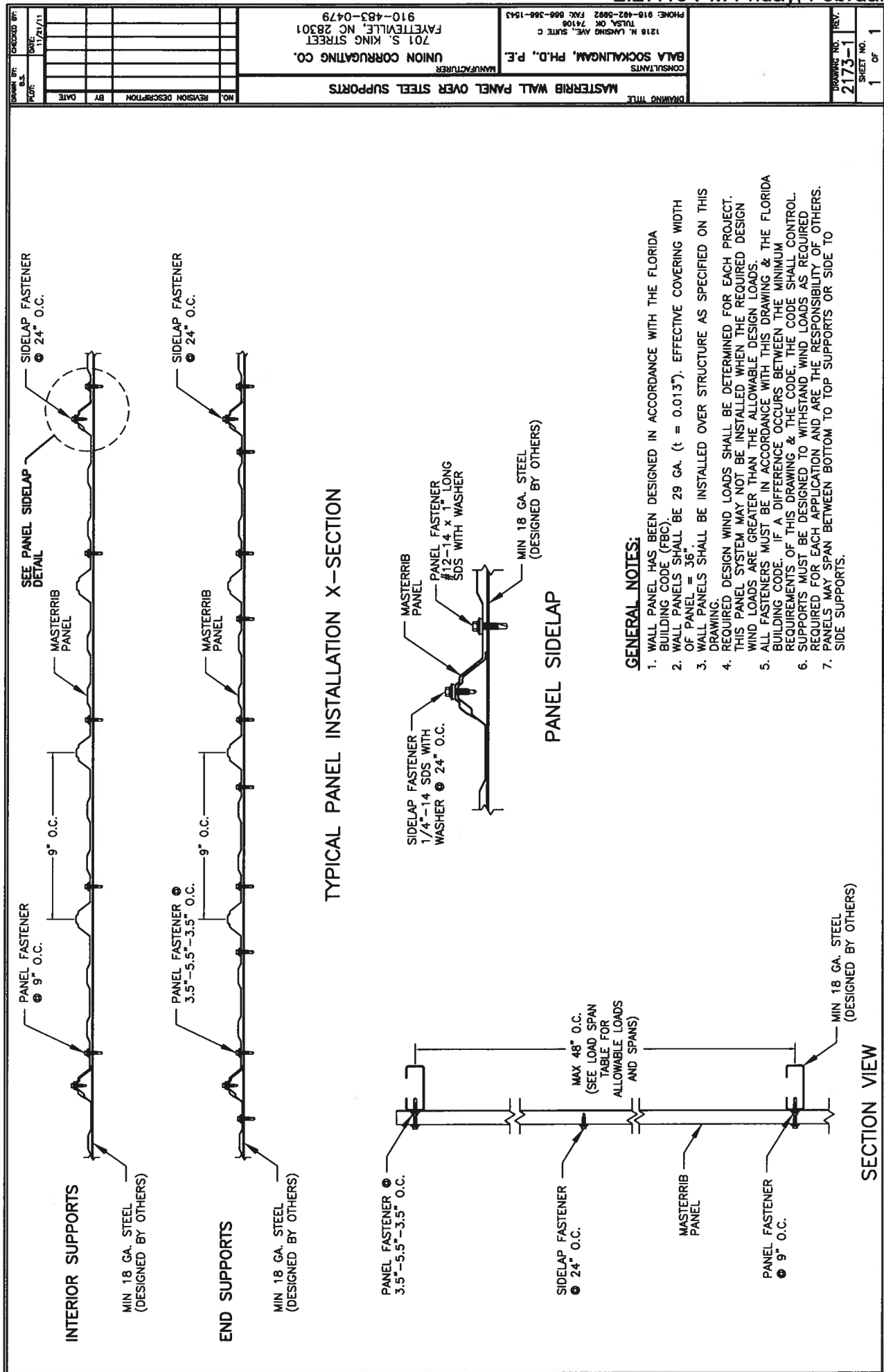
**Test Standards:** Panel assembly tested in accordance with ASTM E1592-01 'Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference'.

**Test Equivalency:** The test procedures in ASTM E1592-01 comply with test procedures prescribed in ASTM E1592-05(2012).

**Code Compliance:** The product described herein has demonstrated compliance with FBC 2017 Section 1404.5.

**Product Limitations:** Design wind loads shall be determined for each project in accordance with FBC 2017 Section 1609 or ASCE 7-10 using allowable stress design. The maximum support spacing listed herein shall not be exceeded. The design pressure for reduced support spacing may be computed using rational analysis prepared by a Florida Professional Engineer or based on Union Corrugating load span table. This product is not approved for use in the High Velocity Hurricane Zone.

**Supporting Documents:** ASTM E1592 Test Report  
ENCON Technology Inc.  
C1514-1 (Test #1 & 3), Reporting Date 9/8/07

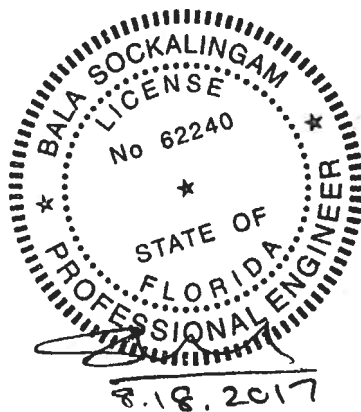


**UNION CORRUGATING COMPANY**  
**MasterRib Wall Panel**  
 36" wide, 29 ga. (min) Steel Panel over Steel Supports

Span Condition	Loading Type	Allowable Load (psf)								
		Support Spacing (ft)								
		1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.50	4.00
Two Span	Positive	106.4	91.2	79.8	70.9	63.9	58.0	53.2	45.6	36.3
	Negative	88.5	75.8	66.4	59.0	53.1	48.3	44.2	37.9	30.2
Three Span	Positive	120.9	103.7	90.7	80.6	72.6	66.0	60.5	51.8	45.4
	Negative	100.5	86.2	75.4	67.0	60.3	54.8	50.3	43.1	37.7
Four or More Spans	Positive	116.4	99.8	87.3	77.6	69.8	63.5	58.2	49.9	42.4
	Negative	96.8	82.9	72.6	64.5	58.1	52.8	48.4	41.5	35.2

**Notes:**

1. Allowable load for each condition is the smallest load calculated based on fastener capacity, panel strength and deflection limit of  $L/120$ . Allowable loads are calculated for minimum 29 ga. panel.
2. The wind load is taken as 0.7 times the "component and cladding" loads for the purpose of determining deflection limit.
3. The panel allowable properties are determined from full scale ASTM E1592 tests at 4' 0" span.
4. The panel fasteners are #12-14 x 1" long self drilling screws with washers. Fastener spacing across panel width is 9.0" o.c. in the interior supports and 3.5"-5.5"-3.5" o.c. at panel ends.
5. Sidelap fasteners are 1/4"-14 x 7/8" long self drilling screws with washer at 24" o.c.
6. Steel supports are minimum 18 ga. All supports must be designed to resist all loads imposed on the panel.
7. Minimum bearing width of support is 1.5".
8. The panels may span from bottom to top supports or side to side supports.
9. Panels must be installed as per Evaluation Report FL 9557.1 and Union current installation procedure.



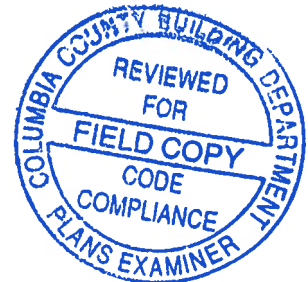
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 Tulsa, OK 74106  
 918 492 5992

Bala Sockalingam, Ph.D., P.E.  
 PE 62240

**EVALUATION REPORT OF  
UNION CORRUGATING COMPANY  
'29 GA. MASTERRIB PANEL'  
OVER STEEL SUPPORTS**

**FLORIDA BUILDING CODE 6TH EDITION (2017)  
FLORIDA PRODUCT APPROVAL  
FL 9555.3-R4  
STRUCTURAL COMPONENTS  
ROOF DECK**

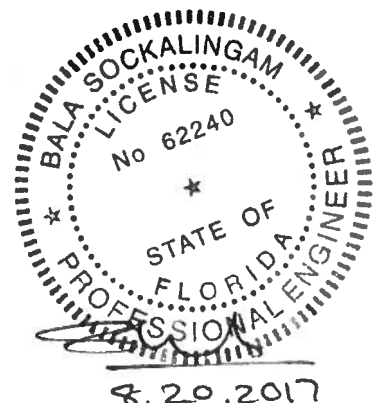
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**This report consists of  
Evaluation Report (3 Pages including cover)  
Installation Details (1 Page)  
Load Span Table (1 Page)**

**Report No. C2172-3  
Date: 8.20.2017**





**UNION CORRUGATING COMPANY****MasterRib Roof Panel**

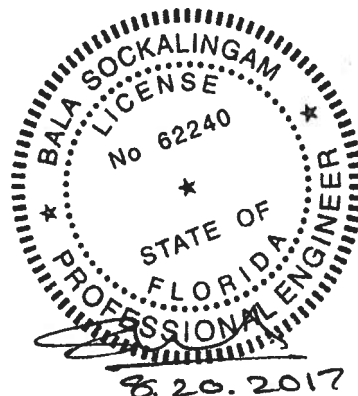
36" wide, 29 ga. (min) Steel Panel over Steel Supports

Span Condition	Loading Type	Allowable Load (psf)								
		Support Spacing (ft)								
		1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.50	4.00
Two Span	Gravity	106.4	91.2	79.8	70.9	63.9	58.0	53.2	45.6	34.7
	Uplift	88.5	75.8	66.4	59.0	53.1	48.3	44.2	37.9	30.2
Three Span	Gravity	120.9	103.7	90.7	80.6	72.6	66.0	60.5	40.5	27.1
	Uplift	100.5	86.2	75.4	67.0	60.3	54.8	50.3	43.1	37.7
Four or More Spans	Gravity	116.4	99.8	87.3	77.6	69.8	63.5	58.2	43.0	28.8
	Uplift	96.8	82.9	72.6	64.5	58.1	52.8	48.4	41.5	35.2

**Notes:**

1. Allowable load for each condition is the smallest load calculated based on fastener capacity, panel strength and deflection limit of  $L/180$ . Allowable loads are calculated for minimum 29 ga. panel.
2. The wind load is taken as 0.7 times the "component and cladding" loads for the purpose of determining deflection limit.
3. The panel allowable properties are determined from full scale ASTM E1592 tests at 4' 0" span.
4. The panel fasteners are #12-14 x 1" long self drilling screws with washers. Fastener spacing across panel width is 9.0" o.c. in the interior supports and 3.5"-5.5"-3.5" o.c. at panel ends.
5. Sidelap fasteners are 1/4"-14 x 7/8" long self drilling screws with washers at 24" o.c.
6. Steel supports are minimum 18 ga. All supports must be designed to resist all loads imposed on the panel.
7. Minimum bearing width of support is 1.5".
8. The panels may span from eave to ridge or rake to rake.
9. Panels must be installed as per Evaluation Report FL 9555.3 and Union current installation procedure.

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