



3900 Dr. Greaves Rd. • Kansas City, MO 64030 • (816) 761-7476 • FAX (816) 765-8955

**XP500WD- WIND DRIVEN RAIN LOUVER  
FEMA P-361 (2015) & ICC 500 (2014) COMPLIANT  
UL LISTED**

**STANDARD CONSTRUCTION**

**FRAME**

5 1/2" (140) deep by x 3/16" (4.7) thick extruded aluminum with end caps.

**BLADES**

4.8" (121) 6063T6 extruded aluminum 3/16" (4.7) nominal wall thickness. Double drainable blades are sightproof

**BIRD SCREEN**

5/8" x .040" (16 x 1.) expanded flattened aluminum bird screen in removable frame. Screen adds approximately 1/2" (13) to louver depth. Screen required to meet spawlling component to FEMA 361 standards.

**FINISH**

Mill.

**MINIMUM SIZE**

12"w x 12"h (305 x 305).

**APPROXIMATE SHIPPING WEIGHT**

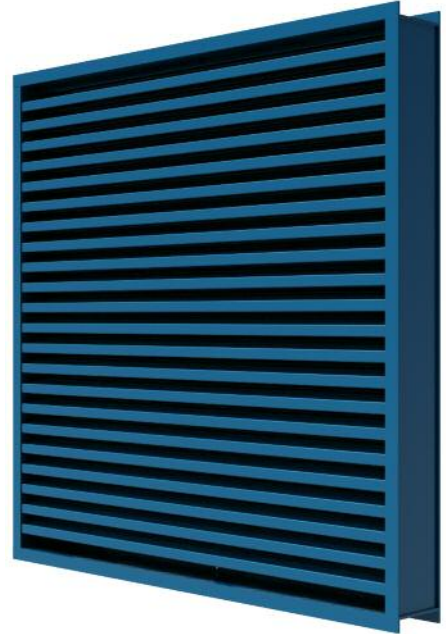
13 lbs. per sq. ft. (193.5 kg/m<sup>2</sup>)

**MAXIMUM SHIPPING SECTION SIZE**

48"w x 96"h (1220 x 2439)  
or 72"w x 60"h (1829 x 1524)

**MAXIMUM OVERALL ASSEMBLY SIZE**

96"h (2439) x Unlimited Wide  
72"w (1829) x Unlimited High



**FEATURES**

- Tested to ICC500 (2014), FEMA Guideline P-361 (2015), FEMA Guideline P-320 (2014)
- Design Pressure +/-300 PSF
- Louver complies with FEMA 361 Design and Construction for Community Shelters, Zone IV criteria, 250 MPH wind, 15 lb. 2x4 impact at 100 mph for Tornadoes.
- Published performance rating based on testing in accordance with AMCA Publication 511
- Aluminum construction for low maintenance and high resistance to corrosion K
- Louver mounted externally in combination with wall louver or by itself internally (See attached).
- 28% Free Area.
- Optional finishes available at additional cost: prime coat and 70% PVDF (modified fluoropolymer), epoxy, Acrodize.
- This product is Listed to applicable UL Standards and Requirements.



Dimensions in inches, parenthesis ( ) indicate millimeters.

\*Units furnished 1/4" (6) smaller than given opening.

TAG	QTY.	SIZE		VARIATIONS
		A*-WIDE	B*-HIGH	
<b>PROJECT</b>		<b>LOCATION</b>		
<b>ARCH./ENGR.</b>		<b>CONTRACTOR</b>		
<b>REPRESENTATIVE</b>		<b>DATE</b>		

Test size is 1M x 1M (39.375" x 39.375") core area, 1.06m x 1.06m (42" x 42") nominal.

Wind Velocity mph (kph)	Rainfall rate in./hr. (mm/hr.)	Core Velocity FPM (m/s) <sup>1</sup>	Airflow cfm (m <sup>3</sup> /min)	Free area velocity <sub>2</sub> fpm (m/s)	Effectiveness Ratio	Class <sub>3,4</sub>	Discharge Loss Class <sub>5</sub> Intake
29 (46.4)	3 (76)	489 (2.4)	5,263(149)	1,949 (10.0)	99.8%	A	1

**NOTES:**

1. Core area is the open area of the louver face (face area less louver frames). Core Velocity is the airflow velocity through the Core Area of the louver. 5 m/s is the maximum core velocity utilized in this test.
2. Free Area of test size is calculated per AMCA standard 500-L.
3. Wind-Driven Rain Penetration Classes:  

Class	Effectiveness
A	1 to .99
B	0.989 to .095
C	0.949 to 0.80
D	Below 0.8
4. The XP500WD provides class A performance at all velocities up to and including 5 m/s core velocity.
5. Discharge Loss Coefficient is calculated by dividing a louvers actual airflow rate vs. a theoretical airflow for the opening. It provides an indication of the louvers' airflow characteristics.

Discharge Loss Classes:

Class	Discharge Loss Coefficient
1	0.4 and above
2	20.3 to 0.399
3	0.2 to 0.299
4	0.199 and below

(The higher the coefficient, the less resistance to airflow.)

**WATER PENETRATION**

Test size 48"w x 48"h (1219 x 1219)  
 Beginning point of water penetration at  
 .01 oz./sq. ft. is 1250 fpm (381 m/min).



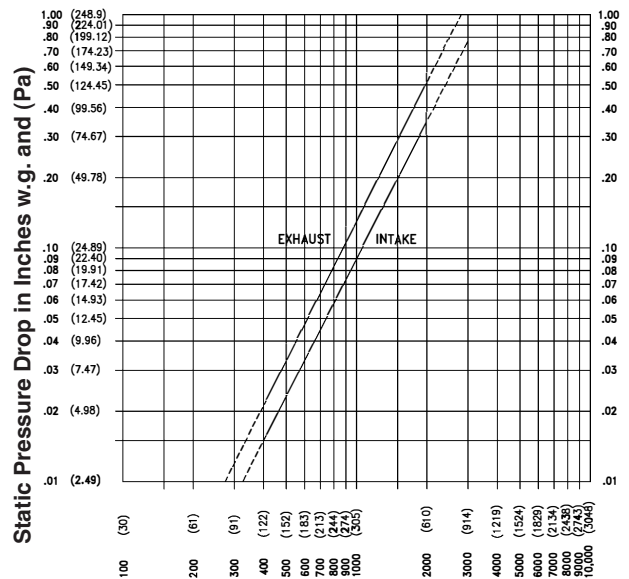
Ruskin Company certifies that the louver shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air performance ratings, water penetration ratings and wind driven rain ratings only.

**FREE AREA GUIDE**

Free Area Guide shows free area in ft<sup>2</sup> and m<sup>2</sup> for various sizes of XP500WD.  
 Width – Inches and Meters

Height – Inches and Meters	12	18	24	30	36	42	48	54	60	66	72
	0.30	0.46	0.61	0.76	0.91	1.07	1.22	1.37	1.52	1.68	1.83
12	0.08	0.17	0.26	0.35	0.44	0.53	0.62	0.68	0.77	0.86	0.96
0.30	0.01	0.02	0.02	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09
18	0.17	0.35	0.53	0.71	0.89	1.07	1.25	1.37	1.55	1.73	1.91
0.46	0.02	0.03	0.05	0.07	0.08	0.10	0.12	0.13	0.14	0.16	0.18
24	0.25	0.52	0.79	1.06	1.33	1.60	1.87	2.05	2.32	2.59	2.87
0.61	0.02	0.05	0.07	0.10	0.12	0.15	0.17	0.19	0.22	0.24	0.27
30	0.33	0.69	1.05	1.41	1.77	2.14	2.50	2.74	3.10	3.46	3.82
0.76	0.03	0.06	0.10	0.13	0.16	0.20	0.23	0.25	0.29	0.32	0.35
36	0.41	0.86	1.32	1.77	2.22	2.67	3.12	3.42	3.87	4.32	4.78
0.91	0.04	0.08	0.12	0.16	0.21	0.25	0.29	0.32	0.36	0.40	0.44
42	0.50	1.04	1.58	2.12	2.66	3.20	3.75	4.11	4.65	5.19	5.73
1.07	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.38	0.43	0.48	0.53
48	0.58	1.21	1.84	2.47	3.11	3.74	4.37	4.79	5.42	6.05	6.69
1.22	0.05	0.11	0.17	0.23	0.29	0.35	0.41	0.45	0.50	0.56	0.62
54	0.66	1.38	2.11	2.83	3.55	4.27	4.99	5.48	6.20	6.92	7.64
1.37	0.06	0.13	0.20	0.26	0.33	0.40	0.46	0.51	0.58	0.64	0.71
60	0.74	1.56	2.37	3.18	3.99	4.81	5.62	6.16	6.97	7.78	8.60
1.52	0.07	0.14	0.22	0.30	0.37	0.45	0.52	0.57	0.65	0.72	0.80
66	0.83	1.73	2.63	3.53	4.44	5.34	6.24				
1.68	0.08	0.16	0.24	0.33	0.41	0.50	0.58				
72	0.91	1.90	2.90	3.89	4.88	5.87	6.87				
1.83	0.08	0.18	0.27	0.36	0.45	0.55	0.64				
78	0.99	2.08	3.16	4.24	5.32	6.41	7.49				
1.98	0.09	0.19	0.29	0.39	0.49	0.60	0.70				
84	1.08	2.25	3.42	4.60	5.77	6.94	8.11				
2.13	0.10	0.21	0.32	0.43	0.54	0.64	0.75				
90	1.16	2.42	3.69	4.95	6.21	7.48	8.74				
2.29	0.11	0.22	0.34	0.46	0.58	0.69	0.81				
96	1.24	2.59	3.95	5.30	6.66	8.01	9.36				
2.44	0.12	0.24	0.37	0.49	0.62	0.74	0.87				

**PRESSURE DROP DATA**



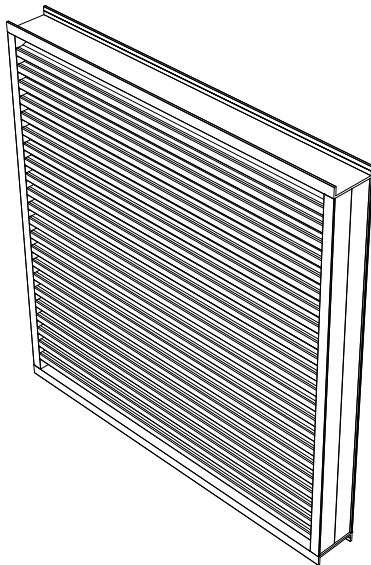
Air Velocity in feet (meters) per minute through Free Area (Data corrected to standard air density and AMCA figure or figures tested to 5.5)

# XP500WD INSTALLATION

## GENERAL INFORMATION

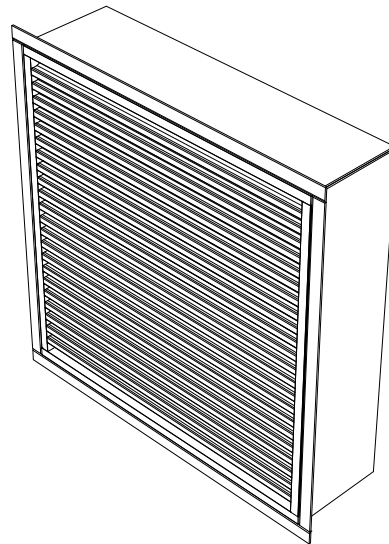
- MAXIMUM DESIGN PRESSURE IS +/- 300 PSF
- MINIMUM SINGLE SECTION SIZE IS 12" WIDE X 12" HIGH
- MAXIMUM SINGLE SECTION SIZE IS 72" WIDE X 60" HIGH OR 48" WIDE X 96" HIGH
- LARGER ASSEMBLIES CAN BE MADE BY STACKING SINGLE SECTIONS IN UNLIMITED WIDTH OR UNLIMITED HEIGHT, BUT NOT BOTH. REF. TABLE TO THE RIGHT FOR MAX. ASSEMBLY SIZES BASED ON INSTALLATION TYPE.

INSTALLATION TYPE	MAX. ASSEMBLY SIZE	MIN. WALL DEPTH	APPLICABLE DETAILS
JAMB ANGLE INSTALLATION	72" WIDE X UNLIMITED HIGH	REF. TABLE 1 ON SHEET 2	1 & 2 ON SHEET 2
HEAD/SILL ANGLE INSTALLATION	UNLIMITED WIDE X 96" HIGH	REF. TABLE 2 ON SHEET 3	3 THRU 6 ON SHEETS 3 & 4
UNIVERSAL SLEEVE INSTALLATION	72" WIDE X UNLIMITED HIGH OR UNLIMITED WIDE X 96" HIGH	5"	7 & 8 ON SHEET 5



**XP500WD WITH STANDARD CHANNEL FRAME**

N.T.S.  
REF. SHEET 2 FOR JAMB ANGLE INSTALLATION DETAILS  
REF. SHEETS 3 & 4 FOR HEAD/SILL ANGLE INSTALLATION DETAILS



**XP500WD WITH UNIVERSAL SLEEVE**

N.T.S.  
REF. SHEET 5 FOR UNIVERSAL SLEEVE INSTALLATION DETAILS

## ABBREVIATIONS:

C-C - CENTER TO CENTER  
LG - LONG  
MAX. - MAXIMUM  
MIN. - MINIMUM  
N.T.S. - NOT TO SCALE  
REF. - REFERENCE  
SIM. - SIMILAR

## DRAWING INDEX:

SHEET 1 - GENERAL INFORMATION & DRAWING INDEX  
SHEET 2 - JAMB ANGLE INSTALLATION DETAILS  
SHEET 3 - HEAD/SILL ANGLE INSTALLATION DETAILS  
SHEET 4 - HEAD/SILL ANGLE @ MULLIONS INSTALLATION DETAILS CONT'D  
SHEET 5 - UNIVERSAL SLEEVE INSTALLATION DETAILS

DATE	BY	CHK'D BY	DATE	REVISED BY	DATE	CHANGE LETTER	REVISION DESCRIPTION	DATE	CHK'D BY	REVISED BY	DATE
6/13/18	MMM	RDF	6/13/18	CJD	6/13/18						
								2000 DR. GIBBS RD. CHANDLER, AZ 84800			
GENERAL INFORMATION & DRAWING INDEX								XP500WD INSTALLATION			
								SHEET 1 OF 5			
								60-022486-00D			

**JAMB ANGLE INSTALLATION**

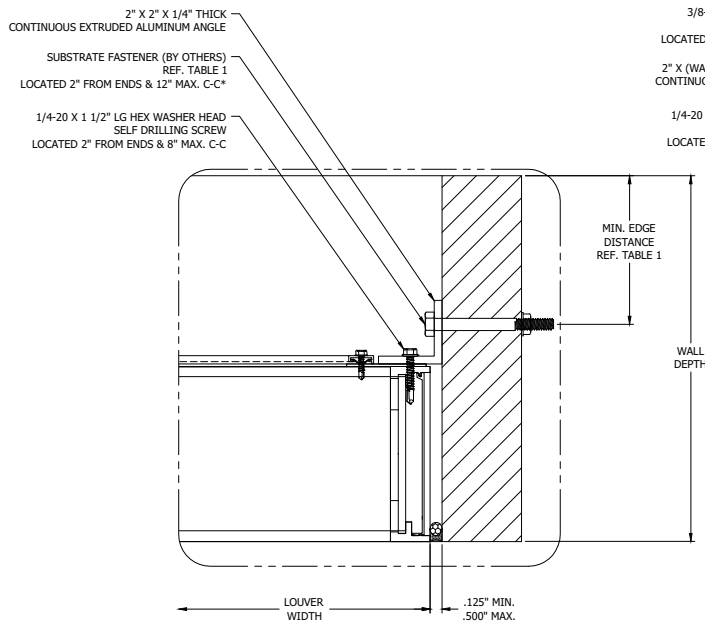
- ANGLES REQUIRED ONLY AT JAMBS
- MAXIMUM ASSEMBLY SIZE IS 72" WIDE X UNLIMITED HIGH
- ASSEMBLIES > 72" WIDE REQUIRE HEAD/SILL INSTALLATION - REF. SHEETS 3 & 4

RUSKIN DOES NOT DETERMINE THE STRUCTURAL INTEGRITY OF THE STRUCTURE. SUBSTRATE REQUIREMENTS GIVEN IN TABLE 1 ARE AS NEEDED FOR ANCHORAGE ONLY.

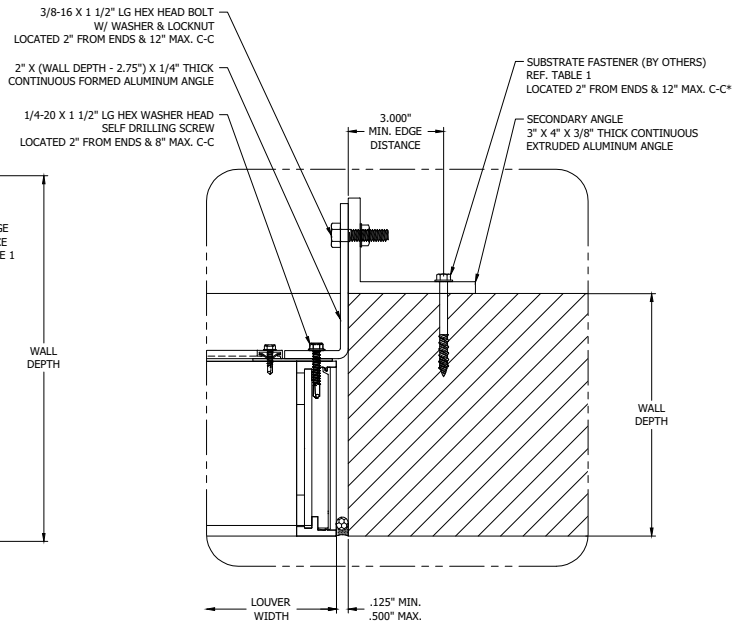
**TABLE 1 - JAMB ANGLE INSTALLATION CONDITIONS (BY OTHERS)**

SUBSTRATE TYPE	MIN. SUBSTRATE REQUIREMENTS	MIN. WALL DEPTH (FLUSH MOUNT)	FASTENER TYPE	MIN. EMBEDMENT	MIN. EDGE DISTANCE	SECONDARY ANGLE REQUIRED WHEN
WOOD	3" THICK	5"	3/8" DIA. BOLT W/ NUT, MIN. A307 GRADE A	FULL THREAD ENGAGEMENT	1 1/2"	WALL DEPTH ≤ 8.5"
STEEL	16 GA, 45 KSI TENSILE STRENGTH	5"	3/8" DIA. BOLT W/ NUT, MIN. A307 GRADE A	FULL THREAD ENGAGEMENT	5/8"	WALL DEPTH ≤ 7.5"
ALUMINUM	0.1875" THICK, 20 KSI TENSILE STRENGTH	5"	3/8" DIA. BOLT W/ NUT, MIN. A307 GRADE A	FULL THREAD ENGAGEMENT	5/8"	WALL DEPTH ≤ 7.5"
CONCRETE	3000 PSI COMP. STRENGTH	5"	3/8" DIA. DEWALT SCREW-BOLT+, CARBON STEEL	3 1/4"	3 1/2"	WALL DEPTH ≤ 10.5"
GROUT FILLED CMU*	ASTM C-90 BLOCK 1500 PSI GROUT COMP. STRENGTH	5"	3/8" DIA. DEWALT SCREW-BOLT+, CARBON STEEL	3 1/4"	3"	WALL DEPTH ≤ 10"

\*FOR GROUT FILLED CMU, FASTENER SPACING MUST BE REDUCED TO 6" MAX C-C



**1 JAMB INSTALLATION DETAIL**  
1 N.T.S.



**2 ALTERNATE JAMB INSTALLATION DETAIL**  
1 N.T.S.  
USED WHEN SECONDARY ANGLE REQUIRED PER TABLE 1

CHG. DATE	BY	REVISION DESCRIPTION	CHKD. DATE	APPV. DATE
6/1/18	MMM	RDF	6/13/18	CJD
6/13/18	DATE	DATE	DATE	DATE

		7800 DR. GERRARD RD. GRANDVIEW, MO 64030	PLOT SCALE: NONE ECR:
JAMB ANGLE INSTALLATION DETAILS		TITLE: XP500WD INSTALLATION	SHEET 2 OF 5
DWG. NO. 60-022486-00D			DATE:

**HEAD/SILL ANGLE INSTALLATION**

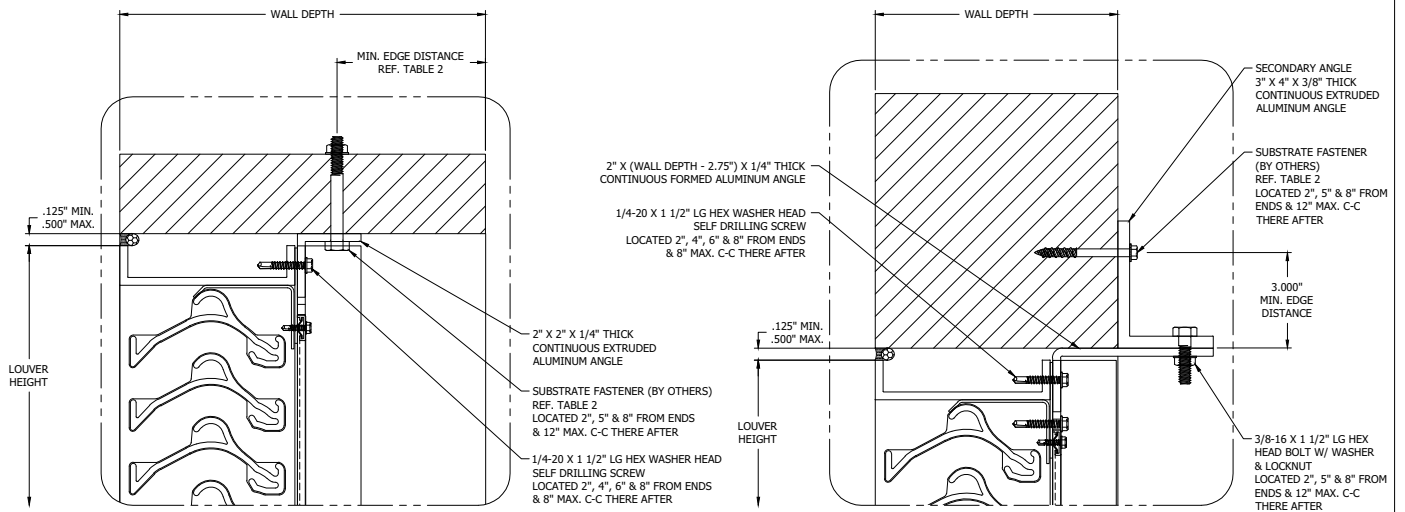
- ANGLES REQUIRED ONLY AT HEAD, SILL, AND MULLION SUPPORT. MULLION SUPPORT DETAILS ARE ON SHEET 3.
- MAXIMUM ASSEMBLY SIZE IS UNLIMITED WIDE X 96" HIGH
- ASSEMBLIES ≤ 72" WIDE MAY UTILIZE JAMB INSTALLATION - REF. SHEET 2

RUSKIN DOES NOT DETERMINE THE STRUCTURAL INTEGRITY OF THE STRUCTURE. SUBSTRATE REQUIREMENTS GIVEN IN TABLE 2 ARE AS NEEDED FOR ANCHORAGE ONLY.

**TABLE 2 - HEAD/SILL ANGLE INSTALLATION CONDITIONS (BY OTHERS)**

SUBSTRATE TYPE	MIN. SUBSTRATE REQUIREMENTS	MIN. WALL DEPTH (FLUSH MOUNT)	FASTENER TYPE	MIN. EMBEDMENT	MIN. EDGE DISTANCE	SECONDARY ANGLE REQUIRED WHEN	
WOOD	3" THICK	10"	3/8" DIA. BOLT W/ NUT, MIN. A307 GRADE A	FULL THREAD ENGAGEMENT	1 1/2"	N/A	
STEEL	16 GA, 45 KSI TENSILE STRENGTH	9"	3/8" DIA. BOLT W/ NUT, MIN. A307 GRADE A	FULL THREAD ENGAGEMENT	5/8"	N/A	
ALUMINUM	0.1875" THICK, 20 KSI TENSILE STRENGTH	9"	3/8" DIA. BOLT W/ NUT, MIN. A307 GRADE A	FULL THREAD ENGAGEMENT	5/8"	N/A	
CONCRETE	3000 PSI COMP. STRENGTH	11"	CONTINUOUS ANGLES	1/2" DIA. DEWALT SCREW-BOLT+, CARBON STEEL	4 1/4"	6"	WALL DEPTH ≤ 13"
			MULLION SUPPORT ANGLES**	3/8" DIA. DEWALT SCREW-BOLT+, CARBON STEEL	3 1/4"	2"	N/A
GROUT FILLED CMU	ASTM C-90 BLOCK 1500 PSI GROUT COMP. STRENGTH	11"	CONTINUOUS ANGLES	3/8" DIA. DEWALT SCREW-BOLT+, CARBON STEEL	3 1/4"	6"	WALL DEPTH ≤ 13"
			MULLION SUPPORT ANGLES**	3/8" DIA. DEWALT SCREW-BOLT+, CARBON STEEL	3 1/4"	2"	N/A

\*\*FOR CONCRETE AND GROUT FILLED CMU, ONLY ONE FASTENER PER MULLION SUPPORT ANGLE REQUIRED



**3 HEAD INSTALLATION DETAIL**  
N.T.S.  
SILL SIM.

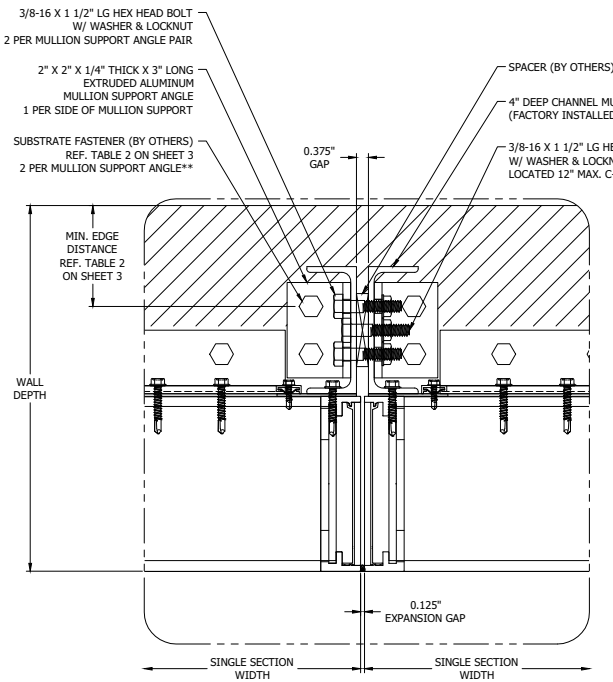
**4 ALTERNATE HEAD INSTALLATION DETAIL**  
N.T.S.  
USED WHEN SECONDARY ANGLE REQUIRED PER TABLE 2  
SILL SIM.

HEAD/SILL ANGLE INSTALLATION DETAILS FOR MULLIONS ARE CONTINUED ON SHEET 3

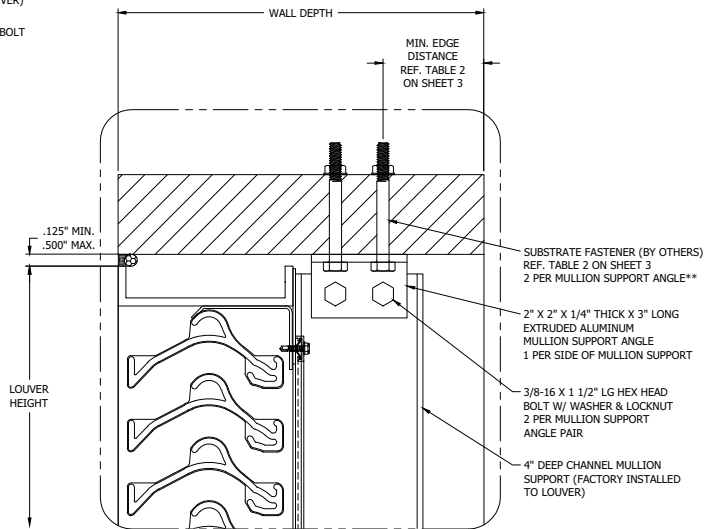
DATE	BY	CHK	APPV	REV	DESCRIPTION	DATE	BY	CHK	APPV	REV	DESCRIPTION	DATE	BY	CHK	APPV	REV	DESCRIPTION	
6/1/18	MMM	RDF	CJD			6/13/18												
												NONE EON:		SHEET 3 OF 5				
HEAD/SILL ANGLE INSTALLATION DETAILS												XPS00WD INSTALLATION		60-022486-00D				

**HEAD/SILL ANGLE INSTALLATION @ MULLIONS (CONTD)**

- MULLION SUPPORT REQUIRED FOR MULTIPLE SECTION WIDE ASSEMBLIES



5 MULLION SUPPORT INSTALLATION DETAIL  
1 N.T.S.

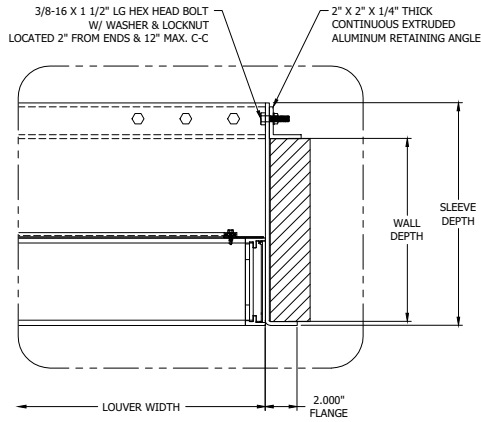


6 MULLION SUPPORT INSTALLATION DETAIL AT HEAD  
1 N.T.S., SILL SIM.

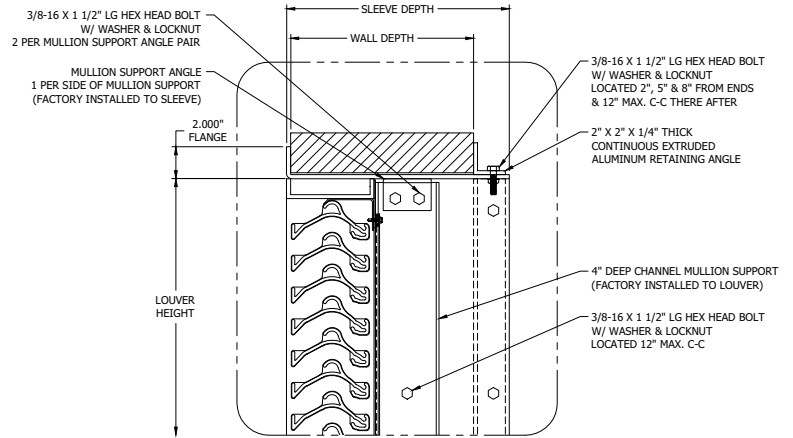
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
6/13/18	MMM	DATE	6/13/18	RDF	DATE	6/13/18	CJD	DATE	6/13/18		
CHANGE LETTERS REVISION DESCRIPTION NONE ECN:			DRAWN BY NONE CHECKED BY NONE APPROVED BY NONE DATE			TITLE XP500WD INSTALLATION SHEET 4 OF 5			DWG. NO. 60-022486-00D		

**UNIVERSAL SLEEVE INSTALLATION**

- UNIVERSAL SLEEVE & RETAINING ANGLE REQUIRED ON ALL SIDES.
- MAXIMUM ASSEMBLY SIZE IS 72" WIDE X UNLIMITED HIGH OR UNLIMITED WIDE X 96" HIGH
- MULLION SUPPORT REQUIRED FOR MULTIPLE SECTION WIDE ASSEMBLIES
- MINIMUM WALL DEPTH IS 5"



7 UNIVERSAL SLEEVE JAMB INSTALLATION DETAIL  
1 N.T.S.



8 UNIVERSAL SLEEVE HEAD INSTALLATION DETAIL  
1 N.T.S. STILL SIM.

DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY
6/1/18	MMM	6/13/18	RDF	6/13/18	CJD				
DRAWN		DATE		DATE		DATE		DATE	
6/1/18		6/13/18		6/13/18					
TITLE: UNIVERSAL SLEEVE INSTALLATION DETAILS PROJECT: XP500WD INSTALLATION						REVISION DESCRIPTION: 2000 OIL GREAVES RD GRANDVIEW, MO 64030 NONE		PLOT SCALE: NONE ECN: SHEET 5 OF 5	
DWG. NO.: 60-022486-00D									



3900 Dr. Greaves Rd.  
 Kansas City, MO 64030  
 (816) 761-7476  
 FAX (816) 765-8955  
 www.ruskin.com