

Application

The ECD-545-MD is engineered and tested to withstand extreme loads, debris impact, and cyclic fatigue associated with the severe weather effects of hurricanes (Miami-Dade County approval #18-1120.06). When combined with the optional factory-attached CD-51 damper in the closed position, the ECD-545-MD also protects against high-velocity wind-driven rain per AMCA 550 and TAS 100A. For installation, the ECD-545-MD is available either with standard continuous angles or with an optional factory installed sleeve which eliminates the need for direct anchorage to the substrate. The ECD-545-MD is AMCA 540 listed, making it ideally suited for use in hurricane-prone and wind borne debris regions per the International Building Code.

Standard Construction

Material: Mill finish 6063-T5 extruded aluminum.

Frame: 5" deep × 0.125" thick (127 × 3) channel.

Blades: 45° × 0.063" (1.6) thick horizontal drainable style.

Screen: 1/2" × 0.063" (12.7 × 1.6) expanded and flattened aluminum.

Mullion: Visible.

Minimum Size: 6" × 6" (152 × 152)
12" × 14" (305 × 356) with CD-51 option

Maximum Size: Single section: 60" × 144" (1524 × 3658)
Multiple section: Unlimited width × 144" (3658)
or 60" (1524) × unlimited height

Installation Hardware: Standard continuous angles and associated fasteners (anchors to substrate by others - refer to installation instructions)

Options

- ☐ Full sleeve and retaining angles (eliminates need for anchors to substrate; 1 1/2" (38) flange frame required).
- ☐ Factory finish:
 - ☐ High Performance Fluoropolymer - 100% resin Newlar®/ 70% resin Kynar®
 - ☐ Baked Enamel
 - ☐ Clear or Color Anodized, Class 1
 - ☐ Prime Coat
- ☐ 1 1/2" (38) flange frame.
- ☐ Alternate bird or insect screens.
- ☐ Insulated or non-insulated blank-off panels.
- ☐ Head and/or sill flashing.
- ☐ Filter racks.
- ☐ CD-51 damper.
- ☐ Burglar bars:
 - ☐ Shipped loose
 - ☐ Shipped mounted

Ratings

Free Area: [48" × 48" (1219 × 1219) unit]: 6.7 ft² (0.62 m²)
41.9%

Performance @ Beginning Point of Water Penetration

Free Area Velocity: Above 1250 fpm (6.35 m/s)

Air Volume Delivered: Above 8388 cfm (3.96 m³/s)

Pressure Loss: 0.21 in.wg. (52 Pa)

Velocity @ 0.15 in.wg. Pressure Loss: 1057 fpm (5.37 m/s)

AMCA 540 (impact resistant) listed

AMCA 550 (high velocity rain resistant) listed

Applies when the CD-51 damper option is utilized and the damper is in the closed position.

Miami Dade County: NOA No. 18-1120.06 (Expires 10/23/2023)

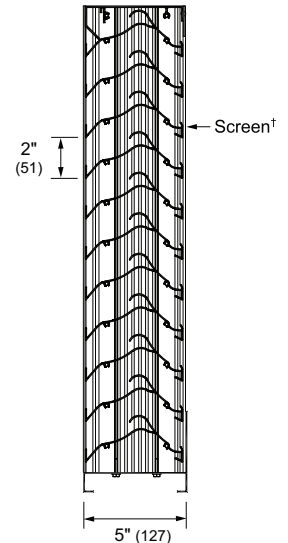
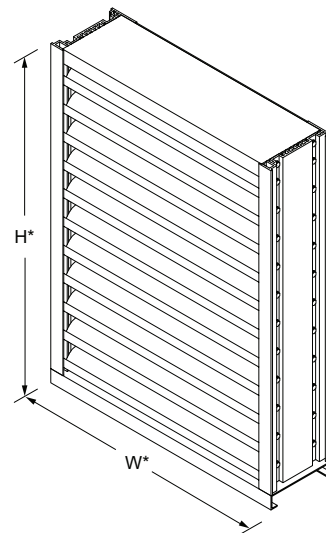
Approved to FBC TAS202-94, TAS201-94
and TAS203-94.

Approved for FBC TAS 100(A)-95 when CD-51 damper option is specified.

Florida Building Code Approval (2017-FBC): No. FL17876.1

Texas Department of Insurance listed

Design Load: 150 psf

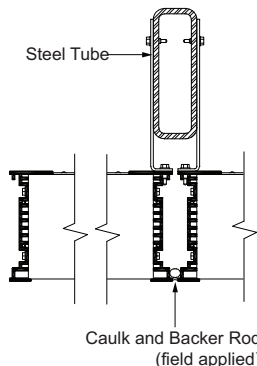


Model **ECD-545-MD**
(standard)

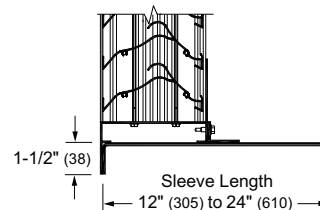
*Louvers dimensions furnished approximately 1/2" (13) undersize.

Vertical Section

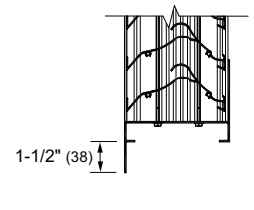
†Screen adds approximately 3/16" (5) to louver depth.



Visible Vertical Mullion
(standard)



Sleeve
(optional)



Flange Frame
(optional)



Certified Ratings:

Pottorff certifies that the model ECD-545-MD shown herein is licensed to bear the AMCA seal. The ratings shown are based on test 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, water penetration and wind-driven rain ratings.



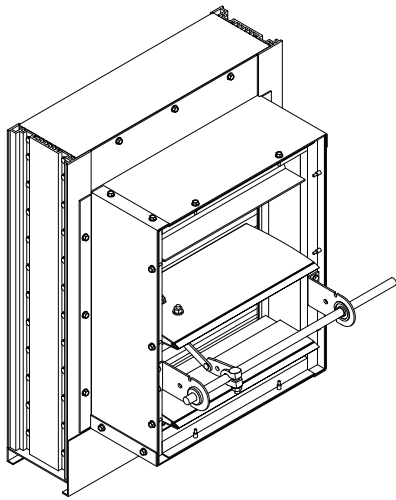
**HIGH VELOCITY
RAIN RESISTANT
AND IMPACT RESISTANT
LOUVER**
Enhanced Protection

See www.AMCA.org for all certified or listed products

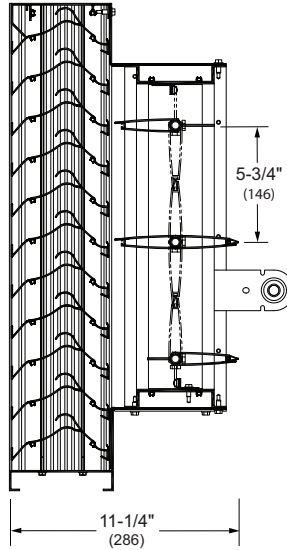
This label does not signify AMCA airflow performance certification.

Certified Ratings:

Pottorff certifies that the model ECD-545-MD shown herein is approved to bear the AMCA Listing Label. The ratings shown are based on tests and procedures performed in accordance with AMCA publications and comply with the requirements of the AMCA Listing Label Program. The AMCA Listing Label applies to High Velocity Rain and Impact resistance.



Rear View w/CD-51
(optional)



Vertical Section w/CD-51
(optional)



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**HIGH VELOCITY
RAIN RESISTANT
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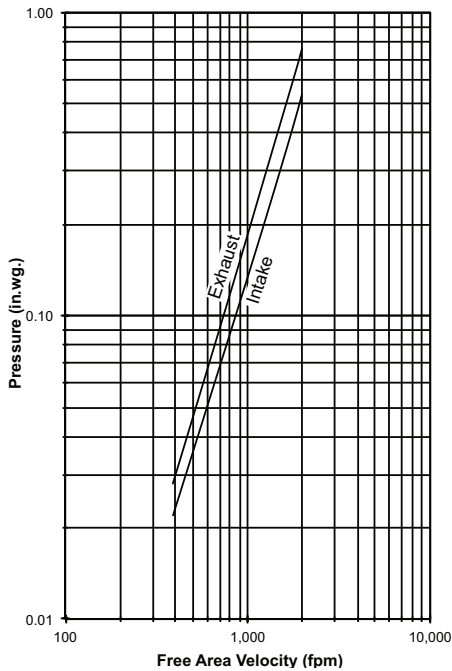
Free Area (ft²)

Width (Inches)

Height (Inches)

	6	12	18	24	30	36	42	48	54	60
6	0.00	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.2	0.3	0.5	0.6	0.7	0.9	1.0	1.1	1.3
18	0.1	0.4	0.6	0.9	1.1	1.4	1.7	1.9	2.2	2.5
24	0.1	0.5	0.9	1.3	1.7	2.1	2.5	2.9	3.3	3.7
30	0.2	0.7	1.2	1.8	2.3	2.8	3.3	3.9	4.4	4.9
36	0.2	0.9	1.5	2.2	2.8	3.5	4.1	4.8	5.5	6.1
42	0.3	1.0	1.8	2.6	3.4	4.2	5.0	5.8	6.5	7.3
48	0.3	1.2	2.1	3.1	4.0	4.9	5.8	6.7	7.6	8.5
54	0.3	1.4	2.4	3.5	4.5	5.6	6.6	7.7	8.7	9.8
60	0.4	1.6	2.7	3.9	5.1	6.3	7.4	8.6	9.8	11.0
66	0.4	1.7	3.0	4.3	5.7	7.0	8.3	9.6	10.9	12.2
72	0.5	1.9	3.3	4.8	6.2	7.7	9.1	10.5	12.0	13.4
78	0.5	2.1	3.7	5.2	6.8	8.3	9.9	11.5	13.0	14.6
84	0.6	2.3	4.0	5.6	7.3	9.0	10.7	12.4	14.1	15.8
90	0.6	2.4	4.3	6.1	7.9	9.7	11.6	13.4	15.2	17.0
96	0.7	2.6	4.6	6.5	8.5	10.4	12.4	14.3	16.3	18.2
102	0.7	2.8	4.9	6.9	9.0	11.1	13.2	15.3	17.4	19.5
108	0.7	3.0	5.2	7.4	9.6	11.8	14.0	16.2	18.5	20.7
114	0.8	3.1	5.5	7.8	10.2	12.5	14.8	17.2	19.5	21.9
120	0.8	3.3	5.8	8.2	10.7	13.2	15.7	18.1	20.6	23.1
126	0.9	3.5	6.1	8.7	11.3	13.9	16.5	19.1	21.7	24.3
132	0.9	3.6	6.4	9.1	11.8	14.6	17.3	20.1	22.8	25.5
138	1.0	3.8	6.7	9.5	12.4	15.3	18.1	21.0	23.9	26.7
144	1.0	4.0	7.0	10.0	13.0	16.0	19.0	22.0	25.0	27.9

Pressure Loss (Standard Air Density @ 0.075 lbs./ft.)



Louver Test Size = 48" x 48" (1219 x 1219)
Pressure loss tested in accordance with Figure 5.5 of
AMCA Standard 500-L.

AMCA defines the beginning point of water penetration as the free area velocity at the intersection of a simple linear regression of test data and the line of 0.01 ounces of water per square foot of free area and is measured through a 48" x 48" louver during a 15 minute period. The AMCA water penetration test provides a method for comparing louver models and designs as to their efficiency in resisting the penetration of rainfall under specific lab conditions. Pottorff recommends that intake louvers are selected with a reasonable margin of safety below the beginning point of water penetration in order to avoid unwanted penetration during severe storm conditions.

Selection Criteria

Follow the steps listed below to calculate the louver size needed to satisfy the required air volume while minimizing the adverse effects of water penetration and pressure loss.

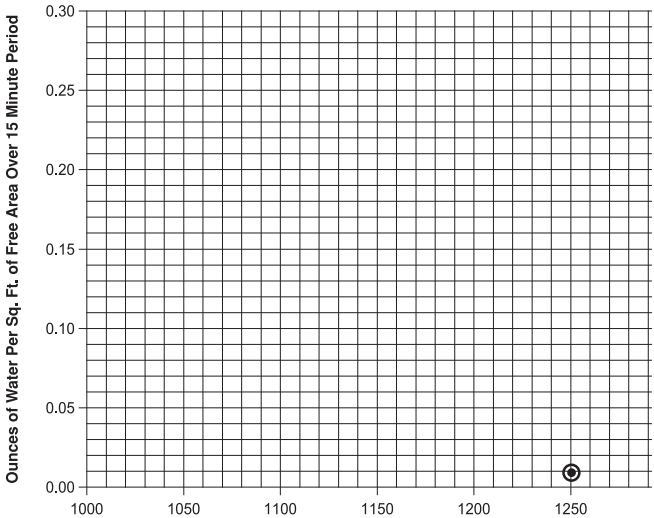
1. Determine the Free Area Velocity (FAV) at the maximum allowable pressure loss using the *Pressure Loss* chart to the left. While job conditions vary, typically, the maximum allowable pressure loss should not exceed 0.15 in.wg., and the FAV for 0.15 in.wg. pressure loss is listed on the front page of this sheet.
2. **Intake Applications** If the FAV at the Beginning Point of Water Penetration (shown below) is less than the FAV from step 1, then use the FAV at the Beginning Point of Water Penetration in step 3, otherwise use the FAV from step 1.
- Exhaust Applications** Use the FAV from step 1 in step 3.
3. Calculate the total louver square footage required using the following equation.

$$\frac{\text{Required Air Volume}}{\text{cfm}} \div \frac{\text{FAV}}{\text{fpm}} = \frac{\text{ft}^2}{\text{Required Louver (Free-Area) Size in ft}^2}$$

4. Using the *Free Area* chart above, select a louver width and height that yields a free area ft² greater than or equal to the required louver size calculated in step 3.

Water Penetration

Beginning Point of Water Penetration = Above 1250 fpm



Wind Driven Rain Performance - AMCA 500L Wind-Driven Rain Test

3 in/hr Rainfall & 29 mph Wind Speed				8 in/hr Rainfall & 50 mph Wind Speed			
Airflow	Core Velocity ¹	Effectiveness	Class ²	Airflow	Core Velocity ¹	Effectiveness	Class ²
7361 cfm	684 fpm	99.4%	A	8478 cfm	787 fpm	96.0%	B
Discharge Loss Coefficient Class ³ (Intake) = 2							

NOTES

1. Core area is the open area of the louver face (face area less louver frame).
Test louver core area is 39-3/8" x 39-3/8" (1000 x 1000)

2. Wind-Driven Rain Penetration Classes:

Class	Effectiveness
A	99% and Above
B	95% to 98.9%
C	80% to 94.9%
D	Below 80%

3. Discharge Loss Coefficient Classes:

Class	Effectiveness
1	0.4 and Above
2	0.3 to 0.399
3	0.2 to 0.299
4	Below 0.2

Discharge Loss Coefficient is calculated by dividing the louver's actual airflow rate by the theoretical airflow rate for an unobstructed opening. The higher the coefficient, the lower the resistance to airflow.