

# Model: IC-638

ASTM E330-02  
TAS 202-94  
FL#: FL11048.2

## Extruded Aluminum Louver – Mounting Option #4 Shown

### APPLICATION:

IC-638 is an extruded louver designed specifically to meet the following Miami Dade County test requirements and protocols:

- **ASTM E330-02** (Uniform Static Air Pressure Test)
- **TAS 202-94** (Uniform Static Air Pressure test)

Based on single section testing of an 84" w x 120" h and 48" w x 48" h sample with a maximum design load pressure of 60-psf.

### STANDARD SPECIFICATIONS:

**Frame:** Heavy gauge 6" x .125" thick 6063T5 extruded aluminum. Flanged Bottom Seal

**Blade:** Drainable design .125" thick 6063T5 extruded aluminum, mechanically fastened to jambs, set on 38° angles. Blades are spaced at 4.75" apart. (Bottom blade opening varies).

**Birdscreen:** Standard .0516 x 3/4" flattened expanded aluminum.

**Aluminum Angle:** 2" x 2" x 3/16".

**10 ga. Aluminum Sleeve:** 12" long min. – 24" long max, with flange for ease of Vertical Blade Support: 1 support on any louver bigger than 48" x 48"

### MINIMUM SIZE:

12" w X 12" h

**57% Free Area**

### MAXIMUM SIZE:

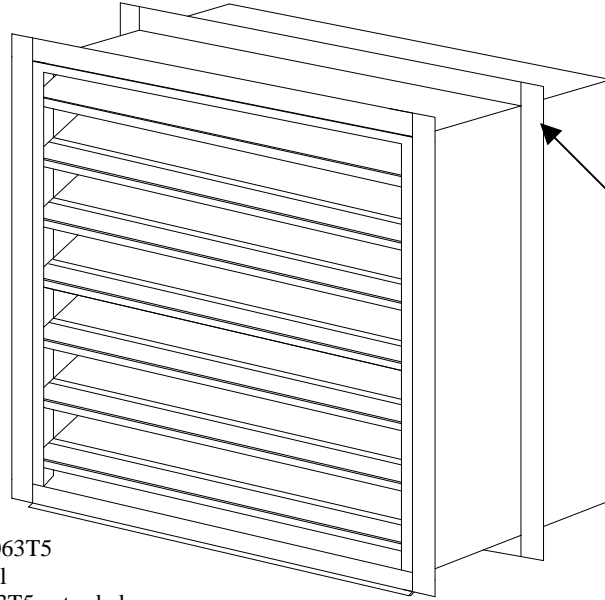
84" w X 120" h Single Section. Unlimited width x 120" h sectional.

### OPTIONS:

- |                    |                   |                              |
|--------------------|-------------------|------------------------------|
| { Insect Screen    | { Enamel Finish   | { Mill Finish (Standard)     |
| { Trim Flange      | { Kynar Finish    | { Sleeve Length Inches _____ |
| { Non-Flanged Sill | { Anodized Finish |                              |

### FEATURES:

- Built in bottom flange to divert water away from building.
- Louver may be used in approved masonry or wood structure walls.
- 57% Free Area
- Published performance ratings based on testing in accordance with AMCA Standard 500-L.

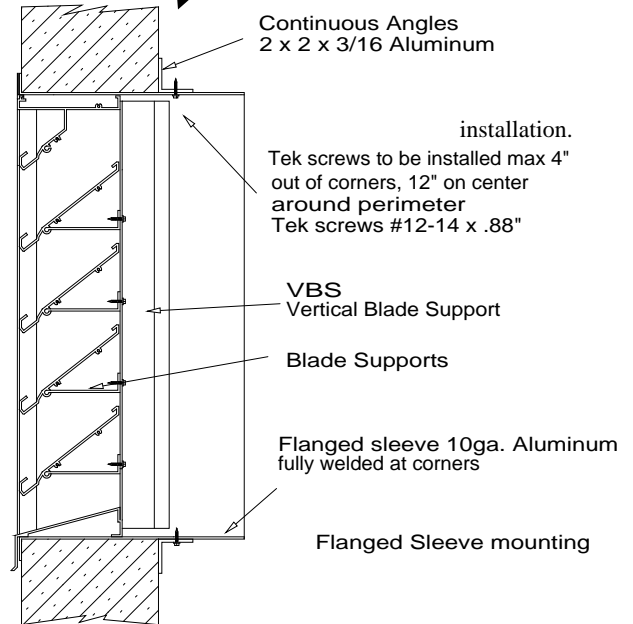


**Max Wind load ±60 psf**

### Ease of Installation!

IC-638-4 can be mounted without the use of mechanical fasteners to the substructure!

## Mounting Option #4



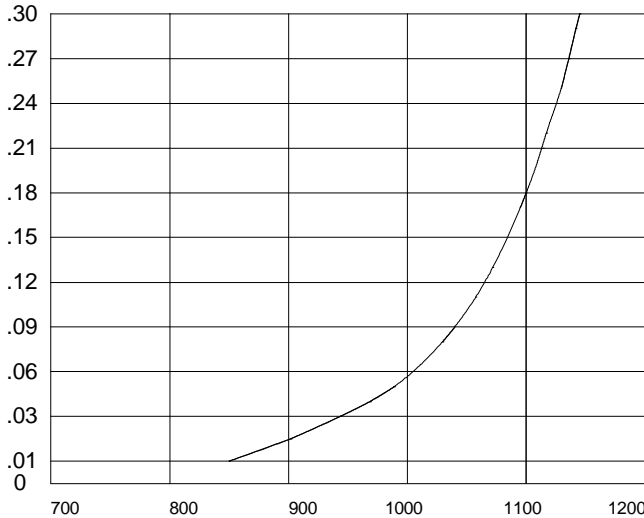
Note: All IC-638 louvers are built 1/2" under size both directions unless ordered actual size. Sleeved louvers are built 1/2" under size both directions to outside of sleeves unless ordered actual size.

**LEADER**  
Dampers & Louvers

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A Division of Leader Industries, Inc.

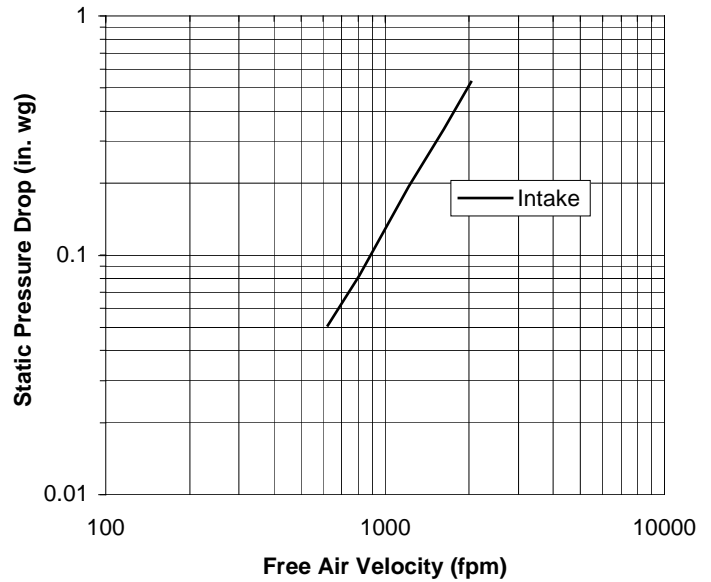


**Water Penetration Chart**

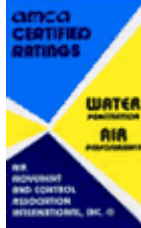


Water Penetration beginning point is 845.4 fpm Free Area Velocity. Data applies to test size of 48" x 48" IC-638 sample. Test duration was 15 min.

**Airflow Resistance**



Ratings do not include the effect of birdscreen. The graph above is based on a test size of 48" x 48".



Leader Industries, Inc. certifies that the model IC-638 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 Seal applies to Water Penetration and Air Performance ratings only.

## DC-638 Specifications

Louvers meeting the following specifications shall be furnished and installed where shown on the plans and or schedules. Louvers shall be stationary type with horizontal drainable blades in a 6 in. deep frame. Louvers shall conform to South Florida Building Code, (Miami Dade County), Protocols: PA 201-94, PA 202-94, and PA 203-94 based on a maximum design load of 160 lbs/sq ft. (Corresponds with a 250 mph wind), when mounted within a concrete, masonry block or structural steel framed opening. Louver blade and frame materials to be 0.125 in. thick 6063T5 extruded aluminum. Louver blades shall be positioned at 38° angles on approximately 4.75 in. centers. Louver blades shall be both mechanically fastened with Tek Screws and welded to the frame. All welding to louver blades shall be on backside to maintain aesthetic appearance. Louver sections for openings larger than 84 in. wide shall have factory supplied mullions contained within the jamb for smooth uninterrupted appearance. Louver performance data shall be licensed under the AMCA Certified Rating Program, and shall bear the AMCA Certified Ratings Seal. This licensed performance data shall include airflow pressure loss and water penetration, and shall demonstrate performance equal to or better than the Leader model specified.



# Model IC-638 Extruded Aluminum Louver

## CFM and Free Area Selection Chart

		Louver Width (in.)												
		12	18	24	30	36	42	48	54	60	66	72	78	84
Louver Height (in.)	12	0.36 306	0.59 502	0.82 697	1.05 893	1.28 1088	1.52 1292	1.75 1488	1.98 1683	2.21 1879	2.44 2074	2.67 2270	2.91 2474	3.14 2669
	18	0.64 544	1.06 901	1.48 1258	1.89 1607	2.31 1964	2.73 2321	3.14 2669	3.49 2967	3.98 3383	4.39 3732	4.81 4089	5.23 4446	5.64 4794
	24	0.84 714	1.38 1173	1.92 1632	2.46 2091	3.01 2559	3.55 3018	4.09 3477	4.63 3936	5.18 4403	5.72 4862	6.26 5321	6.80 5780	7.35 6248
	30	1.12 952	1.85 1573	2.58 2193	3.30 2805	4.03 3426	4.76 4046	5.48 4658	6.21 5279	6.94 5899	7.66 6511	8.39 7132	9.12 7752	9.85 8373
	36	1.41 1199	2.32 1972	3.23 2746	4.14 3519	5.05 4293	5.97 5075	6.88 5848	7.79 6622	8.70 7395	9.61 8169	10.53 8951	11.44 9724	12.35 10498
	42	1.69 1437	2.78 2363	3.88 3298	4.98 4233	6.07 5160	7.17 6095	8.26 7021	9.36 7956	10.45 8883	11.55 9818	12.64 10744	13.74 11679	14.83 12606
	48	1.86 1581	3.07 2610	4.28 3638	5.49 4667	6.70 5695	7.90 6715	9.11 7744	10.32 8772	11.53 9801	12.74 10829	13.95 11858	15.15 12878	16.36 13906
	54	2.17 1845	3.57 3035	4.98 4233	6.38 5423	7.79 6622	9.20 7820	10.60 9010	12.01 10209	13.41 11399	14.82 12597	16.23 13796	17.63 14986	19.04 16184
	60	2.45 2083	4.04 3434	5.63 4786	7.22 6137	8.81 7489	10.40 8840	11.99 10192	13.58 11543	15.17 12895	16.76 14246	18.35 15598	19.94 16949	21.53 18301
	66	2.74 2329	4.51 3834	6.28 5338	8.06 6851	9.83 8356	11.61 9869	13.38 11373	15.15 12878	16.93 14391	18.70 15895	20.48 17408	22.25 18913	24.03 20426
	72	2.93 2491	4.83 4106	6.74 5729	8.64 7344	10.54 8959	12.44 10574	14.34 12189	16.25 13813	18.15 15428	20.05 17043	21.95 18658	23.86 20281	25.76 21896
	78	3.21 2729	5.30 4505	7.38 6273	9.47 8050	11.55 9818	13.64 11594	15.72 13362	17.81 15139	19.89 16907	21.98 18683	24.06 20451	26.15 22228	28.23 23996
	84	3.50 2975	5.77 4905	8.04 6834	10.31 8764	12.57 10685	14.84 12614	17.11 14544	19.38 16473	21.65 18403	23.92 20332	26.19 22262	28.46 24191	30.73 26121
	90	3.78 3213	6.23 5296	8.69 7387	11.14 9469	13.59 11552	16.05 13643	18.50 15725	20.95 17808	23.40 19890	25.86 21981	28.31 24064	30.76 26146	33.22 28237
	96	3.98 3383	6.56 5576	9.14 7769	11.72 9962	14.30 12155	16.87 14340	19.45 16533	22.03 18726	24.61 20919	27.19 23112	29.77 25305	32.35 27498	34.93 29691
	102	4.26 3621	7.02 5967	9.79 8322	12.55 10668	15.32 13022	18.08 15368	20.84 17714	23.61 20069	26.37 22415	29.13 24761	31.90 27115	34.66 29461	37.43 31816
108	4.54 3859	7.49 6367	10.44 8874	13.39 11382	16.33 13881	19.28 16388	22.23 18896	25.18 21403	28.12 23902	31.07 26410	34.02 28917	36.97 31425	39.91 33924	
114	4.74 4029	7.82 6647	10.90 9265	13.97 11875	17.05 14493	20.12 17102	23.20 19720	26.28 22338	29.35 24948	32.43 27566	35.51 30184	38.58 32793	41.66 35411	
120	5.02 4267	8.28 7038	11.54 9809	14.80 12580	18.06 15351	21.31 18114	24.57 20885	27.83 23656	31.09 26427	34.35 29198	37.61 31969	40.86 34731	44.12 37502	

This Table has been developed to assist in application and selection of these louvers. Two numbers are shown for each louver size. The upper number represents the sq. ft. of louver free area for each louver size. The lower number shows CFM of air flow permitted when selecting an intake louver at the point of zero water penetration.

Pressure drop when using this selection Guide for an intake louver will be .055 in. W.G. Louvers may be selected at other operating points on the Performance Curves if desired using the formula:  
 $CFM = \text{Free Area (sq. ft.)} \times \text{Free Area Velocity (FPM)}$

**Free Area Chart** **IC-638**  
Nominal Louver Width in Inches

	12	18	24	30	36	42	48	54	60	66	72	78	84
<b>12</b>	0.36	0.59	0.82	1.05	1.28	1.52	1.75	1.98	2.21	2.44	2.67	2.91	3.14
<b>18</b>	0.64	1.06	1.48	1.89	2.31	2.73	3.14	3.49	3.98	4.39	4.81	5.23	5.64
<b>H 24</b>	0.84	1.38	1.92	2.46	3.01	3.55	4.09	4.63	5.18	5.72	6.26	6.80	7.35
<b>E 30</b>	1.12	1.85	2.58	3.30	4.03	4.76	5.48	6.21	6.94	7.66	8.39	9.12	9.85
<b>I 36</b>	1.41	2.32	3.23	4.14	5.05	5.97	6.88	7.79	8.70	9.61	10.53	11.44	12.35
<b>G 42</b>	1.69	2.78	3.88	4.98	6.07	7.17	8.26	9.36	10.45	11.55	12.64	13.74	14.83
<b>H 48</b>	1.86	3.07	4.28	5.49	6.70	7.90	9.11	10.32	11.53	12.74	13.95	15.15	16.36
<b>T 54</b>	2.17	3.57	4.98	6.38	7.79	9.20	10.60	12.01	13.41	14.82	16.23	17.63	19.04
<b>60</b>	2.45	4.04	5.63	7.22	8.81	10.40	11.99	13.58	15.17	16.76	18.35	19.94	21.53
<b>I 66</b>	2.74	4.51	6.28	8.06	9.83	11.61	13.38	15.15	16.93	18.70	20.48	22.25	24.03
<b>N 72</b>	2.93	4.83	6.74	8.64	10.54	12.44	14.34	16.25	18.15	20.05	21.95	23.86	25.76
<b>C 78</b>	3.21	5.30	7.38	9.47	11.55	13.64	15.72	17.81	19.89	21.98	24.06	26.15	28.23
<b>H 84</b>	3.50	5.77	8.04	10.31	12.57	14.84	17.11	19.38	21.65	23.92	26.19	28.46	30.73
<b>E 90</b>	3.78	6.23	8.69	11.14	13.59	16.05	18.50	20.95	23.40	25.86	28.31	30.76	33.22
<b>S 96</b>	3.98	6.56	9.14	11.72	14.30	16.87	19.45	22.03	24.61	27.19	29.77	32.35	34.93
<b>102</b>	4.26	7.02	9.79	12.55	15.32	18.08	20.84	23.61	26.37	29.13	31.90	34.66	37.43
<b>108</b>	4.54	7.49	10.44	13.39	16.33	19.28	22.23	25.18	28.12	31.07	34.02	36.97	39.91
<b>114</b>	4.74	7.82	10.90	13.97	17.05	20.12	23.20	26.28	29.35	32.43	35.51	38.58	41.66
<b>120</b>	5.02	8.28	11.54	14.80	18.06	21.31	24.57	27.83	31.09	34.35	37.61	40.86	44.12

**IC-638 Selection and Examples**

**Example 1:**

Airflow given as 10000 cfm – select louver size.

- A. Determine louver free area by dividing airflow by free area velocity (do not exceed 845 fpm on intake louver application).

$$\frac{10000 \text{ cfm}}{\text{Airflow}} \div \frac{845 \text{ fpm}}{\text{Free Area Velocity}} = \frac{11.84 \text{ ft.}^2}{\text{Required Louver Free Area}}$$

- B. Select a louver with at least the required free area from **Free Area Chart** above. Louver size = **54" W x 54" H**  
12.01 ft.<sup>2</sup> free area  
833 fpm free area velocity (10000 cfm ÷ 12.01 ft.<sup>2</sup> F.A.)

- C. Check the pressure drop of the selected louver at the given airflow (pressure drop chart on page 2).  
ΔP at 833 fpm = .08 in. wg  
Free Area Velocity      Pressure Drop

**Example 2:**

Louver size given as 48" x 48" – determine maximum intake airflow.

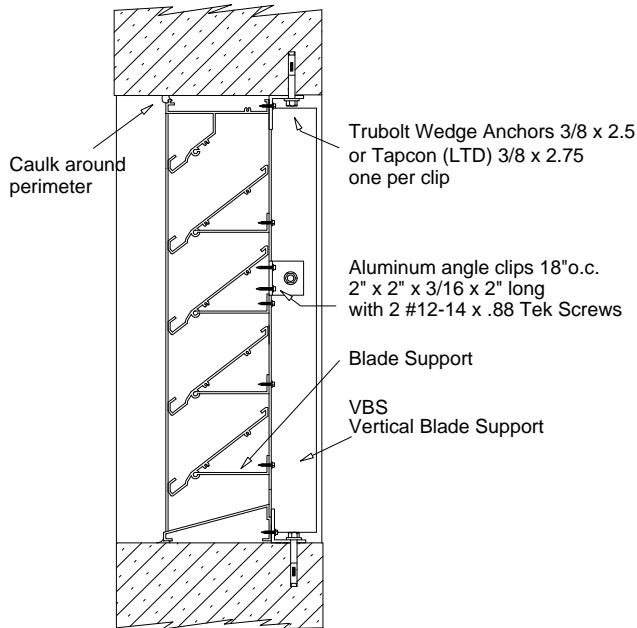
- A. Use **Free Area Chart** to determine  
Free Area = 9.11 ft.<sup>2</sup>

- B. Multiply Free Area x Free Area Velocity (Do not exceed 845 fpm on intake louver applications).  
9.11 ft.<sup>2</sup> x 845 fpm = 7702 cfm  
Free Area      Free Area Velocity      Maximum Airflow

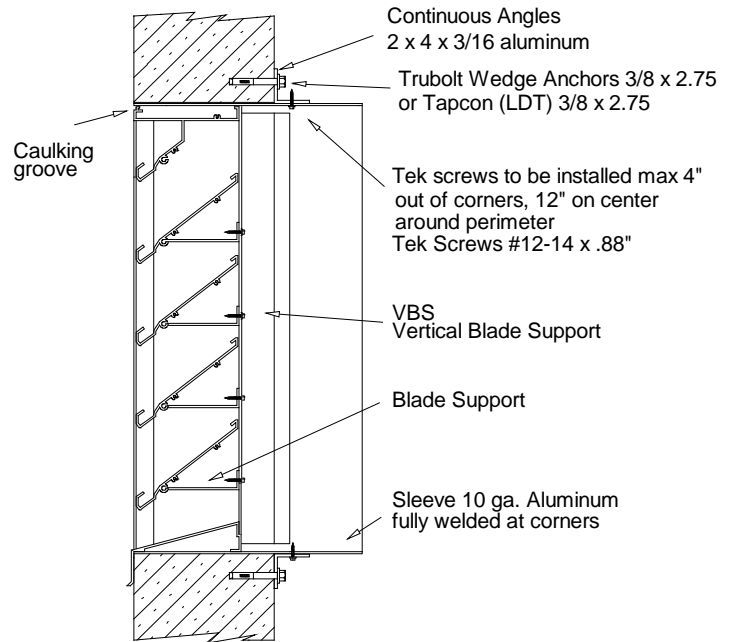
- C. Check the pressure drop of the selected louver at the given airflow (**Pressure Drop Chart** on page 2).  
ΔP at 845 fpm = .08 in. wg  
Free Area Velocity      Pressure Drop

# Installation Instructions

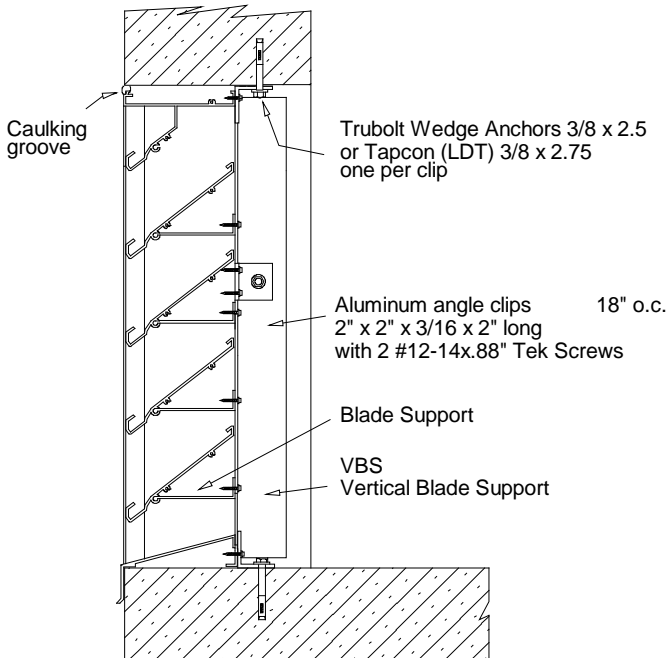
## Leader Model IC-638



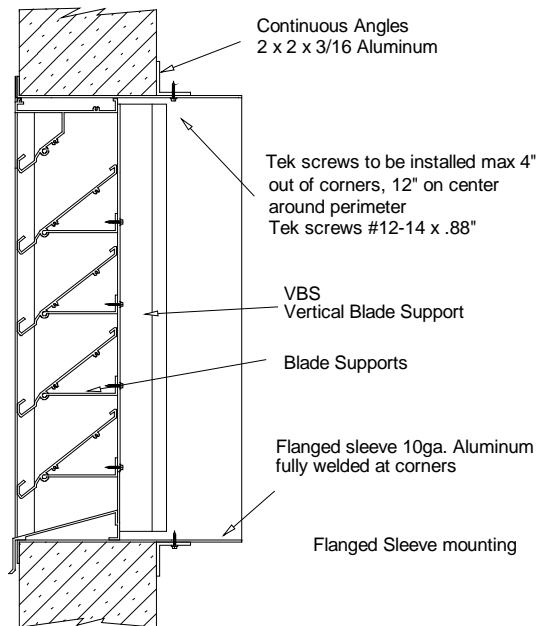
**Fig. 1 – IC-638-1**



**Fig. 3 – IC-638-3**



**Fig. 2 – IC-638-2**



**Fig. 4 – IC-638-4**

See following page(s) for installation details:

## Models IC-638-1, IC-638-2:

1. **Anchoring into Concrete or Masonry:** See **Fig. 1 & 2**, Model **IC-638-1, IC-638-2** for detailed instructions.
2. Install louver into opening. Shim as required at each set of installation anchors using load-bearing shims. Max allowable shim stack to be  $\frac{1}{4}$ ". Use shims where space greater than  $\frac{1}{16}$ " is present. Fasten angle clips to IC-638-1 louver with two (2) # 12-14 x .88 TEK screws. Use  $\frac{3}{8}$ " Dia. Trubolt wedge anchors of sufficient length to achieve min. of 3" embedment into concrete or masonry with min. 3" edge distance.
3. **Anchoring into Wood Frame Substrate:** Use  $\frac{7}{16}$ " Dia. Lag Screws of sufficient length to achieve  $3\frac{1}{2}$ " min. embedment into wood framing with min. 3" edge distance.
4. Seal louver opening to perimeter using backing rod and sealant (by others). For correct anchor spacing according to opening size, and for more detailed drawing see FL# - FL11048.2.

## Model IC-638-3

1. **Anchoring into Concrete or Masonry:** See **Fig. 3** Model **IC-638-3** for detailed instructions.
2. Install louver into opening. Shim as required at each set of installation anchors using load-bearing shims. Max allowable shim stack to be  $\frac{1}{4}$ ". Use shims where space greater than  $\frac{1}{16}$ " is present. Fasten continuous angle to IC-638-3 louver sleeve with # 12-14 x .88 TEK screws, spacing as follows: **Head and Sill** - at 8" from corners, 13" O.C. **Jambs** - at 6" from corners, 18" O.C. Attach continuous angle, (with same fastener spacing as TEK screws), to concrete or masonry using  $\frac{3}{8}$ " Dia. Trubolt wedge anchors of sufficient length to achieve min. of 3" embedment into concrete or masonry with min. 3" edge distance.
3. **Anchoring into Wood Frame Substrate:** Use  $\frac{7}{16}$ " Dia. Lag Screws of sufficient length to achieve  $3\frac{1}{2}$ " min. embedment into wood framing with min. 3" edge distance.
4. Seal louver opening to perimeter using backing rod and sealant (by others). For more detailed drawings and instructions see FL# - FL11048.2.

## Model IC-638-4

1. Install louver into opening. Shim as required using load-bearing shims. Max allowable shim stack to be  $\frac{1}{4}$ ". Use shims where space greater than  $\frac{1}{16}$ " is present.
2. Attach Sleeve to the continuous angle with #12-14 x .88 TEK screws. Spacing as follows: **Head and Sill** - at 8" from corners,  $13\frac{1}{2}$ " O.C. **Jambs** - at 6" from corners, 12" O.C. Trubolt wedge anchors or lag screws are not used for this configuration.
3. This configuration of the IC-638 Louver System is not mechanically fastened to the substrate.
4. Seal louver opening to perimeter using backing rod and sealant (by others). For more detailed drawings and instructions see FL# - FL11048.2.

## **IC-638 Series Hurricane Louver Specifications**

The IC-638 Series Louvers shall have been tested and successfully passed the following test requirements and protocols necessary to carry a Florida State License Number.

- A. ASTM E330-02 (Uniform Static Air Pressure Test)
- B. TSA 202-94 (Uniform Static Air Pressure Test)
- C. Maximum Wind Load of 60 pounds per square foot.

All **IC-638** six inch deep Hurricane Louvers have also been tested and certified for air performance and water penetration and are in compliance with the requirements of **AMCA** Standard 500 and carry the appropriate seal.

The **IC-638** six inch deep Hurricane Louvers is a drainable blade design utilizing integral water drains within the louver jambs to carry water away from the outer face. Louver Blades, Jamb Headers and Sills shall be constructed of a minimum of .125 thick extruded 6063T5 aluminum alloy. A .0516 thick x 3/4" flattened expanded aluminum bird screen attached to the rear of the louver shall be standard.

The **IC-638** Mounting Method 4, six inch deep Hurricane Louvers incorporates a factory furnished sleeve (12" minimum up to a 24" maximum length) with fully welded corners constructed of a minimum of .101" thick aluminum. Sleeve to incorporate a standard formed 1.5" (2" optional) wide mounting flange located on the front side of the louver. Factory provided retaining angles are positioned on the face of the inside wall and attached to the sleeve by means of screws. No drilling of the support walls or building structure is necessary to secure the louver in the prepared opening. All screws shall be caulked after installation to obtain a watertight seal.

All Severe Duty Hurricane Louvers shall incorporate factory provided weep opening in the bottom corners of the louver assembly to drain any water carry over due to excessively high wind driven rain.

Acceptable manufacturers

1. Leader Dampers & Louvers Model IC-638, Mounting Methods 1, 2, 3 or 4 as applicable.