

HURRICANE LOUVERS

BUILDING CODE OVERVIEW

The devastating impact of Hurricane Andrew in 1992 resulted in the adoption of more robust building codes. Pottorff meets and exceeds these enhanced code requirements.



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HURRICANE
LOUVERS

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CURRENT U.S. HURRICANE LOUVER REQUIREMENTS:

State of Florida – Florida Building Code (FBC) and Florida Mechanical Code (FMC)

Atlantic and Gulf of Mexico Coasts outside of Florida – International Building Code (IBC) and International Mechanical Code (IMC).

To determine the appropriate edition of the codes per region, reference ICC's code adoption site at www.iccsafe.org/adoptions.

Miami-Dade and Broward Counties – Miami-Dade County launched a product control program, with testing and approval requirements for a wide variety of building materials and products (including louvers) used within the county.

Houston, TX – Follows the 2021 Unified Mechanical Code (UMC) in lieu of the IMC.

Variations exist in some areas, verify specific local codes. See the region map below for more definition.

State of Florida – For ventilation louvers within 30' of grade in Wind-borne Debris Regions, AMCA 540 Basic or Enhanced Impact Resistance per the FBC (Enhanced for Essential Buildings).

For all air intake and exhaust louvers, AMCA 550 High Velocity Wind-Driven Rain Resistance per the FMC. These qualifications are confirmed with Florida Product Approval.

For the High Velocity Hurricane Zone (HVHZ) of Broward and Miami-Dade Counties, Miami-Dade Approval, also known as NOA (Notice of Acceptance), is used to validate the design and installation methods of louvers for the area's elevated hurricane conditions.

Note: the FBC has Testing Application Standard (TAS) test protocols that may be used in lieu of AMCA tests for Miami-Dade Approvals.

Atlantic and Gulf of Mexico Coasts* – For ventilation louvers within 30' of grade in Wind-borne Debris Regions, AMCA 540 Basic or Enhanced Impact Resistance per the IBC (Enhanced for Essential Buildings).

For all air intake and exhaust louvers in Hurricane Prone Regions, AMCA 550 High Velocity Wind Driven Rain Resistance per the IMC and UMC. Florida Product Approval and Miami-Dade Approval are not required by code.

In All Areas – hurricane louvers must be fabricated to withstand the appropriate wind loads for the project. For wind load calculation, refer to the appropriate Building Code for the region. In addition to the impact and wind driven rain testing requirements described above.

**Outside of Florida*

Texas Department of Insurance (TDI) – For louvers installed in the coastal areas of Texas, the TDI offers evaluations and approvals for products that comply with their approved building specifications. While TDI approval is not required by code, it is required on projects that will seek windstorm insurance eligibility through the Texas Windstorm Insurance Association (TWIA). Refer to the TDI website for more information.



HURRICANE AFFECTED AREA BREAKDOWN

HURRICANE-PRONE REGIONS

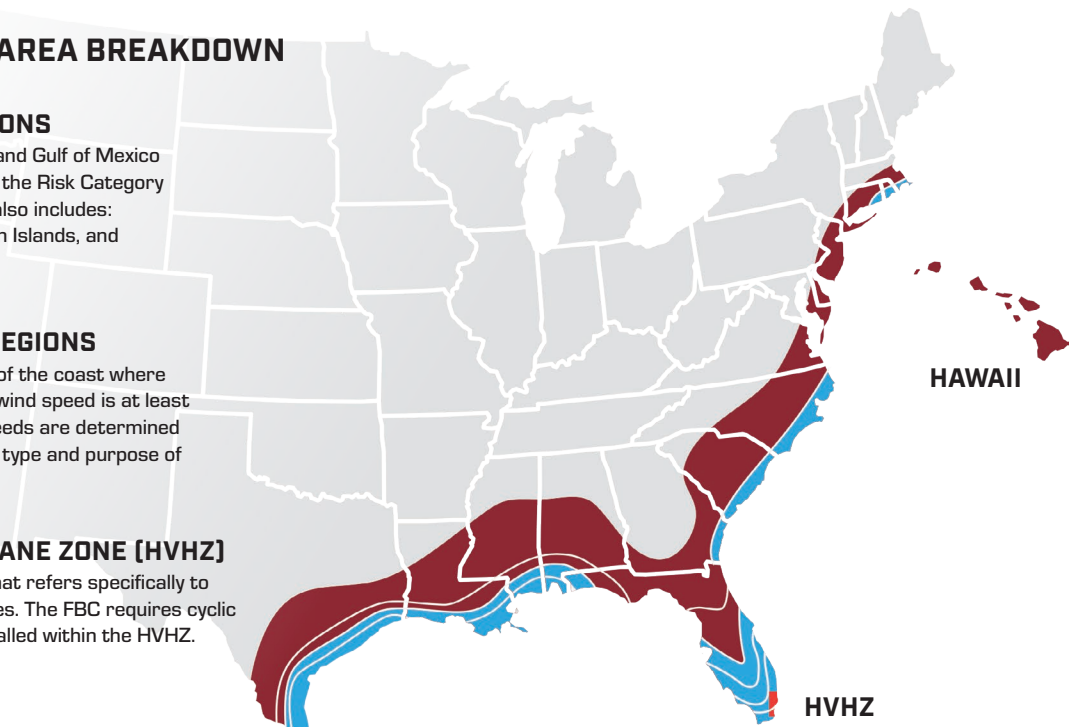
are areas along the US Atlantic and Gulf of Mexico coasts where the wind speed on the Risk Category II map* exceeds 115 mph. This also includes: Hawaii, Puerto Rico, Guam, Virgin Islands, and American Samoa.

WIND-BORNE DEBRIS REGIONS

include territory within one mile of the coast where further inland where the design wind speed is at least 140 mph. These design wind speeds are determined from the IBC maps based on the type and purpose of the building in question.

HIGH VELOCITY HURRICANE ZONE (HVHZ)

is a Florida Building Code term that refers specifically to Broward and Miami-Dade counties. The FBC requires cyclic pressure testing for louvers installed within the HVHZ.



*Risk category II as defined by IBC is shown as the Hurricane Prone Regions on the map plus the Wind-Borne Debris Regions and HVHZ

HURRICANE LOUVER CODE REQUIREMENT SUMMARY:

GEOGRAPHICAL AREA	AMCA 540 IMPACT RESISTANCE	AMCA 550 HIGH VELOCITY WIND-DRIVEN RAIN RESISTANCE	FLORIDA PRODUCT APPROVAL	MIAMI-DADE APPROVAL (TAS 202)
FLORIDA EXCEPT HVHZ	YES ¹	YES ²	YES	OPTIONAL
FLORIDA HVHZ	YES OR TAS-201/203 ³	YES OR TAS-100 [A] ²	OPTIONAL	YES
ATLANTIC COAST AND GULF OF MEXICO OUTSIDE FLORIDA	YES ¹	YES ⁴	NO	NO

¹ For all ventilation louvers within 30' of grade in Wind-borne Debris Regions

² For all intake and exhaust louvers

³ For all ventilation louvers within 30' of grade

⁴ For all intake and exhaust louvers in Hurricane Prone Regions

The information provided above is an overview of the general code requirements for hurricane louvers. Variations to this information may exist in certain localities. Please check with building authorities in your project's location to confirm the actual code requirements prior to selecting louvers.

FBC/MIAMI-DADE TESTING APPLICATION STANDARDS:

TAS 100 — is a wind-driven rain test standard published in the Florida Building Code. This standard is actually written for rooftop ventilation systems, but Miami-Dade County has adapted it for louvers.

TAS 201 — Florida Building Code impact-test standard required for Miami-Dade product approval.

TAS 202 — is the primary standard for static pressure testing of hurricane louvers. It rates the louver's ability to resist pressure from hurricane-force winds.

TAS 203 — the primary standard for cyclic pressure testing of hurricane louvers.

AMCA 512 LISTING

AMCA, The Air Movement and Control Association, lists louvers that comply with the AMCA 540 impact and /or AMCA 550 high-velocity wind-driven rain test standards. AMCA's Listing Program is governed by AMCA Publication 512.



LARGE MISSILE IMPACT TEST



HIGH VELOCITY WIND-DRIVEN RAIN TEST



HIGH VELOCITY
RAIN RESISTANT
AND IMPACT RESISTANT
LOUVER
Enhanced Protection

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

AMCA 540 Test Method for Louvers Impacted by Wind Borne Debris – Large missile impact test. This test utilizes a 2x4 timber projected at 50 fps (feet per second) or 34 mph to qualify for Basic Level D protection. To qualify for Enhanced Level E protection, the louver must be tested successfully at 80 fps or 55 mph.

AMCA 550 Test Method for High Velocity Wind-Driven Rain Resistant louvers – It is a pass/fail test subjecting louvers to 8.8" per hour simulated rain and up to 110 mph wind effects. This test should not be confused with the AMCA Standard 500-L Wind-Driven Rain test, which is a different procedure and is not required by any codes.

AMCA 512 Listed models are advertised with a red AMCA Listed seal. Included next to the seal will be text specifying which performance standards the design has attained. To gain an AMCA 512 listing, a manufacturer must submit test reports and catalog pages to AMCA for review. Requirements were initially implemented in the 2012 editions of the IBC and IMC and are in all subsequent editions.

MIAMI-DADE CERTIFICATION

The original hurricane certification, Miami-Dade County Product Approval, is technically valid only in Miami-Dade County, Florida. It is often specified in other areas due to the high level of respect this approval has within the engineering and architectural communities.

Miami-Dade approval requires the following testing:

1. Static pressure (TAS 202) to establish resistance to wind load.
2. Following the static pressure test, impact testing to verify that the design can resist wind-borne debris.
3. After the impact test, pressure cycling to check fatigue limits and confirm that the louver has not been structurally compromised by the impact test.
4. High velocity wind-driven rain testing is optional, but the lack of this performance will be noted on Miami-Dade approval documents.



Pottorff's hurricane louvers are engineered and rigorously tested to withstand the extreme loads, debris impact and cyclic fatigue associated with the intense weather conditions associated with hurricanes. They meet and exceed the stringent U.S. building codes, making Pottorff the preferred solution for all severe-duty projects.



TRY LIST
OUR LOUVER
SELECTION TOOL
TO SIZE AND
SELECT THE
PERFECT LOUVER

Left: Hard Rock Hotel – Hollywood, FL **Top Center:** Installed Louver bank
Bottom Center: Baltus House Condominiums – Miami, FL **Right:** SLS BRICKELL – Miami, FL

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POTTORFF'S FULL LINE OF HURRICANE LOUVERS MAKE US THE PREFERRED SOLUTION FOR ANY CONDITION.

MODEL	BLADE ANGLE	FREE AREA	AMCA CERT	FBC (2020)	MIAMI DADE	AMCA 540 550
ECD-545 5" CHEVRON BLADE	45°	46.3%	WP/AP/W	—	—	■ —
ECD-545-MD 5" CHEVRON BLADE	45°	41.9%	WP/AP/W	■	■	■ ■*
ECV-345 3" VERTICAL CHEVRON BLADE	45°	46.9%	WP/AP/W	—	—	■ ■
ECV-345-MD 3" VERTICAL CHEVRON BLADE	45°	46.9%	WP/AP/W	■	■	■ ■
ECV-545 5" VERTICAL CHEVRON BLADE	45°	54.8%	WP/AP/W	—	—	■ ■
ECV-545-MD 5" VERTICAL CHEVRON BLADE	45°	54.8%	WP/AP/W	■	■	■ ■
ECV-645 6" VERTICAL CHEVRON BLADE	45°	46.0%	WP/AP/W	—	—	■ ■
ECV-645-MD 6" VERTICAL CHEVRON BLADE	45°	46.0%	WP/AP/W	■	■	■ ■
EDV-545 5" DUAL-MODULE LOUVER	45°	50.2%	WP/AP/W	—	—	■ ■
EDV-545-MD 5" DUAL-MODULE LOUVER	45°	50.2%	WP/AP/W	■	■	■ ■
EFD-437-FL 4" FBC LOUVER	37.5°	55.3%	WP/AP	■	—	■ —
EFD-635-MD 6" DRAINABLE BLADE	35°	60.9%	WP/AP	■	■	■ —
EFJ-937 9" DUAL-MODULE LOUVER	37°	53.9%	WP/AP/W	—	—	■ ■
EFJ-937-MD 9" DUAL-MODULE LOUVER	37°	53.9%	WP/AP/W	■	■	■ ■
EXA-645-MD 6" COMBINATION BLADE	37.5°– 45°	48.1%	WP/AP	■	■	■ ■**
EAJ-1235 12" ACOUSTICAL LOUVER	35°	30.6%	WP/AP	—	—	■ —

AMCA DEFINITIONS: WP/ Water Penetration AP/ Air Performance W/ Wind-Driven Rain

*Applies when the CD-51 damper option is utilized and the damper is in the closed position. **Applies with operable blades in the closed position.