High Wind and Hurricane Fans

Miami-Dade County Product Control Approved
Florida Product Approval

COOK

INTRODUCTION

Loren Cook Company's "Hurricane Rated Construction" option is developed for the demands of high wind and coastal areas.

HIGH WIND & HURRICANE RATED

MEETING HIGH STANDARDS

- Through rigorous research and testing, this option is designed to meet three of Miami-Dade County's Testing Application Standards: TAS-201, TAS-202 and TAS-203. In addition, all of these products have received approval from the Florida Building Commission.
- Approved attachment details are included in the Notice of Acceptance documents on the Miami-Dade County Florida website, *miamidade.gov* and the Florida Building Commission website, *floridabuilding.org*. These details are also available in Cook's Installation, Operation and Maintenance manual: *Hurricane Rated Construction Supplement*. The approved attachment details do not require the use of external tie downs to the roof. Installation of the fans on an approved roof curb must be in accordance with these details to meet the Miami-Dade County and Florida Building Commission approvals.

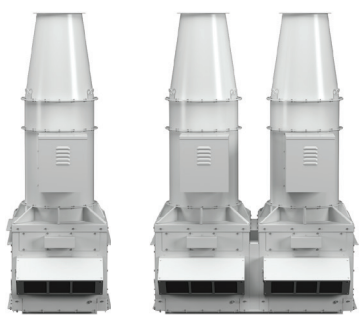
SAME GREAT PERFORMANCE

- The hurricane rated construction option is engineered so the fans have the same physical size as the standard construction units. In addition, the fan's air and sound performance, as shown in the product Guide and CookSelect selection software, remains identical to the standard construction products.

ACE

ACRU, ACSC, VCR

ASP



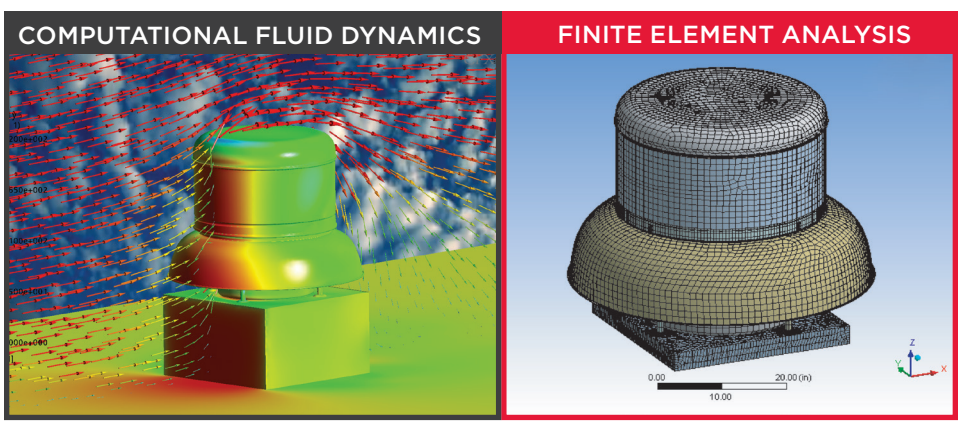
TCNHBLE single or double

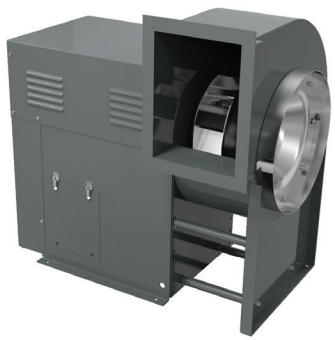
INTRODUCTION

Loren Cook Company's "Hurricane Rated Construction" option is developed for the demands of high wind and coastal areas.

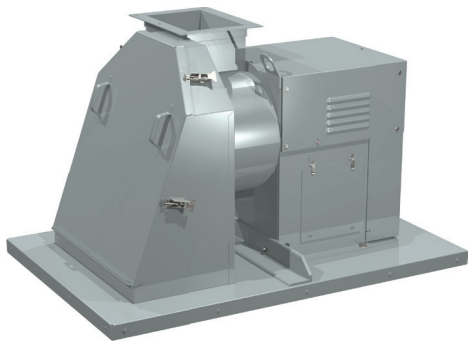
ADVANCED DESIGN TECHNIQUES

- In the early stages of development, products are modeled with Computational Fluid Dynamics (CFD) to determine the stress points as air flows around the fans at 150 miles per hour.
- Next, Finite Element Analysis (FEA) is utilized to model and evaluate stress plots.
- Finally, the proper material gauges and hardware are determined so the fans will survive high wind loads.

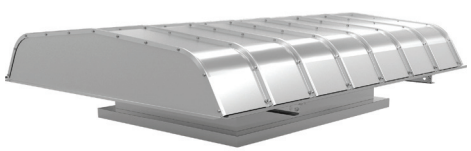




CPS, CPS-A, CPV, CPFB



CPS, CPS-A, CPV
(with inlet box and curb cap)



GI/GR

H-Series

APPROVAL TESTING

Loren Cook Company's "Hurricane Rated Construction" option is developed for the demands of high wind and coastal areas.

150 MPH WIND LOAD

- In the next step of testing, select products are placed in an aerodynamic wind tunnel. They are tested to a 150 MPH sustained wind to determine the product's resistance to wind load.

FULL SCALE WIND TUNNEL TESTING

APPROVAL TESTING

Cook products attain the highest level of performance by passing not one, not two, but all three approval tests. These tests are performed in an accredited independent laboratory.

TESTING

- Finally, the products are subjected to the Miami-Dade County test procedures for Uniform Static Air Pressure Testing (TAS-202), Large Missile Impact Testing (TAS-201) and Cyclic Wind Pressure Testing (TAS-203).
- TAS-201, 202 and 203 test procedures are performed in an accredited independent laboratory. The photographs to the right show actual impact tests.
- The products are evaluated to provide sufficient resistance to wind borne debris as required by the Florida Building Code, Section 1626.
- The TAS-202 test method provides a procedure for determining compliance with the Florida Building Code, Section 1620 and Section 1625, which requires that the products provide external protection to maintain the overall building envelope.

MISSILE IMPACT TESTING

PRESSURE TESTING

TAS - 201

LARGE MISSILE IMPACT TEST

Establishes sufficient resistance to windborne debris as determined by the Florida Building Code, Section 1626 for maintaining the envelope of the building. Test employs an 8 foot Southern Pine 2" x 4" beam, weighing 9 pounds; shot from an air cannon at (50 ft/sec) with resulting damage not to exceed specified tolerances allowed by Section 1626.2.8.

TAS - 202

UNIFORM STATIC AIR PRESSURE TEST

Establishes sufficient resistance to wind forces as determined by Florida Building Code, Section 1620 and Section 1625 for maintaining the overall envelope of the building. Test employs a sealed pressure envelope both inside and outside of the test product (allowing for both positive and negative static pressure tests) to determine if the product provides sufficient resistance to wind forces as required by Section 1620.

TAS - 203

CYCLIC WIND PRESSURE TEST

Establishes sufficient resistance to failure due to repeated exposure to wind pressure as required by Florida Building Code Section 1620. Test employs a sealed pressure envelope to repeatedly apply (671 cycles) positive and negative static pressure forces, lasting 1 to 3 seconds each, on the product surface following completion of the missile impact test.

APPROVED PRODUCTS

Miami-Dade County Product Control and Florida Building Commission Approved Products

Style	Products	Approved Sizes	TAS-201	TAS-202	TAS-203	NOA Number / Expiration Date*	Florida Product Approval
Exhaust	ACEB	60 - 300	✓ PASSED	✓ PASSED	✓ PASSED	23-0821.05 / 10-2-2028	FL11693
	ACED	70 - 300	✓ PASSED	✓ PASSED	✓ PASSED		
	ACRUB, ACRUB-HP & ACRUB-XP	100 - 300	✓ PASSED	✓ PASSED	✓ PASSED	23-0815.03 / 11-13-2028	FL11695
	ACSC, ACSC-HP & ACSC-XP	100 - 300	✓ PASSED	✓ PASSED	✓ PASSED		
	ACRUD, ACRUD-HP & ACRUD-XP	70 - 300	✓ PASSED	✓ PASSED	✓ PASSED		
	ACW, ACW-HP, ACW-XP	70 - 245	✓ PASSED	✓ PASSED	✓ PASSED		
	VCRD, VCRD-HP & VCRD-XP	100 - 300	✓ PASSED	✓ PASSED	✓ PASSED		
	VCR, VCR-HP & VCR-XP	100 - 300	✓ PASSED	✓ PASSED	✓ PASSED		
	CPS, CPS-A, CPV & CPFB	60 - 490	✓ PASSED	✓ PASSED	✓ PASSED	24-0912.04 / 12-19-2029	FL16731
	CPS, CPS-A & CPV with inlet box and curb cap	60 - 245	✓ PASSED	✓ PASSED	✓ PASSED	24-0912.03 / 10-2-2029	FL11692
	TCNHBLE with mixing box single or double	100 - 300	✓ PASSED	✓ PASSED	N/A	24-0311.08 / 3-12-2025	FL17580
Exhaust/ Supply	H-Series	Unfiltered: 20 - 48 Filtered: 20 - 42	✓ PASSED	✓ PASSED	N/A	24-0311.09 / 5-12-2026	FL20476
Supply	ASP	90 - 200	✓ PASSED	✓ PASSED	✓ PASSED	24-0912.01 / 11-13-2029	FL11696
Gravity	GR	12x12 - 36x36	✓ PASSED	✓ PASSED	✓ PASSED	24-0912.02 / 11-13-2029	FL11697
	GR	37x37 - 66x66	**	✓ PASSED	**	24-00311.07 / 8-21-2029	FL11697
	GI	12x12 - 54x54	**	✓ PASSED	**	24-00311.07 / 8-21-2029	FL11697

- * NOA Number / Expiration Date issued by Miami-Dade County, Florida Regulatory & Economic Resource Department, Product Control Division
- Texas Department of Insurance Product evaluation pending
- ** These products were tested with the TAS-202 process only.