



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP – 0272 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: ClimateCraft, Inc.

Manufacturer's Technical Representative: Andrew Hills

Mailing Address: 518 North Indiana Ave., Oklahoma City, OK 73106

Telephone: (405) 415-9230 Ext. 122 Email: ahills@climatecraft.com

Product Information

Product Name: FanMatrix

Product Type: Stacked Fan Array

Product Model Number: See Attachment

(List all unique product identification numbers and/or part numbers)

General Description: Stacked fan tower consisting of four HSS 3"x3"x1/8" columns, with 11 gauge horizontal braces on three sides (located at the fans), 11 gauge seismic punched square, and 5/8" column base plates.

Mounting Description: Rigid Floor Mounted

Applicant Information

Applicant Company Name: The VMC Group

Contact Person: Mr. John Giuliano

Mailing Address: 113 Main Street, Bloomington, NJ 07403

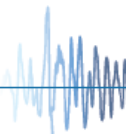
Telephone: (973) 838-1780 Email: john.giuliano@thevmcgroup.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant:  Date: 2/21/17

Title: President Company Name: The VMC Group

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION**

California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: The VMC Group

Name: Mr. Ken Tarlow California License Number: SE2851

Mailing Address: 113 Main Street, Bloomingdale, NJ 07403

Telephone: (973) 838-1780 Email: ken.tarlow@thvmcgroup.com

Supports and Attachments Preapproval

- Supports and attachments are preapproved under OPM- _____
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
- Supports and attachments are not preapproved

Certification Method

- Testing in accordance with: ICC-ES AC156
- Other (Please Specify): _____

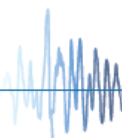
Testing Laboratory

Company Name: Environmental Testing Laboratory

Contact Name: Paul E. Little

Mailing Address: 11034 Indian Trail, Dallas, TX 75229

Telephone: (972) 247-9657 Email: paul@etldallas.com





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Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: Yes No

Design Basis of Equipment or Components (F_p/W_p) = 4.50

S_{DS} (Design spectral response acceleration at short period, g) = 2.00

a_p (In-structure equipment or component amplification factor) = 2.5

R_p (Equipment or component response modification factor) = 2.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See Attachment

Overall dimensions and weight (or range thereof) = See Attachment

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15 Yes No

Design Basis of Equipment or Components (V/W) = _____

S_{DS} (Design spectral response acceleration at short period, g) = _____

S_{D1} (Design spectral response acceleration at 1 second period, g) = _____

R (Response modification coefficient) = _____

Ω_0 (System overstrength factor) = _____

C_d (Deflection amplification factor) = _____

I_p (Importance factor) = 1.5

Height to Center of Gravity above base = _____

Equipment or Component Natural Frequencies (Hz) = _____

Overall dimensions and weight (or range thereof) = _____


Tank(s) designed in accordance with ASME BPVC, 2015: Yes No

List of Attachments Supporting Special Seismic Certification

Test Report(s) Drawings Calculations Manufacturer's Catalog

Other(s) (Please Specify): _____

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature:  Date: May 31, 2017

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.00 z/h = 1

Condition of Approval (if applicable): _____

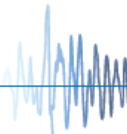


Table 1 - Certified Climate Craft Fan Arrays

Enter Model Name: MTX Drive Type: Direct Drive

Plenum Fan	HP	3	3	5	5	7.5	7.5	10	10	15	15	20	20	25	25	30	30	Tested Weight Fan/UUT (lbs)	UUT	MFR
	Motor Wt.	69	72	74	95	117	146	141	158	217	255	237	286	330	417	372	492			
Size	12"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	511	UUT 1	ClimateCraft
Weight	23 Lbs																	1886		
Size	15"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N/A	[Interpolated]	
Weight	24 Lbs																			
Size	16"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	588	UUT 1	
Weight	27 Lbs																	1886		
Size	18"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N/A	[Interpolated]	
Weight	30 Lbs																			
Size	20"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	827	UUT 1	
Weight	35 Lbs																	1886		
Size	22"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	596	UUT 2	
Weight	54 Lbs																	2176		
Size	24"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	700	UUT 2	
Weight	68 Lbs																	2176		
Size	27"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1041	UUT 2	
Weight	76 Lbs																	2176		

Note: X denotes the units that were tested in the 1x3 fan array

Arrangement	Fan Class	Fan Sizes	UUT
Direct Drive	CLASS 2,3	12,15,18,20	UUT 2
	CLASS 2,3	22,24,27	UUT 1

Isolators	Part No.	Material	MFR	UUT
Internal	SW-1C	Carbon Steel	VMC	1,2

Wheel	Part No.	Wheel MFR	Material	UUT
12 Bladed	QEP	Greenheck	Aluminum	1,2

Part No.	Fan Sled Material	MFR	UUT
M500-001/M500-002	Carbon Steel	ClimateCraft	1,2

Table 2 - Certified Fan Array Structure

Array Configuration	Dimensions	Overall Size							Fan Tower Material	MFR	UUT / Int / Ext	
		12	15	16	18	20	22	24				27
		Internally Isolated										
1x1	Width (in)	37.00	37.00	37.00	37.00	37.00	44.00	44.00	Carbon Steel	ClimateCraft	1,2	
	Depth (in)	48.00	48.00	48.00	48.00	48.00	48.00	48.00				
	Height (in)	42-90	42-90	42-90	42-90	42-90	42-96	42-96				
1x2	Width (in)	37.00	37.00	37.00	37.00	37.00	44.00	44.00	Carbon Steel	ClimateCraft	1,2	
	Depth (in)	48.00	48.00	48.00	48.00	48.00	48.00	48.00				
	Height (in)	72-126	72-126	72-126	72-126	72-126	84-126	84-126				
1x3	Width (in)	37.00	37.00	37.00	37.00	37.00	44.00	44.00	Carbon Steel	ClimateCraft	1,2	
	Depth (in)	48.00	48.00	48.00	48.00	48.00	48.00	48.00				
	Height (in)	114-144	114-144	114-144	114-144	114-144	126-144	126-144				

Table 3 - Certified Wheel Summary

Model	Drive	MFR	Wheel Diameter	Material	UUT / Int / Ext
12MTX	Direct Drive	Greenheck	15.00	Aluminum	UUT 2
15MTX		Greenheck	15.00	Aluminum	[Interpolated]
16MTX		Greenheck	16.00	Aluminum	UUT 2
18MTX		Greenheck	18.00	Aluminum	[Interpolated]
20MTX		Greenheck	20.00	Aluminum	UUT 2
22MTX		Greenheck	22.00	Aluminum	UUT 1
24MTX		Greenheck	24.00	Aluminum	UUT 1
27MTX		Greenheck	27.00	Aluminum	UUT 1

Table 4 - Certified Motor Summary

Motor Series	Motor HP (hp)	MFR	Voltage (V)	Frame Size (in)	Enclosure	AMP Draw (A) 208/230/460	UUT / Int / Ext
Premium Efficient AC	3	Baldor	208-230 / 480	182T	Cold Rolled Carbon Steel [ODP]	8.5/8/4	UUT 2
	5			184T		13.8/13.2/6.6	[Interpolated]
	7.5			213T		21/19.2/9.6	[Interpolated]
	10			215T		26/25/12.5	UUT 2
	15			254T		37.4/35.4/17.7	[Interpolated]
	20			256T		49.4/47/23.5	[Interpolated]
	25			284T		63.3/60/30	[Interpolated]
	30			286T		74.1/70/35	UUT 2
	3			182T	8.4/8/4.1	UUT 1	
	5			184T	13.7/13/6.5	[Interpolated]	
	7.5			213T	19.8/19/9.5	[Interpolated]	
	10			215T	26.3/25/12.5	UUT 1	
	15			254T	38.9/37/18.5	[Interpolated]	
	20			256T	51/48/24	[Interpolated]	
	25			284T	63.3/60/30	[Interpolated]	
	30			286T	77/72/36	UUT 1	

Note: The voltage is effected by the internal wiring connections only. Amp Draw (A) is dependent on the voltage



UNIT UNDER TEST (UUT) Summary Sheet

UUT-01

VMA-50943-01C

Model Line	Model Number	Manufacturer
FanMatrix	12MTX3, 16MTX10, & 20MTX30	ClimateCraft, Inc.

Product Construction Summary

Tower consisted of: 4 - HSS 3"x3"x1/8" columns, with 11 gauge horizontal braces on three sides (located at the fans), 11 gauge seismic punched square, and 5/8" column base plates

Options / Subcomponent Summary

Aluminum fan blades, horse power (3-30hp), and voltage (208V, 230V, 460V)

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
1,886	48	37	144	4.272	4.044	>33

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.51	1.74	0.70

Test Mounting Details

The UUTs were attached to the shake table using (6) 5/8" grade 8 bolts through the holes located in the base of the FanMatrix.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.



UNIT UNDER TEST (UUT) Summary Sheet

UUT-02

VMA-50943-01C

Model Line	Model Number	Manufacturer
FanMatrix	22MTX3, 24MTX10, & 27MTX30	ClimateCraft, Inc.

Product Construction Summary

Tower consisted of: 4 - HSS 3"x3"x1/8" columns, with 11 gauge horizontal braces on three sides (located at the fans), 11 gauge seismic punched square, and 5/8" column base plates

Options / Subcomponent Summary

Aluminum fan blades, horse power (3-30hp), and voltage (208V, 230V, 460V)

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
2,176	48	44	144	3.667	3.596	>33

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	SDS (g)	z/h	Ip	AFLX-H (g)	ARIG-H (g)	AFLX-V (g)	ARIG-V (g)
CBC 2016	ICC-ES AC156	2.00	1.00	1.50	3.20	2.51	1.74	0.70

Test Mounting Details

The UUTs were attached to the shake table using (6) 5/8" grade 8 bolts through the holes located in the base of the FanMatrix.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.