



**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION**

**APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)**

OFFICE USE ONLY

APPLICATION #: OSP-0122

HCAI Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Loren Cook Company

Manufacturer's Technical Representative: Bradley Skidmore

Mailing Address: 2015 East Dale St., Springfield, MO 65808

Telephone: (417) 869-6474

Email: bskidmore@lorencook.com

Product Information

Product Name: Air Handling Units

Product Type: Fans

Product Model Number: 90ASP, 100ASP, 120ASP, 150ASP 180ASP, 200ASP

General Description: Supply fans with carbon steel housings and forward curved carbon steel wheels.

Mounting Description: Rigid, Rigid mounted on 9-1/2" tall Aluminum or Carbon Steel curb or 24" tall Carbon Steel curb.

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: VMC Group

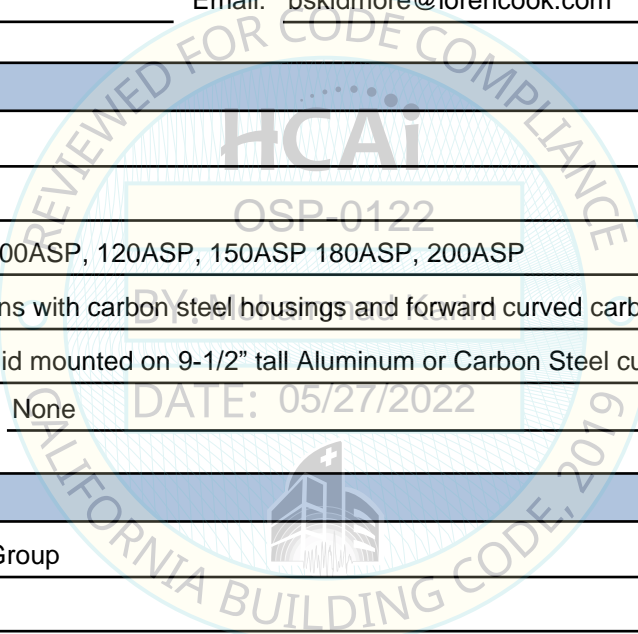
Contact Person: John Giuliano

Mailing Address: Main Street, Bloomingdale, NJ 07403

Telephone: (973) 838-1780

Email: john.giuliano@thvmcgroup.com

Title: President





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

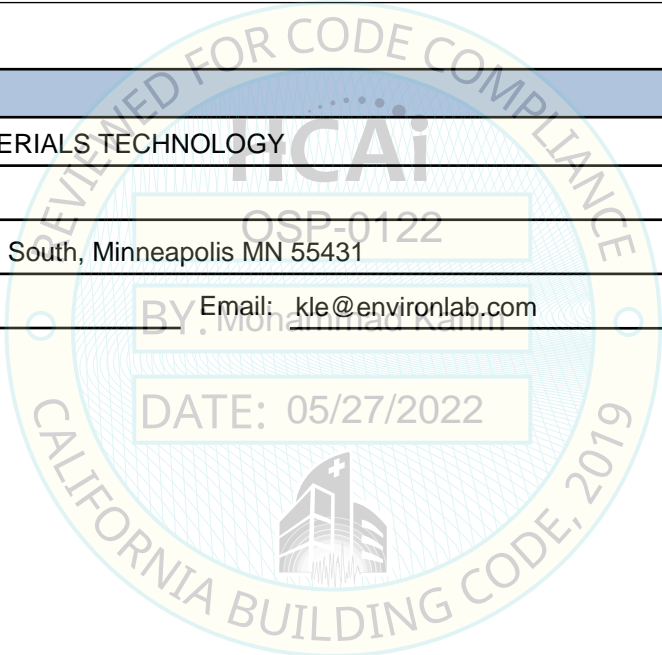
Company Name: THE VMC GROUP
Name: Kenneth Tarlow California License Number: S2851
Mailing Address: 980 9th Street, 16th Floor, Sacramento, CA 95814
Telephone: (832) 627-2214 Email: ken.tarlow@thevmcgroup.com

Certification Method

GR-63-Core ICC-ES AC156 IEEE 344 IEEE 693 NEBS 3
 Other (Please Specify): _____

Testing Laboratory

Company Name: ELEMENT MATERIALS TECHNOLOGY
Contact Person: Kent L. Erickson
Mailing Address: 9725 Girard Ave South, Minneapolis MN 55431
Telephone: (952) 888-7795 Email: kle@environlab.com





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.71

SDS (Design spectral response acceleration at short period, g) = 2.27

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

HCAI Approval (For Office Use Only) - Approval Expires on 05/27/2028

Date: 5/27/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = 2.27 z/h = 1

Condition of Approval (if applicable): DATE: 05/27/2022

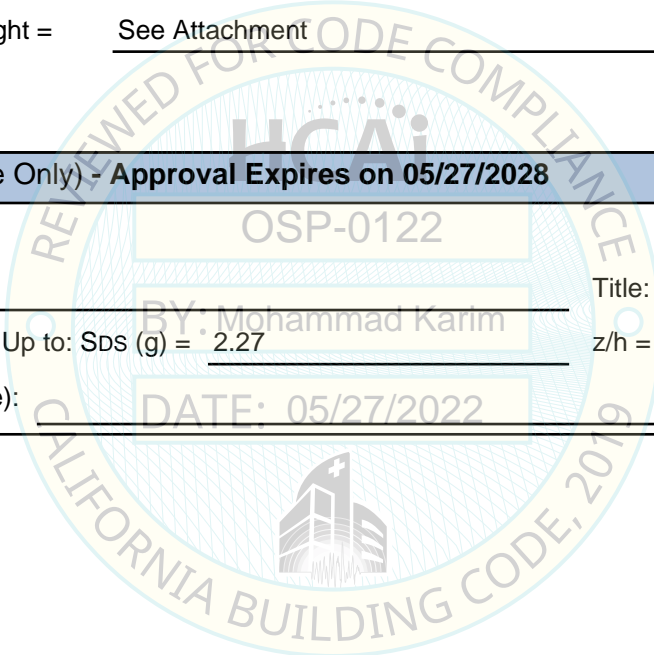


Table 1 - Certified Supply Fans

Model Line	Model Number	Overall Dimensions [in]			Material	Mounting Description	Weight [lb]	UUT
		Depth	Width	Height				
ASP [Belt Drive]	90 ASP	33	33	26.5	16 Gauge Galvanized Carbon Steel	Rigid Base Mounted to 9-1/2" tall Aluminum Curb	263	UUT-1
	90 ASP	33	33	26.5		Rigid Base Mounted on Carbon Steel Curb up to 24" Tall	263	Interpolated
	100 ASP	38.5	38.5	30			335	Interpolated
	120 ASP	42.5	42.5	33			385	Interpolated
	150 ASP	46	46	36			435	Interpolated
	180 ASP	56	56	40			630	Interpolated
	200 ASP	68	68	47			925	Interpolated
	200 ASP	68	68	47		Rigid Base Mounted to 24" tall Carbon Steel Curb	925	UUT-2

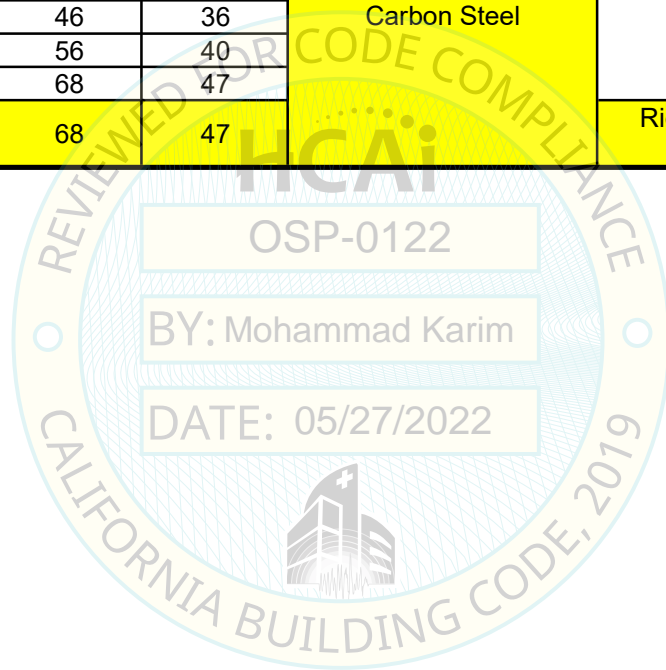


Table 2 - Certified Fan Motors

Model Number	Rating [hp]	Frame	Manufacturer	Weight [lb]	UUT
EM3116T	1	145 T	Baldor	34	UUT-1
EM3154T	1.5			37	Interpolated
EM3157T	2	184 T		40	Interpolated
EM3218T	5			84	Interpolated
EM3311T	7.5	213 T		115	UUT-2

Table 3 - Certified Motorized Damper

Model Number	Material	Manufacturer	Weight [lb]	UUT
BDMI-18	Aluminum	Ruskin	18	UUT-1
BDMI-22	Aluminum		22	Interpolated
BDMI-26	Aluminum		25	Interpolated
BDMI-30	Aluminum		35	Interpolated
BDMI-42	Aluminum		73	UUT-2

Table 4 - Certified Filters

Model Number	Dimensions [in]			Manufacturer	Weight [lb]	UUT
	Depth	Width	Height			
9 ASP	1	10.25	19.75	Loren Cook	0.75	UUT-1
10 ASP	1	12	24		1	Interpolated
12 ASP	1	16	28		1.75	Interpolated
15 ASP	1	16	28		1.75	Interpolated
18 ASP	1	20	32		2.5	Interpolated
20 ASP	1	27.75	44		4.5	UUT-2



UNIT UNDER TEST (UUT) Summary Sheet

UUT-1

Test Report: 42529-1

Model Line	Model Number	Manufacturer
ASP	90 ASP	Loren Cook Company

Product Construction Summary

Galvanized Carbon Steel Enclosure on 9-1/2" Aluminum Curb

Options / Subcomponent Summary

Fan Motor, Motorized Damper, Filters

UUT Properties						
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
263	33.0	33.0	26.5	24.0	16.1	16.6

UUT Highest Passed Seismic Run Information								
Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2019	ICC-ES AC156	2.27	1.0	1.5	3.63	2.72	1.52	0.61
		-	-	-	-	-	-	-

Test Mounting Details

The unit was attached to the curb using (12) 12-14x2" Grade 5 self-drilling sheet metal screws through the fan housing into the curb. The curb was attached to the shake table using (12) 5/16" diameter Grade 5 fasteners.



Vertical axis



Horizontal axis

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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-2

Test Report: 42529-1

Model Line	Model Number	Manufacturer
ASP	200 ASP	Loren Cook Company

Product Construction Summary

Galvanized Carbon Steel Enclosure on 24" Carbon Steel Curb

Options / Subcomponent Summary

Fan Motor, Motorized Damper, Filters

UUT Properties						
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
925	68.0	68.0	47.0	10.4	8.1	29.2

UUT Highest Passed Seismic Run Information								
Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2019	ICC-ES AC156	2.27	1.0	1.5	3.63	2.72	1.52	0.61
		-	-	-	-	-	-	-

Test Mounting Details

The unit was attached to the curb using (12) 12-14x2" Grade 5 self-drilling sheet metal screws through the fan housing into the curb. The curb was attached to the shake table using (20) 5/16" diameter Grade 5 fasteners.



Vertical Axis



Horizontal Axis

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