APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0269-10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: ENGINEERING DYNAMICS LTD.

Manufacturer's Technical Representative: ROBIN MARSHALL

Mailing Address: 137 PICK ROAD, RR1, CARLETON PLACE, ON, CANADA K7C 3P1

Telephone: (613) 257-5450 Email: Robin@dynamicaqs.com

Product Information

Product Name: V8 HIGH EFFICIENCY AIR CLEANER

Product Type: AIR CLEANER

Product Model Number: See table 1 of attachment
(List all unique product identification numbers and/or part numbers)

General Description: The filter pads of the air cleaner are a patented combination of medias, bonded together in a frame that seals securely between the hinged aluminum frames of the module. ***Used in rigid base mounted HVAC applications.***

Mounting Description: The units were stacked in the test structure. The tops and bottoms of the stacks were fastened to a horizontal supporting frame member. Each unit's flanges were fastened to a vertical support frame on both sides.

Applicant Information

Applicant Company Name: DYNAMIC AIR QUALITY SOLUTIONS

Contact Person: MARK GOTTFRIED

Mailing Address: 5 CRESCENT AVENUE, BLDG. B-3, ROCKY HILL, NJ 08553

Telephone: (609) 917-2951 Email: mgottfried@dynamicaqs.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: Jan 16, 2017

Title: VP, Engineering Company Name: Dynamic Air Quality Solutions

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

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

Company Name: ARCHES ENGINEERING, LLC.

Name: RUTH MILLER California License Number: S4657

Mailing Address: P.O. Box 3852, GRAND JUNCTION, CO 81502

Telephone: (970) 255-6788 Email: ruth@archesengineering.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: VERSATILE MEASURING INSTRUMENTS INC.

Contact Name: SHERWIN JAMISOLA

Mailing Address: 165 PONY DRIVE, NEWMARKET, ONTARION L3Y 7B5

Telephone: (905) 954-0841 Email: sjamisola@amidyne.com

Seismic Parameters

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

Design Basis of Equipment or Components (F_p/W_p) = 1.88

S_{DS} (Design spectral response acceleration at short period, g) = 2.49

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

R_p (Equipment or component response modification factor) = 6.0

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 Attachments

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

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: 2/7/2017

Print Name: M. R. Karim Title: SHFR

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.49 z/h = 1.0

Condition of Approval (if applicable):

RICE ENGINEERING

REI No: R10-09-22F

105 School Creek Trail
Luxemburg, WI 54217
Phone: (920)845-1042
Fax: (920)845-1048
www.rice-inc.com

TABLE 1

SEISMICALLY CERTIFIED COMPONENTS

PRODUCT LINE	MODULE SIZE	WEIGHT (LB)	DEPTH (IN)	WIDTH (IN)	HEIGHT (IN)	BASIS
V8 Air Cleaner	1V82612-24-F	21	24	26	12	Interpolated
V8 Air Cleaner	**1V82612-29.5-F**	**26**	**29.5**	**26**	**12**	**UUT1**
V8 Air Cleaner	1V83012-24-F	25	24	30	12	Interpolated
V8 Air Cleaner	1V83012-29.5-F	30	29.5	30	12	Interpolated
V8 Air Cleaner	1V83412-24-F	28	24	34	12	Interpolated
V8 Air Cleaner	1V83412-29.5-F	34	29.5	34	12	Interpolated
V8 Air Cleaner	1V83812-24-F	31	24	38	12	Interpolated
V8 Air Cleaner	1V83812-29.5-F	38	29.5	38	12	Interpolated
V8 Air Cleaner	1V83912-24-F	32	24	39	12	Interpolated
V8 Air Cleaner	1V83912-29.5-F	39	29.5	39	12	Interpolated
V8 Air Cleaner	1V84312-24-F	35	24	43	12	Interpolated
V8 Air Cleaner	1V84312-29.5-F	43	29.5	43	12	Interpolated
V8 Air Cleaner	1V84812-24-F	39	24	48	12	Interpolated
V8 Air Cleaner	1V84812-29.5-F	48	29.5	48	12	Interpolated
V8 Air Cleaner	1V82618-24-F	28	24	26	18	Interpolated
V8 Air Cleaner	1V82618-29.5-F	34	29.5	26	18	Interpolated
V8 Air Cleaner	1V83018-24-F	31	24	30	18	Interpolated
V8 Air Cleaner	1V83018-29.5-F	38	29.5	30	18	Interpolated
V8 Air Cleaner	1V83418-24-F	34	24	34	18	Interpolated
V8 Air Cleaner	1V83418-29.5-F	42	29.5	34	18	Interpolated
V8 Air Cleaner	1V83818-24-F	38	24	38	18	Interpolated
V8 Air Cleaner	1V83818-29.5-F	46	29.5	38	18	Interpolated
V8 Air Cleaner	1V83918-24-F	39	24	39	18	Interpolated
V8 Air Cleaner	1V83918-29.5-F	47	29.5	39	18	Interpolated
V8 Air Cleaner	1V84318-24-F	42	24	43	18	Interpolated
V8 Air Cleaner	1V84318-29.5-F	51	29.5	43	18	Interpolated
V8 Air Cleaner	1V84818-24-F	46	24	48	18	Interpolated
V8 Air Cleaner	**1V84818-29.5-F**	**56**	**29.5**	**48**	**18**	**UUT2**
V8 Air Cleaner	**CP 75-120**	**10**	**4.5**	**8.25**	**8.25**	**UUT3**

All components shown in Table 1 were manufactured by Dynamic Air Quality Solutions.

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UUT # 1

Unit Under Test (UUT) Summary Sheet

Manufacturer:	***Dynamic Air Quality Solutions***
Model Line:	***V8 High Efficiency Air Cleaner***
Model Number:	***1V8-2612-29.5-F***

Product Construction Summary:

Filter pads of the air cleaner are a patented combination of medias, bonded together in a frame that seals securely between the hinged aluminum frame of the module. Galvanized steel screens cover each filter pad and filter pads are connected with a galvanized steel frame. The unit has 4 pads per nominal 12" of height. 24Vac is used to polarize fibers in the media and airborne contaminants.

Options/Subcomponent Summary:

The units were stacked in the test structure. The tops and bottoms of the stacks were fastened to a horizontal supporting frame member. Each unit's left and right flange was fastened to a vertical supporting frame member.

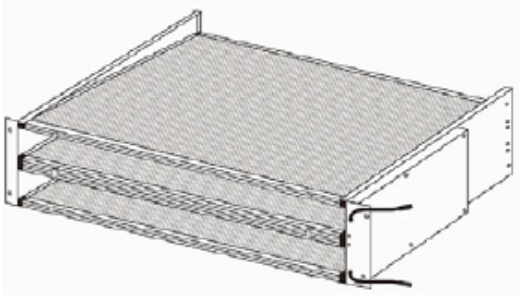
UUT Properties

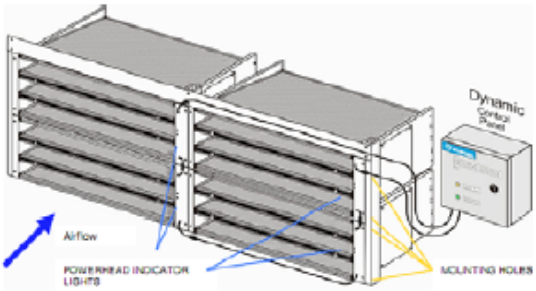
Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
47	29.5	26	12	N/A	N/A	N/A

UUT Highest Passed Seismic Test Information

Building Code	Test Criteria	S_{DS}	z/h	I_p	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC *2016*	ICC-ES AC 156	2.49g	1	1.5	3.98g	2.99g	1.67g	0.67g

Test Mounting Details:





The units were stacked in the test structure. The tops and bottoms of the stacks were fastened to a horizontal supporting frame member. Each unit's left and right flange was fastened to a vertical supporting frame member. The units were fastened with #8 x ½" self-tapping screws (qty 4 per unit), torqued to 4 ft/lbs. Fastening was done through the front flange.

The units were also fastened on the backside through horizontal mounting flanges using #10 x 1" self-tapping screws (qty 2 per unit).

The units were full of content during the test, and maintained structural stability and functionality after the test.

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UUT # 2

Unit Under Test (UUT) Summary Sheet

Manufacturer:	*Dynamic Air Quality Solutions*
Model Line:	*V8 High Efficiency Air Cleaner*
Model Number:	*1V8-4818-29.5-F*

Product Construction Summary:

Filter pads of the air cleaner are a patented combination of medias, bonded together in a frame that seals securely between the hinged aluminum frame of the module. Galvanized steel screens cover each filter pad and filter pads are connected with a galvanized steel frame. The unit has 4 pads per nominal 12" of height. 24Vac is used to polarize fibers in the media and airborne contaminants.

Options/Subcomponent Summary:

The units were stacked in the test structure. The tops and bottoms of the stacks were fastened to a horizontal supporting frame member. Each unit's left and right flange was fastened to a vertical supporting frame member.

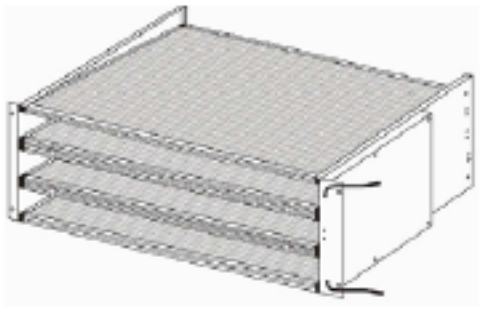
UUT Properties

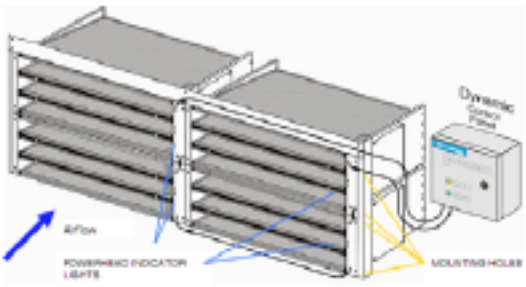
Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
99	29.5	48	18	N/A	N/A	N/A

UUT Highest Passed Seismic Test Information

Building Code	Test Criteria	S_{DS}	z/h	I_p	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC *2016*	ICC-ES AC 156	2.49 g	1	1.5	3.98 g	2.99 g	1.67 g	0.67 g

Test Mounting Details:





The units were stacked in the test structure. The tops and bottoms of the stacks were fastened to a horizontal supporting frame member. Each unit's left and right flange was fastened to a vertical supporting frame member. The units were fastened with #8 x ½" self-tapping screws (qty 4 per unit), torqued to 4 ft/lbs. Fastening was done through the front flange.

The units were also fastened on the backside through horizontal mounting flanges using #10 x 1" self-tapping screws (qty 2 per unit).

The units were full of content during the test, and maintained structural stability and functionality after the test.

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UUT # 3

Unit Under Test (UUT) Summary Sheet

Manufacturer:	*Dynamic Air Quality Solutions*
Model Line:	*V8 High Efficiency Air Cleaner*
Model Number:	*CP 75-120*

Product Construction Summary:

A plastic box with a transformer. The CP 75-120 was installed on the exterior side of the frame structure.

Options/Subcomponent Summary:

NA

UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
10	4.50	8.25	8.25	N/A	N/A	N/A

UUT Highest Passed Seismic Test Information

Building Code	Test Criteria	S_{DS}	z/h	I_p	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC *2016*	ICC-ES AC 156	2.49 g	1	1.5	3.98g	2.99 g	1.67g	0.67g

Test Mounting Details:

The CP 75-120 was installed on the side of the frame structure using two #8x1/2" self-tapping screws in each corner of the CP 75-120.

The units was full of content during the test, and maintained structural stability and functionality after the test.