



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

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

OFFICE USE ONLY

APPLICATION #: **OSP – 0343 – 10**

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Energex

Manufacturer's Technical Representative: Steen Hagenson

Mailing Address: 1685 Bluegrass Lakes Pkwy

Telephone: 650.995.4070 Email: steen@energex.com

Product Information

Product Name: IPVB and RSV fans

Product Type: Inline and roof power vents

Product Model Number: Varies – See Attached Tables

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

General Description: Inline ducted fans and roof mounted

Mounting Description: Varies – See Attached Tables

Applicant Information

Applicant Company Name: Tobolski Watkins Engineering Inc.

Contact Person: Derrick Watkins, Ph.D., S.E.

Mailing Address: 9246 Lightwave Ave, Suite 140

Telephone: 858.381.5843 Email: dwatkins@tobolskiwatkins.com

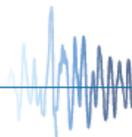
I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant: *Derrick Watkins* Date: 5/14/2013

Title: Executive Vice President Company Name: Tobolski Watkins Engineering Inc.

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

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY
OSH-FD-759 (REV 1/24/13)



osHPD



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

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

Company Name: Tobolski Watkins Engineering, Inc.

Name: Derrick Watkins, Ph.D., S.E. California License Number: S 5257

Mailing Address: 9246 Lightwave Ave, San Diego, CA 92122

Telephone: 858.381.5843 Email: dwatkins@tobolskiwatkins.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

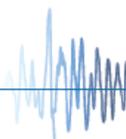
Company Name: Environmental Testing Lab (ETL)

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) = 1.875

S_{DS} (Design spectral response acceleration at short period, g) = 2.5g

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

R_p (Equipment or component response modification factor) = 6

Ω_0 (System overstrength factor) = 2.5

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = Varies (see attached tables)

Overall dimensions and weight (or range thereof) = Varies (see attached tables)

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, 2010: Yes No

List of Attachments Supporting Special Seismic Certification

Test Report(s) Drawings Calculations Manufacturer's Catalog

Other(s) (Please Specify): UUT summary tables, Product Matrix

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2019

Signature:  Date: July 25, 2013

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.5 z/h = 1.0

Condition of Approval (if applicable): _____





Table 3

Special Seismic Certification Certified Product Matrix

TWEI Project No.: 2011-0365-CO-001, rev.2

Manufacturer: ENERVEX, Inc.

Model Line: Modulating Pressure Control – EBC 30

Certified Product Construction Summary:
 EBC 30 enclosure made of steel, NEMA 1 rated.
 XTP2 enclosure made of NEMA 4x Polystyrene, IP66; ES12 Relay Box enclosure is NEMA 12 Plastic, IP54

Certified Options Summary:
 See below

Certified Mounting Summary:
 Wall Mounted.

Building Code: CBC 2013 **Seismic Certification Limits:** $S_{DS} = 2.5g$ $z/h = 1.0$ $I_p = 1.5$

Supplier	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Energex	EBC 30	14.65	4.22	11.03	9.5		5 & 6
EBC30 Internal Components							
Energex	Stack Probe						5 & 6
	Silicone Tubing						5 & 6
Exodraft / Energex	Main Board						5 & 6
	Triac Board						5 & 6
	Relay Board						5 & 6
Externally mounted components							
Energex	XTP2	3.13	3.70	6.18	0.6	Externally wall mounted	7 & 8
	ES12 Relay Box	6.90	5.60	1.60	3.0	Externally wall mounted	9 & 10
XTP2 Internal Components							
Ashcroft	CXLdp Differential Pressure Sensor						7 & 8
ES12 Relay Box Internal Components							
Exodraft / Energex	Relay Board						9 & 10
	3x Relay					120V / 3A	9 & 10

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UNIT UNDER TEST (UUT) Summary Sheet

TWEI Project No.: 2011-0365-CO-001

Manufacturer:	Energex, Inc.
Model Line:	Exhausto Chimney Fan
Model Number:	RSV 200
Product Construction Summary:	Housing made of cast aluminum with a thickness of 3/16". Cast aluminum impeller.
Options/Subcomponent Summary:	Energex TEFC Motor 0.15HP Single Phase Motor. 120V

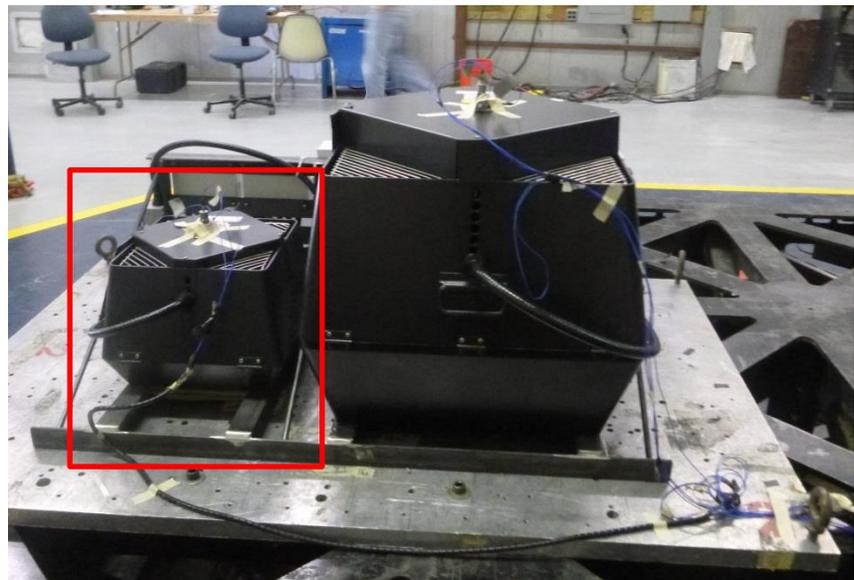
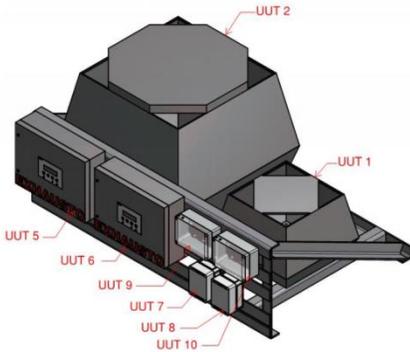
UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
47	15.37	15.37	11.03	> 33hz	46.51	15.45

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 2013	ICC-ES AC 156	2.50g	1.0	1.5	4.00g	3.00g	1.67g	0.67g

Test Mounting Details:



Mounted to the test fixture using four (4) 10-32 SAE Grade 8 bolts
Unit maintained structural integrity and remained functional per manufacturer requirement.

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UNIT UNDER TEST (UUT) Summary Sheet

TWEI Project No.: 2011-0365-CO-001

Manufacturer: Energex, Inc.

Model Line: Exhausto Chimney Fan

Model Number: RSV 450

Product Construction Summary:
Housing made of cast aluminum with a thickness of 3/16". Cast aluminum impeller.

Options/Subcomponent Summary:
ABB TEFC Motor 2.0HP. Single Phase Motor. 120V.

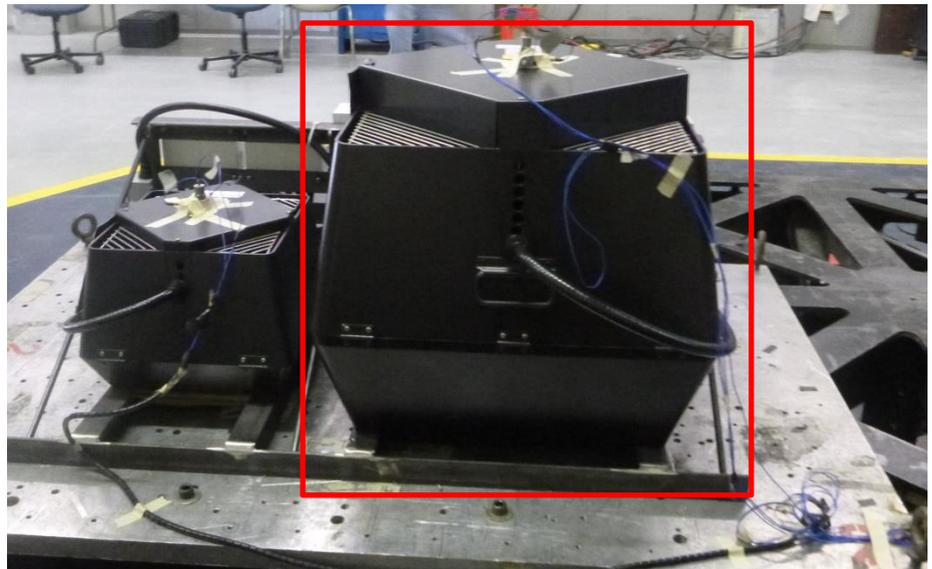
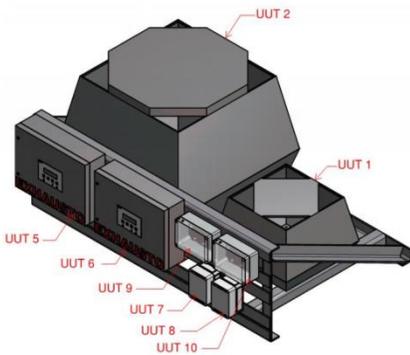
UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
128	25.61	25.61	23.23	24.00	18.76	18.61

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 2013	ICC-ES AC 156	2.50g	1.0	1.5	4.00g	3.00g	1.67g	0.67g

Test Mounting Details:



Mounted to the test fixture using four (4) 10-32 SAE Grade 8 bolts
Unit maintained structural integrity and remained functional per manufacturer requirement.

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UUT - 3

**UNIT UNDER TEST (UUT)
Summary Sheet**

TWEI Project No.: 2011-0365-CO-001

Manufacturer: Energex, Inc.

Model Line: Exhausto Inline Power Venter

Model Number: IPVB 200

Product Construction Summary:
Housing made of 316L stainless steel. Cast aluminum impeller.

Options/Subcomponent Summary:
Energex TEFC Motor 0.5HP Three Phase Motor. 440-480V.

UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
75	47.1	22.2	21.6	11.54	6.74	26.01

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 2013	ICC-ES AC 156	2.50g	1.0	1.5	4.00g	3.00g	1.67g	0.67g

Test Mounting Details:



Mounted to the ceiling test fixture using four (4) 1/2" Dia. thread rods with 12" clear spacing and four (4) 1/8" Dia. seismic bracing cables (one at each corner)

Unit maintained structural integrity and remained functional per manufacturer requirement.

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**UNIT UNDER TEST (UUT)
Summary Sheet**

TWEI Project No.: 2011-0365-CO-001

Manufacturer: Energex, Inc.

Model Line: Exhausto Inline Power Venter

Model Number: IPVB 500

Product Construction Summary:
Housing made of 316L stainless steel. Cast aluminum impeller.

Options/Subcomponent Summary:
ABB TEFC Motor 3.0HP. Three Phase Motor. 440-480V.

UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
182	66.9	32.4	30.0	11.76	16.64	22.02

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 2013	ICC-ES AC 156	2.50g	1.0	1.5	4.00g	3.00g	1.67g	0.67g

Test Mounting Details:



Mounted to the ceiling test fixture using four (4) ½" Dia. thread rods with 12" clear spacing and four (4) 1/8" Dia. seismic bracing cables (one at each corner)

Unit maintained structural integrity and remained functional per manufacturer requirement.

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UUT – 5 & 6

UNIT UNDER TEST (UUT) Summary Sheet

TWEI Project No.: 2011-0365-CO-001

Manufacturer: Energex, Inc.

Model Line: Modulating Pressure Control

Model Number: EBC 30

Product Construction Summary:
Housing made of steel and is NEMA 1 rated. Component construction specific to model number listed above.

Options/Subcomponent Summary:
Stack Probe, Silicone Tubing, Main board, Triac Board, Relay Board

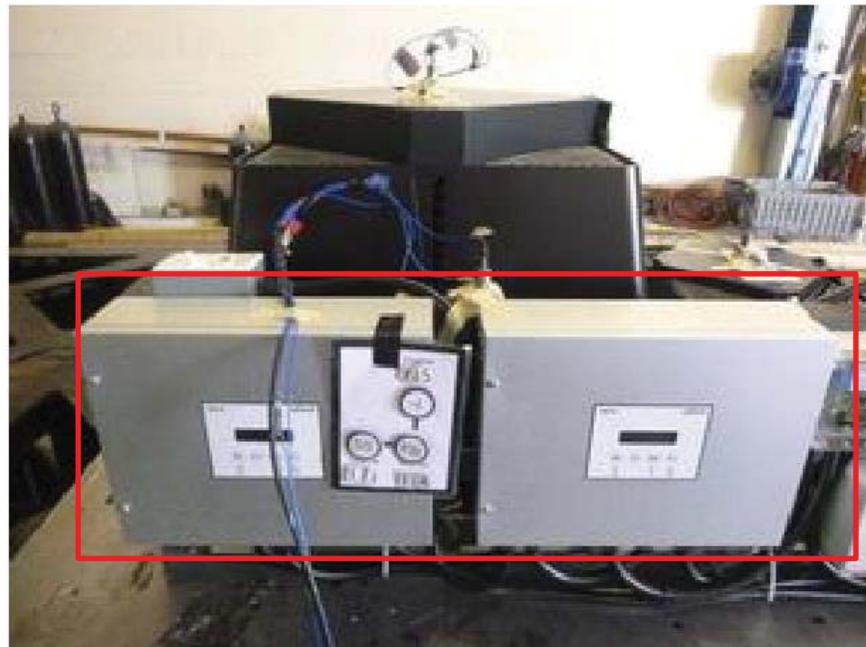
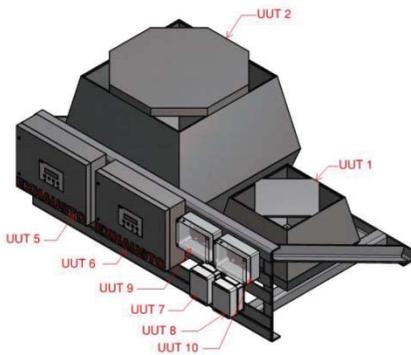
UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
9.5	14.65	4.22	11.03	> 33	> 33	> 33

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 2013	ICC-ES AC 156	2.50g	1.0	1.5	4.00g	3.00g	1.67g	0.67g

Test Mounting Details:



Mounted to the test fixture side (wall mount) using four (4) #10-32 SAE Grade 8 bolts
Unit maintained structural integrity and remained functional per manufacturer requirement.

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UUT – 7 & 8

UNIT UNDER TEST (UUT) Summary Sheet

TWEI Project No.: 2011-0365-CO-001

Manufacturer:	Energex, Inc.
Model Line:	Modulating Pressure Control
Model Number:	ECB 30: XTP2
Product Construction Summary:	NEMA 4x Polystyrene, IP66
Options/Subcomponent Summary:	Ashcroft CXLdp Differential Pressure Sensor

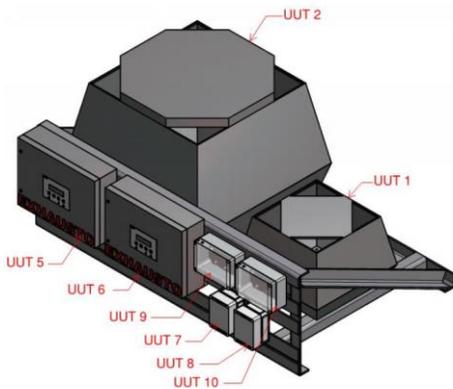
UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
0.6	3.13	3.70	6.18	> 33	> 33	> 33

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 2013	ICC-ES AC 156	2.50g	1.0	1.5	4.00g	3.00g	1.67g	0.67g

Test Mounting Details:



Mounted to the test fixture side (wall mount) using four (4) #8-32 SAE Grade 8 bolts
Unit maintained structural integrity and remained functional per manufacturer requirement.

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UUT – 9 & 10

UNIT UNDER TEST (UUT) Summary Sheet

TWEI Project No.: 2011-0365-CO-001

Manufacturer:	Energex, Inc.
Model Line:	Modulating Pressure Control
Model Number:	EBC30: ES12 Relay Box
Product Construction Summary:	ES12 Relay Box enclosure is NEMA 12 Plastic, IP54
Options/Subcomponent Summary:	Relay Board, 3x Relay 120v/3A

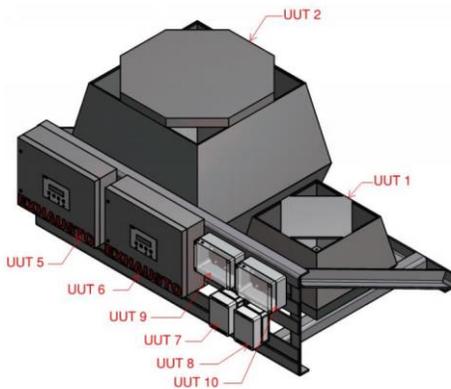
UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
3.0	6.9	5.6	1.6	> 33 hz	46 hz	> 33 hz

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 2013	ICC-ES AC 156	2.50g	1.0	1.5	4.00g	3.00g	1.67g	0.67g

Test Mounting Details:



Mounted to the test fixture side (wall mount) using four (4) #8-32 SAE Grade 8 bolts
Unit maintained structural integrity and remained functional per manufacturer requirement.

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