

OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD S	OFFICE USE ONLY						
CERTIFICATION PREAPPROV		APPLICATION #: OSP-0343					
OSHPD Special Seismic Certification	Preapproval (OSP)						
Type: New X Renewal							
Manufacturer Information							
Manufacturer: ENERVEX Inc.							
Manufacturer's Technical Representative: St	een Hagensen						
Mailing Address: 1685 Bluegrass Lakes Par	kway, Alpharetta, GA 30004						
Telephone: (770) 587-3238	Felephone: (770) 587-3238 Email: steenh@enervex.com						
Product Information	NED						
Product Name: Exhaust/Smoke Control Fans	S OSHPD	The second se					
Product Type: NA	OSP-0343	The second se					
Product Model Number: RSV Chimney Fans	s & IPVB Inline Power Venters (for	model numbers, see attached)					
General Description: Rigid floor mounted mounted controls.	RSV chimney fans, ceiling suspe	nded IPVB inline power venters, and rigid wall					
Mounting Description: Rigid floor (RSV), c	eiling suspended (IPVB), and rigid	wall (controls), See Certified Product Tables					
	enhancements made to the test ur es during the tests shall be incorpo	hits and/or modifications required to address rated into the production units.					
Applicant Information		Ser .					
Applicant Company Name: Manwill Enginee	ring LLC/4 RULL DING CO						
Contact Person: Derek Manwill	SULDIN						
Mailing Address: PO Box 1194, Bend, OR 9	7709						
Telephone: (541) 241-2102	Email: derek@manwillSE.	com					

Title: President

STATE OF CALIFORNIA- HEALTH AND HUMAN SERVICES AGENCY

OSHPD



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

California Licensed Structural Engine	er Responsible for the Engineering and Test Report(s)
Company Name: MANWILL ENGINEERING	; LLC
Name: Derek Manwill	California License Number: S6266
Mailing Address: PO Box 1194, Bend, OR 9	7709
Telephone: (541) 241-2102	Email: derek@manwillse.com
Certification Method	
GR-63-Core X ICC-ES AC	C156 IEEE 344 IEEE 693 NEBS 3
Other (Please Specify):	
	-OR CODE CO
Testing Laboratory	JEDFO. MAD
Company Name: ENVIRONMENTAL TEST	NG LABORATORIES, INC. (ETL)
Contact Person: Jeremy Lange	
Mailing Address: 11034 Indian Trail, Dallas	TX 75229-3513
Telephone: (972) 247-9657	Email: jeremy@etIdallas.com
	DATE: 09/16/2020
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	RORNIA BUILDING CODE.

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

STATE OF CALIFORNIA- HEALTH AND HUMAN SERVICES AGENCY

OSP-0343

OSHPD



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

Seismic Parameters			
Design Basis of Equipment or Component	s (Fp/Wp) = 1.88		
SDS (Design spectral response acce	leration at short period, g) = 2.50		
ap (Amplification factor) =	2.5		
Rp (Response modification factor) =	6.0		
Ω_0 (System overstrength factor) =	2.0		
lp (Importance factor) =	1.5		
z/h (Height ratio factor) =	1		
Natural frequencies (Hz) =	See Attachment 2		
Overall dimensions and weight =	See Attachments 1&2		
OSHPD Approval (For Office Use Onl	y) - Approval Expires on 12/31/202	252	
Date: 9/16/2020	OSP-0343	1m	
Name: Mohammad Aliaari		Title:	Senior Structural Engineer
Special Seismic Certification Valid Up to: S	Bps (g) = 2.50	z/h =	1
Condition of Approval (if applicable):	DATE: 09/16/2020	$\Box / /$	
ç	PILEORNIA BUILDING CODE	6102	

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OSP-0343

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ATTACHMENT 1: CERTIFIED COMPONENTS

SPECIAL SEISMIC CERTIFICATION

TABLE 1 - FLOOR MOUNTED

DOCUMENT NO.: 20011CR1.1

ENERVEX

MANUFACTURER: **ENERVEX INC. (formerly EXHAUSTO) PRODUCT FAMILY: CHIMNEY FANS & POWER VENTERS** DIMENSIONS (in) MAX. WT. **MODEL NUMBER DESCRIPTION / NOTES** BASIS DEPTH WIDTH HEIGHT (lb) **RSV Chimney Fan RSV 160** 12.2 12.2 9.9 28 EXTRAP **RSV 200** 15.4 15.4 11.0 47 UUT 1 **RSV 250** 13.2 60 INTERP 19.1 19.1 22.9 15.0 **RSV 315** 22.9 88 INTERP **RSV 400** 25.6 25.6 16.9 127 INTERP 23.2 **RSV 450** 25.6 25.6 155 UUT 2 SEISMIC MOUNTING: Rigid floor mounted. $S_{DS} = 2.50g$ for z/h = 1 $I_{P} = 1.5$ LEVEL: Building Code: 2019 California Building Code NOTES: Product Construction: Cast aluminum housing. Backwards curved cast aluminum impeller. Options/Subcomponents: 120V-480V. Available motors and impellers are listed in Table 4.

TABLE 2 - CEILING SUSPENDED

MANUFAC PRODUCT		X INC. (for		C.			
MODEL NU	-		MENSIONS	_	MAX. WT.	DESCRIPTION / NOTES	BASIS
WODEL NO		DEPTH	WIDTH	HEIGHT	(lb)	DESCRIPTION / NOTES	DASIS
IPVB Inline P	ower Venter		BA: MOI	nammac	Allaari		
IPVB300		47.1	22.2	21.6	109		UUT 3
IPVB350		51.2	25.3	24.6	118		INTERP
IPVB400		56.8	DA _{29.2}	26.3	160		INTERP
IPVB500		66.9	32.4	30.0	224	0	UUT 4
MOUNTING:	Celing suspended.	P			SEISMIC LEVEL:	$S_{DS} = 2.50g$ for z/h = 1	I _P = 1.5
NOTES:	Building Code: 2019 Product Construction Options/Subcompo	on: Stainless	steel housing				

TABLE 3 - WALL MOUNTED

MANUFAC	TURER: ENERVE	X INC. (forr	nerly EXHA	USTO)			
PRODUCT	FAMILY: CHIMNE	Y FANS & F	OWER VEI	NTERS			
	MDED	DIN	IENSIONS	(in)	MAX. WT.	DESCRIPTION (NOTES	DACIC
MODEL NU	MBER	DEPTH	WIDTH	HEIGHT	(lb)	DESCRIPTION / NOTES	BASIS
Modulating P	ressure Control						
EBC 30		4.2	14.7	11.0	9	NEMA 1 carbon steel	UUT 5,6
Differential P	ressure Sensor			•			
XTP2		3.1	3.7	6.2	0.6	NEMA 4X polystyrene	UUT 7,8
Relay Box				•			
ES 12		3.0	6.9	5.6	1.6	NEMA 12 plastic	UUT 9,10
MOUNTING:	Rigid wall mounted.				SEISMIC LEVEL:	$S_{DS} = 2.50g$ for z/h = 1	I _P = 1.5
NOTES:	Building Code: 2019 California Building Code Construction/Options: Model number uniquely identifies construction, materials, and subcomponents.						

derek@manwillSE.com

ATTACHMENT 1: CERTIFIED SUBCOMPONENTS

SPECIAL SEISMIC CERTIFICATION

TABLE 4 - SUBCOMPONENTS

DOCUMENT NO.: 20011CR1.1

ENERVEX

MANUFACTURER: ENERVEX INC. (formerly EXHAUSTO) PRODUCT FAMILY: CHIMNEY FANS & POWER VENTERS DIMENSIONS (in) MAX. WT. **MODEL NUMBER DESCRIPTION / NOTES** BASIS DEPTH WIDTH HEIGHT (lb) Exodraft - Motor 0.15HP 14 120V, 1-phase UUT 1 ABB - Motor 38 240/480V, 3-phase UUT 2 2HP ENERVEX Inc. - Backwards Curved Impeller (cast aluminum) 160 6.3 6.3 3 INTERP 200 7.9 7.9 5 UUT 1 Ι. 250 9.8 9.8 8 INTERP 315 12.4 12.4 11 INTERP 400 15.7 15.7 14 INTERP 450 17.7 17.7 16 UUT 2 SEISMIC MOUNTING: Mounted within rigid floor mounted unit. $S_{DS} = 2.50g$ for z/h = 1 $I_{P} = 1.5$ LEVELS: NOTES: Building Code: 2019 California Building Code Construction/Options: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.

TABLE 5 - SUBCOMPONENTSBY: Mohammad Aliaari

PRODUCT F	AMILY: CHIMNE	Y FANS & P	OWER VE	NTERS			
MODEL NUM		DIN	IENSIONS	(in)	MAX. WT.	DESCRIPTION / NOTES	BASIS
	IDEN	DEPTH	WIDTH	HEIGHT	(lb)	DESCRIPTION / NOTES	BASIS
Exodraft - Mote	or			4515			
0.5HP			N		22	120V, 1-phase	UUT 3
ABB - Motor			A P	וח ווו וצ	NG		
3HP				ULD	53	240/480V, 3-phase	UUT 4
ENERVEX Inc.	- Backwards Inclin	ned Impeller	· (cast alur	ninum)	L L		
300			11.8	11.8	9		UUT 3
350			13.8	13.8	13		INTERP
400			15.7	15.7	17		INTERP
500			19.7	19.7	23		UUT 4
MOUNTING:	G: Mounted within ceiling suspended unit.			SEISMIC LEVELS:	$S_{DS} = 2.50g$ for z/h = 1	I _P = 1.5	

ENERVEX

ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 1

DOCUMENT NO.: 20011CR1.1

MANUFAC	TURER:	ENERVE>	(INC. (forme	rly EXHAL	JSTO)	
MODEL NU	JMBER:	RSV 200				
UNIT FUNC	CTION:	CHIMNEY	' FAN			
SERIAL NU	JMBER:	N/A				
DIN	IENSIONS	(in)	WEIGHT	RES.	FREQ	. (Hz)
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V
15.4	15.4	11.0	47	>33	>33	15.4
CODE & CI	RITERIA:	2019 CBC		ICC-E	S AC15	6
TEST LAB	ORATORY:	ENVIRON	MENTAL TE	STING LA	BORAT	ORY
REPORT &	DATE:	12706		May 13, 2013		
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} ((g) A _i	_{RIG-V} (g)
2.5	1	4.00	3.00	1.68		0.68
Unit was fu maintained	ANCE FACT ull of operatin d structural in nt after shake	g content duri tegrity and rei	ing the shake			turer
MOUNTING	:	Rigid floor	mounted usi	ng (4) #10) Grade	8 bolts.
CONSTRU		Cost alum	inum houging	Pooleuro	rdo our	ad aget a
		Cast alum	inum housing	J. Dackwa	rus curv	eu cast a

UUT 2

MANUFAC	TURER:	ENERVE	(INC. (forme	IY EXHAUST	- oj mmac	
MODEL NU	JMBER:	RSV 450				
UNIT FUNC	CTION:	CHIMNEY	FAN		0/4 6/0	
SERIAL NU	JMBER:	N/A		DATE: U	19/10/20	
DIN	MENSIONS	(in)	WEIGHT	RES. FF	REQ. (Hz)	
DEPTH	WIDTH	HEIGHT	(tb)	F-B S	-SV	
25.6	25.6	23.2	155	24.0 18	8.8 18.6	
CODE & C	RITERIA:	2019 CBC		ICC-ES A	C156	
TEST LAB	ORATORY:	ENVIRON	MENTAL TE	STING LABO	RATORY	
REPORT &	DATE:	12706		May 13, 2	013	
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)	
2.5	1	4.00	3.00	1.68	0.68	
Unit was f	ANCE FACT ull of operatin d structural in ent after shake	g content duri tegrity and rer	ng the shake			
MOUNTING	IG: Rigid floor mounted using (4) #10 Grade 8 bolts.					
CONSTRU	CTION:	Cast alum	inum housing	. Backwards	curved cast a	
SUBCOMP	ONENTS:	ABB - mot	or (2HP), EN	ERVEX Inc	impeller (450	

ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 3

DOCUMENT NO.: 20011CR1.1

ENERVEX

0013									
MANUFAC	TURER:	ENERVEX	ENERVEX INC. (formerly EXHAUSTO)						
MODEL NU	JMBER:	IPVB300							
UNIT FUNC	CTION:	INLINE PO	OWER VENT	ER					
SERIAL NU	JMBER:	N/A							
DIN	MENSIONS	(in)	WEIGHT	RES	. FREQ	. (Hz)			
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V			
47.1	22.2	21.6	109	N/A	N/A	N/A			
CODE & C	RITERIA:	2019 CBC		ICC-E	ICC-ES AC156				
TEST LAB	ORATORY:	ENVIRONMENTAL TESTING LABORATORY							
REPORT &	DATE:	12706	May 14, 2013						
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V}	(g) A _F	rig-v (g)			
2.5	1	4.00	3.00	1.68		0.68			
IMPORTANCE FACTOR , $I_P = 1.5$									

Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.



MOUNTING:	Ceiling suspended. Unit flange on each end is attached to (2) vertical 1 in x 1/8 in steel straps with (4) 3/8 in Grade 8 bolts on each end (4 straps, 8 bolts total). Each strap connects at top and bottom to horizontal P1000 Unistrut with (1) 3/8 in Grade 8 bolt (4 unistrut, 8 bolts total). The unistrut are supported by (4) 1/2 in A36 threaded rods directly attached to the upper and lower unistrut. The rods have a 12 in drop from the ceiling and are directly attached to the ceiling support member. There are (4) 1/4 in seismic bracing cables (one at each corner angled 45-deg from vertical and 45-deg from each horizontal orthogonal axis of the unit) attached to the threaded rod below the lower unistrut with Mason SCBH hooks. The cables are attached to the ceiling with Mason SCBH hooks and 1/2 in Grade 8 bolts.
CONSTRUCTION:	Stainless steel housing. Backwards inclined cast aluminum impeller.
SUBCOMPONENTS:	Exodraft - motor (0.5HP), ENERVEX Inc impeller (300).



ENERVEX

ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 4

DOCUMENT NO.: 20011CR1.1

0014								
MANUFAC	TURER:	ENERVEX INC. (formerly EXHAUSTO)						
MODEL NU	JMBER:	IPVB500						
UNIT FUNC	CTION:	INLINE PO	OWER VENT	ER				
SERIAL NU	JMBER:	N/A						
DIN	IENSIONS	(in)	WEIGHT	RES	. FREG	Q. (Hz)		
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V		
66.9	32.4	30.0	224	N/A	N/A	N/A		
CODE & C	RITERIA:	2019 CBC	ICC-ES AC156					
TEST LABORATORY:		ENVIRONMENTAL TESTING LABORATORY						
REPORT &	DATE:	12706	May 14, 2013					
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V}	(g) A	A _{RIG-V} (g)		
2.5	1	4.00	3.00	1.68		0.68		
Unit was fo maintaineo	ull of operatin	FOR, I_P = 1. g content duri tegrity and rer table test.	ing the shake					



MOUNTING:	Ceiling suspended. Unit flange on each end is attached to (2) vertical 1 in x 1/8 in steel straps with (4) 3/8 in Grade 8 bolts on each end (4 straps, 8 bolts total). Each strap connects at top and bottom to horizontal P1000 Unistrut with (1) 3/8 in Grade 8 bolts (4 unistrut, 8 bolts total). The unistrut are supported by (4) 1/2 in A36 threaded rods directly attached to the upper and lower unistrut. The rods have a 12 in drop from the ceiling and are directly attached to the ceiling support member. There are (4) 1/4 in seismic bracing cables (one at each corner angled 45-deg from vertical and 45-deg from each horizontal orthogonal axis of the unit) attached to the threaded rod below the lower unistrut with Mason SCBH hooks. The cables are attached to the ceiling with Mason SCBH hooks and 1/2 in Grade 8 bolts.
CONSTRUCTION:	Stainless steel housing. Backwards inclined cast aluminum impeller.
SUBCOMPONENTS:	ABB - motor (3HP), ENERVEX Inc impeller (500).



ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 5 & UUT 6

DOCUMENT NO.: 20011CR1.1

ENERVEX

0015		0					
MANUFACTURER: ENERVEX			(INC. (formerly EXHAUSTO)				
MODEL NUMBER:		EBC 30					
UNIT FUNCTION:		MODULATING PRESSURE CONTROL					
SERIAL NU	JMBER:	N/A					
DIN	MENSIONS	(in)	WEIGHT RES. FREQ. (Hz)		Q. (Hz)		
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V	
4.2	14.7	11.0	9	N/A	N/A	N/A	
CODE & CRITERIA:		2019 CBC ICC-ES AC156					
TEST LABORATORY:		ENVIRONMENTAL TESTING LABORATORY					
REPORT & DATE:		12706 May 13, 2013			Chapter		
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} ((g) /	A _{RIG-V} (g)	and the second
2.5	1	4.00	3.00	1.68		0.68	
IMPORT	ANCE FAC	τor, I _P = 1.	5	5	JR	CODE	
maintaine		g content duri tegrity and rer table test.	0			acturer	ATRIA DE
MOUNTING: Rigid wal			all mounted using (4) #10 Grade 8 bolts.				
CONSTRUCTION: NEMA 1 of			carbon steel enclosure.				
SUBCOMPONENTS: Uniquely identified by model number. SP-U343					+3 MAR		
TESTING N	NOTES: UUT 5 and UUT 6 are identical.						

UUT 7 & UUT 8

BY: Mohammad Aliaari

MANUFAC	TURER:	ENERVEX INC. (formerly EXHAUSTO)						
MODEL NU	MBER:	XTP2						
UNIT FUNC	TION:	DIFFERENTIAL PRESSURE SENSOR						
SERIAL NU	MBER:	N/A						
DIN	IENSIONS	(in)	WEIGHT	RES.	FREQ.	(Hz)		
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V		
3.1	3.7	6.2	0.6	N/A	N/A	N/A		
CODE & CF	RITERIA:	2019 CBC	ICC-ES AC156			C		
TEST LABO	ORATORY:	ENVIRONMENTAL TESTING LABORATORY						
REPORT &	DATE:	12706	May 13, 2013					
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V}	(g) A _F	_{RIG-V} (g)	Va	
2.5	1	4.00	3.00	1.68		0.68	1	
Unit was fu maintained	Ill of operatin	tegrity and rei	5 ing the shake mained function			urer		
MOUNTING	i:	Rigid wall mounted using (4) #8 Grade 8 bolts.						
CONSTRUC	CTION:	NEMA 4X polystyrene enclosure.						
SUBCOMP	ONENTS:	Uniquely identified by model number.						
TESTING N	OTES:	UUT 7 and UUT 8 are identical.						



ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 9 & UUT 10

CONSTRUCTION:

SUBCOMPONENTS: TESTING NOTES:

DOCUMENT NO.: 20011CR1.1

ENERVEX

MANUFAC	TURER:	ENERVEX INC. (formerly EXHAUSTO)					
MODEL NU	JMBER:	ES 12					
UNIT FUNC	CTION:	RELAY BOX					
SERIAL NU	JMBER:	N/A					
DIN	IENSIONS	(in) WEIGHT		RES. FREQ. (Hz)			
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V	
3.0	6.9	5.6	1.6	N/A	N/A	N/A	
CODE & CI	RITERIA:	2019 CBC	ICC-ES AC156				
TEST LAB	ORATORY:	ENVIRONMENTAL TESTING LABORATORY					
REPORT &	DATE:	12706	May 13, 2013				
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V}	(g) /	А _{RIG-V} (g)	
2.5	1	4.00	3.00	1.68		0.68	
Unit was fu maintained	ull of operatin	FOR, I_P = 1. g content duri tegrity and rer table test.	ing the shake				
						NUL AND ALL MADE	

NEMA 12 plastic enclosure.

COMP - ITI -	

