



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

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

OFFICE USE ONLY	
APPLICATION #:	OSP – 0460-10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Halton Company

Manufacturer's Technical Representative: Greg Lyons

Mailing Address: 26241 W. Leslie Drive, Channahon, IL 60410

Telephone: 815.467.8033 Email: rschmidt@haltoncompany.com

Product Information

Product Name: EcoloAir

Product Type: Custom Air Conditioning Units

Product Model Number: See Attached

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

General Description: Unit consists of three modules including a filter module, odor control module and a fan module. All modules are constructed of 16-gauge painted carbon steel. Externally mounted stainless steel control panels. Seismic enhancements made to the test units and modifications required to address the anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Units are rigid and isolated base mounted.

Applicant Information

Applicant Company Name: TRU Compliance, LLC - A Tobolski Watkins Affiliate

Contact Person: Derek J. Manwill, S.E.

Mailing Address: 960 SW Disk Dr., Suite 104, Bend, OR 97702

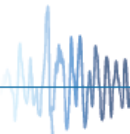
Telephone: 844.878.0200 Email: dmanwill@trucompliance.com

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: 03/10/2016

Title: Vice President Company Name: TRU Compliance, LLC

"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: TRU Compliance, LLC
Name: Derek J. Manwill, S.E. California License Number: S6266
Mailing Address: 960 SW Disk Dr., Suite 104, Bend, OR 97702
Telephone: 844.878.0200 Email: dmanwill@trucompliance.com

Supports and Attachments Preapproval

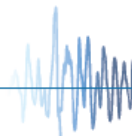
- Supports and attachments are preapproved under OPM- _____
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
- Supports and attachments are not preapproved

Certification Method

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

Testing Laboratory

Company Name: Clark Testing
Contact Name: Russell Matich
Mailing Address: 1801 Route 51 South, Jefferson Hills, PA 15025
Telephone: 412.387.1001 Email: rmatich@clarktesting.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) = Rigid: 1.5(S_{DS} = 2.0g), 1.44(S_{DS} = 3.2g); Isolated: 4.5(S_{DS} = 2.0g), 2.4(S_{DS} = 3.2g)

S_{DS} (Design spectral response acceleration at short period, g) = 2.0g (z/h = 1.0); 3.2g (z/h = 0.0)

a_p (In-structure equipment or component amplification factor) = Rigid: 2.5; Isolated: 2.5

R_p (Equipment or component response modification factor) = Rigid: 6.0; Isolated: 2.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0 (S_{DS} = 2.0g); 0.0 (S_{DS} = 3.2g)

Equipment or Component Natural Frequencies (Hz) = See attached

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

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): Attachment A

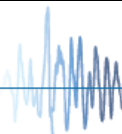
OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature:  Date: 3/18/16

Print Name: M. R. Karim Title: SHFR

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

Condition of Approval (if applicable): _____



SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

TRU PROJECT NO. 15038



Manufacturer: Halton Company	Table Description: Motors, Compressors & Fans	TABLE 3
Model Line: EcoloAir		

Building Code: CBC 2016	Seismic Certification Limits:	$S_{DS} = 2.0$	$z/h = 1.0$		$I_p = 1.5$
		$S_{DS} = 3.2$	$z/h = 0.0$		

Component Type	Manufacturer	Model	Description	Notes	UUT
Motor	Weg	00736ET3E213T-W22	7.5 HP, 208/460V, 3600 RPM		1
		01036ET3E215T-W22	10 HP, 208/460V, 3600 RPM		
		01518ET3E254T-W22	15 HP 208/460V, 1800 RPM		
		02018ET3E256T-W22	20 HP, 208/460V, 1800 RPM		2
Motor Base	World Wide	W213T	Double adjust slide base for 213T motor		1
		W215T	Double adjust slide base for 215T motor		
		W254T	Double adjust slide base for 254T motor		
		W256T	Double adjust slide base for 256T motor		2
Compressor	Gast	DOA-P701-AA	1/8 HP, 115V, 4.2A		1,2
Fan	Comefri	ATZAF 12-12 T2	Carbon steel, 4350 RPM max, 12.7" diam.		1
		ATZAF 15-15 T2	Carbon steel, 3500 RPM max, 16.1" diam.		
		ATZAF 18-18 T2	Carbon steel, 3100 RPM max, 18.1" diam.		
		ATZAF 20-20 T2	Carbon steel, 2750 RPM max, 20.1" diam.		
		ATZAF 22-22 T2	Carbon steel, 2500 RPM max, 22.6" diam.		2
		Orion	OA938AP-11-1WB	115VAC, aluminum, 3100RPM, 9W	
Fan Shroud	Hoffman	T4S3R	16GA. carbon steel, NEMA 3R, 4"		1,2

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

TRU PROJECT NO. 15038



Manufacturer: Halton Company Model Line: EcoloAir		Table Description: Electrical Components			TABLE 6	
Building Code: CBC 2016		Seismic Certification Limits:				
		$S_{DS} = 2.0$ $z/h = 1.0$		$I_p = 1.5$		
		$S_{DS} = 3.2$ $z/h = 0.0$				
Component Type	Manufacturer	Model	Description	Notes	UUT	
Pressure Transducer	Setra	2651-001WD	0-1"W.C.		1,2	
		2651-2R5WD	0-2.5"W.C.		1,2	
		2651-050WD	0-5"W.C.		1,2	
Relay	Square D	RPM21B7	24V coil, 250V contact, 15A		1,2	
		RPZF2	250V rating, 16A socket		1,2	
Switch	McGill	0852-0011N	120/277VAC, 1P, 15A, SPST rocker		1,2	
	Ansul	423879	21A, DPDT micro switch		1,2	
Thermostat	White Rodgers	3F01-350NO	120/240/277VAC, 350F Limit		1,2	
	Caloritech	SS101	125V		1,2	
Transformer	SOLA	E100TE	100VA, 208/240/415, 200/230/400, 220/380VAC		1,2	
Controller	Omron	61F-GP-N8-AC120	120VAC, 8-pin		1,2	
VFD	Allen-Bradley	22B-B024N	7.5HP, 240VAC, 24A		1	
		22B-B033N	10HP, 240VAC, 33A			
		22B-D024N	15HP, 480VAC, 24A			
		22C-D030N	20HP, 480VAC, 30A			
		22C-D038N	25HP, 480VAC, 38A		2	
Fuse	Bussmann	JKS-40	40A, 600VAC		1,2	
		ABC3	3A, 250VAC, ceramic		1,2	
Fuse Holder	Square D	AB1FUSE435U6X	15A, 600V		1,2	

**SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX**

TRU PROJECT NO. 15038



Manufacturer: Halton Company	Table Description: Miscellaneous	TABLE 7
Model Line: EcoloAir		

Building Code: CBC 2016	Seismic Certification Limits:	$S_{DS} = 2.0$ $z/h = 1.0$	$I_p = 1.5$
		$S_{DS} = 3.2$ $z/h = 0.0$	

Component Type	Manufacturer	Model	Description	Notes	UUT
Tank	Ansul	429862	Stainless steel, holds agent		1,2
Latch	Sierra Pacific Eng.	173	Die cast zinc, compression over-center lever		1,2
Air Cylinder	SMC	AF20-N02C-C7	Body size 20, NPT threads, 1/4" port		1,2
Hinge	Sierra Pacific Eng.	FH200BKP	Plastic friction hinge, large		1,2
Sheave & Bushings	Browning	2B5V60	Cast iron, 6.28" diameter		1,2
Belt	Gates	BX55	Cogged V-belt, 58"		1
		BX90	Cogged V-belt, 93"		2

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

TRU PROJECT NO. 15038



Manufacturer: Halton Company Model Line: EcoloAir		Table Description: Electrical Components for External Panel			TABLE 8	
Building Code: CBC 2016		Seismic Certification Limits:				
		$S_{DS} = 2.0$ $z/h = 1.0$		$I_p = 1.5$		
		$S_{DS} = 3.2$ $z/h = 0.0$				
Component Type	Manufacturer	Model	Description	Notes	UUT	
Relay	Schneider Electric	781XAXM4L-24A	24VAC, 20A, 180Ω coil resistance		3,4	
Switch	Schurter	MSM 22-ST	24V, 0.8A		3,4	
Transformer	HPS	PH100PG	100VA, 120/240VAC in, 12x24VAC out, 8.33/4.17A		3,4	
Controller	Halton	MC8 Rev 3	24V, 4A	UUT 4 (2) installed	3,4	
Fuse	Bussmann	ABC-3	3A, 250VAC, ceramic		3,4	
		ABC-1/4	0.25A, 250VAC, ceramic		3,4	
Fuse Holder	Ferraz Shawmut	ATM5	5A, 600VAC/VDC		3,4	
	Ferraz Shawmut	USM1	30A, 600VAC, 1P		3,4	
Fuse Holder	Square D	AB1FUSE435U6X	15A, 600V		3,4	
	Weintek	MT8070iE	24VDC, 7" color touch panel		3,4	
Power Supply	TDK-LAMBDA	DSP60-24	120VAC input, 24VDC output, 60W, 2.5A		3,4	
Terminal Block	C3 Controls	WTB2-W2/4G	20A maximum, DIN rail mounted		3,4	

UNIT UNDER TEST (UUT) SUMMARY SHEET



TRU PROJECT NO. 15038

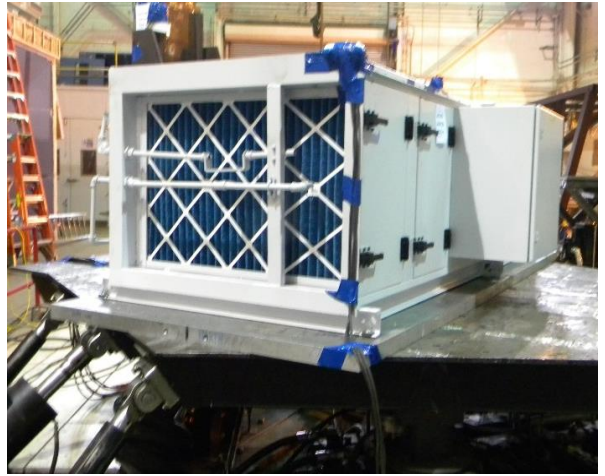
Manufacturer: Halton Company	UUT 1
Model Line: EcoloAir	
Model Number: 3000CFM	
Serial Number: N/A	

Product Construction Summary:
Filter module: double wall construction reinforced and braced, 16GA. carbon steel inner walls liquid tight welded, 20GA. carbon steel outer walls. **Odor control module:** 16GA. carbon steel. **Fan module:** 16GA. carbon steel.

Options/Subcomponent Summary:
Options: Weather proof insulation, fire supression system, VFD.
Subcomponents: Motor - Weg/00736ET3E213T-W22 | Motor base - World Wide/W213T | Compressor - Gast/DOA-P701-AA | Fan - Comefri/ATZAF 12-12 T2, Orion/OA938AP-11-1WB | VFD - Allen-Bradley/22B-B024N | Enclosures - Rittal/WM161208NC (NEMA 1/3R/4/12), WM242412NC (NEMA 1/3R/4/12). See Tables 3-7 for complete list of installed subcomponents.

<i>UUT Properties</i>										
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)						
	Depth	Width	Height	Front-Back	Side-Side	Vertical				
1,348	46.4	113.0	33.0	11.1	11.5	20.2				
<i>UUT Highest Passed Seismic Run Information</i>										
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 AC156		2.0	1.0	1.5	3.20	2.40	1.33	0.53
				3.2	0.0	1.5	3.20	1.28	2.13	0.85

Test Mounting Details:



Rigid base mounted with (8) 1/2" grade 5 cap screws.
 Unit maintained structural integrity and remained functional per manufacturer requirement.
 Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 15038



Manufacturer: Halton Company	UUT 2
Model Line: EcoloAir	
Model Number: 12000CFM	
Serial Number: N/A	

Product Construction Summary:
Filter module: double wall construction reinforced and braced, 16GA. carbon steel inner walls liquid tight welded, 20GA. carbon steel outer walls. **Odor control module:** 16GA. carbon steel. **Fan module:** 16GA. carbon steel.

Options/Subcomponent Summary:
Options: Weather proof insulation, fire supression system, VFD.
Subcomponents: Motor - Weg/02018ET3E256T-W22 | Motor base - World Wide/W256T | Compressor - Gast/DOA-P701-AA | Fan - Comefri/ATZAF 22-22 T2, Orion/OA938AP-11-1WB | VFD - Allen-Bradley/22C-D038N | Enclosures - Rittal/WM161208NC (NEMA 1/3R/4/12), WM242412NC (NEMA 1/3R/4/12). See Tables 3-7 for complete list of installed subcomponents.

UUT Properties										
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)						
	Depth	Width	Height	Front-Back	Side-Side	Vertical				
3,480	82.4	128.0	56.0	8.9	12.9	13.1				
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 2016		ICC-ES AC156		2.0	1.0	1.5	3.20	2.40	1.33	0.53
				3.2	0.0	1.5	3.20	1.28	2.13	0.85

Test Mounting Details:



Isolated base mounted on (6) Mason SLF-107 isolators & (4) Mason Z-1011-5000 snubbers. **Unit to fixture:** (8) 1/2" grade 5 cap screws. **Fixture to isolators:** (6) 1/2" cap screws. **Fixture to snubbers:** (16) 5/8" cap screws. **Snubbers to table:** (16) 5/8" cap screws. Unit maintained structural integrity and remained functional per manufacturer requirement. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 15038



Manufacturer: Halton Company	UUT 3
Model Line: EcoloAir	
Model Number: EcoloAir Control Panel	
Serial Number: N/A	

Product Construction Summary:
16GA. stainless steel enclosure.

Options/Subcomponent Summary:
Relay: Schneider Electric - 781XAXM4L-24A | Switch: Schurter - MSM 22-ST | Transformer: HPS - PH100PG | Controller: Halton - MC8 Rev 3 | Fuse: Bussman - ABC-3 & ABC-1/4, Ferraz Shawmut - ATM5 | HMI: Weintek - MT8070iE | Power Supply: TDK-LAMBDA - DSP60-24 | Terminal Block: C3 Controls - WTB2-W2/4G.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
25	7	15	24	N/A	N/A	N/A

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 2016	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.33	0.53
		3.2	0.0	1.5	3.20	1.28	2.13	0.85

Test Mounting Details:



Rigid wall mounted with (4) 7/16" grade 5 cap screws.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET



TRU PROJECT NO. 15038

Manufacturer: Halton Company	UUT 4
Model Line: EcoloAir	
Model Number: EcoloAir Control Panel Serial Number: N/A	

Product Construction Summary:
16GA. stainless steel enclosure.

Options/Subcomponent Summary:
Relay: Schneider Electric - 781XAXM4L-24A | Switch: Schurter - MSM 22-ST | Transformer: HPS - PH100PG | Controller: (2) Halton - MC8 Rev 3 | Fuse: Bussman - ABC-3 & ABC-1/4, Ferraz Shawmut - ATM5 | HMI: Weintek - MT8070iE | Power Supply: TDK-LAMBDA - DSP60-24 | Terminal Block: C3 Controls - WTB2-W2/4G. *Same as UUT 3 with an extra controller and larger enclosure.*

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
46	7	22	24	N/A	N/A	N/A

<i>UUT Highest Passed Seismic Run Information</i>									
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 AC156	2.0	1.0	1.5	3.20	2.40	1.33	0.53	
		3.2	0.0	1.5	3.20	1.28	2.13	0.85	

Test Mounting Details:



Rigid wall mounted with (4) 7/16" grade 5 cap screws.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.