



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

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

OFFICE USE ONLY

APPLICATION #: OSP – 0122-10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Loren Cook Company

Manufacturer's Technical Representative: Bradley F. Skidmore, P.E.

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

Telephone: 417.869.6474 Email: bskidmore@lorencook.com

Product Information

Product Name: ASP Supply Fans

Product Type: Supply Fans

Product Model Number: 90ASP/100ASP/120ASP/150ASP/180ASP/200ASP
(List all unique product identification numbers and/or part numbers)

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

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

Applicant Information

Applicant Company Name: TRU Compliance, LLC

Contact Person: Matthew J. Tobolski, S.E.

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

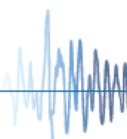
Telephone: 844.878.0200 Email: mtobolski@trucompliance.com

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: 10/17/2016

Title: President & CEO 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: Matthew J. Tobolski, S.E. California License Number: S5648

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

Telephone: 844.878.0200 Email: mtobolski@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

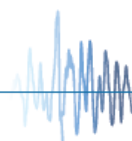
Company Name: Environ Laboratories

Contact Name: Kent L. Erickson

Mailing Address: 9725 Girard Avenue South, Minneapolis, MN 55431

Telephone: 952.888.7795 Email: kle@environlab.com

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FACILITIES DEVELOPMENT DIVISION**

Seismic Parameters

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

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

S_{DS} (Design spectral response acceleration at short period, g) = 2.28

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 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

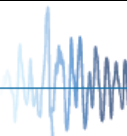
OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature:  Date: 11/14/16

Print Name: M. R. Karim Title: SHFR

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.28 z/h = 1.0

Condition of Approval (if applicable): _____



SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

TRU PROJECT NO. 16034



Manufacturer: Loren Cook Company	TABLE 1
Model Line: ASP	

Certified Product Construction Summary:
16ga. carbon steel outer housing; 16ga. carbon steel housing base; forward curve carbon steel wheel; 16ga. Carbon steel inner housing

Certified Options Summary:
90ASP: 0.080" thick Aluminum Curb - 9.5" tall
All models: Carbon steel curb - up to 24" tall

Mounting Configuration:
Base mounted - rigid
Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: IBC 2015 **Seismic Certification Limits:** $S_{DS} = 2.28g$ $z/h=1.0$ $I_p = 1.5$

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
ASP (Belt Drive)	90 ASP	33	33	26.5	263	UUT: 9-1/2" tall Al curb	1
	100 ASP	38.5	38.5	30	335		Interp.
	120 ASP	42.5	42.5	33	385		Interp.
	150 ASP	46	46	36	435		Interp.
	180 ASP	56	56	40	630		Interp.
	200 ASP	68	68	47	925	UUT: 24" tall CS curb	2

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

TRU PROJECT NO. 16034



Manufacturer: Loren Cook Company		Table Description: Fan Motors			TABLE 2	
Model Line: ASP						
Building Code: IBC 2015		Seismic Certification Limits: $S_{DS} = 2.28 g$ $z/h = 1.0$			$I_p = 1.5$	
Component Type	Manufacturer	Model	Description	Notes	UUT	
Fan Motor	Baldor	EM3116T	1 hp; 34 lbs.; 145T frame		1	
		EM3154T	1.5 hp; 37 lbs.; 145T frame		Interp.	
		EM3157T	2 hp; 40 lbs.; 184T frame		Interp.	
		EM3218T	5 hp; 84 lbs.; 184T frame		Interp.	
		EM3311T	7.5 hp; 115 lbs.; 213T frame		2	

TRU Compliance, LLC - A Tobolski Watkins Affiliate
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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

TRU PROJECT NO. 16034



Manufacturer: Loren Cook Company		Table Description: Dampers			TABLE 3
Model Line: ASP					
Building Code: IBC 2015		Seismic Certification Limits: $S_{DS} = 2.28g$ $z/h = 1.0$ $I_p = 1.5$			
Component Type	Manufacturer	Model	Description	Notes	UUT
Motorized damper	Ruskin	BDMI-18	18 lbs.; Carbon steel		1
		BDMI-22	22 lbs.; Carbon steel		Interp.
		BDMI-26	25 lbs.; Carbon steel		Interp.
		BDMI-30	35 lbs.; Carbon steel		Interp.
		BDMI-42	73 lbs.; Carbon steel		2

**SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX**

TRU PROJECT NO. 16034



Manufacturer: Loren Cook Company	Table Description: Filters	<h2>TABLE 4</h2>
Model Line: ASP		

Building Code: IBC 2015 **Seismic Certification Limits:** $S_{DS} = 2.28g$ $z/h = 1.0$ $I_p = 1.5$

Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT
		Depth	Width	Height				
1" Permanent filters (Loren Cook)	9 ASP	1	10.25	19.75	0.75	Al Frame w/ Al Media	UUT: Qty (4)	1
	10 ASP	1	12	24	1	Al Frame w/ Al Media		Interp.
	12 ASP	1	16	28	1.75	Al Frame w/ Al Media		Interp.
	15 ASP	1	16	28	1.75	Al Frame w/ Al Media		Interp.
	18 ASP	1	20	32	2.5	Al Frame w/ Al Media		Interp.
	20 ASP	1	27.75	44	4.5	Al Frame w/ Al Media	UUT: Qty (4)	2

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16034



Manufacturer: Loren Cook Company	UUT 1
Model Line: ASP	
Model Number: 90 ASP Serial Number: N/A	

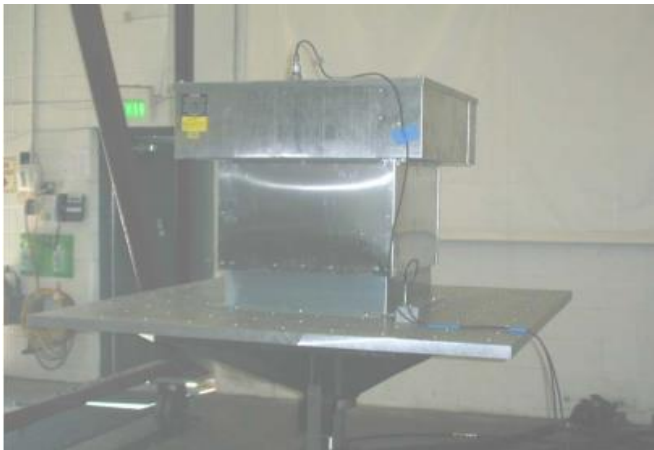
Product Construction Summary:
16ga. carbon steel outer housing; 16ga. carbon steel housing base; forward curve carbon steel wheel; 16ga. Carbon steel inner housing

Options/Subcomponent Summary:
9 1/2" tall Aluminum curb; BDMI-18 motorized damper; Baldor EM3116T 1 hp Motor; (4) 9 ASP Aluminum filters

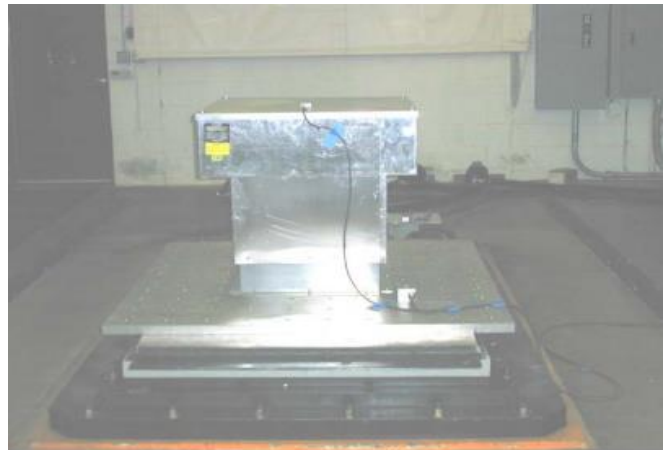
UUT Properties						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
263	33	33	26.5	24.0	16.1	16.6

UUT Highest Passed Seismic Run Information								
Building Code	Test Criteria	S _{DS} (g)	z/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
IBC 2015	ICC-ES AC156	2.28	1.0	1.5	3.65	2.74	1.52	0.61

Test Mounting Details:



Vertical axis



Horizontal axis

The unit was attached to the curb using self-drilling sheet metal screws through the fan housing into the curb. The curb was attached to the shake table using 5/16" diameter fasteners at 6" spacing around perimeter of the mounting flange. 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. 16034



Manufacturer: Loren Cook Company	UUT 2
Model Line: ASP	
Model Number: 200 ASP Serial Number: N/A	

Product Construction Summary:
16ga. carbon steel outer housing; 16ga. carbon steel housing base; forward curve carbon steel wheel; 16ga. Carbon steel inner housing

Options/Subcomponent Summary:
24" tall Carbon Steel curb; BDMI-42 motorized damper; Baldor EM3311T 7.5 hp Motor; (4) 20 ASP Aluminum filters

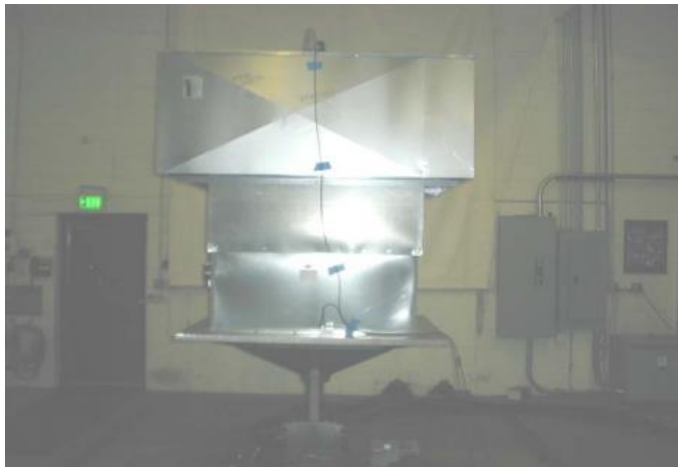
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
925	68	68	47	10.4	8.1	29.2

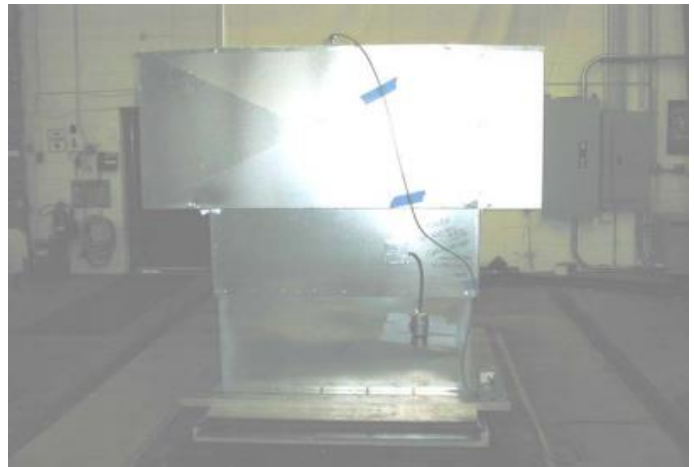
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
IBC 2015	ICC-ES AC156	2.28	1.0	1.5	3.65	2.74	1.52	0.61

Test Mounting Details:



Vertical Axis



Horizontal Axis

The unit was attached to the curb using self-drilling sheet metal screws through the fan housing into the curb. The curb was attached to the shake table using 5/16" diameter fasteners at 6" spacing around perimeter of the mounting flange. Unit maintained structural integrity and remained functional per manufacturer requirement. Contents were included in testing per operating conditions.