



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

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

OFFICE USE ONLY

APPLICATION #: **OSP – 0489 – 10**

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Thermo Fisher Scientific

Manufacturer's Technical Representative: Nathan Lang

Mailing Address: 25 Nimble Hill Road, Newington, NH 03801

Telephone: (603) 403-6130 Email: Nathan.lang@thermofisher.com

Product Information

Product Name: Recirculating Chiller ThermoFlex 5000

Product Type: Recirculating Chiller

Product Model Number: 1417922160230001 w/ Seismic Kit #095139
(List all unique product identification numbers and/or part numbers)

General Description: Recirculating chiller

Mounting Description: Rigidly floor mounted

Applicant Information

Applicant Company Name: Product EHS Consulting

Contact Person: Steven Brody

Mailing Address: 19 Red Sox Lane, Raymond, NH 03077

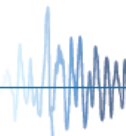
Telephone: (603) 244 1460 Email: Stevenb@productehsconsulting.com

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: October 31, 2016

Title: Owner/Manager Company Name: Product EHS Consulting LLC

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





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

Company Name: Forell/Elsesser Engineers, Inc.

Name: Marco Scanu, SE California License Number: S4454

Mailing Address: 160 Pine St., 6th Flr., San Francisco, CA 94111

Telephone: (415) 837-0700 Email: m.scanu@forell.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): _____

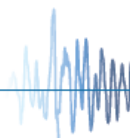
Testing Laboratory

Company Name: National Technical Systems

Contact Name: Tom Boonarkat

Mailing Address: 7800 Highway 20 West, Huntsville, AL 35806

Telephone: (256) 837-4411 Email: Tom.Boonarkat@nts.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) = 2.12

S_{DS} (Design spectral response acceleration at short period, g) = 2.83

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) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See attachment, UUT Summary Sheets

Overall dimensions and weight (or range thereof) = See attachment, Certified Products Table

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): Certified Products Table, Certified Subcomponents Table, UUT Summary Sheets

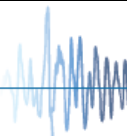
OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature:  Date: February 7, 2017

Print Name: Ali Sumer Title: DSE

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.83 z/h = 1.0

Condition of Approval (if applicable): _____



Thermo Fisher Scientific - Recirculating Chiller ThermoFlex 5000							
Certified Product Table							
Unit	Width	Depth	Height	Weight	Construction Material	Model Number	Test Status
Recirculating Chiller ThermoFlex 5000							
ThermoFlex 5000	19.3 in	30.9 in	38.9 in	303 lbs	Carbon Steel	1417922160230001 w/ Seismic Kit #095139	UUT1
Notes							
<ol style="list-style-type: none"> 1. Enclosure is NEMA Type 1 rated 2. Floor mounted 3. 60 Hz voltage (US): 200-230 VAC 4. 50 Hz voltage: 200/230 VAC 5. Seismic Tie Down Kit (Part #095139): (2) 12ga carbon steel angles at each corner w/ (1) 5/16" bolt between ea. angle. 							

OSP APPLICATION
 Thermo Fisher Scientific – Recirculating Chiller ThermoFlex 5000
 UUT Summary Sheet

Date: 2/7/2017

Test Report PR050997-TR-16 – UUT 1

Recirculating Chiller ThermoFlex 5000

Model number 1417922160230001

Carbon Steel

38.9" H x 19.3" W x 30.9"D, 303 lbs

Floor mounted using:

(4) - 3/8" grade 5 bolts torqued to 35 ft-lbs in double-angle brackets (Seismic Tie Down Kit #095139)



Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	Horizontal		Vertical	
					A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC 156	2.83	1.0	1.5	4.53	3.52	1.96	0.78
Natural Frequencies (Hz)			Test Results					
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. UUT full of contents during testing.					
7.2	8.5	n/a						