



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY

APPLICATION #: OSP – 0465 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: Termaco

Manufacturer's Technical Representative: Carl Tremblay

Mailing Address: 325 Bd Industriel, Saint-Jean-sur-Richelieu, QC J3B7M3, Canada

Telephone: (450) 346-6781 Email: ctremblay@termaco.com

Product Information

Product Name: Battery cabinets

Product Type: Electrical equipment

Product Model Number: TCR-CS-410RB-S01 and TCR-CS-410RB-S02

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

General Description: Each unit consists of a circuit breaker, batteries and enclosure. Seismic enhancements made to the test units required to address the anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Rigid base mounted

Applicant Information

Applicant Company Name: Dynamic Certification Laboratories

Contact Person: Joseph L. La Brie, S.E., Partner

Mailing Address: 1315 Greg Street, Suite 109, Sparks, NV 89431

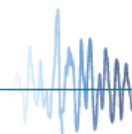
Telephone: (775) 358-5085 Email: labrie@shaketest.com

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: 5/3/16

Title: Joseph L. La Brie, S.E. Company Name: Dynamic Certification Laboratories

"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: Dynamic Certification Laboratories

Name: Dr. Ahmad Itani, S.E. California License Number: SE-5220

Mailing Address: 1315 Greg Street, Suite 109, Sparks, NV 89431

Telephone: (775) 358-5085 Email: Itani@shaketest.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): _____

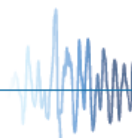
Testing Laboratory

Company Name: Dynamic Certification Laboratories

Contact Name: Kelly Laplace, Project Manager

Mailing Address: 1315 Greg Street, Suite 109, Sparks, NV 89431

Telephone: (775) 358-5085 Email: Kelly@shaketest.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) = 0.99

S_{DS} (Design spectral response acceleration at short period, g) = 1.38

a_p (In-structure equipment or component amplification factor) = 1.0

R_p (Equipment or component response modification factor) = 2.5

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1

Equipment or Component Natural Frequencies (Hz) = See attachment

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

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): _____

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

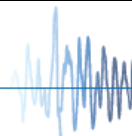
Signature: Timothy J. Piland Date: May 16, 2016

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = 1.38 z/h = 1

Condition of Approval (if applicable): _____

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



Special Seismic Certification Certified Components



Manufacturer: Termaco

Product Line: Battery Racks

Certified Construction: 10 gage painted carbon steel

Certified Options: Breakers and batteries

Mounting Description: Rigid base mount

Model	Manufacturer	Dimensions (in)			Weight (lb)	Sds (g), z/h=1	Unit
		Depth	Width	Height			
TCR-CS-410RB-S02	Termaco	32.7	40.0	77.6	4,930	1.38	UUT1
TCR-CS-410RB-S01		35.3	40.3	78.7	5,120	1.38	UUT2

Special Seismic Certification Certified Subcomponents



Manufacturer: Termaco

Product Line: Battery racks

Certified Subcomponent: Enclosures

Enclosures								
Model Number	Manufacturer	Cabinet Material	NEMA Rating	Dimensions (in)			Max. Weight (lb)	Unit
				Length	Depth	Height		
TCR-CS-410RB-S02-Enclosure	Termaco	Painted carbon steel	NEMA 1/2	32.7	40.0	77.6	4,930	UUT1
TCR-CS-410RB-S01-Enclosure			NEMA 1	35.3	40.3	78.7	5,120	UUT2

Special Seismic Certification Certified Subcomponents



Manufacturer: Termaco

Product Line: Battery racks

Certified Subcomponent: Breakers and batteries

Breakers

Model Number	Manufacturer	Material	Amperage	Unit
LLL37060D33	Square D	Molded case (plastic)	600	UUT1
SACE T6N800	ABB		800	UUT2

Note: Manufacturing process for tested breakers is ISO 9001 certified.

Batteries

Model Number	Manufacturer	Material	Voltage	Unit
UPS12-540MR	C&D Dynasty	Lead acid battery	12 V	UUT1
12HX500-FR	Data Safe		12 V	UUT2

Note: Multiple identical batteries were tested in each unit.

Special Seismic Certification



Tested Components

Manufacturer: Termaco

Product Line: Battery Racks

Tested Construction: 10 gage painted carbon steel

Tested Options: Breakers and batteries

Mounting Description: Rigid base mount

Model	Manufacturer	Dimensions (in)			Weight (lb)	Sds (g), z/h=1	Unit
		Depth	Width	Height			
TCR-CS-410RB-S02	Termaco	32.7	40.0	77.6	4,930	1.38	UUT1
TCR-CS-410RB-S01		35.3	40.3	78.7	5,120	1.38	UUT2

UUT1**UNIT UNDER TEST (UUT) Summary Sheet****Manufacturer:** Termaco**Product Line:** Battery cabinets**Model Number:** TCR-CS-410RB-S02**Product Construction Summary:**

10 gage painted carbon steel

Options / Subcomponent Summary:

Square D circuit breaker and C&D Dynasty batteries

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Dimensions (inches)				Lowest Natural Frequency (Hz)		
		Depth	Width	Height	Front-Back	Side-Side	Vertical
4,930	UUT1	32.7	40.0	77.6	6.8	9.0	23.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2016	ICC-ES AC156	1.38	1.0	1.5	2.21	1.66	0.92	0.45
		1.55	0.0		1.55	0.62	1.03	0.41

Unit Mounting Description:

The unit was rigidly mounted at its base with (6) 1/2" diameter Grade 8 bolts, torqued to 80 ft-lb.

UUT2**UNIT UNDER TEST (UUT) Summary Sheet****Manufacturer:** Termaco**Product Line:** Battery cabinets**Model Number:** TCR-CS-410RB-S01**Product Construction Summary:**

10 gage painted carbon steel

Options / Subcomponent Summary:

ABB circuit breaker and Data Safe batteries

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Dimensions (inches)				Lowest Natural Frequency (Hz)		
		Depth	Width	Height	Front-Back	Side-Side	Vertical
5,120	UUT2	35.3	40.3	78.7	6.5	6.8	18.8

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2016	ICC-ES AC156	1.38	1.0	1.5	2.21	1.66	0.92	0.45
		1.55	0.0		1.55	0.62	1.03	0.41

Unit Mounting Description:

The unit was rigidly mounted at its base with (6) 1/2" diameter Grade 8 bolts, torqued to 80 ft-lb.