



**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION**

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

OFFICE USE ONLY

APPLICATION #: OSP-0465

HCAI 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

Telephone: (450) 346-6781

Email: ctremblay@termaco.com

Product Information

Product Name: UPS and Batteries

Product Type: UPS

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

General Description: Each unit consists of a circuit breaker, batteries and enclosure.

Mounting Description: Rigid, Floor Mounted

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

Applicant Information

Applicant Company Name: Dynamic Certification Laboratories

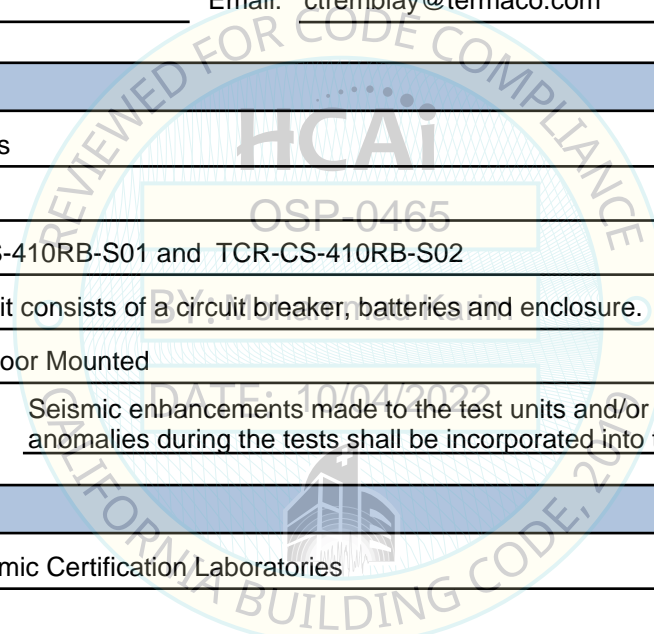
Contact Person: Kelly Laplace

Mailing Address: 1315 Greg Pkwy # 109, Sparks, NV 89431

Telephone: (775) 358-5085

Email: kelly@shaketest.com

Title: Business Manager





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

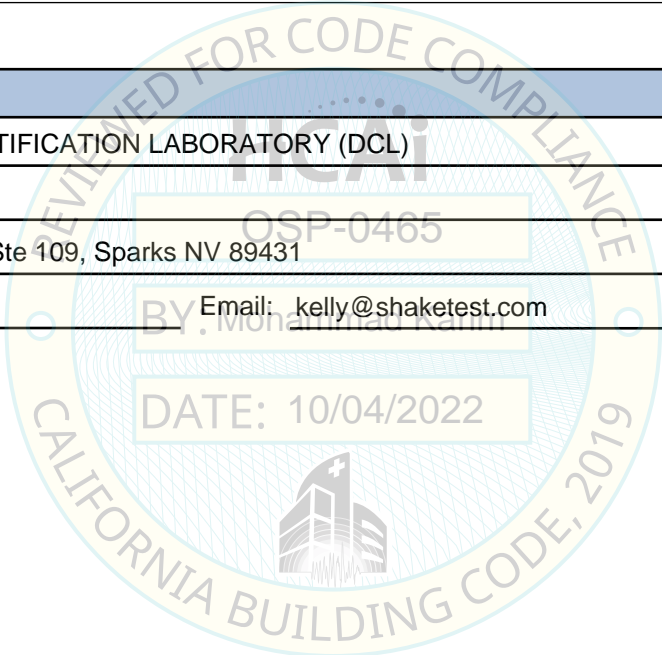
Company Name: THE VMC GROUP
Name: Kenneth Tarlow California License Number: S2851
Mailing Address: 980 9th Street, 16th Floor, Sacramento, CA 95814
Telephone: (832) 627-2214 Email: ken.tarlow@thevmcgroup.com

Certification Method

GR-63-Core ICC-ES AC156 IEEE 344 IEEE 693 NEBS 3
 Other (Please Specify): _____

Testing Laboratory

Company Name: DYNAMIC CERTIFICATION LABORATORY (DCL)
Contact Person: Kelly Laplace
Mailing Address: 1315 Greg St., Ste 109, Sparks NV 89431
Telephone: (775) 358-5085 Email: kelly@shaketest.com





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 0.99

SDS (Design spectral response acceleration at short period, g) = 1.38

a_p (Amplification factor) = 1.0

R_p (Response modification factor) = 2.5

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

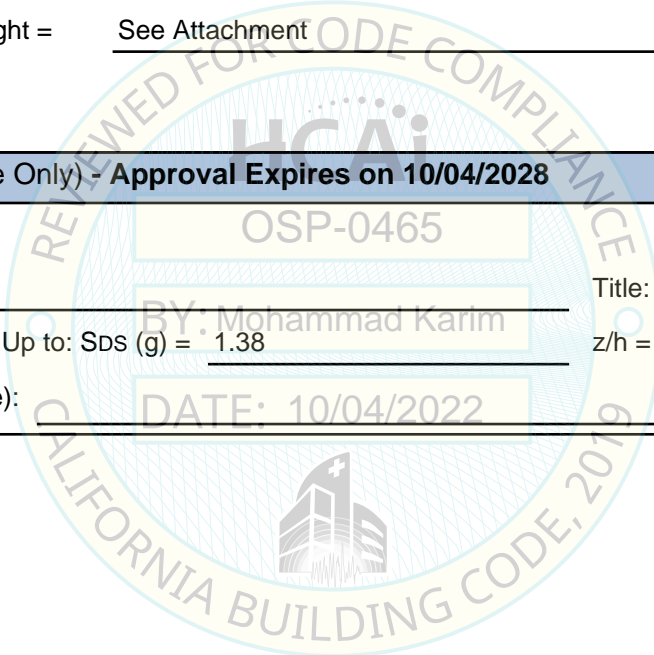
HCAI Approval (For Office Use Only) - Approval Expires on 10/04/2028

Date: 10/4/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = 1.38 z/h = 1

Condition of Approval (if applicable): DATE: 10/04/2022

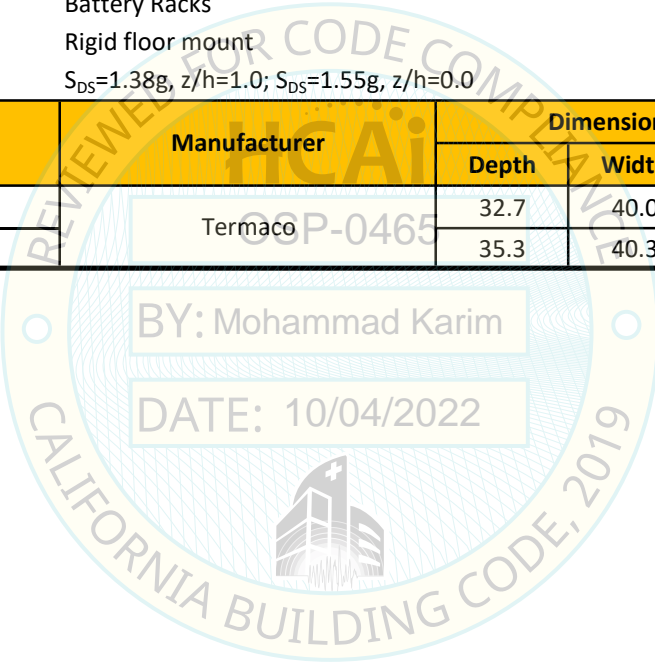


Special Seismic Certification
Table 1 - Certified Components



DCL Project Number: 89379-2201
Manufacturer: Termaco
Product Line: Battery Racks
Mounting Description: Rigid floor mount
Certified Seismic Level: $S_{DS}=1.38g, z/h=1.0; S_{DS}=1.55g, z/h=0.0$

Model	Manufacturer	Dimensions (in)			Weight (lb)	UUT
		Depth	Width	Height		
TCR-CS-410RB-S02	Termaco	32.7	40.0	77.6	4930	UUT-1
TCR-CS-410RB-S01		35.3	40.3	78.7	5120	UUT-2



Special Seismic Certification
Table 2 - Certified Subcomponents



DCL Project Number: 89379-2201

Certified Seismic Level: $S_{DS}=1.38g, z/h=1.0; S_{DS}=1.55g, z/h=0.0$

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	4930	UUT-1
TCR-CS-410RB-S01-Enclosure			NEMA 1	35.3	40.3	78.7	5120	UUT-2
Breakers ¹								
Model Number	Manufacturer	Material		Amperage (A)	Unit			
LLL37060D33	Square D	Molded case (plastic)		600	UUT-1			
SACE T6N800	ABB			800	UUT-2			
Batteries ²								
Model Number	Manufacturer	Material		Voltage (V)	Unit			
UPS12-540MR	C&D Dynasty	Lead acid battery		12	UUT-1			
12HX500-FR	Data Safe			12	UUT-2			

Notes:

1. Manufacturing process for tested breakers is ISO 9001 certified.
2. Multiple identical batteries were tested in each unit.

Special Seismic Certification
Table 4 - Tested Units



DCL Project Number: 89379-2201

Manufacturer: Termaco

Product Line: Battery Racks

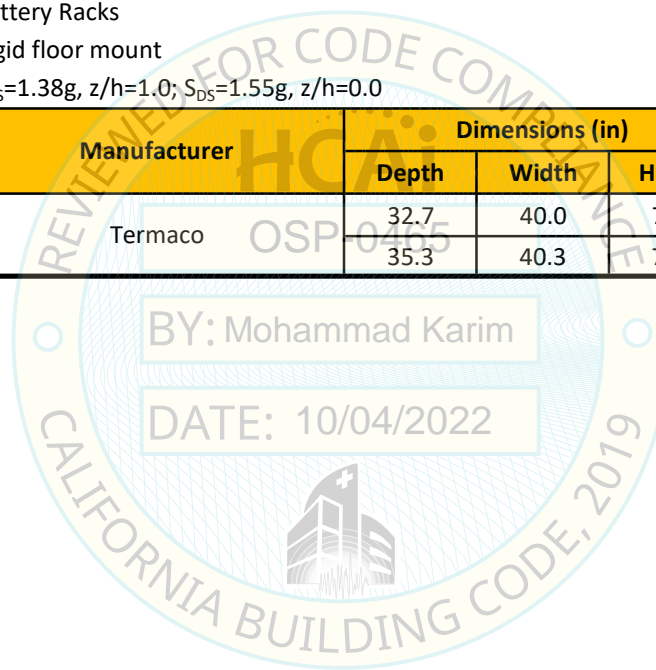
Mounting Description: Rigid floor mount

Certified Seismic Level: $S_{DS}=1.38g, z/h=1.0; S_{DS}=1.55g, z/h=0.0$

Model	Manufacturer	Dimensions (in)			Weight (lb)	UUT
		Depth	Width	Height		
TCR-CS-410RB-S02	Termaco	32.7	40.0	77.6	4930	UUT-1
TCR-CS-410RB-S01		35.3	40.3	78.7	5120	UUT-2

BY: Mohammad Karim

DATE: 10/04/2022



UUT-1
UNIT UNDER TEST (UUT)
Summary Sheet



DCL Project Number: 89379-2201

Manufacturer: Termaco

Product Line: Battery Cabinets

Model Number: TCR-CS-410RB-S02

Product Construction Summary:

10 gage painted carbon steel

Options / Component Summary:

Square D circuit breaker and C&D Dynasty batteries.

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

UUT Properties

Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
4,930	32.7	40	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 2022	ICC-ES AC156	1.38	1.0	1.5	2.21	1.66	1.03	0.41
		1.55	0.0					

Unit Mounting Description:

The unit was rigidly base mounted with (6) 1/2" grade 8 bolts torqued to 80 ft-lb.



Overall view of UUT-1

UUT-2
UNIT UNDER TEST (UUT)
Summary Sheet



DCL Project Number: 89379-2201

Manufacturer: Termaco

Product Line: Battery Cabinets

Model Number: TCR-CS-410RB-S01

Product Construction Summary:

10 gage painted carbon steel

Options / Component Summary:

ABB circuit breaker and Data Safe batteries.

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

UUT Properties

Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
5,120	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 2022	ICC-ES AC156	1.38	1.0	1.5	2.21	1.66	1.03	0.41
		1.55	0.0					

Unit Mounting Description:

The unit was rigidly base mounted with (6) 1/2" grade 8 bolts torqued to 80 ft-lb.



Overall view of UUT-2