

	OFFIC	E USE ONLY
APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)	APPLICATION #:	OSP – 0597
	APPLICATION #:	03P - 0597
OSHPD Special Seismic Certification Preapproval (OSP)		
Type: New Renewal		
Manufacturer Information		
Manufacturer: Termaco		
Manufacturer's Technical Representative: <u>Carl Tremblay, R&amp;D Direct</u>	or	
Mailing Address:325 Boul. Industriel Saint-Jean-Sur-Richelieu, QC, C	Canada J3B 7M3	
Telephone: (450)-346-6871 ext. 237	lay@termaco.com	
Product Information	MD	
Product Name: GVS Battery Cabinets OSHPD	T	
Product Type: Battery Cabinets OSP-0597	· Sr.	
Product Model Number: <u>See Attached</u> (List all unique product identification numbers and/or part numbers) hammad Alia	ari	
General Description: Each UUT is a cabinet comprised of batteries	and breakers.	
Mounting Description: Units are rigid base mounted	a	
The second secon	0	
Applicant Information	ODE	
Applicant Information Applicant Company Name: The VMC Group		
Contact Person: John Giuliano		
Mailing Address: 113 Main Street, Bloomingdale, NJ 07403		
Telephone: (973) 838-1780 Email: john.gi	uliano@thevmcgroup.c	om
I hereby agree to reimburse the Office of Statewide Health F accordance with the California Administrative Code, 2016.	Planning and Develo	opment review fees in
Signature of Applicant:	Date	e: <u>3/26/19</u>
Title: President Company Name: The VI	MC Group	
	4	
"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"	J. All Au	OSHPD
STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY OSH-FD-759 (REV 12/16/15)	. And handlen	Page 1 of 3



California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)
Company Name: The VMC Group
Name: Kenneth Tarlow California License Number: SE-2851
Mailing Address: 113 Main Street, Bloomingdale, NJ 07403
Telephone: (973) 838-1780 Email: <u>ken.tarlow@thevmcgroup.com</u>
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
<ul> <li>Testing in accordance with: ICC-ES AC156</li> <li>Other (Please Specify): OSP-0597</li> <li>BY: Mohammad Aliaari</li> </ul>
Testing Laboratory DATE: 11/19/2020
Company Name: Dynamic Certification Laboratories
Contact Name: Josh Sailer, Laboratory Manager
Mailing Address:1315 Greg Street, Suite 109, Sparks, NV 89431
Telephone: (775) 358-5085 Email: Josh@shaketest.com
Testing Laboratory
Company Name: National Technical Systems
Contact Name:Robert Bridges, Operations Manager
Mailing Address:7800 Highway 20 West, Huntsville, AL, 35806
Telephone:       (256) 837-4411         Email:       rob.bridges@nts.com

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OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

Seismic Parameters
Design in accordance with ASCE 7-16 Chapter 13: 🖂 Yes 🗌 No
Design Basis of Equipment or Components (Fp/Wp) = _1.04
S <sub>DS</sub> (Design spectral response acceleration at short period, g) = <u>1.45</u>
a <sub>p</sub> (In-structure equipment or component amplification factor) = <u>1.0</u>
R <sub>p</sub> (Equipment or component response modification factor) = <u>2.5</u>
$\Omega_0$ (System overstrength factor) = _2.0
I <sub>p</sub> (Importance factor) = 1.5
z/h (Height factor ratio) = <u>1.0</u>
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 7-16 Chapter 15:  Yes X No
Design Basis of Equipment or Components (V/W) =
S <sub>DS</sub> (Design spectral response acceleration at short period, g) =
S <sub>D1</sub> (Design spectral response acceleration at 1 second period, g) =
R (Response modification coefficient ) =
Ω₀ (System overstrength factor) = <u>By:_Mohammad_Aliaari</u>
C₄ (Deflection amplification factor) =
I <sub>P</sub> (Importance factor) = 1.5 DATE: 11/19/2020
Height to Center of Gravit <mark>y above</mark> 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): Attachments
OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2025
Signature: Date: Date: November 19, 2020
Print Name: <u>Mohammad Aliaari</u> Title: <u>Senior Structural Engineer</u>
Special Seismic Certification Valid Up to : S <sub>DS</sub> (g) = <u>1.45</u> z/h = <u>1</u>
Condition of Approval (if applicable):
"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY OSH-FD-759 (REV 12/16/15)

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#### Table 1 - Certified Components, Agilis Battery Cabinets

Certification Level:  $S_{DS} = 1.45g$ , z/h=1.0

#### Mounting: Rigid Base Mounted



Termaco Model Number	Schneider Drawing Number	Max. I	Dimensi	ons (in)	Max Weight	Battery	Battery Model	Battery	Unit
	Schneider Drawing Number	Depth	Width	Height	(lb)	Quantity		Manufacturer	Onit
TCR-CS-410RB-A07-150A-32-HRL140	GVS32B150NA140-CS	33.1	27.6	58.5	1,286	32	HRL140	Narada	Extrapolated
TCR-CS-410RB-A07-150A-32-xxxxx	GVS32B150NA140-CS	33.1	27.6	58.5	1,357	32	12HX135 12HRL140 UPS12-150MR	Enersys (1) Narada (30) C&D (1)	UUT 1
TCR-CS-410RB-A07-150A-32-HX135	GVS32B150EN135-CS	33.1	27.6	58.5	1,366	32	12HX135	Enersys	Interpolated
TCR-CS-410RB-A07-150A-32-150MR	GVS32B150CD150-CS	33.1	27.6	58.5	1,418	32	UPS12-150MR	C&D	Interpolated
TCR-CS-410RB-A07-150A-40-HRL140	GVS40B150NA140-CS	33.1	27.6	58.5	1,494	40	HRL140	Narada	Interpolated
TCR-CS-410RB-A07-150A-40-HX135	GVS40B150EN135-CS	33.1	27.6	58.5	1,574	40	12HX135	Enersys	Interpolated
TCR-CS-410RB-A07-150A-40-150MR	GVS40B150CD150-CS	33.1	27.6	58.5	1,626	40	UPS12-150MR	C&D	Interpolated
TCR-CS-410RB-A07-150A-40-210MR	GVS40B150CD210-CS	33.1	27.6	58.5	2,120	40	UPS12-210MR	C&D	Interpolated
TCR-CS-410RB-A07-150A-40-HRL200	GVS40B150NA200-CS	33.1	27.6	58.5	2,160	40	HRL200	Narada	Interpolated
TCR-CS-410RB-A07-150A-40-HX205	GVS40B150EN205-CS	33.1	27.6	58.5	2,240	40	12HX205	Enersys	Interpolated
TCR-CS-410RB-A10-250A-40-HRL300	GVS40B250NA300-CS	33.1	39.4	58.5	2,917	40	HRL300	Narada	Interpolated
TCR-CS-410RB-A10-250A-40-300MR	GVS40B250CD300-CS	33.1	39.4	58.5	3,009	40	UPS12-300MR	C&D	Interpolated
TCR-CS-410RB-A10-250A-40-HX300	GVS40B250EN300-CS	33.1	39.4	58.5	3,073	40	12HX300	Enersys	Interpolated
TCR-CS-410RB-A10-250A-40-HRL365	GVS40B250NA365-CS	33.1	_39.4	58.5	3,324	40	HRL365	Narada	Interpolated
TCR-CS-410RB-A10-250A-40-350MR	GVS40B250CD350-CS	33.1	39.4	58.5	3,364	40	350MR	C&D	Interpolated
TCR-CS-410RB-A10-250A-40-xxxxx	GVS40B250EN330-CS	33.1	39.4	58.5	3,468	400	12HX330 12HRL365 UPS12-350MR	Enersys (38) Narada (1) C&D (1)	UUT 2
TCR-CS-410RB-A11-250A-40-XP400	GVS40B250LE400-CS	33.1	44.4	58.5	3,499	40	XP12-400	Leoch	Interpolated
TCR-CS-410RB-A10-250A-40-HX330	GVS40B250EN330-CS	33.1	39.4	58.5	3,508	40	12HX330	Enersys	Interpolated
TCR-CS-410RB-A11-400A-40-XP400	GVS40B400LE400-CS	33.1	44.4	58.5	3,538	40	XP12-400	Leoch	Interpolated
TCR-CS-410RB-A11-250A-40-HRL400	GVS40B250NA400-CS	33.1	44.4	58.5	3,731	40	HRL400	Narada	Interpolated
TCR-CS-410RB-A11-400A-40-xxxxx	GVS40B400EN400-CS	33.1	44.4	58.5	3,760	40	12HX400 12HRL400 UPS12-400MR HR4000 XP12-400	Enersys (32) Narada (2) C&D (2) East Penn (2) Leoch (2)	UUT 3
TCR-CS-410RB-A11-250A-40-400MR	GVS40B250CD400-CS	33.1	44.4	58.5	3,763	40	400MR	C&D	Extrapolated
TCR-CS-410RB-A11-400A-40-HRL400	GVS40B400NA400-CS	33.1	44.4	58.5	3,770	40	HRL400	Narada	Extrapolated
TCR-CS-410RB-A11-400A-40-400MR	GVS40B400CD400-CS	33.1	44.4	58.5	3,802	40	400MR	C&D	Extrapolated
TCR-CS-410RB-A11-250A-40-HX400	GVS40B250EN400-CS	33.1	44.4	58.5	3,931	40	12HX400	Enersys	Extrapolated
TCR-CS-410RB-A11-250A-40-HR4000	GVS40B250EP400-CS	33.1	44.4	58.5	3,931	40	HR4000	East Penn	Extrapolated
TCR-CS-410RB-A11-400A-40-HX400	GVS40B400EN400-CS	33.1	44.4	58.5	3,970	40	12HX400	Enersys	Extrapolated
TCR-CS-410RB-A11-400A-40-HR4000	GVS40B400EP400-CS	33.1	44.4	58.5	3,970	40	HR4000	East Penn	Extrapolated

Notes:

1. Multiple batteries were used in UUTs to encompass all the brands in the full product line. As such a distinct model number cannot be associated with the actual tested units since they

each utilize multiple battery brands.

# **Nomenclature Chart**



Part Number	Allowable Value	Meaning	Unit
ABC	TCR	Termaco Top Terminal Battery Cabinet	UUT 1, UUT 2, UUT 3
DE	CS	Seismic Version	UUT 1, UUT 2, UUT 3
0	4	Number of Tiers	UUT 1, UUT 2, UUT 3
12	10	Maximum Quantity of Batteries per Tier	UUT 1, UUT 2, UUT 3
F	R	Regular Battery Type	UUT 1, UUT 2, UUT 3
G	В	Door Cabinet Configuration	UUT 1, UUT 2, UUT 3
	A07	Cabinet Width (700mm)	UUT 1
A34	A10	Cabinet Width (1000mm)	UUT 2
	A11 FUR	Cabinet Width (1150mm)	UUT 3
	150A		UUT 1
567A	250A	Amperage (Amperes)	UUT 2
	400A		UUT 3
89	32	SP-0 Battery Quantity	UUT 1
89	40	ST - O Battery Quantity	UUT 2, UUT 3
	HX135		UUT 1
	HX205 Moh	ammad Allaari	Interpolated
	HX300		Interpolated
	HX330	1/19/2020	UUT 2
	HX400		UUT 3
	HR4000	1 S	UUT 3
	HRL140		UUT 1
	HRL200	OF.	Interpolated
ххххх	HRL300	Battery Type / Brand	Interpolated
	HRL365	<b>UIL</b> DAllowable Values	UUT 2
	HRL400		UUT 3
	150MR		UUT 1
	210MR		Interpolated
	300MR		Interpolated
	350MR		UUT 2
	400MR		UUT 3
	XP400		UUT 3



## **Table 2 - Certified Subcomponents**

Certification Level: S<sub>DS</sub> = 1.45g, z/h=1.0

**Mounting:** Interior Mounting



		12 Volt Batteries			
Model Number	Manufacturer	Rated Power (W) <sup>1</sup>	Material	Battery Quantity Tested	Unit
12HX135	Enersys	136	Lead Acid	1	UUT 1
12HX205	Enersys	206	Lead Acid	N/A	Interpolated
12HX300	Enersys	284	Lead Acid	N/A	Interpolated
12HX330	Enersys	336	Lead Acid	38	UUT 2
12HX400	Enersys	381	Lead Acid	32	UUT 3
12HRL140	Narada	140	Lead Acid	1	UUT 1
12HRL200	Narada	RC0200	Lead Acid	N/A	Interpolated
12HRL300	Narada	300	Lead Acid	N/A	Interpolated
12HRL365	Narada	365	Lead Acid	1	UUT 2
12HRL400	Narada	400	Lead Acid	2	UUT 3
UPS12-150MR	C&D	148	Lead Acid	30	UUT 1
UPS12-210MR	C&D	OSP-(206)7	Lead Acid	N/A	Interpolated
UPS12-300MR	C&D	300	Lead Acid	N/A	Interpolated
UPS12-350MR	C&D	350 Aliceri	Lead Acid	1	UUT 2
UPS12-400MR	C&D BY: W	400 Allaan	Lead Acid	2	UUT 3
HR4000	East Penn	420	Lead Acid	2	UUT 3
XP12-400	Leoch DATE	11/1940620	Lead Acid	2	UUT 3
Notes:			2		

1. Ratings at 15min rate to 1.67 volts/cell end voltage at 77°F 

	OPA	Cabinets			
Model Number	Manufacturer	Dimensions (D"xW"xH")	Material <sup>1</sup>	NEMA	Unit
GVSCBT1ST	Termaco	33.1"x27.6"x58.5"	Carbon Steel	1	UUT 1
GVSCBT2ST	Termaco	33.1"x27.6"x58.5"	Carbon Steel	1	Interpolated
GVSCBT3ST	Termaco	33.1"x27.6"x58.5"	Carbon Steel	1	Interpolated
GVSCBT4ST	Termaco	33.1"x39.4"x58.5"	Carbon Steel	1	Interpolated
GVSCBT5ST	Termaco	33.1"x39.4"x58.5"	Carbon Steel	1	UUT 2
GVSCBT6ST	Termaco	33.1"x44.4"x58.5"	Carbon Steel	1	Interpolated
GVSCBT7ST	Termaco	33.1"x44.4"x58.5"	Carbon Steel	1	UUT 3

Notes:

1. Cabinets are 10 gage carbon steel. Cabinet Panels are 16 gage carbon steel.

		Breakers		
Model Number	Manufacturer	Description	Material	Unit
JGL37150D81AAUO	Schneider Electric	150A	Plastic, Copper	UUT 1
JGL37250D82AAUO	Schneider Electric	250A	Plastic, Copper	UUT 2
LGL37040D30ABUO	Schneider Electric	400A	Plastic, Copper	UUT 3

## **Table 3 - Tested Units**

**Certification Level:** S<sub>DS</sub> = 1.45g, z/h=1.0

#### Mounting: Rigid Base Mounted



	Max. I	Dimensio	ons (in)	Weight		
Model Number	Depth	Width	Height	(lb)	Battery Manufacturer (Quantity Tested in Unit)	Unit
TCR-CS-410RB-A07-150A-32-xxxxx	33.1	27.6	58.5	1,357	Enersys (1), Narada (30), C&D (1)	UUT 1
TCR-CS-410RB-A10-250A-40-xxxxx	33.1	39.4	58.5	3,468	Enersys (38), Narada (1), C&D (1)	UUT 2
TCR-CS-410RB-A11-400A-40-xxxxx	33.1	44.4	58.5	05 <u>9</u> 760	Enersys (32), Narada (2), C&D (2), East Penn (2), Leoch (2)	UUT 3

BY: Mohammad Aliaari DATE: 11/19/2020

Product Line:       Batta         Model Number:       TCR-         Mounting:       Rigic         Product Construction Sum       Painted Carbon Steel         Options / Component Sum       12V Batteries, Cabinets, Br         Note:       The UUT was opera         of the component attachn       1,357         Building Code       Transmission	maco ttery Cabinets R-CS-410RB-A07 id Base Mounter mmary: Breakers rational before mment system a Length 33.1 Test Criteria ICC-ES AC156 on:	7-150A-32-xxx ed e and after shal and force-resis Dimens Wi 2 Sds (g) 1.45	xx king and was f	vas maintai perties He DOD 5 Parameters Ip 1.5 P-059	ned. eight 8.5 Aflx-H (g) 2.32		ts. The structure atural Freque Side-Side 10.0 Aflx-V (g) 0.97	
Manufacturer:       Term         Product Line:       Batter         Model Number:       TCR-         Mounting:       Rigic         Product Construction Sum       Product Construction Sum         Painted Carbon Steel       Options / Component Sum         Dytions / Component Sum       12V Batteries, Cabinets, Br         Note:       The UUT was opera         of the component attachm       1,357         Building Code       Tr        CBC 2019       IC	maco ttery Cabinets R-CS-410RB-A07 id Base Mounter mmary: Breakers rational before mment system a Length 33.1 Test Criteria ICC-ES AC156 on:	7-150A-32-xxx ed e and after shal and force-resis Dimens Wi 2 Sds (g) 1.45	xx king and was t sting systems v UUT Pro sions (inches) idth 7.6 Seismic Test z/h 1.0 Seismic Test Y: Mohai	vas maintai perties He DOD 5 Parameters Ip 1.5 P-059	ned. eight 8.5 Aflx-H (g) 2.32	Lowest N Front-Back 10.0 Arig-H (g)	atural Freque Side-Side 10.0 Aflx-V (g)	ency (Hz) Vertical 23.0 Arig-V (g
Model Number:       TCR-         Mounting:       Rigic         Product Construction Sum       Product Construction Sum         Painted Carbon Steel       Descriptions / Component Sum         Dytions / Component Sum       12V Batteries, Cabinets, Br         Note:       The UUT was opera         of the component attachm       1,357         Building Code       Tr         CBC 2019       IC	R-CS-410RB-A07 id Base Mounte mmary: Breakers rational before ament system a Length 33.1 Test Criteria ICC-ES AC156 on:	ed e and after sha and force-resis Dimens Vi 2 Sds (g) 1,45	king and was t sting systems v UUT Pro sions (inches) idth 7.6 Seismic Test 2/h 1.0 OS	vas maintai perties He DOD 5 Parameters Ip 1.5 P-059	ned. eight 8.5 Aflx-H (g) 2.32	Lowest N Front-Back 10.0 Arig-H (g)	atural Freque Side-Side 10.0 Aflx-V (g)	ency (Hz) Vertical 23.0 Arig-V (g
Mounting:     Rigic       Product Construction Sum       Painted Carbon Steel       Options / Component Sum       12V Batteries, Cabinets, Br       Note: The UUT was opera       of the component attachm       Operating Weight       (Ib)       1,357       Building Code       Tr       CBC 2019	id Base Mounte mmary: Breakers rational before iment system a Length 33.1 Test Criteria ICC-ES AC156 on:	ed e and after sha and force-resis Dimens Vi 2 Sds (g) 1,45	king and was t sting systems v UUT Pro sions (inches) idth 7.6 Seismic Test 2/h 1.0 OS	vas maintai perties He DOD 5 Parameters Ip 1.5 P-059	ned. eight 8.5 Aflx-H (g) 2.32	Lowest N Front-Back 10.0 Arig-H (g)	atural Freque Side-Side 10.0 Aflx-V (g)	ency (Hz) Vertical 23.0 Arig-V (g
Product Construction Sum         Painted Carbon Steel         Options / Component Sum         12V Batteries, Cabinets, Br         Note: The UUT was operating the component attachm         Operating Weight         (Ib)         1,357         Building Code       Tr         CBC 2019       IC	mmary: mmary: Breakers rational before ment system a Length 33.1 Test Criteria ICC-ES AC156 on:	and after sha and force-resis Dimens Wi 2 Sds (g) 1.45	sting systems v UUT Pro sions (inches) idth 7.6 Seismic Test v Z/h 1.0 OS	vas maintai perties He DOD 5 Parameters Ip 1.5 P-059	ned. eight 8.5 Aflx-H (g) 2.32	Lowest N Front-Back 10.0 Arig-H (g)	atural Freque Side-Side 10.0 Aflx-V (g)	ency (Hz) Vertical 23.0 Arig-V (g
Painted Carbon Steel Options / Component Sum 12V Batteries, Cabinets, Br Note: The UUT was opera of the component attachn Operating Weight (Ib) 1,357 Building Code T CBC 2019 IC	mmary: Breakers rational before iment system a Length 33.1 Test Criteria ICC-ES AC156	Dimens Dimens Sds (g) 1.45	sting systems v UUT Pro sions (inches) idth 7.6 Seismic Test v Z/h 1.0 OS	vas maintai perties He DOD 5 Parameters Ip 1.5 P-059	ned. eight 8.5 Aflx-H (g) 2.32	Lowest N Front-Back 10.0 Arig-H (g)	atural Freque Side-Side 10.0 Aflx-V (g)	ency (Hz) Vertical 23.0 Arig-V (g
Options / Component Sum         12V Batteries, Cabinets, Br         Note: The UUT was opera         of the component attachm         Operating Weight         (lb)         1,357         Building Code         CBC 2019	Breakers rational before ment system a Length 33.1 Test Criteria ICC-ES AC156 on:	Dimens Dimens Sds (g) 1.45	sting systems v UUT Pro sions (inches) idth 7.6 Seismic Test v Z/h 1.0 OS	vas maintai perties He DOD 5 Parameters Ip 1.5 P-059	ned. eight 8.5 Aflx-H (g) 2.32	Lowest N Front-Back 10.0 Arig-H (g)	atural Freque Side-Side 10.0 Aflx-V (g)	ency (Hz) Vertical 23.0 Arig-V (g
12V Batteries, Cabinets, Br       Note: The UUT was opera       of the component attachn       Operating Weight       (Ib)       1,357       Building Code       Tr       CBC 2019	Breakers rational before ment system a Length 33.1 Test Criteria ICC-ES AC156 on:	Dimens Dimens Sds (g) 1.45	sting systems v UUT Pro sions (inches) idth 7.6 Seismic Test v Z/h 1.0 OS	vas maintai perties He DOD 5 Parameters Ip 1.5 P-059	ned. eight 8.5 Aflx-H (g) 2.32	Lowest N Front-Back 10.0 Arig-H (g)	atural Freque Side-Side 10.0 Aflx-V (g)	ency (Hz) Vertical 23.0 Arig-V (g
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Operating Weight (Ib) 1,357 Building Code T CBC 2019 IC	Length 33.1 Test Criteria ICC-ES AC156 on:	Dimens Dimens Sds (g) 1.45	sting systems v UUT Pro sions (inches) idth 7.6 Seismic Test v Z/h 1.0 OS	vas maintai perties He DOD 5 Parameters Ip 1.5 P-059	ned. eight 8.5 Aflx-H (g) 2.32	Lowest N Front-Back 10.0 Arig-H (g)	atural Freque Side-Side 10.0 Aflx-V (g)	ency (Hz) Vertical 23.0 Arig-V (g
Operating Weight (lb)     -       1,357     -       Building Code     T       CBC 2019     IC	Length 33.1 Test Criteria ICC-ES AC156 on:	Dimens Wi 2 Sds (g) 1.45	UUT Pro sions (inches) idth 7.6 Seismic Test ( 2/h 1.0 OS	Perties He DOD 5 Parameters Ip 1.5 P-059	aight 8.5 Aflx-H (g) 2.32	Front-Back 10.0 Arig-H (g)	Side-Side 10.0 Aflx-V (g)	Vertical 23.0 Arig-V (g
(Ib) 1,357 Building Code To CBC 2019 IC	33.1 Test Criteria ICC-ES AC156 on:	Wi           2'           Sds (g)           1.45           B           D	sions (inches) idth 7.6 Seismic Test 1 2/h 1.0 OS	He Parameters Ip 1.5 P-059	8.5 Aflx-H (g) 2.32	Front-Back 10.0 Arig-H (g)	Side-Side 10.0 Aflx-V (g)	Vertical 23.0 Arig-V (g
(Ib) 1,357 Building Code To CBC 2019 IC	33.1 Test Criteria ICC-ES AC156 on:	Wi           2'           Sds (g)           1.45           B           D	idth 7.6 Seismic Test . Z/h 1.0 OS Y: Mohai	Parameters Ip P1.5 P-059	8.5 Aflx-H (g) 2.32	Front-Back 10.0 Arig-H (g)	Side-Side 10.0 Aflx-V (g)	Vertical 23.0 Arig-V (g
1,357     Building Code     Tr     CBC 2019	33.1 Test Criteria ICC-ES AC156 on:	2 Sds (g) 1.45	7.6 Seismic Test z/h 1.0 OS	Parameters Ip P1.5 P-059	8.5 Aflx-H (g) 2.32	10.0 Arig-H (g)	10.0 Aflx-V (g)	23.0 Arig-V (g
Building Code To CBC 2019 IC	Test Criteria	Sds (g) 1.45 B	Seismic Test z/h 1.0 OSI Y: Mohai	Parameters Ip 1.5 P-059	Aflx-H (g) 2.32	Arig-H (g)	Aflx-V (g)	Arig-V (g
CBC 2019 IC	DCC-ES AC156	1.45 B	z/h 1.0 S OSI Y: Mohai	ip 1.5 P-059	Aflx-H (g) 2.32	1		
CBC 2019 IC	DCC-ES AC156	1.45 B	OSI Y: Mohai	P-059	2.32 7	1		
	on:	B	OSI Y: Mohai	P-059	7	1.74	0.97	0.39
Unit Mounting Description		D		P-059 mmad	7	R		
		CALIFOR	PNIA BU	ILDIN	GCOD			
		- A manual		1 5				

Manufacturer: 7 Product Line: 6 Model Number: 7	el int Summary: intess, Breakers is operational before nent system and for Length 33.1 Test Criteria ICC-ES AC156	250A-40-xxxxx l e and after sha rce-resisting s	aking and was ystems was m UU ions (inches) ith .4	naintained. T Properties He	eight 8.5		st Natural Freque Front-Back 10.0	
Manufacturer: 1 Product Line: E Model Number: 1 Mounting: F Product Constructio Painted Carbon Stee Dptions / Componen 12V Batteries, Cabin Note: The UUT was component attachm Operating Weight (Ib) 3,468 Building Code CBC 2019	Termaco Battery Cabinet TCR-CS-410RB-A10- Rigid Base Mounted on Summary: el Int Summary: nets, Breakers coperational before nent system and fo Length 33.1 Test Criteria ICC-ES AC156	250A-40-xxxxx e and after sha rce-resisting so Dimens Wic 39 Sds (g) 1.45	aking and was ystems was m UU ions (inches) dth .4 Seismic z/h	T Properties	eight 8.5 eters Aflx-H (g)	Lowes Side-Side 10.0	st Natural Freque Front-Back 10.0	ncy (Hz) Vertical (Z)
Product Line: [F Model Number: ] Mounting: [F Product Constructio Painted Carbon Stee Options / Componen 12V Batteries, Cabin Note: The UUT was component attachm Operating Weight (Ib) 3,468 Building Code CBC 2019	Battery Cabinet TCR-CS-410RB-A10- Rigid Base Mounted on Summary: el nt Summary: nets, Breakers coperational before nent system and fo Length 33.1 Test Criteria ICC-ES AC156	e and after sha rce-resisting s Dimens Wic 39 Sds (g) 1.45	aking and was ystems was m UU ions (inches) dth .4 Seismic z/h	T Properties	eight 8.5 eters Aflx-H (g)	Lowes Side-Side 10.0	st Natural Freque Front-Back 10.0	ncy (Hz) Vertical (Z)
Model Number: 1 Mounting: F Product Constructio Painted Carbon Stee Dptions / Componen L2V Batteries, Cabin Note: The UUT was component attachm Operating Weight (Ib) 3,468 Building Code CBC 2019	TCR-CS-410RB-A10- Rigid Base Mounted on Summary: el nt Summary: hets, Breakers coperational before nent system and for Length 33.1 Test Criteria ICC-ES AC156	e and after sha rce-resisting s Dimens Wic 39 Sds (g) 1.45	aking and was ystems was m UU ions (inches) dth .4 Seismic z/h	T Properties	eight 8.5 eters Aflx-H (g)	Lowes Side-Side 10.0	st Natural Freque Front-Back 10.0	ncy (Hz) Vertical (Z)
Mounting: F Product Constructio Painted Carbon Stee Detions / Component 12V Batteries, Cabin Note: The UUT was component attachm Operating Weight (Ib) 3,468 Building Code CBC 2019	Rigid Base Mounted on Summary: el nets, Breakers coperational before nent system and fo Length 33.1 Test Criteria ICC-ES AC156	e and after sha rce-resisting s Dimens Wic 39 Sds (g) 1.45	aking and was ystems was m UU ions (inches) dth .4 Seismic z/h	T Properties	eight 8.5 eters Aflx-H (g)	Lowes Side-Side 10.0	st Natural Freque Front-Back 10.0	ncy (Hz) Vertical (Z)
Product Constructio Painted Carbon Stee Options / Componen L2V Batteries, Cabin Note: The UUT was component attachm Operating Weight (Ib) 3,468 Building Code CBC 2019	n Summary: el nt Summary: nets, Breakers coperational before nent system and fo Length 33.1 Test Criteria ICC-ES AC156	e and after sha rce-resisting s Dimens Wic 39 Sds (g) 1.45	ystems was m UU ions (inches) dth .4 Seismic z/h	T Properties	eight 8.5 eters Aflx-H (g)	Lowes Side-Side 10.0	st Natural Freque Front-Back 10.0	ncy (Hz) Vertical (Z)
Deainted Carbon Stee Deainted Carbon Stee Dealer of Component Dealer of Component attachm Dealer of Component attachm Operating Weight (Ib) 3,468 Building Code CBC 2019	el int Summary: intess, Breakers is operational before nent system and for Length 33.1 Test Criteria ICC-ES AC156	rce-resisting s Dimens Wic 39 Sds (g) 1.45	ystems was m UU ions (inches) dth .4 Seismic z/h	T Properties	eight 8.5 eters Aflx-H (g)	Lowes Side-Side 10.0	st Natural Freque Front-Back 10.0	ncy (Hz) Vertical (Z)
12V Batteries, Cabin Note: The UUT was component attachm Operating Weight (Ib) 3,468 Building Code CBC 2019	ets, Breakers operational before nent system and fo Length 33.1 Test Criteria ICC-ES AC156	rce-resisting s Dimens Wic 39 Sds (g) 1.45	ystems was m UU ions (inches) dth .4 Seismic z/h	T Properties	eight 8.5 eters Aflx-H (g)	Lowes Side-Side 10.0	st Natural Freque Front-Back 10.0	ncy (Hz) Vertical (Z)
12V Batteries, Cabin Note: The UUT was component attachm Operating Weight (lb) 3,468 Building Code CBC 2019	ets, Breakers operational before nent system and fo Length 33.1 Test Criteria ICC-ES AC156	rce-resisting s Dimens Wic 39 Sds (g) 1.45	ystems was m UU ions (inches) dth .4 Seismic z/h	T Properties	eight 8.5 eters Aflx-H (g)	Lowes Side-Side 10.0	st Natural Freque Front-Back 10.0	ncy (Hz) Vertical (Z)
Operating Weight (Ib) 3,468 Building Code CBC 2019	Length 33.1 Test Criteria ICC-ES AC156	rce-resisting s Dimens Wic 39 Sds (g) 1.45	ystems was m UU ions (inches) dth .4 Seismic z/h	T Properties	eight 8.5 eters Aflx-H (g)	Lowes Side-Side 10.0	st Natural Freque Front-Back 10.0	ncy (Hz) Vertical (Z)
(lb) 3,468 Building Code CBC 2019	33.1 Test Criteria ICC-ES AC156	Wic 39 Sds (g) 1.45	ions (inches) dth .4 Seismic z/h	He 5 Test Parame	eight 8.5 eters Aflx-H (g)	Side-Side 10.0	Front-Back 10.0	Vertical (Z)
(lb) 3,468 Building Code CBC 2019	33.1 Test Criteria ICC-ES AC156	Wic 39 Sds (g) 1.45	dth .4 Seismic z/h	5 Test Paramo	8.5 eters Afix-H (g)	Side-Side 10.0	Front-Back 10.0	Vertical (Z)
(lb) 3,468 Building Code CBC 2019	33.1 Test Criteria ICC-ES AC156	39 Sds (g) 1.45	.4 Seismic z/h	5 Test Paramo	8.5 eters Afix-H (g)	10.0	10.0	
Building Code CBC 2019	33.1 Test Criteria ICC-ES AC156	Sds (g) 1.45	Seismic z/h	5 Test Paramo	8.5 eters Afix-H (g)			
CBC 2019	ICC-ES AC156	1.45	z/h	lp	Aflx-H (g)	Arig-H (g)		
CBC 2019	ICC-ES AC156	1.45				Arig-H (g)		
		-	1.0	1.5	1.222		Aflx-V (g)	Arig-V (g)
Unit Mounting Desc	cription:	RE			2.32	1.74	0.97	0.39
		CALIFO	DATE: T			DE		
UUT 2 was rigid   11/19/2020	base mounted to a	shake table int		vith (6) 1/2" and 32" leng OSP-059	gthwise.	de 5 bolts space	ed approximately	19" on center Page 9 c

	UUT 3				((			
Unit Under	Test (UUT) S	Summary	/ Sheet			DYNAM		
Manufacturer:	Termaco							
Product Line:	Battery Cabinets							
Model Number:	TCR-CS-410RB-A11	L-400A-40-xxx	xx					
Mounting:	Rigid Base Mounte	ed						
Product Construction	Summary:							
Painted Carbon Steel								
<b>Options / Componen</b> 12V Batteries, Cabine	-							
Note: The UUT was of the component at						during the tes	ts. The struct	ural integrit
-			UUT Pro	perties				
Operating Weight		Dimen	sions (inches)			Lowest N	latural Freque	encv (Hz)
(lb)	Length	1	idth	Не	eight	Front-Back	Side-Side	Vertical
3,760	33.1		4.4		8.5	9.0	10.0	>33.3
5,. 00			Seismic Test I			5.0	20.0	
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53
		CRURO	PNIA BU	1	1G COD			
		1.2.5	•		L.			