



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

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

OFFICE USE ONLY

APPLICATION #: OSP-0746

HCAI Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Stored Energy Systems, LLC

Manufacturer's Technical Representative: Sam Coleman

Mailing Address: 1840 Industrial Circle, Longmont, CO 80501

Telephone: (303) 678-7500

Email: samc@sens-usa.com

Product Information

Product Name: UPS and Batteries

Product Type: Batteries

Product Model Number: SuperTorque 8Z Genset Starting System

General Description: 12V-24V rigid mounted engine starting system with integrated high performance NiZn battery, battery charger, alarms, and communications.

Mounting Description: Rigid, Floor Mounted

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: Dynamic Certification Laboratories

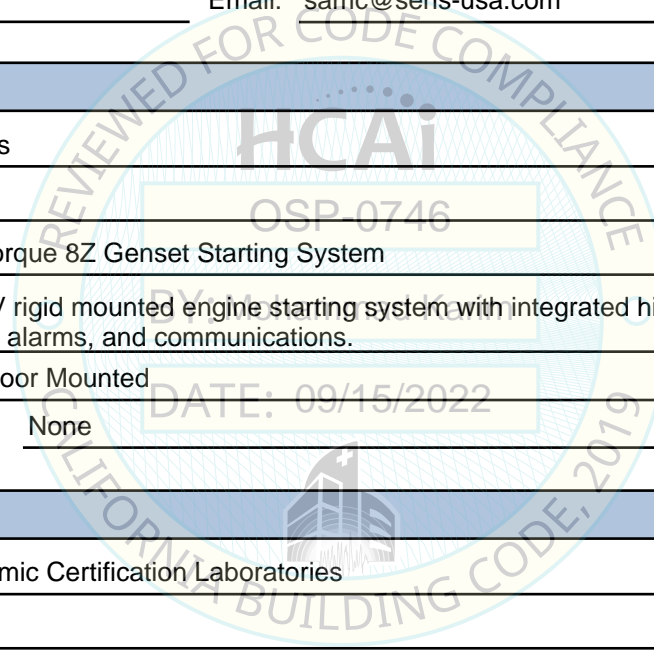
Contact Person: Kelly Laplace

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)

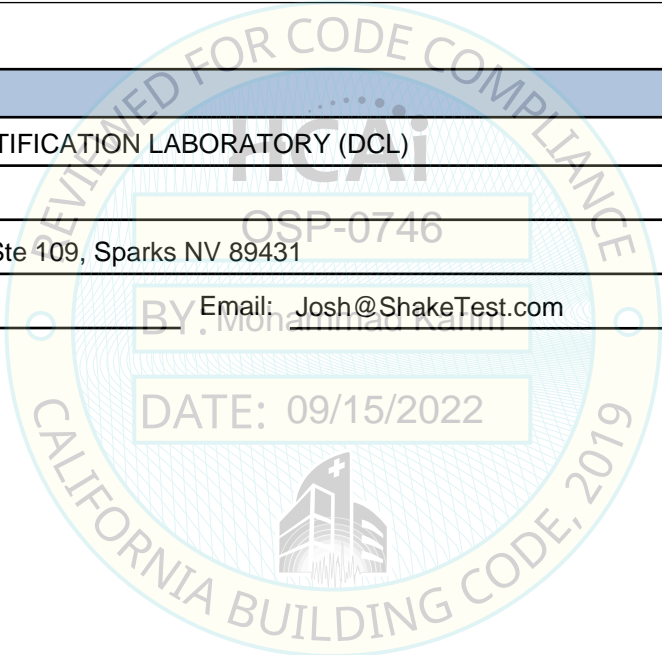
Company Name: THE VMC GROUP
Name: Kenneth Tarlow California License Number: S2851
Mailing Address: 980 9th Street, 16th Floor, Sacramento, CA 95814
Telephone: (832) 627-2214 Email: ken.tarlow@thevmcgroup.com

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: Josh Sailer
Mailing Address: 1315 Greg St., Ste 109, Sparks NV 89431
Telephone: (775) 358-5085 Email: Josh@ShakeTest.com





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.44 (Sds 2.0g, z/h=1); 1.13 (Sds 2.5g, z/h=0)

SDS (Design spectral response acceleration at short period, g) = Sds 2.0g, z/h=1; Sds 2.5g, z/h=0

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 and 0

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

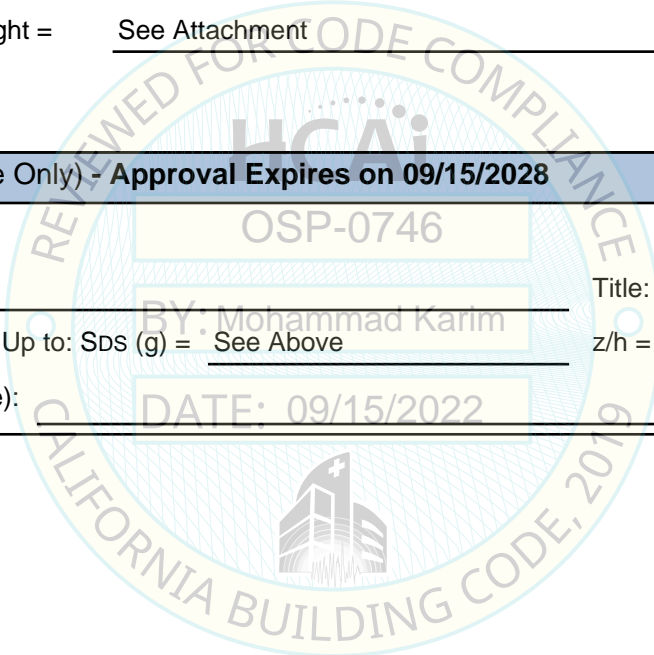
HCAI Approval (For Office Use Only) - Approval Expires on 09/15/2028

Date: 9/15/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = See Above z/h = See Above

Condition of Approval (if applicable): DATE: 09/15/2022

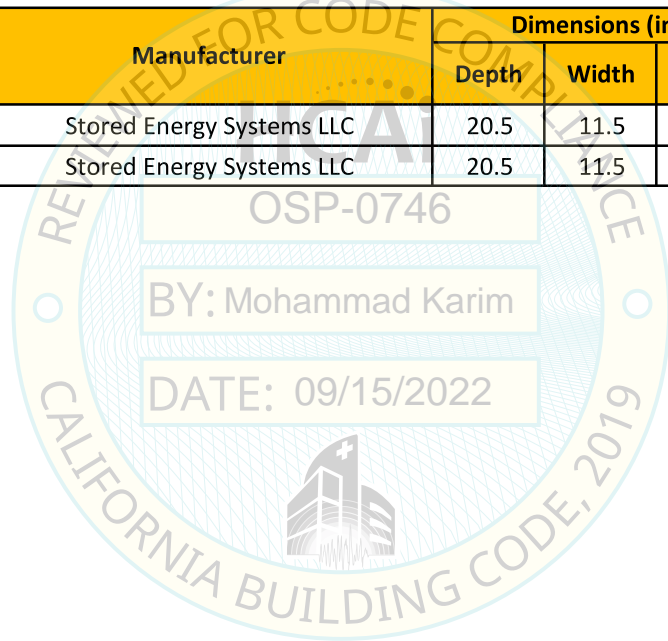


Special Seismic Certification
Table 1 - Certified Components



DCL Project Number: 10420-2201
Manufacturer: Stored Energy Systems LLC (SENS)
Product Line: SuperTorque 8Z
Mounting Configuration: Rigid Base Mount
Certified Seismic Levels: $S_{DS} = 2.00g, z/h=1.0$; $S_{DS} = 2.50g, z/h=0.0$

Model Number	Manufacturer	Dimensions (in.)			Weight (lb.)	Unit
		Depth	Width	Height		
8Z-12-C-15-C-2-1-01	Stored Energy Systems LLC	20.5	11.5	9.5	91	UUT-01
8Z-24-B-15-B-2-1-00	Stored Energy Systems LLC	20.5	11.5	9.5	91	UUT-02



Product Type	Output Volts	Battery Cap	Output Current	Alms & Comms	Mount	Terms	Config
8Z	24	B	15	B	1	1	00
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)

	Parameter	Code	Value
(A)	Product Family	8Z	SuperTorque 8Z
(B)	Output Voltage	12 24	12V 24V
(C)	Battery Capacity	B C	80Ah 160Ah (12V only)
(D)	Charging Current	15	15A
(E)	Interface & Communication Options	A B C	Base model, includes status LEDs and 2 ea. Form C alarm relays Base model + LCD + keypad control + RS-485 Modbus Base model + LCD + keypad control + TCP/IP Modbus + Ethernet
(F)	Mounting	1 2	Standard, not for rigid mounting With rigid mounting brackets
(G)	Terminals	1 2	Threaded inserts for ring lug connection (M8) SAE battery terminal posts
(H)	Configuration	00 01	Standard Current sensing (requires Comm option C) (late availability)

Special Seismic Certification

Table 2 - Certified Subcomponents



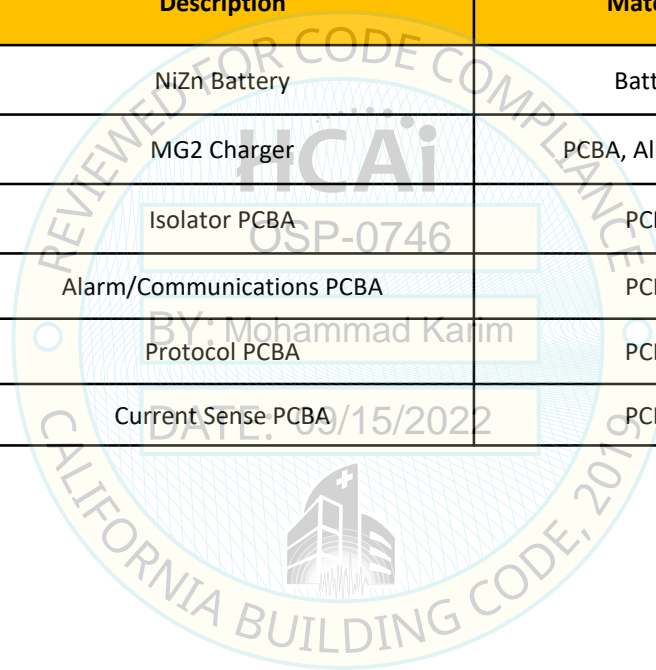
DCL Project Number: 10420-2201

Certified Seismic Levels: $S_{DS} = 2.00g, z/h=1.0$; $S_{DS} = 2.50g, z/h=0.0$

Model	Manufacturer	Description	Material	Dimensions (in.)			Unit
				Depth	Width	Height	
BMF-Z51380HSF	ZincFive	NiZn Battery	Battery	7.4	10.9	6.9	UUT-01 and UUT-02
M4-22-1515-A	SENS	MG2 Charger	PCBA, Aluminum	6.0	3.0	10.0	UUT-01 and UUT-02
207270	SENS	Isolator PCBA	PCBA	6.2	4.5	1.0	UUT-01 and UUT-02
2S7756	SENS	Alarm/Communications PCBA	PCBA	6.2	4.5	1.0	UUT-01
2S7810	SENS	Protocol PCBA	PCBA	6.0	2.5	1.0	UUT-02
207280	SENS	Current Sense PCBA	PCBA	1.3	2.0	1.0	UUT-01

Notes:

1. PCBA stands for "Printed Circuit Board Assembly"

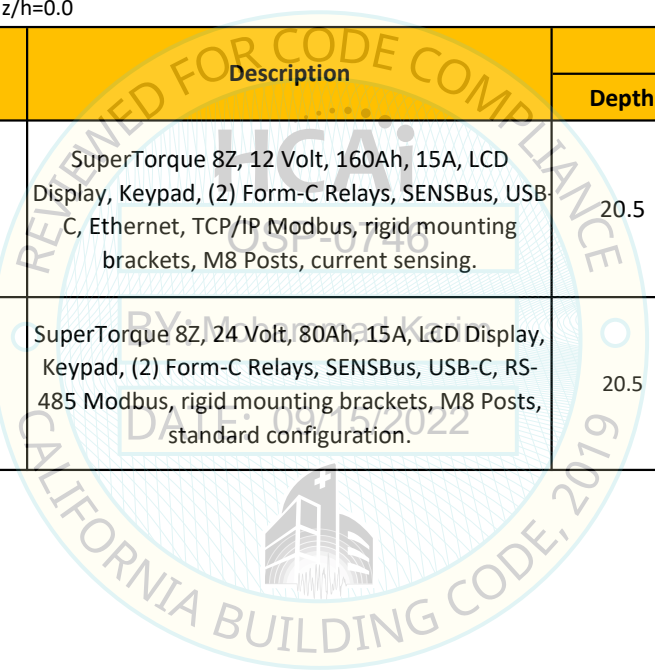


Special Seismic Certification
Table 3 - Tested Units



DCL Project Number: 10420-2201
Manufacturer: Stored Energy Systems LLC (SENS)
Product Line: SuperTorque 8Z
Mounting Configuration: Rigid Base Mount
Certified Seismic Levels: $S_{DS} = 2.00g, z/h=1.0$; $S_{DS} = 2.50g, z/h=0.0$

Model Number	Manufacturer	Description	Dimensions (in.)			Weight (lb.)	Unit
			Depth	Width	Height		
8Z-12-C-15-C-2-1-01	Stored Energy Systems LLC	SuperTorque 8Z, 12 Volt, 160Ah, 15A, LCD Display, Keypad, (2) Form-C Relays, SENSBUS, USB-C, Ethernet, TCP/IP Modbus, rigid mounting brackets, M8 Posts, current sensing.	20.5	11.5	9.5	91	UUT-01
8Z-24-B-15-B-2-1-00	Stored Energy Systems LLC	SuperTorque 8Z, 24 Volt, 80Ah, 15A, LCD Display, Keypad, (2) Form-C Relays, SENSBUS, USB-C, RS-485 Modbus, rigid mounting brackets, M8 Posts, standard configuration.	20.5	11.5	9.5	91	UUT-02



UUT-01 UNIT UNDER TEST (UUT) Summary Sheet



DCL Project Number: 10420-2201

Manufacturer: Stored Energy Systems LLC

Product Line: SuperTorque 8Z

Model Number: 8Z-12-C-15-C-2-1-01

Product Construction Summary:

Aluminum

Options / Component Summary:

SuperTorque 8Z, 12 Volts, 160Ah, 15A, LCD display, keypad, (2) Form-C Relays, SENSBUS, USB-C, ethernet, TCP/IP Modbus, rigid mounting brackets, M8 posts, and current sensing.

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
91	20.5	11.5	9.5	>33.3	>33.3	>33.3

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	2.00	1.0	1.5	3.20	2.40	1.67	0.67
		2.50	0.0					

Unit Mounting Description:

UUT-01 was rigidly base-mounted to the steel shake table interface plate with (6) 3/8" grade 5 bolts and washers. The steel shake table interface plate was attached to the shake table with (10) M12 threaded rods.



Overall view of UUT-01

UUT-02 UNIT UNDER TEST (UUT) Summary Sheet



DCL Project Number: 10420-2201

Manufacturer: Stored Energy Systems LLC

Product Line: SuperTorque 8Z

Model Number: 8Z-24-B-15-B-2-1-00

Product Construction Summary:

Aluminum

Options / Component Summary:

SuperTorque 8Z, 24 Volts, 80Ah, 15A, LCD display, keypad, (2) Form-C Relays, SENSBUS, USB-C, RS-485 Modbus, rigid mounting brackets, and M8 posts.

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
91	20.5	11.5	9.5	>33.3	>33.3	>33.3

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	2.00	1.0	1.5	3.20	2.40	1.67	0.67
		2.50	0.0					

Unit Mounting Description:

UUT-02 was rigidly base-mounted to the steel shake table interface plate with (6) 3/8" grade 5 bolts and washers. The steel shake table interface plate was attached to the shake table with (10) M12 threaded rods.



Overall view of UUT-02