



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

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

OFFICE USE ONLY

APPLICATION #: OSP-0669

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Schneider Electric

Manufacturer's Technical Representative: Jeff Gatscher

Mailing Address: 6700 Tower Circle, Suite 700, Franklin, TN 37067

Telephone: (615) 459-8466 Email: jeff.gatscher@se.com

Product Information

Product Name: UPS and Batteries

Product Type: Batteries

Product Model Number: UL9540A Lithium Ion Battery (LIB) Rack

General Description: Lithium Ion battery rack with 10 - 17 battery modules for single and three phase applications.

Mounting Description: Rigid, Floor Mounted

Tested Seismic Enhancements: None DATE: 07/08/2021

Applicant Information

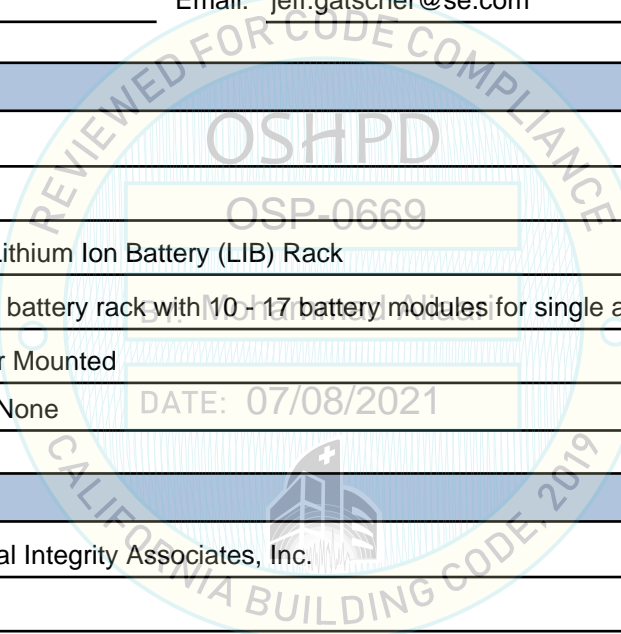
Applicant Company Name: Structural Integrity Associates, Inc.

Contact Person: Galen Reid

Mailing Address: 233 SW Wilson Ave Suite 101, Bend, OR 97702

Telephone: (541) 604-7225 Email: greid@structint.com

Title: Manager, TRU Compliance





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

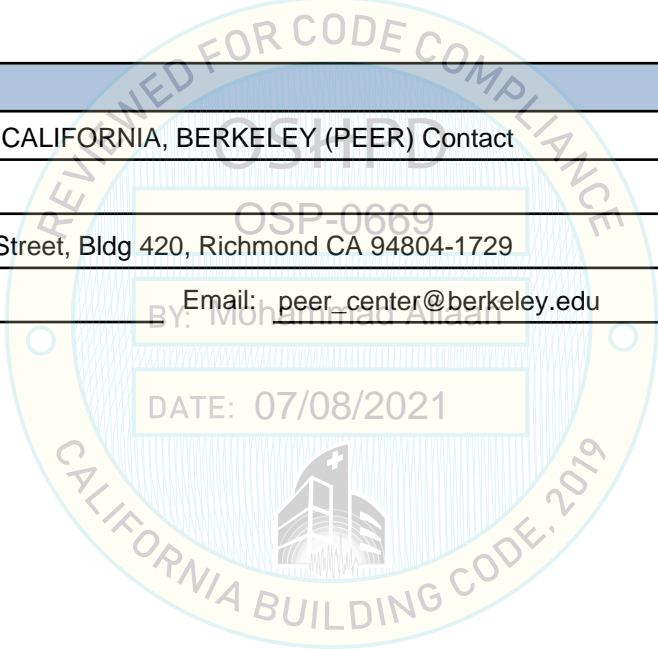
Company Name: STRUCTURAL INTEGRITY ASSOCIATES, INC.
Name: Andrew Coughlin California License Number: S6082
Mailing Address: 5215 Hellyer Ave, Suite 101, San Jose, CA 95138-1025
Telephone: (415) 635-8461 Email: acoughlin@structint.com

Certification Method

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

Testing Laboratory

Company Name: UNIVERSITY OF CALIFORNIA, BERKELEY (PEER) Contact
Person: Amarnath Kasalantati
Mailing Address: 1301 South 46th Street, Bldg 420, Richmond CA 94804-1729
Telephone: (510) 642-3437 Email: peer_center@berkeley.edu





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.28(z/h = 1.0); 0.9(z/h = 0)

SDS (Design spectral response acceleration at short period, g) = 1.7(z/h = 1); 2.0(z/h = 0)

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 6.0

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

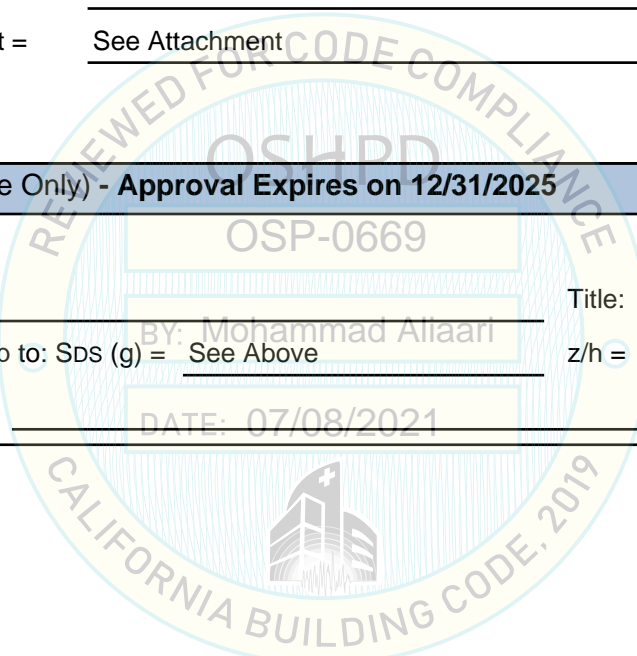
OSHPD Approval (For Office Use Only) - Approval Expires on 12/31/2025

Date: 7/8/2021

Name: Mohammad Aliaari Title: Senior Structural Engineer

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

Condition of Approval (if applicable): DATE: 07/08/2021



SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX



2000795-CR-001-R0

Manufacturer: Schneider Electric						TABLE 1	
Model Line: UL9540A Lithium Ion Battery (LIB) Rack							
Certified Product Construction Summary: Carbon Steel Lithium Ion Battery Cabinet.							
Certified Options Summary: 10 - 17 Lithium Ion Battery Modules for 1 phase and 3 phase applications. Quantity is uniquely identified by model number. All other subcomponents are identical between models.							
Mounting Configuration: Base mounted - rigid Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.							
Building Code: CBC 2019		Seismic Certification Limits:			$S_{DS} = 1.7g \quad z/h = 1.0$ $S_{DS} = 2.0g \quad z/h = 0.0$		$I_P = 1.5$
Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
UL9540A Lithium Ion Battery (LIB) Rack	LIBSMG95OUL (PHR2042-001A)	20.87	25.59	80.9	726	10 Battery Modules - 3 phase	2
	LIBSMG95OUL1PH (PHR2042-001A)	20.87	25.59	80.9	726	10 Battery Modules - 1 phase	Interp.
	LIBSMG95SUL (PHR2652-001A)	20.87	25.59	80.9	836	13 Battery Modules - 3 phase	Interp.
	LIBSMG95SUL1PH (PHR2652-001A)	20.87	25.59	80.9	836	13 Battery Modules - 1 phase	Interp.
	LIBSMG95EUL (PHR3262-001A)	20.87	25.59	80.9	945	16 Battery Modules - 3 phase	Interp.
	LIBSMG95EUL1PH (PHR3262-001A)	20.87	25.59	80.9	945	16 Battery Modules - 1 phase	Interp.
	LIBSMG95GUL (PHR3462-001A)	20.87	25.59	80.9	981	17 Battery Modules - 3 phase	1
	LIBSMG95GUL1PH (PHR3462-001A)	20.87	25.59	80.9	981	17 Battery Modules - 1 phase	Interp.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

2000795-CR-001-R0



Manufacturer:	Schneider Electric	Table Description: Misc. Subcomponents	TABLE 2
Model Line:	UL9540A Lithium Ion Battery (LIB) Rack		

Building Code: CBC 2019 **Seismic Certification Limits:** $S_{DS} = 1.7g$ $z/h = 1.0$ $I_p = 1.5$
 $S_{DS} = 2.0g$ $z/h = 0.0$

Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT
		Depth	Width	Height				
Li-Ion Battery Module Type A (Samsung)	LIBSMG95MODA	15.9	8.4	6.4	36.4	Plastic Case, Lithium Ion, 3.8V	UUT1: Qty (8) UUT2: Qty (4)	1, 2
Li-Ion Battery Module Type B (Samsung)	LIBSMG95MODB	15.9	8.4	6.4	36.4	Plastic Case, Lithium Ion, 3.8V	UUT1: Qty (9) UUT2: Qty (6)	1, 2
Switchgear (Samsung)	LIBSMG95SGUL	16.2	22.9	9.3	33.0	Carbon Steel, Plastic, Aluminum	UUT1: Qty (1) UUT2: Qty (1)	1, 2
SMPS Assembly (Samsung)	LIBSMG95SMPS	13.3	15.6	3.4	11.0	Carbon Steel, Plastic	UUT1: Qty (1) UUT2: Qty (1)	1, 2
	LIBSMG95SMPS1PH	13.3	15.6	3.4	11.0	Carbon Steel, Plastic	Identical to LIBSMG95SMPS. Wiring configuration change for 1 phase.	Interp.
Rack Frame Including Accessories (Samsung)	LIBSMG95RACKUL	13.4	20.9	81	318.2	Carbon Steel	UUT1: Qty (1) UUT2: Qty (1)	1, 2

Note: All components mounted in cabinet in horizontal configuration.

UNIT UNDER TEST (UUT) SUMMARY SHEET



2000795-CR-001-R0

Manufacturer: Schneider Electric	UUT 1
Model Line: UL9540A Lithium Ion Battery (LIB) Rack	
Model Number: LIBSMG95GUL (PHR3462-001A) Serial Number: N/A	

Product Construction Summary:
Carbon Steel Lithium Ion Battery Cabinet with seventeen (17) Battery Modules - 3 phase.

Options/Subcomponent Summary:
Battery Modules: (9) LIBSMG95MODB, (8) LIBSMG95MODA; **Switchgear:** (1) LIBSMG95SGUL; **SMPS Assembly:** (1) LIBSMG95SMPS; **Rack Frame:** (1) LIBSMG95RACKUL

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
981	20.87	25.59	80.91	3.10	5.84	>33.33

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2019	ICC-ES AC156	1.7	1.0	1.5	2.72	2.04	1.33	0.53
		2.0	0.0					

Test Mounting Details:



Base Mounted - Rigid using four (4) 5/8" diameter Grade 5 bolts with four (4) 5/8" Belleville conical spring washers. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET



2000795-CR-001-R0

Manufacturer: Schneider Electric	UUT 2
Model Line: UL9540A Lithium Ion Battery (LIB) Rack	
Model Number: LIBSMG95OUL (PHR2042-001A) Serial Number: N/A	

Product Construction Summary:
Carbon Steel Lithium Ion Battery Cabinet with ten (10) Battery Modules.

Options/Subcomponent Summary:
Battery Modules: (6) LIBSMG95MODB, (4) LIBSMG95MODA; **Switchgear:** (1) LIBSMG95SGUL; **SMPS Assembly:** (1) LIBSMG95SMPS; **Rack Frame:** (1) LIBSMG95RACKUL

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
726	20.87	25.59	80.91	2.6	5.0	>33.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2019	ICC-ES AC156	1.8	1.0	1.5	2.88	2.16	1.47	0.59
		2.2	0.0					

Test Mounting Details:



Base Mounted - Rigid using four (4) 5/8" diameter Grade 5 bolts with four (4) 5/8" Belleville conical spring washers. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET



2000795-CR-001-R0

Manufacturer: Schneider Electric
Model Line: UL9540A Lithium Ion Battery (LIB) Rack
Model Number: LIBSMG95OUL (PHR2042-001A) **Serial Number:** N/A

UUT 2

UUT Configuration:

LIBSMG95SGUL

LIBSMG95SMPS or
LIBSMG95SMPS1PH

LIBSMG95MODB

LIBSMG95MODA

LIBSMG95MODB

LIBSMG95MODA

LIBSMG95MODB

LIBSMG95RACKUL

LIBSMG95MODB

LIBSMG95MODA

LIBSMG95MODB

LIBSMG95MODA

LIBSMG95MODB