APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0617

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: Advanced Mechanical Technologies

Manufacturer's Technical Representative: Ian Anderson, Lead Engineer

Mailing Address: 201-B West Gibson Lane, Phoenix, AZ 95003

Telephone: (602) 283-2220 Email: ian@amechtech.com

Product Information

Product Name: Custom Panels

Product Type: Control Panels

Product Model Number: See attached
(List all unique product identification numbers and/or part numbers)

General Description: The units are enclosures with Controller, Relays, Expansion Modules, VFD, Gateway, Ethernet Switch, Touchscreen, Power Supplies, Surge Protector, Disconnect, Thermostat, Indicator Buzzer, Fans, Circuit Breaker, Circuit Breaker Molded Case, Motor Starter, Power Distribution, and Deadfront Panel inside.

Mounting Description: Units are rigid and isolated wall mounted

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.giuliano@thevmcgroup.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: 7/26/19

Title: President Company Name: The VMC Group

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: ken.tarlow@thevmcgroup.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: DCL Labs

Contact Name: Josh Sailer, Laboratory Manager

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

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

Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = 1.50

S_{DS} (Design spectral response acceleration at short period, g) = 2.00

a_p (In-structure equipment or component amplification factor) = 2.5

R_p (Equipment or component response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

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): Attachment

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2025

Signature: M. Aliaari Date: April 20, 2020

Print Name: Mohammad Aliaari Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.00 z/h = 1

Condition of Approval (if applicable):

Table 1 - Certified Components

Test Level: S_{DS}=2.0g, z/h=1.0 (horizontal); S_{DS}=3.0g z/h=0.0 (vertical)

Model Number	Manufacturer	Max. Dimensions (in)			Max. Weight (lb)	Mounting	Unit
		Depth	Width	Height			
aaaa-XXXXX	Advanced Mechanical Technologies	8.0-17.0	20.0-48.0	8.0-48.0	50-408	Rigid/isolated wall mount	Extrapolated
S0CP-00000	Advanced Mechanical Technologies	17.0	36.0	60.0	408	Rigid/isolated wall mount	UUT 1a,b
aaaa-XXXXX	Advanced Mechanical Technologies	13.0-16.0	36.0-60.0	42.0-60.0	100-430	Rigid/isolated wall mount	Interpolated
S0BP-00000	Advanced Mechanical Technologies	13.0	60.0	42.0	430	Rigid/isolated wall mount	UUT 2a,b

Note: Reference Table 2 for nomenclature chart

Table 2 - Nomenclature Chart

Nomenclature: aaaa-XXXXX			
Nomenclature	**Allowable Value**	**Allowable Value Description**	**Unit**
aaaa[1]	S0BP	Booster Panel	UUT 2a,b
	SMBP	Mini Mi Booster Panel	Interpolated
	SCTP	Cooling Tower Panel	Interpolated
	S0CP	Custom Panel	UUT 1a,b
	STMP	Transfermaxx Panel	Interpolated
	SCBP	Cabilito Panel	Interpolated
	SSIP	Sol Invictus Panel	Interpolated
XXXXX	00000-99999	Internally Applied Serial Number	UUT 1a,b, 2a,b

1. 00BP, 0MBP, 0CTP, 00CP, TMAX, 0CBP, 0SIP only differ by software

Table 3 - Certified Subcomponents - Enclosures

Manufacturer: *Saginaw*

Test Level: S_{DS}=2.0g, z/h=1.0 (horizontal); S_{DS}=3.0g z/h=0.0 (vertical)

Model Number	Certified NEMA Rating	Max. Dimensions (in)			Thickness (gauge)	Material	Enclosure Weight (lb)	Unit
		Depth	Width	Height				
SCE-20EL2008LP	1, 12, 13, 3R, 4	9.0	20.0	20.0	14	Carbon Steel	36.0	Extrapolated
SCE-20EL2008SSLP	1, 12, 13, 3R, 4, 4X	9.0	20.0	20.0	14	Carbon or Stainless Steel	37.0	Interpolated
SCE-20EL2010SSLP	1, 12, 13, 3R, 4, 4X	11.0	20.0	20.0	14	Carbon or Stainless Steel	40.0	Interpolated
SCE-20EL2010LP	1, 12, 13, 3R, 4	11.0	20.0	20.0	14	Carbon Steel	42.0	Extrapolated
SCE-24EL2008LP	1, 12, 13, 3R, 4	9.0	20.0	24.0	14	Carbon Steel	42.0	Extrapolated
SCE-24EL2008SSLP	1, 12, 13, 3R, 4, 4X	9.0	20.0	24.0	14	Carbon or Stainless Steel	43.0	Interpolated
SCE-20EL2012LP	1, 12, 13, 3R, 4	13.0	20.0	20.0	14	Carbon Steel	44.0	Extrapolated
SCE-20EL2012SSLP	1, 12, 13, 3R, 4, 4X	13.0	20.0	20.0	14	Carbon or Stainless Steel	45.0	Interpolated
SCE-24EL2010LP	1, 12, 13, 3R, 4	11.0	20.0	24.0	14	Carbon Steel	46.0	Extrapolated
SCE-24EL2010SSLP	1, 12, 13, 3R, 4, 4X	11.0	20.0	24.0	14	Carbon or Stainless Steel	48.0	Interpolated
SCE-24EL2012LP	1, 12, 13, 3R, 4	13.0	20.0	24.0	14	Carbon Steel	50.0	Extrapolated
SCE-24EL2012SSLP	1, 12, 13, 3R, 4, 4X	13.0	20.0	24.0	14	Carbon or Stainless Steel	53.0	Interpolated
SCE-24EL2410SSLP	1, 12, 13, 3R, 4, 4X	11.0	24.0	24.0	14	Carbon or Stainless Steel	54.0	Interpolated
SCE-24EL2412SSLP	1, 12, 13, 3R, 4, 4X	13.0	24.0	24.0	14	Carbon or Stainless Steel	58.0	Interpolated
SCE-24EL2410LP	1, 12, 13, 3R, 4	11.0	24.0	24.0	14	Carbon Steel	60.0	Extrapolated
SCE-24EL2412LP	1, 12, 13, 3R, 4	13.0	24.0	24.0	14	Carbon Steel	78.0	Extrapolated
SCE-30EL3012LP	1, 12, 13, 3R, 4	13.0	30.0	30.0	14	Carbon Steel	82.0	Extrapolated
SCE-30EL3012SSLP	1, 12, 13, 3R, 4, 4X	13.0	30.0	30.0	14	Carbon or Stainless Steel	89.0	Interpolated
SCE-42EL3012LP	1, 12, 13, 3R, 4	13.0	30.0	42.0	14	Carbon Steel	111.0	Extrapolated
SCE-36EL3612SSLP	1, 12, 13, 3R, 4, 4X	13.0	36.0	36.0	14	Carbon or Stainless Steel	111.0	Interpolated
SCE-36EL3612LP	1, 12, 13, 3R, 4	13.0	36.0	36.0	14	Carbon Steel	112.0	Extrapolated
SCE-42EL3016LP	1, 12, 13, 3R, 4	17.0	30.0	42.0	14	Carbon Steel	117.0	Extrapolated
SCE-36EL3616LP	1, 12, 13, 3R, 4	17.0	36.0	36.0	14	Carbon Steel	122.0	Extrapolated
SCE-42EL3612LP	1, 12, 13, 3R, 4	13.0	36.0	42.0	14	Carbon Steel	123.0	Extrapolated
SCE-42EL3612SSLP	1, 12, 13, 3R, 4, 4X	13.0	36.0	42.0	14	Carbon or Stainless Steel	124.0	Interpolated
SCE-48EL3612SSLP	1, 12, 13, 3R, 4, 4X	13.0	36.0	48.0	14	Carbon or Stainless Steel	131.0	Interpolated
SCE-48EL3612LP	1, 12, 13, 3R, 4	13.0	36.0	48.0	14	Carbon Steel	133.0	Extrapolated
SCE-36EL4812SSWFLP	1, 12, 13, 3R, 4, 4X	13.0	48.0	36.0	14	Carbon or Stainless Steel	134.0	Interpolated
SCE-36EL4216WFLP	1, 12, 13, 3R, 4	17.0	42.0	36.0	14	Carbon Steel	145.0	Interpolated
SCE-42EL3012SSLP	1, 12, 13, 3R, 4, 4X	13.0	30.0	42.0	14	Carbon or Stainless Steel	147.0	Interpolated
SCE-42EL4212SSWFLP	1, 12, 13, 3R, 4, 4X	13.0	42.0	42.0	14	Carbon or Stainless Steel	147.0	Interpolated
SCE-42EL4812SSWFLP	1, 12, 13, 3R, 4, 4X	13.0	48.0	42.0	14	Carbon or Stainless Steel	148.0	Interpolated
SCE-42EL3616LP	1, 12, 13, 3R, 4	17.0	36.0	42.0	14	Carbon Steel	149.0	Extrapolated
SCE-48EL3616LP	1, 12, 13, 3R, 4	17.0	36.0	48.0	14	Carbon Steel	149.0	Extrapolated
SCE-42EL3616SSLP	1, 12, 13, 3R, 4, 4X	17.0	36.0	42.0	14	Carbon or Stainless Steel	149.0	Interpolated
SCE-36EL4812WFLP	1, 12, 13, 3R, 4	13.0	48.0	36.0	14	Carbon Steel	150.0	Interpolated
SCE-48EL4812WFLP	1, 12, 13, 3R, 4	13.0	48.0	48.0	14	Carbon Steel	152.0	Interpolated
SCE-42EL6012WFALP	1, 12, 13, 3R, 4, 4X	13.0	60.0	42.0	14	Carbon Steel	152.0	Interpolated
SCE-42EL6012SSWFALP	1, 12, 13, 3R, 4, 4X	13.0	60.0	42.0	14	Stainless Steel	152.0	UUT 2a,b[2]
SCE-36EL6012WFLP	1, 12, 13, 3R, 4	13.0	60.0	36.0	14	Carbon Steel	153.0	Interpolated
SCE-48EL3616SSLP	1, 12, 13, 3R, 4, 4X	17.0	36.0	48.0	14	Carbon or Stainless Steel	153.0	Interpolated
SCE-36EL6012SSWFLP	1, 12, 13, 3R, 4, 4X	13.0	60.0	36.0	14	Carbon or Stainless Steel	153.0	Interpolated
SCE-36EL4212SSWFLP	1, 12, 13, 3R, 4, 4X	13.0	42.0	36.0	14	Carbon or Stainless Steel	155.0	Interpolated
SCE-42EL6012WFALP	1, 12, 13, 3R, 4	13.0	60.0	42.0	14	Carbon Steel	158.0	Interpolated
SCE-48EL4812SSWFLP	1, 12, 13, 3R, 4, 4X	13.0	48.0	48.0	14	Carbon or Stainless Steel	158.0	Interpolated
SCE-60EL3612LP	1, 12, 13, 3R, 4	13.0	36.0	60.0	14	Carbon Steel	162.0	Extrapolated
SCE-60EL3612SSLP	1, 12, 13, 3R, 4, 4X	13.0	36.0	60.0	14	Carbon or Stainless Steel	162.0	Interpolated
SCE-42EL4212WFLP	1, 12, 13, 3R, 4	13.0	42.0	42.0	14	Carbon Steel	179.0	Interpolated
SCE-42EL4812WFLP	1, 12, 13, 3R, 4	13.0	48.0	42.0	14	Carbon Steel	187.0	Interpolated
SCE-60EL3616SSLP	1, 12, 13, 3R, 4, 4X	17.0	36.0	60.0	14	Carbon or Stainless Steel	195.0	Interpolated
SCE-60EL3616LP	1, 12, 13, 3R, 4	17.0	36.0	60.0	14	Carbon Steel	195.0	UUT 1a,b[1]

1. Tested unit was NEMA 3R
2. Tested unit was NEMA 4X

Table 4 - Certified Subcomponents, Misc.

Test Level: S_{DS}=2.0g, z/h=1.0 (horizontal); S_{DS}=3.0g z/h=0.0 (vertical)

Subcomponent (Manufacturer)	Model Number	Description	Material	Approximate Weight (lb)	Unit
Controller (IDEC)	FC6A-C16R1CE	Controller	Plastic	0.8	UUT 2a,b
	FT1A-C14SA	Controller/HMI	Plastic	0.6	UUT 1a,b
Relays (Automation Direct)	781-1C-24D	24VDC SPDT Relay	Plastic	0.1	UUT 2a,b
	782-2C-24D	24VDC DPDT Relay	Plastic	0.1	Interpolated
	783-3C-24D	24VDC 3PDT Relay	Plastic	0.2	Interpolated
	784-4C-24D	24VDC 4PDT Relay	Plastic	0.2	UUT 1a,b
Expansion Module (IDEC)	FC6A-J8A1	I/O Expansion Module	Plastic	0.2	UUT 2a,b
	FC6A-R081	I/O Expansion Module	Plastic	0.2	UUT 2a,b
	FC6A-R161	I/O Expansion Module	Plastic	0.2	Interpolated
	FC6A-N08B1	I/O Expansion Module	Plastic	0.2	Interpolated
	FC6A-N16B1	I/O Expansion Module	Plastic	0.2	Interpolated
	FC6A-K4A1	I/O Expansion Module	Plastic	0.2	UUT 2a,b
VFD (ABB)	R1 Frame	ACS310 Variable Frequency Drive, HP Range 1-5	Plastic, Copper	3.1	UUT 2a,b
	R2 Frame	ACS310 Variable Frequency Drive, HP Range 2-5	Plastic, Copper	4.0	Interpolated
	R3 Frame	ACS310 Variable Frequency Drive, HP Range 7.5-15	Plastic, Copper	6.4	Interpolated
	R4 Frame	ACS310 Variable Frequency Drive, HP Range 10-30	Plastic, Copper	11.2	UUT 1a,b
Gateway (ICC, Inc)	XLTR-1000	RS-485 Gateway	Plastic	0.5	UUT 2a,b
	ETH-1000	Ethernet Gateway	Plastic	0.5	UUT 1a,b
Ethernet Switch (Advantech)	EKI-2525	5 Port Ethernet Switch	Copper	1.0	UUT 1a,b, 2a,b
Touchscreen (IDEC)	HG2G-5TT22TF	5.7" Touchscreen	Plastic	1.1	UUT 2a,b
	HG3G-8JT22MF	8.4" Touchscreen	Plastic	2.8	Interpolated
	HG3G-AJT22MF	10.4" Touchscreen	Plastic	3.6	Interpolated
	HG4G-CJT22MF	12.1" Touchscreen	Plastic	4.6	UUT 1a,b
Power Supply (Meanwell)	WDR-120-24	180-550VAC/24VDC 120W	Plastic	0.3	UUT 1a,b, 2a,b
Surge Protector (Delta Lightning Arrestors, Inc)	CA603RMB	600V 3-Phase Surge Capacitor, #12 Leads	Plastic	0.5	UUT 1a,b, 2a,b
Disconnect (ABB)	OT16F3	Disconnect, Non-Fused, 3 Pole 20 Amp	Plastic, Copper	0.1	UUT 1a,b
	OT25F3	Disconnect, Non-Fused, 3 Pole 30 Amp	Plastic, Copper	0.2	Interpolated
	OT40F3	Disconnect, Non-Fused, 3 Pole 40 Amp	Plastic, Copper	0.4	Interpolated
	OT63F3	Disconnect, Non-Fused, 3 Pole 60 Amp	Plastic, Copper	0.8	Interpolated
	OT80F3	Disconnect, Non-Fused, 3 Pole 80 Amp	Plastic, Copper	0.8	Interpolated
	OT100F3	Disconnect, Non-Fused, 3 Pole 100 Amp	Plastic, Copper	1.0	UUT 1a,b
	OT200U03	Disconnect, Non-Fused, 3 Pole 200 Amp	Plastic, Copper	3.0	Interpolated
	OT400U30	Disconnect, Non-Fused, 3 Pole 400 Amp	Plastic, Copper	5.0	UUT 2a,b
	OS100GJ03	Disconnect, Fused, 3 Pole 100 Amp	Plastic, Copper	3.0	UUT 2a,b
Thermostat (Stego)	011419-00	Thermostat 1 NO Contact	Plastic	0.1	UUT 1a,b, 2a,b
Indicator Buzzer (Chint)	ND16-22FS-24V-RED	LED Red Light With Buzzer	Plastic	0.1	UUT 1a,b, 2a,b
Fans (Y.S. Tech)	YW12038024BM-6	Fan Axial 24VDC	Plastic	0.5	UUT 1a,b
	XYW12038024BL-P-6	Fan Axial 24VDC	Plastic	0.5	UUT 1a,b

Table 4 - Certified Subcomponents Continued

Test Level: S_{DS}=2.0g, z/h=1.0 (horizontal); S_{DS}=3.0g z/h=0.0 (vertical)

Subcomponent (Manufacturer)	Model Number	Description	Material	Approximate Weight (lb)	Unit
Power Supply (IDEC)	PS5R-VB24	100-240VAC to 24VDC Power Supply, 15W	Plastic	0.3	UUT 2a,b
	PS5R-VC24	100-240VAC to 24VDC Power Supply, 30W	Plastic	0.3	Interpolated
	PS5R-VD24	100-240VAC to 24VDC Power Supply, 60W	Plastic	0.6	Interpolated
	PS5R-VE24	100-240VAC to 24VDC Power Supply, 90W	Plastic	0.7	Interpolated
	PS5R-VF24	100-240VAC to 24VDC Power Supply, 120W	Plastic	1.0	UUT 1a,b
Circuit Breaker (ABB)	SU201M-KX	1 Pole X Amps Up To 40A	Plastic	0.3	UUT 1a,b
	SU202M-KX	2 Pole X Amps Up To 40A	Plastic	0.3	UUT 1a,b, 2a,b
	SU203M-KX	3 Pole X Amps Up To 40A	Plastic	0.3	UUT 1a,b
Circuit Breaker, Molded Case (ABB)	XT1	3 Pole Up To 100A	Plastic	3.0	UUT 2a,b
	XT3	3 Pole Up To 225A	Plastic	4.6	UUT 1a,b
Motor Starter (ABB)	MS165-XX	3 Pole XX Amps Up To 65 Amp	Plastic	0.3	UUT 2a,b
	MS495-XX	3 Pole XX Amps Up To 90 Amp	Plastic	0.7	UUT 1a,b
Power Distribution (Eriflex)	UD-80A	Power Distribution Block, 85A, 1 Pole	Plastic, Copper	0.2	UUT 1a,b
	UDJ-125A	Power Distribution Block, 150A, 1 Pole	Plastic, Copper	0.3	Interpolated
	UDJ-160A	Power Distribution Block, 200A, 1 Pole	Plastic, Copper	0.3	Interpolated
	UD-250A	Power Distribution Block, 255A, 1 Pole	Plastic, Copper	0.9	Interpolated
	UD-400212CU	Power Distribution Block, 400A, 1 Pole	Plastic, Copper	0.8	UUT 2a,b
Power Supply (IDEC)	PH50MQMJ	Control Transformer, 50VA, 480x240/240x120	Iron, Carbon Steel	3.5	UUT 1a,b
	PH75MQMJ	Control Transformer, 75VA, 480x240/240x120	Iron, Carbon Steel	3.5	Interpolated
	PH100MQMJ	Control Transformer, 100VA, 480x240/240x120	Iron, Carbon Steel	4.5	Interpolated
	PH150MQMJ	Control Transformer, 150VA, 480x240/240x120	Iron, Carbon Steel	5.7	Interpolated
	PH250MQMJ	Control Transformer, 250VA, 480x240/240x120	Iron, Carbon Steel	7.5	Interpolated
	PH350MQMJ	Control Transformer, 350VA, 480x240/240x120	Iron, Carbon Steel	10.1	Interpolated
	PH500MQMJ	Control Transformer, 500VA, 480x240/240x120	Iron, Carbon Steel	14.2	Interpolated
	PH750MQMJ	Control Transformer, 750VA, 480x240/240x120	Iron, Carbon Steel	16.6	Interpolated
	PH1000MQMJ	Control Transformer, 1000VA, 480x240/240x120	Iron, Carbon Steel	23.6	Interpolated
	PH1500MQMJ	Control Transformer, 1500VA, 480x240/240x120	Iron, Carbon Steel	34.0	UUT 2a,b
Deadfront Panel (Saginaw)	SCE-DF24EL20LP	Dead Front Panel 24x20 Enclosure	Carbon Steel	13.5	Extrapolated
	SCE-DF24EL24LP	Dead Front Panel 24x24 Enclosure	Carbon Steel	15.0	Extrapolated
	SCE-DF30EL30LP	Dead Front Panel 30x30 Enclosure	Carbon Steel	36.7	Extrapolated
	SCE-DF36EL30LP	Dead Front Panel 36x30 Or 36x60 2-Door Enclosure	Carbon Steel	22.3	Extrapolated
	SCE-DF42EL24LP	Dead Front Panel 42x24 Or 42x48 2-Door Enclosure	Carbon Steel	20.0	Extrapolated
	SCE-DF42EL30LP	Dead Front Panel 42x30 Or 42x60 2-Door Enclosure	Carbon Steel	24.0	UUT 2a,b
	SCE-DF42EL36LP	Dead Front Panel 42x36	Carbon Steel	26.0	Interpolated
	SCE-DF48EL24LP	Dead Front Panel 48x24 Or 48x48 2-Door Enclosure	Carbon Steel	45.0	Interpolated
	SCE-DF48EL36LP	Dead Front Panel 48x36	Carbon Steel	39.7	Interpolated
	SCE-DF60EL36LP	Dead Front Panel 60x36 Enclosure	Carbon Steel	88.0	UUT 1a,b

Table 5 - Tested Units

Test Level: S_{DS}=2.0g, z/h=1.0 (horizontal); S_{DS}=3.0g z/h=0.0 (vertical)

Model Number	Manufacturer	Dimensions (in)			Weight (lb)	Mounting	Unit
		Depth	Width	Height			
S0CP-00000	Advanced Mechanical Technologies	17.0	36.0	60.0	408	Rigid/isolated wall mount	UUT 1a,b
S0BP-00000	Advanced Mechanical Technologies	13.0	60.0	42.0	430	Rigid/isolated wall mount	UUT 2a,b

UUT 1a

Unit Under Test (UUT) Summary Sheet

Manufacturer:	Advanced Mechanical Technologies
Product Line:	Custom Panel
Model Number:	S0CP-00000
Mounting:	Rigid Wall Mounting

Product Construction Summary:

14 Gage Painted Carbon Steel NEMA 3R

Options / Component Summary:

Controller, Relays, Expansion Modules, VFD, Gateway, Ethernet Switch, Touchscreen, Power Supplies, Surge Protector, Disconnect, Thermostat, Indicator Buzzer, Fans, Circuit Breaker, Circuit Breaker Molded Case, Motor Starter, Power Distribution, Deadfront Panel

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.

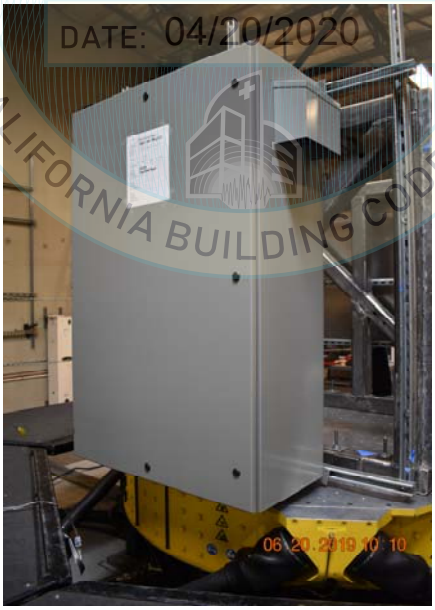
UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Length	Width	Height	Front-Back	Side-Side	Vertical
408	17	36	60	N/A	N/A	N/A

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 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		3.00	0.0	1.5	N/A	N/A	2.01	0.81

Unit Mounting Description:



UUT 1a, Rigid Wall Mounting

UUT 1a was wall mounted to the wall fixture with (4) 3/8" diameter, grade 8 bolts and washers, 3"x3"x1/4" low carbon steel plate washers, and spring nuts. The bolts are spaced 25" widthwise on center and 59" heightwise on center.

During the rigid shake (UUT 1a) the wall fixture was directly bolted to the shake table.

UUT 1b

Unit Under Test (UUT) Summary Sheet

Manufacturer:	Advanced Mechanical Technologies
Product Line:	Custom Panel
Model Number:	S0CP-00000
Mounting:	Isolated Wall Mounting

Product Construction Summary:

14 Gage Painted Carbon Steel NEMA 3R

Options / Component Summary:

Controller, Relays, Expansion Modules, VFD, Gateway, Ethernet Switch, Touchscreen, Power Supplies, Surge Protector, Disconnect, Thermostat, Indicator Buzzer, Fans, Circuit Breaker, Circuit Breaker Molded Case, Motor Starter, Power Distribution, Deadfront Panel

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.

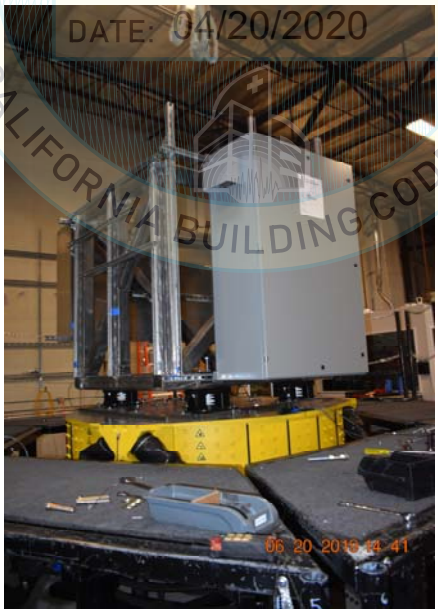
UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Length	Width	Height	Front-Back	Side-Side	Vertical
408	17	36	60	N/A	N/A	N/A

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 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		3.00	0.0	1.5	N/A	N/A	2.01	0.81

Unit Mounting Description:



UUT 1b, Isolated Wall Mounting

UUT 1b was wall mounted to the wall fixture with (4) 3/8" diameter, grade 8 bolts and washers, 3"x3"x1/4" low carbon steel plate washers, and spring nuts. The bolts are spaced 25" widthwise on center and 59" heightwise on center.

During the isolated shake (UUT 1b) the wall fixture was mounted atop the VMC MSS-H spring isolators; the isolators were mounted to the shake table via a steel shake table interface plate.

UUT 2a

Unit Under Test (UUT) Summary Sheet

Manufacturer:	Advanced Mechanical Technologies
Product Line:	Custom Panel
Model Number:	S0BP-00000
Mounting:	Rigid Wall Mounting

Product Construction Summary:

14 Gage Stainless Steel NEMA 4X

Options / Component Summary:

Controller, Relays, Expansion Modules, VFD, Gateway, Ethernet Switch, Touchscreen, Power Supplies, Surge Protector, Disconnect, Thermostat, Indicator Buzzer, Fans, Circuit Breaker, Circuit Breaker Molded Case, Motor Starter, Power Distribution, Deadfront Panel

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.

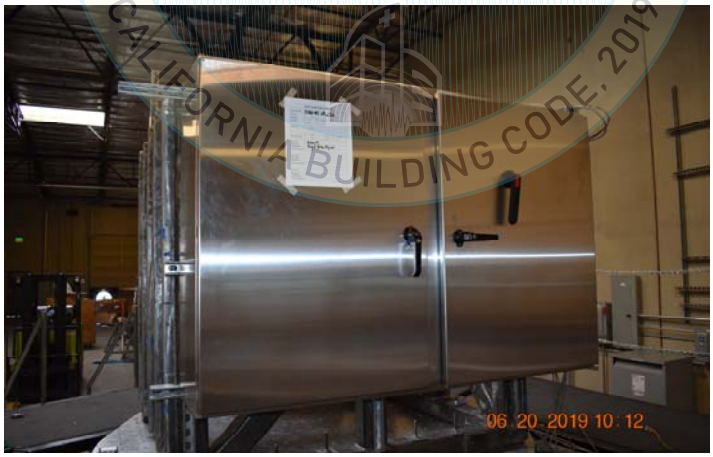
UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Length	Width	Height	Front-Back	Side-Side	Vertical
430	13	60	42	N/A	N/A	N/A

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 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		3.00	0.0	1.5	N/A	N/A	2.01	0.81

Unit Mounting Description:



UUT 2a, Rigid Wall Mounting

UUT 2a was mounted to the wall fixture with (4) 3/8" diameter, grade 8 bolts and washers, 3"x3"x1/4" low carbon steel plate washers, and spring nuts. The bolts are spaced 27.5" widthwise on center and 40.5" heightwise on center.

During the rigid shake (UUT 2a) the wall fixture was directly bolted to the shake table.

UUT 2b

Unit Under Test (UUT) Summary Sheet

Manufacturer:	Advanced Mechanical Technologies
Product Line:	Custom Panel
Model Number:	S0BP-00000
Mounting:	Isolated Wall Mounting

Product Construction Summary:

14 Gage Stainless Steel NEMA 4X

Options / Component Summary:

Controller, Relays, Expansion Modules, VFD, Gateway, Ethernet Switch, Touchscreen, Power Supplies, Surge Protector, Disconnect, Thermostat, Indicator Buzzer, Fans, Circuit Breaker, Circuit Breaker Molded Case, Motor Starter, Power Distribution, Deadfront Panel

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.

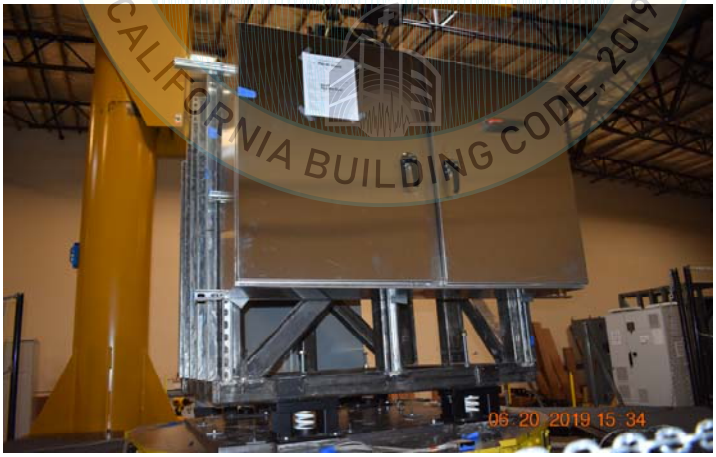
UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Length	Width	Height	Front-Back	Side-Side	Vertical
430	13	60	42	N/A	N/A	N/A

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 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		3.00	0.0	1.5	N/A	N/A	2.01	0.81

Unit Mounting Description:



UUT 2b, Isolated Wall Mounting

UUT 2b was mounted to the wall fixture with (4) 3/8" diameter, grade 8 bolts and washers, 3"x3"x1/4" low carbon steel plate washers, and spring nuts. The bolts are spaced 27.5" widthwise on center and 40.5" heightwise on center.

During the isolated shake (UUT 2b) the wall fixture was mounted atop the VMC MSS-H spring isolators; the isolators were mounted to the shake table via a steel shake table interface plate.