APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0378

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Price Industries Limited

Manufacturer's Technical Representative: Jeremy Wall, Product Designer

Mailing Address: 638 Raleigh Street, Winnipeg, Manitoba, R2K 3Z9, Canada

Telephone: 204-669-4220 ext. 7929 Email: jeremyw@priceindustries.com

Product Information

Product Name: Horizontal Fan Coils, Horizontal High Performance Fan Coils, Horizontal Blower Coils

Product Type: Fan Coils

Product Model Number: FCHCB, FCHCP, FCHE, FCHG, FCHGQ, BCH, BCHQ
(List all unique product identification numbers and/or part numbers)

General Description: Fan coil units in standard sizes with coil configurations in several optional types. Seismic enhancements made to the test units and modifications required to address anomalies observed during the tests shall be incorporated into the production units

Mounting Description: Ceiling suspended, rigidly on hanger rods or spring vibration isolated hanger rods with cable sway bracing.

Applicant Information

Applicant Company Name: The VMC Group

Contact Person: John Giuliano, PE

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: 5/14/19

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: SE2851

Mailing Address: 113 Main Street, Bloomingdale, NK 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: UC Berkeley, PEER Labs

Contact Name: Amarnath Kasalanati

Mailing Address: 1301 South 46th Street, Building 420, Richmond, CA 94804

Telephone: 510-642-6475 Email: Amarnath1@berkeley.edu

Seismic Parameters

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

Design Basis of Equipment or Components (F_p/W_p) = Rigid: 1.50 (S_{DS} = 2.00; z/h = 1); 1.13 (S_{DS} = 2.50; z/h = 0) Isolated: 4.50 (S_{DS} = 2.00; z/h = 1); 1.88 (S_{DS} = 2.50; z/h = 0)

S_{DS} (Design spectral response acceleration at short period, g) = 2.00 (z/h = 1); 2.50 (z/h = 0)

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

R_p (Equipment or component response modification factor) = 6.0 (Rigid); 2.0 (Isolated)

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1 and 0

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 7-10 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):

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

Signature: Date: April 16, 2021

Print Name: Timothy J. Piland Title: SSE

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

Condition of Approval (if applicable):

Price Fan Coils

OSHPD OSP Certified Product Matrix

Table 1 - Certified Components

Mounting: *Ceiling Suspended*

Product Family	Model	Size	Height (in)	Width (in)	Max Depth (in)	Max Weight (lbs)	Non-Isolated	Isolated	Sds (g)	z/h
Horizontal Fan Coils	FCHCB	2	10.6	28.1	22.5	30	extrapolated	extrapolated	SDS = 2.0 @ z/h = 1.0 & SDS = 2.5 @ z/h = 0.0	
		3	10.6	37.4	22.5	50	UUT 1 (a)	UUT 1 (b)		
		6	10.6	42.1	22.5	68	interpolated	interpolated		
		8	10.6	42.1	22.5	80	interpolated	interpolated		
		10	10.6	62.1	22.5	100	interpolated	interpolated		
		12	10.6	71.8	22.5	120	interpolated	interpolated		
	FCHCP	2	10.6	28.1	24.8	48	interpolated	interpolated		
		3	10.6	37.4	24.8	65	interpolated	interpolated		
		6	10.6	42.1	24.8	80	interpolated	interpolated		
		8	10.6	42.1	24.8	95	interpolated	interpolated		
		10	10.6	62.1	24.8	120	interpolated	interpolated		
		12	10.6	71.8	24.8	135	UUT 2 (a)	UUT 2 (b)		
	FCHE	10	12.0	36	30	105	interpolated	interpolated		
		20	12.0	45	30	135	interpolated	interpolated		
		30	12.0	50	30	160	interpolated	interpolated		
		40	12.0	70	30	245	UUT 3 (a)	UUT 3 (b)		
Horizontal High Performance Fan Coils	FCHG	20	13.5	35	97.69	195	extrapolated	extrapolated		
		30	13.5	35	97.69	195	UUT 4 (a)	UUT 4 (b)		
		40	15.5	40	97.69	220	interpolated	interpolated		
		50	13.5	56	100.19	300	interpolated	interpolated		
		60	15.5	62	100.19	360	interpolated	interpolated		
		70	15.5	74	121.19	470	interpolated	interpolated		
	FCHGQ	20	13.5	35	133.69	165	UUT 5 (a)	UUT 5 (b)		
		20	13.5	35	133.69	265	interpolated	n/a		
		30	13.5	35	133.69	265	interpolated	n/a		
		40	15.5	40	133.69	305	interpolated	n/a		
		50	13.5	56	136.19	420	interpolated	n/a		
		60	15.5	62	136.19	510	interpolated	n/a		
		70	15.5	74	157.19	720	UUT 6 (a)	n/a		
Horizontal Blower Coils	BCH	8	15.5	30	82	275	UUT 7 (a)	UUT 7 (b)		
		12	15.5	38	82	338	interpolated	interpolated		
		16	18.0	44	84.5	421	interpolated	interpolated		
		20	18.0	50	84.5	451	interpolated	interpolated		
		30	25.0	52	98.5	633	interpolated	interpolated		
		40	25.0	65	98.5	796	interpolated	interpolated		
	BCHQ	8	15.5	30	118	325	interpolated	interpolated		
		12	15.5	38	118	390	interpolated	interpolated		
		16	18.0	44	120.5	495	interpolated	interpolated		
		20	18.0	50	120.5	550	interpolated	interpolated		
		30	25.0	52	134.5	760	interpolated	interpolated		
		40	25.0	65	134.5	945	UUT 8 (a)	UUT 8 (b)		

THE VMC GROUP
The Power of Together™

Price Fan Coils
OSHPD OSP Certified Product Subcomponent Matrix

Table 2 - External Sheeting

EXTERIOR Wall/Roof/Floor Panel Material	Thickness	Unit	
		Non-Isolated	Isolated
Galvanized Carbon Steel	18 ga	UUT 3,7,8 (a)	UUT 3,7,8 (b)
Galvanized Carbon Steel	20 ga	UUT 1,2,4,5,6 (a)	UUT 1,2,4,5 (b)

Table 3 - Insulation

MFR	Material	Thickness	Unit	
			Non-Isolated	Isolated
Johns Manville	Fiberglass	0.500	UUT 2, 4 (a)	UUT 2, 4 (b)
Johns Manville		1.000	Extrapolated [1]	Extrapolated [1]
Johns Manville	Fiberboard	0.625	Extrapolated	Extrapolated
Johns Manville		1.000	UUT 7 (a)	UUT 7 (b)
Johns Manville	Fiberglass with Solid Metal	0.500	UUT 5 (a)	UUT 5 (b)
Johns Manville		1.000	UUT 8 (a)	UUT 8 (b)
Johns Manville	Fiberglass with Perforated Metal	0.500	UUT 6 (a)	UUT 6 (b)
Nomaco	Fiberfree	0.500	UUT 3 (a)	UUT 3 (b)
Nomaco		1.000	Extrapolated [1]	Extrapolated [1]

1. 1" Insulation tested on UUT 7 and UUT 8

Table 4 - Hydronic Coils

***Material*:** Galvanized Carbon Steel (Casing), Copper (Tubes and Header), Aluminum (Fins)

MFR	Dimensions		Coil Row Qty	Pipe Qty	Unit	
	Height [in.]	Width [in.]			Non-Isolated	Isolated
Price	8.75	16-25	1-8	2, 4	Extrapolated	Extrapolated
		25	2	2	UUT 1 (a)	UUT 1 (b)
		25-50	1-8	2, 4	Interpolated	Interpolated
		50	4	4	UUT 3 (a)	UUT 3 (b)
		50-60	1-8	2, 4	Interpolated	Interpolated
		60	4	2	UUT 2 (a)	UUT 2 (b)
	10	21	6	2	UUT 4 (a)	UUT 4 (b)
		21	1	2	UUT 5 (a)	UUT 5 (b)
	10	21-60	1-8	2, 4	Interpolated	Interpolated
	12.5	21-60	1-8	2, 4	Interpolated	Interpolated
	12.5	60	6	4	UUT 6 (a)	Interpolated
	12.5	22	8	2	UUT 7 (a)	UUT 7 (b)
	12.5-21.25	22-56	1-8	2, 4	Interpolated	Interpolated
	21.25	56	8	4	UUT 8 (a)	UUT 8 (b)

Note: Tube outer diameter is 0.5" , tube wall thickness is 0.016", fin thickness is 0.0045"

Price Fan Coils

OSHPD OSP Certified Product Subcomponent Matrix

Table 5 - Fan Motor

MFR	Type	HP	Tested Voltage (V) - Phase	Certified Voltage (V) -Phase	Speeds	Weight (lbs)	Unit	
							Non-Isolated	Isolated
Genteq	Permanent Split Capacitor	1/30	115 -1	115/208/240/277 -1	3	10	UUT 1 (a)	UUT 1 (b)
		1/10	208/240 -1	115/208/240/277 -1	3	10	UUT 2 (a)	UUT 2 (b)
		1/8	115 -1	115/208/240/277 -1	3	10	UUT 5 (a)	UUT 5 (b)
		1/4	interpolated	115/208/240/277 -1	3	15	Interpolated	Extrapolated
		1/2	115 -1	115/208/240/277 -1	3	20	UUT 6 (a)	Extrapolated
	Electronically Commutated Motor	1/15	208/240 -1	115/208/240/277 -1	3	10	UUT 3 (a)	UUT 3 (b)
		1/8	208/240 -1	115/208/240/277 -1	3	15	UUT 3 (a)	UUT 3 (b)
		1/3	208/240 -1	115/208/240/277 -1	3	10	UUT 4 (a)	UUT 4 (b)
		1/2	interpolated	115/208/240/277 -1	3	15	Interpolated	Extrapolated
		3/4	208/240 -1	115/208/240/277 -1	3	20	UUT 6 (a)	Extrapolated
Marathon	Permanent Split Capacitor	1/2	extrapolated	115/208/240/277 -1	1	23	Extrapolated	Extrapolated
		3/4	115 -1	115/208/240/277 -1	1	27	UUT 7 (a)	UUT 7 (b)
		1.0	interpolated	115/208/240/277 -1	1	31	Interpolated	Interpolated
		1.5	interpolated	115/208/240/277 -1	1	37	Interpolated	Interpolated
		3/4	interpolated	208/230/460/575 - 3	1	31	Interpolated	Interpolated
		1.0	interpolated	208/230/460/575 - 3	1	42	Interpolated	Interpolated
		1.5	interpolated	208/230/460/575 - 3	1	44	Interpolated	Interpolated
		2.0	interpolated	208/230/460/575 - 3	1	47	Interpolated	Interpolated
		3.0	interpolated	208/230/460/575 - 3	1	87	Interpolated	Interpolated
		5.0	460 -3	208/230/460/575 - 3	1	89	UUT 8 (a)	UUT 8 (b)

Table 6a - Housed Fans (Direct Drive)

***Material*:** Galvanized Steel (Wheel and Housing)

MFR	Fan Size (Dia x Width)	Fan Weight (lbs)	Motor HP	Motor Weight (lbs)	Fan Class	Unit	
						Non-Isolated	Isolated
Yilida	6" x 6"	7	1/30	7	1	UUT 1 (a)	UUT 1 (b)
	6" x 6"	7	1/10	10	1	UUT 2 (a)	UUT 2 (b)
	6" x 6"	7	1/15 & 1/8	10	1	UUT 3 (a)	UUT 3 (b)
Morrison	9" x 4"	12	1/8	10	1	UUT 5 (a)	UUT 5 (b)
	10" x 4"	15	1/2	15	1	UUT 4 (a)	UUT 4 (b)
	12" x 6"	25	3/4	17	1	UUT6 (a)	Extrapolated

Table 6b - Housed Fans (Belt Drive)

***Material*:** Galvanized Steel (Wheel,Housing, and Fan Base)

Fan MFR	Fan Size (Dia x Width)	Fan Weight	Motor HP	Motor Weight	Fan Class	Unit	
						Non-Isolated	Isolated
BCH	9" x 6"	15 lbs	1	30 lbs	1	UUT 7 (a)	UUT 7 (b)
BCHQ	15" x 9"	50 lbs	5	75 lbs	1	UUT 8 (a)	UUT 8 (b)

Price Fan Coils

OSHPD OSP Certified Product Subcomponent Matrix

Table 7 - Flat Filter Rack and Options

MFR	Type	Frame Material Options	Dimensions		Unit	
			Width	Height	Non-Isolated	Isolated
Price	Bottom Slide-In w/ Bend Tabs	Galvanized Carbon Steel	25"	10"	UUT 2 (a)	UUT 2 (b)
	Swing-Down Access Panel	Painted Cold Rolled Carbon Steel	60"	10"	UUT 3 (a)	UUT 3 (b)
	Side Access Slide-In	Galvanized Carbon Steel	21"	10"	UUT 4 (a)	UUT 4 (b)
	Side Access Slide-In	Galvanized Carbon Steel	21"	10"	UUT 5 (a)	UUT 5 (b)
	Side Access Slide-In	Galvanized Carbon Steel	60"	12"	UUT 6 (a)	Interpolated
	Side Access Slide-In	Galvanized Carbon Steel	22"	15"	UUT 7 (a)	UUT 6 (b)
	Side Access Slide-In	Galvanized Carbon Steel	55"	24"	UUT 8 (a)	UUT 7 (b)
AAF	Media Option (Qty: 2)	Non Woven Synthetic	1" Thick		UUT 2, 3 (a)	UUT 2, 3 (b)
	Media Option (Qty: 2)	Non Woven Synthetic	2" Thick		UUT 5, 6 (a)	UUT 5 (b)
Camfil Farr	Media Option (Qty: 1)	Non Woven Synthetic	1" Thick		UUT 4 (a)	UUT 4 (b)
	Media Option (Qty: 2)	Non Woven Synthetic	2" Thick		UUT 7, 8 (a)	UUT 7, 8 (b)

Table 8 - Electric Heat

MFR	kW	Tested Voltage (V) - Phase	Certified Voltage (V) - Phase	Unit	
				Non-Isolated	Isolated
Price	0.5	208/240 -1	115/208/240/277 -1, 208/240/480/600-3	UUT 4 (a)	UUT 4 (b)
	1	115 -1	115/208/240/277 -1, 208/240/480/600-3	UUT 7 (a)	UUT 7 (b)
	1.5 - 12	interpolated	115/208/240/277 -1, 208/240/480/600-3	Interpolated	Interpolated
	13	208/240 -1	115/208/240/277 -1, 208/240/480/600-3	UUT 6 (a)	Interpolated
	14 - 35	interpolated	115/208/240/277 -1, 208/240/480/600-3	Interpolated	Interpolated
	40	480 -3	115/208/240/277 -1, 208/240/480/600-3	UUT 8 (a)	UUT 8 (b)

Table 9 - Controls

MFR	Type	Weight	Voltage, Amperage	Unit	
				Non-Isolated	Isolated
Price Electronics	FC-PCS3 3 Speed Controller(250000-450)	< 1 lb	N/A	UUT 1, 2, 5 (a)	UUT 1, 2, 5 (b)
	PIC DDC Controller (250000-110)	< 1 lb		UUT 4, 6 (a)	UUT 4 (b)
	PIC-FC DDC Controller (250000-210)	< 1 lb		UUT 1-3, 5, 7, 8 (a)	UUT 1-3, 5, 7, 8 (b)
	VAV Module (250000-160)	< 1 lb		UUT 4 (a)	UUT 4 (b)
	BACnet Module (250000-360)	< 1 lb		UUT 7, 8 (a)	UUT 7, 8 (b)
	SCR-DAT, 1 Phase	< 1 lb	480V, 10-45A	UUT 4, 6 (a)	UUT 4 (b)
	SCR-DAT, 3 Phase	< 1 lb	480V, 10-45A	UUT 7 (a)	UUT 7 (b)

Price Fan Coils
OSHPD OSP Certified Product Subcomponent Matrix

Table 10 - Disconnect

MFR	Type	Weight	Voltage Rating	Amperage Rating	Unit	
					Non-Isolated	Isolated
Legrand	Toggle Switch, Single Pole	< 1 lb	115V, 277V	15A	UUT 1, 3, 5 (a)	UUT 1, 3, 5 (b)
Legrand	Toggle Switch, Double Pole	< 1 lb	208V, 240V	30A	UUT 2 (a)	UUT 2 (b)
Eaton	Door Interlock Disconnect Switch	< 1 lb	600V	40A/60A/25A	UUT 4, 6-8 (a)	UUT 4, 7, 8 (b)

Table 11 - Fusing

MFR	Type	Weight	Voltage Rating	Amperage Rating	Unit	
					Non-Isolated	Isolated
Littelfuse	Motor Fuse	< 1 lb	500V	1A - 20A	UUT 1-6 (a)	UUT 1-5 (b)
	Motor Fuse	< 1 lb	600V	7A - 30A	UUT 7, 8 (a)	UUT 7, 8, (b)

Table 12 - Contactors

MFR	Type	Weight	Voltage Rating	Amperage Rating	Unit	
					Non-Isolated	Isolated
Hartland Controls	Magnetic Contactor, 1 Pole	< 1 lb	24V	30A	UUT 4, 6 (a)	UUT 4 (b)
	Magnetic Contactor, 3 Pole	< 1 lb	24V	30A	UUT 7 (a)	UUT 7 (b)

Table 13 - Transformer

MFR	Model Number	Type	Weight	Voltage Rating	Amperage Rating	Unit	
						Non-Isolated	Isolated
Hartland Controls	HCT-01E/HCT-01D	120/24V Transformer	2 lb	120/24V	40VA/50VA	UUT 1, 5, 7 (a)	UUT 1, 5, 7 (b)
	HCT-03E/HCT-03D	277/24V Transformer	2 lb	277/24V	40VA/50VA	UUT 3, 5, 6 (a)	3, 5 (b)
	HCT-05D	120,277/24V Transformer	2 lb	120,277/24V	50VA	Interpolated	Interpolated
	HCT-09D	208,240/24V Transformer	2 lb	208,240/24V	50VA	UUT 2, 4 (a)	UUT 2, 4 (b)
	HCT-51D	347/24V Transformer	2 lb	347/24V	50VA	Interpolated	Interpolated
	HCT-76D	480/24V Transformer	2 lb	480/24V	50VA	Interpolated	Interpolated
	HCT-78D	480,575/24V Transformer	2 lb	480,575/24V	50VA	UUT 8 (a)	UUT 8 (b)

Table 14 - Relay

MFR	Type	Weight (lbs)	Voltage Rating	Amperage Rating	Unit	
					Non-Isolated	Isolated
Hartland Controls	General Purpose Switching Relay	<1	24V - 277V	12A	UUT 1, 2, 5, 6 (a)	UUT 1, 2, 5 (b)

Table 15 - Airflow Switch

MFR	Type	Weight	Pressure Setting Range	Voltage Rating	Amperage Rating	Unit	
						Non-Isolated	Isolated
Cleveland Controls	Airflow Switch, SPDT	< 1 lb	0.05 in. WC	115V - 277V	15A, 300VA	UUT 7, 8 (a)	UUT 7, 8 (b)

Price Fan Coils

OSHPD OSP Certified Product Subcomponent Matrix

Table 16 - Horizontal Oriented Dampers

***Material*:** Galvanized Carbon Steel (Frame and Blades)

MFR	Height (in)	Width (in)	Diameter (in)	Qty	Unit	
					Non-Isolated	Isolated
Price	N/A	N/A	8.00	2	Extrapolated	Extrapolated
	N/A	N/A	9.00	2	UUT 4 (a)	UUT 4 (b)
	N/A	N/A	10.00	2	Extrapolated	Extrapolated
	8.00	16.00	-	2	Interpolated	Interpolated
	8.00	21.00	-	2	Interpolated	Interpolated
	9.00	28.00	-	2	UUT 6 (a)	Interpolated
	9.25	16.25	-	2	UUT 7 (a)	UUT 7 (b)
	9.25	24.25	-	2	Interpolated	Interpolated
	11.25	30.25	-	2	Interpolated	Interpolated
	11.00	36.25	-	2	Interpolated	Interpolated
	16.25	37.25	-	2	Interpolated	Interpolated
	16.25	48.00	-	2	UUT 8 (a)	UUT 8 (b)

Note: Damper actuators by Belimo (as tested in UUT4,6,7,8)

Table 17 - Accessories

Manufacturer	Description	Materials	Unit	
			Non-Isolated	Isolated
Price	Mixing Box	Galv Carbon Steel	UUT 4,6,7,8 (a)	UUT 4,7,8 (b)
	Primary/Fresh Air Inlet	Galv Carbon Steel	UUT 5 (a)	UUT 5 (b)
	Inlet Silencer	Galv Carbon Steel	UUT 5,6 (a)	UUT 5 (b)
	Discharge Silencer	Galv Carbon Steel	UUT 5,6,8 (a)	UUT 5, 8 (b)
	Drain Pan	Galv Carbon Steel	UUT 1-8 (a)	UUT 1-5, 7, 8 (b)
	Access Panel	Galv Carbon Steel	UUT 3-8 (a)	UUT 3-5, 7, 8 (b)

UUT #1A

Manufacturer: Price

Model Series: FCHCB Size 03

Cabinet Construction Summary:

Base:	20 Gauge galvanized carbon steel
Walls:	20 Gauge galvanized carbon steel
Roof:	20 Gauge galvanized carbon steel

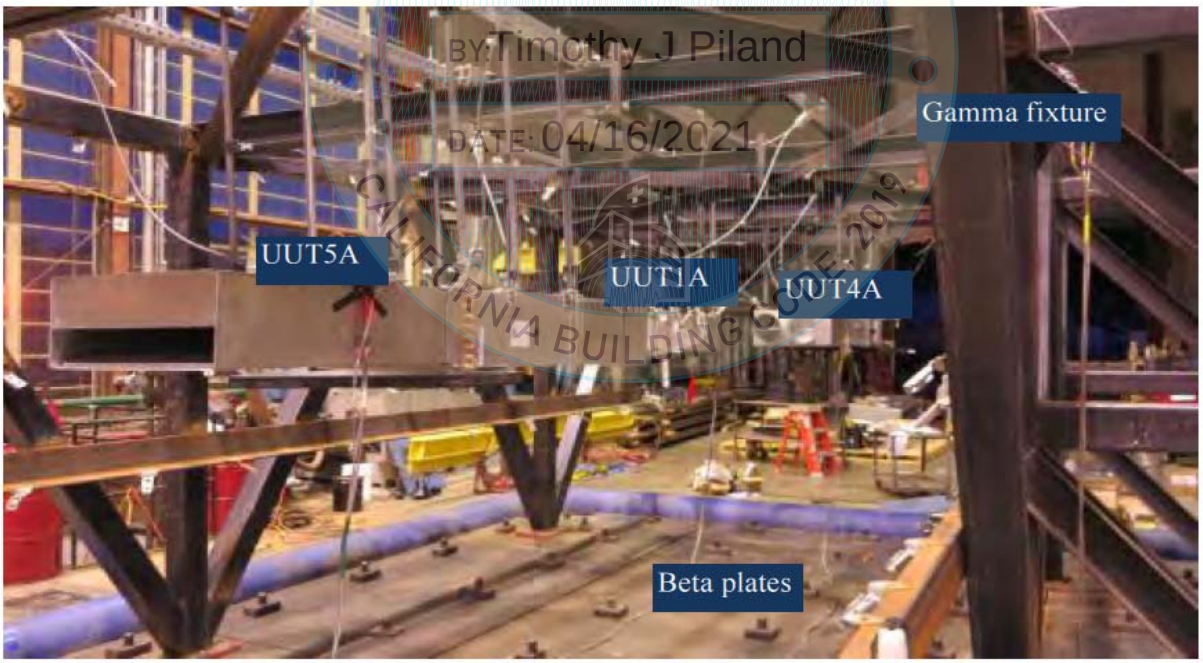
Component Summary:

Item	Dimensions			Operating Weight	Lowest Natural Frequency		
	Depth	Width	Height		F-B	S-S	V
Cabinet	38"	24"	10"	50 lb	na	na	na
Housed Fan							
Coil							

Seismic Test Parameters:

Qualification Method	Sds (g)	z/h	Ip	A_{flx}-H (g)	A_{rig}-H (g)	A_{flx}-V (g)	A_{rig}-V (g)
ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
	2.50	0.0	1.5	N/A	N/A	1.67	0.67

The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained



UUT Mounting Description:

Ceiling suspended unit, (4) 3/8" A307 rods spaced at 27" in depth and 3" in width, (4) L1x1x1/4 Angle Rod Stiffeners, (12) VMC SRBC-1 Rod Clamps, (4) VMC SB-125 Cable Brackets, (4) 1/8" Cables

UUT #1B

Manufacturer: Price

Model Series: FCHCB Size 03

Cabinet Construction Summary:

Base:	20 Gauge galvanized carbon steel
Walls:	20 Gauge galvanized carbon steel
Roof:	20 Gauge galvanized carbon steel

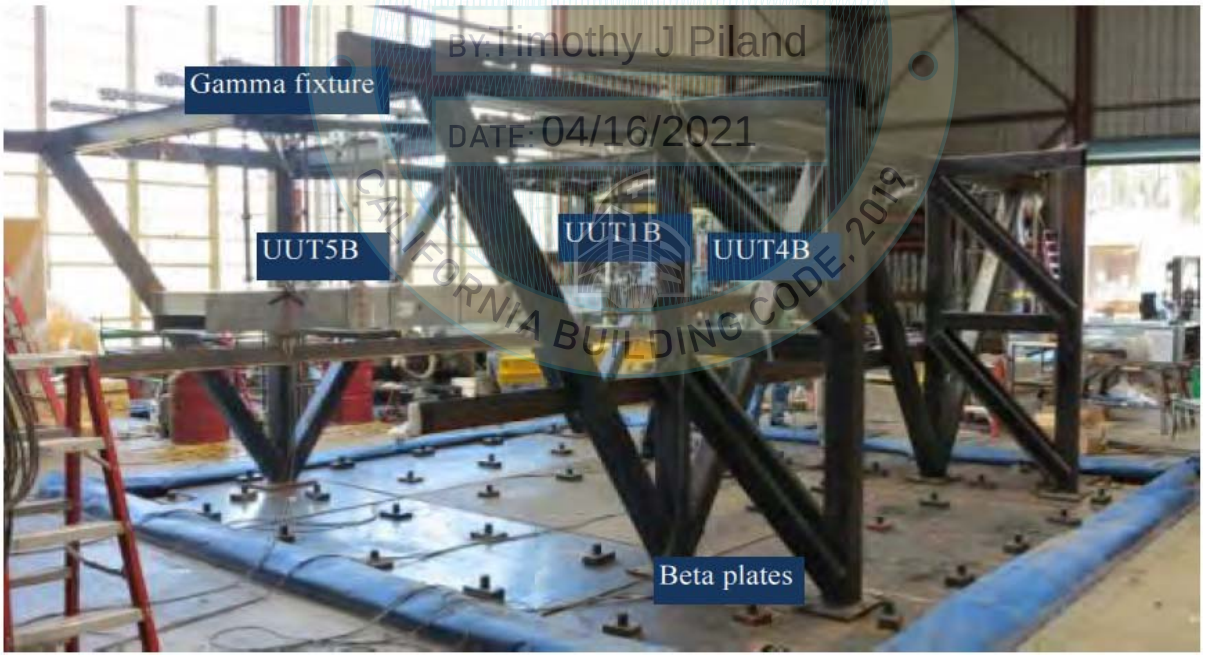
Component Summary:

Item	Dimensions			Operating Weight	Lowest Natural Frequency		
	Depth	Width	Height		F-B	S-S	V
Cabinet	38"	24"	10"	50 lb	na	na	na
Housed Fan							
Coil							

Seismic Test Parameters:

Qualification Method	Sds (g)	z/h	Ip	A_{flx}-H (g)	A_{rig}-H (g)	A_{flx}-V (g)	A_{rig}-V (g)
ICC-ES AC156	2.00	1	1.5	3.20	2.40	N/A	N/A
	2.50	0.0	1.5	N/A	N/A	1.67	0.67

The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained



UUT Mounting Description:

Ceiling suspended unit, (4) 3/8" A307 rods spaced at 27" in depth and 3" in width, (4) L1x1x1/4 Angle Rod Stiffeners, (12) VMC SRBC-1 Rod Clamps, (4) VMC SB-125 Cable Brackets, (4) 1/8" Cables, (4) VMC HRSA-1B-20 Hanger Box Vibration Isolators

UUT #2A

Manufacturer: Price

Model Series: FCHCP Size 12

Cabinet Construction Summary:

Base:	20 Gauge galvanized carbon steel
Walls:	20 Gauge galvanized carbon steel
Roof:	20 Gauge galvanized carbon steel

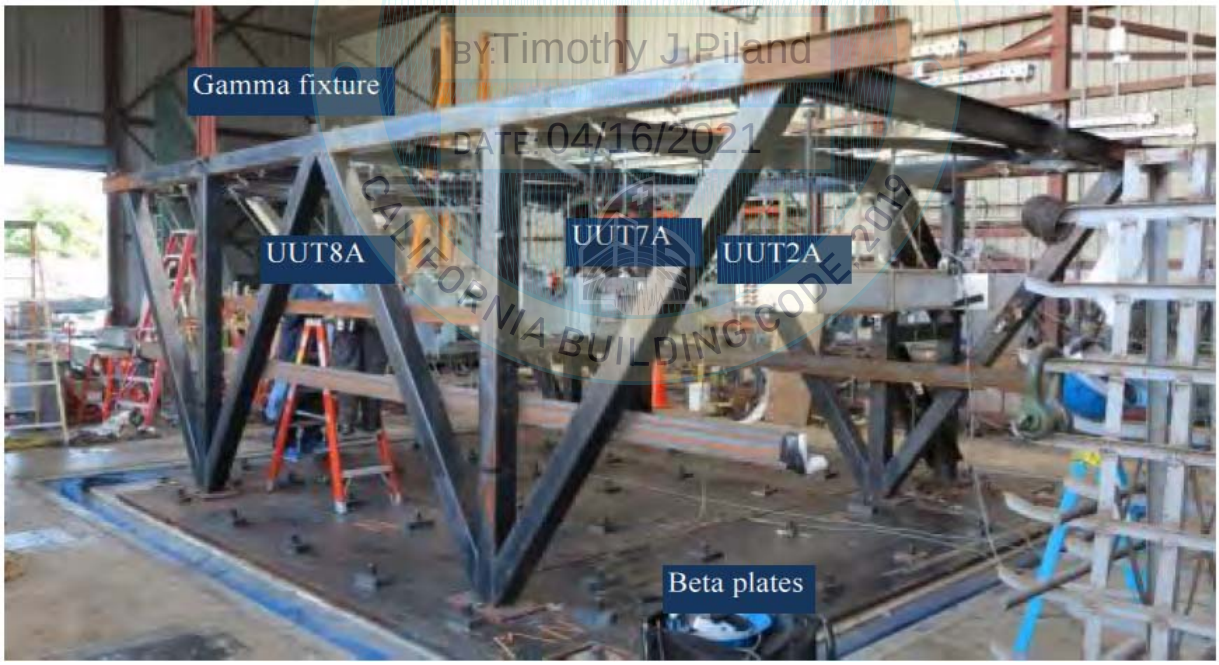
Component Summary:

Item	Dimensions			Operating Weight	Lowest Natural Frequency		
	Depth	Width	Height		F-B	S-S	V
Cabinet	73"	31"	10"	135 lb	na	na	na
Housed Fan							
Coil							

Seismic Test Parameters:

Qualification Method	Sds (g)	z/h	Ip	A_{flx}-H (g)	A_{rig}-H (g)	A_{flx}-V (g)	A_{rig}-V (g)
ICC-ES AC156	2.00	1	1.5	3.20	2.40	N/A	N/A
	2.50	0.0	1.5	N/A	N/A	1.68	0.68

The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained



UUT Mounting Description:

Ceiling suspended unit, (4) 3/8" A307 rods spaced at 63" in depth and 18" in width, (4) L1x1x1/4 Angle Rod Stiffeners, (12) VMC SRBC-1 Rod Clamps, (4) VMC SB-250 Cable Brackets, (4) 1/4" Cables

UUT #2B

Manufacturer: Price

Model Series: FCHCP Size 12

Cabinet Construction Summary:

Base:	20 Gauge galvanized carbon steel
Walls:	20 Gauge galvanized carbon steel
Roof:	20 Gauge galvanized carbon steel

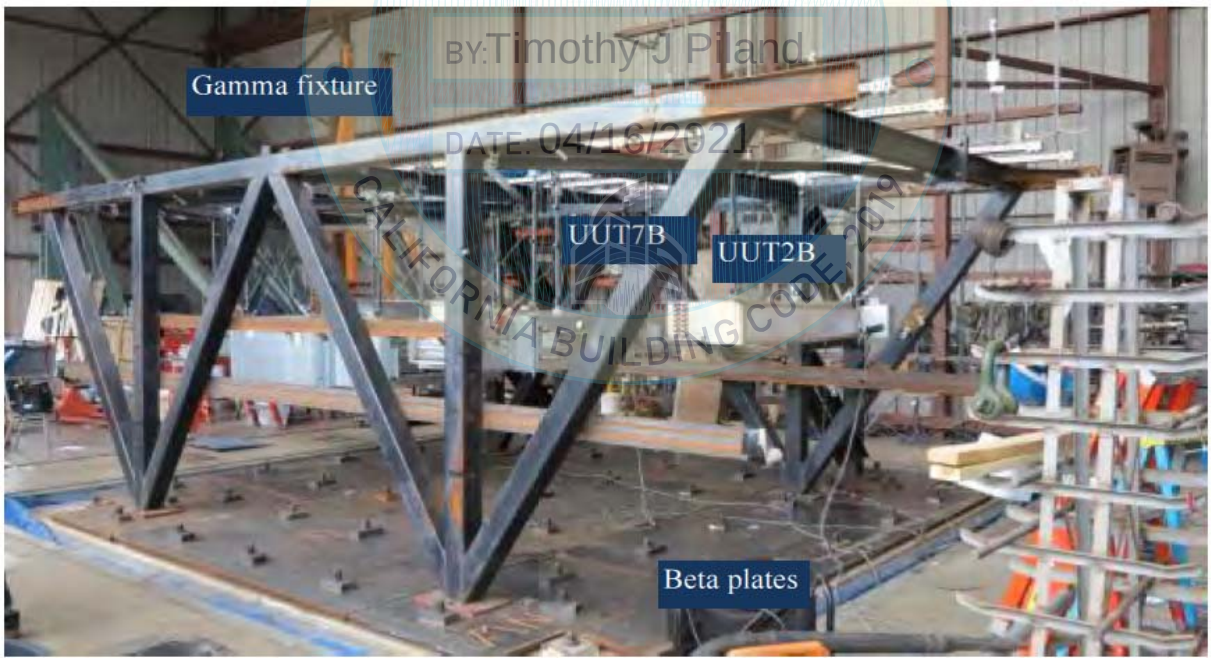
Component Summary:

Item	Dimensions			Operating Weight	Lowest Natural Frequency		
	Depth	Width	Height		F-B	S-S	V
Cabinet	73"	31"	10"	135 lb	na	na	na
Housed Fan							
Coil							

Seismic Test Parameters:

Qualification Method	Sds (g)	z/h	Ip	A_{flx}-H (g)	A_{rig}-H (g)	A_{flx}-V (g)	A_{rig}-V (g)
ICC-ES AC156	2.00	1	1.5	3.20	2.40	N/A	N/A
	2.50	0.0	1.5	N/A	N/A	1.67	0.67

The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained



UUT Mounting Description:

Ceiling suspended unit, (4) 3/8" A307 rods spaced at 63" in depth and 18" in width, (4) L1x1x1/4 Angle Rod Stiffeners, (12) VMC SRBC-1 Rod Clamps, (4) VMC SB-250 Cable Brackets, (4) 1/4" Cables, (4) VMC HRSA-1B-50 Hanger Box Vibration Isolators

UUT #3A

Manufacturer: Price

Model Series: FCHE Size 40

Cabinet Construction Summary:

Base:	18 Gauge galvanized carbon steel
Walls:	18 Gauge galvanized carbon steel
Roof:	18 Gauge galvanized carbon steel

Component Summary:

Item	Dimensions			Operating Weight	Lowest Natural Frequency		
	Depth	Width	Height		F-B	S-S	V
Cabinet	70"	30"	12"	245 lb	na	na	na
Housed Fan							
Coil							

Seismic Test Parameters:

Qualification Method	Sds (g)	z/h	Ip	A_{flx}-H (g)	A_{rig}-H (g)	A_{flx}-V (g)	A_{rig}-V (g)
ICC-ES AC156	2.00	1	1.5	3.20	2.40	N/A	N/A
	2.50	0.0	1.5	N/A	N/A	1.67	0.67

The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained

UUT Mounting Description:

Ceiling suspended unit, (4) 3/8" A307 rods spaced at 67" in depth and 26" in width, (4) L1x1x1/4 Angle Rod Stiffeners, (12) VMC SRBC-1 Rod Clamps, (4) VMC SB-250 Cable Brackets, (4) 1/4" Cables

UUT #3B

Manufacturer: Price

Model Series: FCHE Size 40

Cabinet Construction Summary:

Base:	18 Gauge galvanized carbon steel
Walls:	18 Gauge galvanized carbon steel
Roof:	18 Gauge galvanized carbon steel

Component Summary:

Item	Dimensions			Operating Weight	Lowest Natural Frequency		
	Depth	Width	Height		F-B	S-S	V
Cabinet	70"	30"	12"	245 lb	na	na	na
Housed Fan							
Coil							

Seismic Test Parameters:

Qualification Method	Sds (g)	z/h	Ip	A_{flx}-H (g)	A_{rig}-H (g)	A_{flx}-V (g)	A_{rig}-V (g)
ICC-ES AC156	2.00	1	1.5	3.20	2.40	N/A	N/A
	2.50	0.0	1.5	N/A	N/A	1.67	0.67

The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained

UUT Mounting Description:

Ceiling suspended unit, (4) 1/2" A307 rods spaced at 67" in depth and 26" in width, (4) L1x1x1/4 Angle Rod Stiffeners, (12) VMC SRBC-1 Rod Clamps, (4) VMC SB-250 Cable Brackets, (4) 1/4" Cables, (4) VMC HRSA-1C-100 Hanger Box Vibration Isolators

UUT #4A

Manufacturer: Price

Model Series: FCHG Size 30

Cabinet Construction Summary:

Base:	20 Gauge galvanized carbon steel
Walls:	20 Gauge galvanized carbon steel
Roof:	20 Gauge galvanized carbon steel

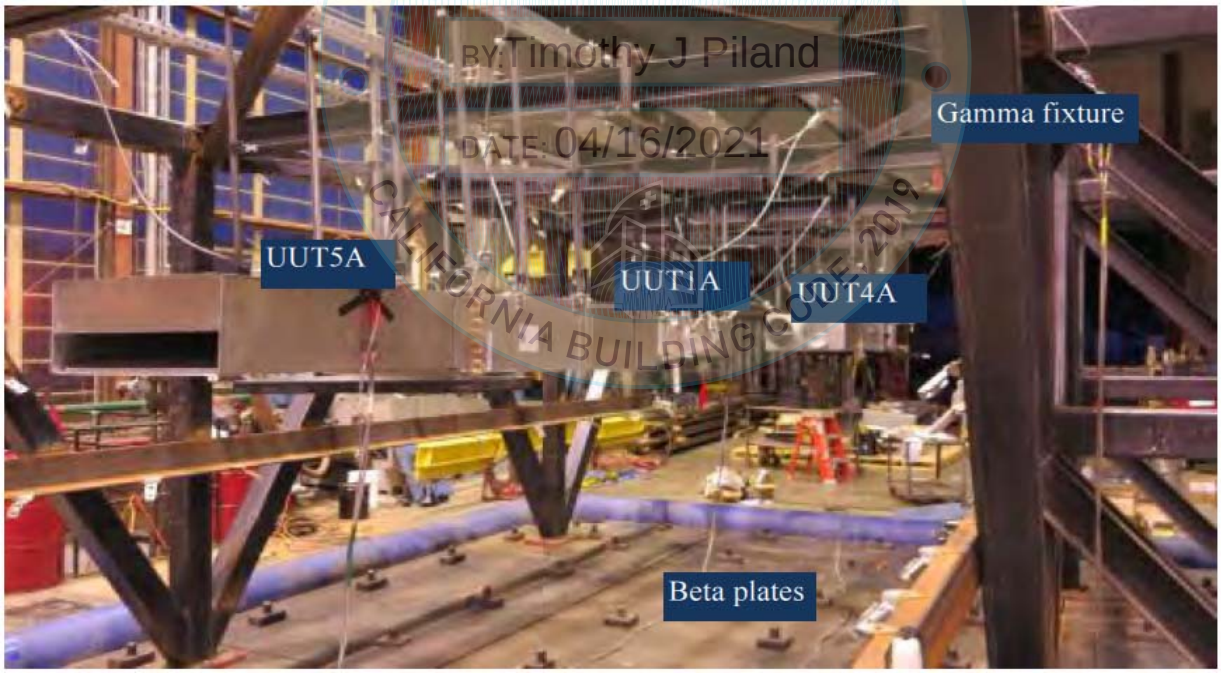
Component Summary:

Item	Dimensions			Operating Weight	Lowest Natural Frequency		
	Depth	Width	Height		F-B	S-S	V
Cabinet	39"	66"	10.5"	195 lb	na	na	na
Housed Fan							
Coil							
Electric Heater							
Mixing Box							

Seismic Test Parameters:

Qualification Method	Sds (g)	z/h	Ip	A_{flx}-H (g)	A_{rig}-H (g)	A_{flx}-V (g)	A_{rig}-V (g)
ICC-ES AC156	2.00	1	1.5	3.20	2.40	N/A	N/A
	2.50	0.0	1.5	N/A	N/A	1.67	0.67

The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained



UUT Mounting Description:

Ceiling suspended unit, (6) 3/8" A307 rods, spaced at 23" in depth and 29,17" in width (6) L1x1x1/4 Angle Rod Stiffeners, (18) VMC SRBC-1 Rod Clamps, (4) VMC SB-250 Cable Brackets, (4) 1/4" Cables

UUT #4B

Manufacturer: Price

Model Series: FCHG Size 30

Cabinet Construction Summary:

Base:	20 Gauge galvanized carbon steel
Walls:	20 Gauge galvanized carbon steel
Roof:	20 Gauge galvanized carbon steel

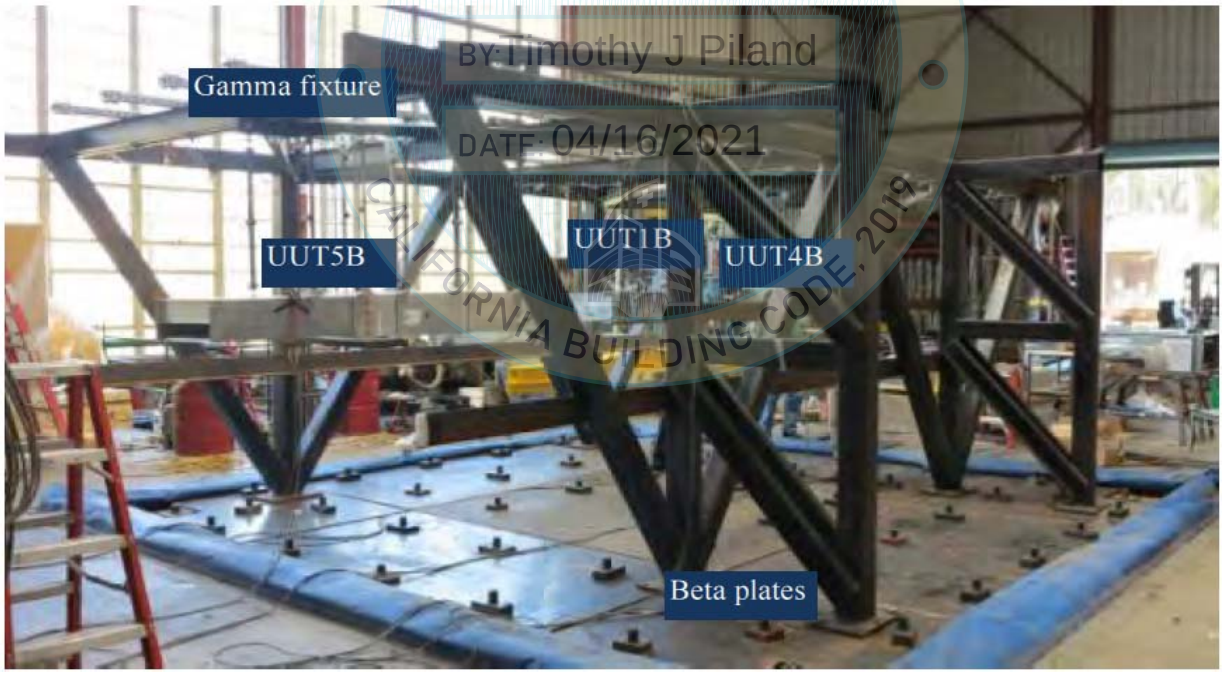
Component Summary:

Item	Dimensions			Operating Weight	Lowest Natural Frequency		
	Depth	Width	Height		F-B	S-S	V
Cabinet	39"	66"	10.5"	195 lb	na	na	na
Housed Fan							
Coil							
Electric Heater							
Mixing Box							

Seismic Test Parameters:

Qualification Method	Sds (g)	z/h	Ip	A_{flx}-H (g)	A_{rig}-H (g)	A_{flx}-V (g)	A_{rig}-V (g)
ICC-ES AC156	2.00	1	1.5	3.20	2.40	N/A	N/A
	2.50	0.0	1.5	N/A	N/A	1.67	0.67

The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained



UUT Mounting Description:

Ceiling suspended unit, (6) 3/8" A307 rods spaced at 23" in depth and 29, 17" in width, (6) L1x1x1/4 Angle Rod Stiffeners, (18) VMC SRBC-1 Rod Clamps, (4) VMC SB-250 Cable Brackets, (4) 1/4" Cables, (6) VMC HRSA-1B-35 Hanger Box Vibration Isolators

UUT #5A

Manufacturer: Price

Model Series: FCHGQ Size 20

Cabinet Construction Summary:

Base:	20 Gauge galvanized carbon steel
Walls:	20 Gauge galvanized carbon steel
Roof:	20 Gauge galvanized carbon steel

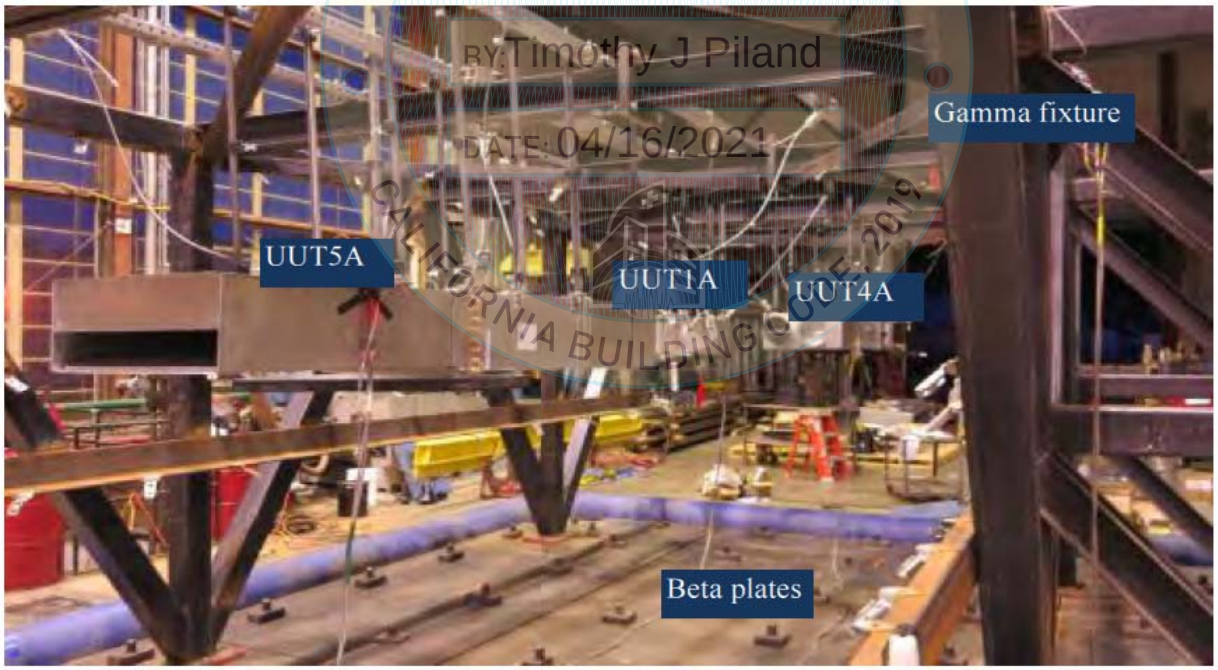
Component Summary:

Item	Dimensions			Operating Weight	Lowest Natural Frequency		
	Depth	Width	Height		F-B	S-S	V
Cabinet	39"	91.5"	10.5"	165 lb	na	na	na
Housed Fan							
Coil							
Discharge Silencer							
Fresh Air Inlet							

Seismic Test Parameters:

Qualification Method	Sds (g)	z/h	Ip	A_{flx}-H (g)	A_{rig}-H (g)	A_{flx}-V (g)	A_{rig}-V (g)
ICC-ES AC156	2.00	1	1.5	3.20	2.40	N/A	N/A
	2.50	0.0	1.5	N/A	N/A	1.67	0.67

The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained



UUT Mounting Description:

Ceiling suspended unit, (10) 3/8" A307 rods spaced at 23" in depth and 13, 14, 16, 21" in width, (10) L1x1x1/4 Angle Rod Stiffeners, (30) VMC SRBC-1 Rod Clamps, (4) VMC SB-250 Cable Brackets, (4) 1/4" Cables

THE VMC GROUP
The Power of Together™

UUT #5B

Manufacturer: Price

Model Series: FCHGQ Size 20

Cabinet Construction Summary:

Base:	20 Gauge galvanized carbon steel
Walls:	20 Gauge galvanized carbon steel
Roof:	20 Gauge galvanized carbon steel

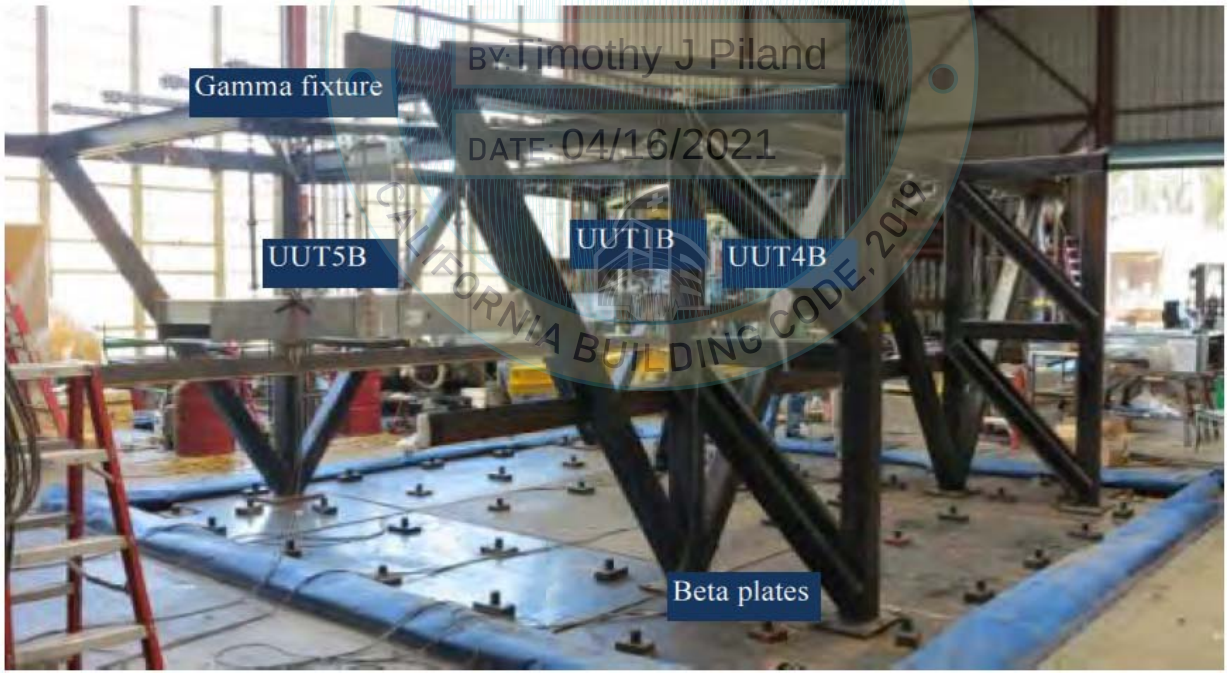
Component Summary:

Item	Dimensions			Operating Weight	Lowest Natural Frequency		
	Depth	Width	Height		F-B	S-S	V
Cabinet	39"	91.5"	10.5"	165 lb	na	na	na
Housed Fan							
Coil							
Discharge Silencer							
Fresh Air Inlet							

Seismic Test Parameters:

Qualification Method	Sds (g)	z/h	Ip	A_{flx}-H (g)	A_{rig}-H (g)	A_{flx}-V (g)	A_{rig}-V (g)
ICC-ES AC156	2.00	1	1.5	3.20	2.40	N/A	N/A
	2.50	0.0	1.5	N/A	N/A	1.67	0.67

The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained,



UUT Mounting Description:

Ceiling suspended unit, (10) 3/8" A307 rods spaced at 23" in depth and 13, 14, 16, 21" in width, (10) L1x1x1/4 Angle Rod Stiffeners, (30) VMC SRBC-1 Rod Clamps, (4) VMC SB-250 Cable Brackets, (4) 1/4" Cables, (10) VMC HRSA-1B-35 Hanger Box Vibration Isolators

UUT #6A

Manufacturer: Price

Model Series: FCHGQ Size 70

Cabinet Construction Summary:

Base:	20 Gauge galvanized carbon steel
Walls:	20 Gauge galvanized carbon steel
Roof:	20 Gauge galvanized carbon steel

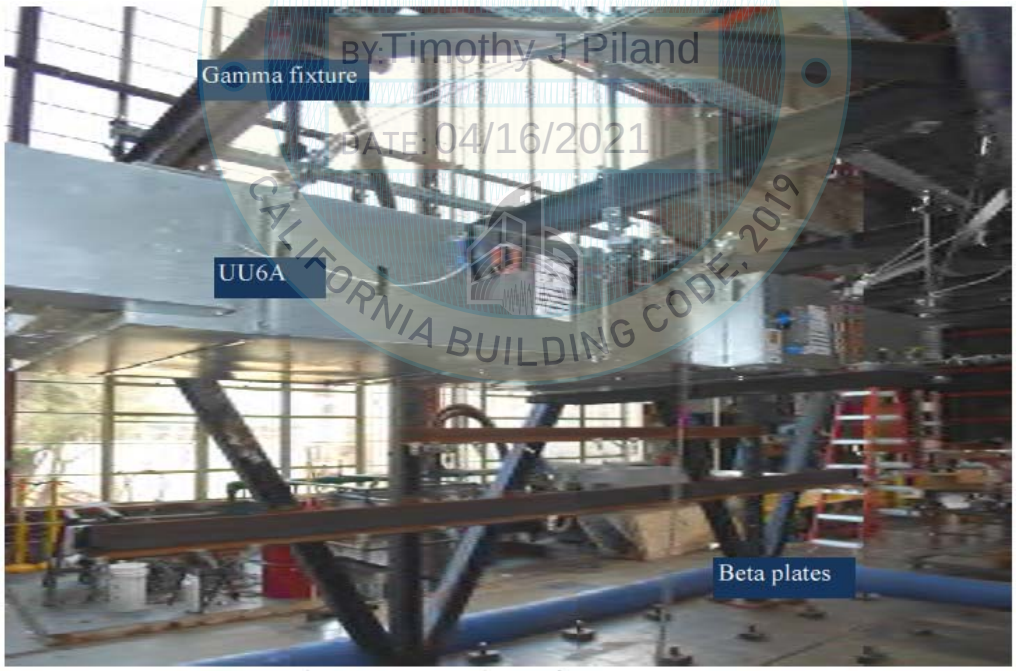
Component Summary:

Item	Dimensions			Operating Weight	Lowest Natural Frequency		
	Depth	Width	Height		F-B	S-S	V
Cabinet	77"	148"	12.5"	720 lb	na	na	na
Housed Fan							
Coil							
Electric Heater							
Mixing Box							
Inlet Silencer							
Discharge Silencer							

Seismic Test Parameters:

Qualification Method	Sds (g)	z/h	Ip	A_{flx}-H (g)	A_{rig}-H (g)	A_{flx}-V (g)	A_{rig}-V (g)
ICC-ES AC156	2.00	1	1.5	3.20	2.40	N/A	N/A
	2.50	0.0	1.5	N/A	N/A	1.67	0.67

The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained



UUT Mounting Description:

Ceiling suspended unit, (10) 5/8" A307 rods spaced at 62" in depth and 32, 36, 20, 39" in width, (10) L1x1x1/4 Angle Rod Stiffeners, (30) VMC SRBC-1 Rod Clamps, (8) VMC SB-250 Cable Brackets, (8) 1/4" Cables

UUT #7A

Manufacturer: Price

Model Series: BCH Size 08

Cabinet Construction Summary:

Base:	18 Gauge galvanized carbon steel
Walls:	18 Gauge galvanized carbon steel
Roof:	18 Gauge galvanized carbon steel

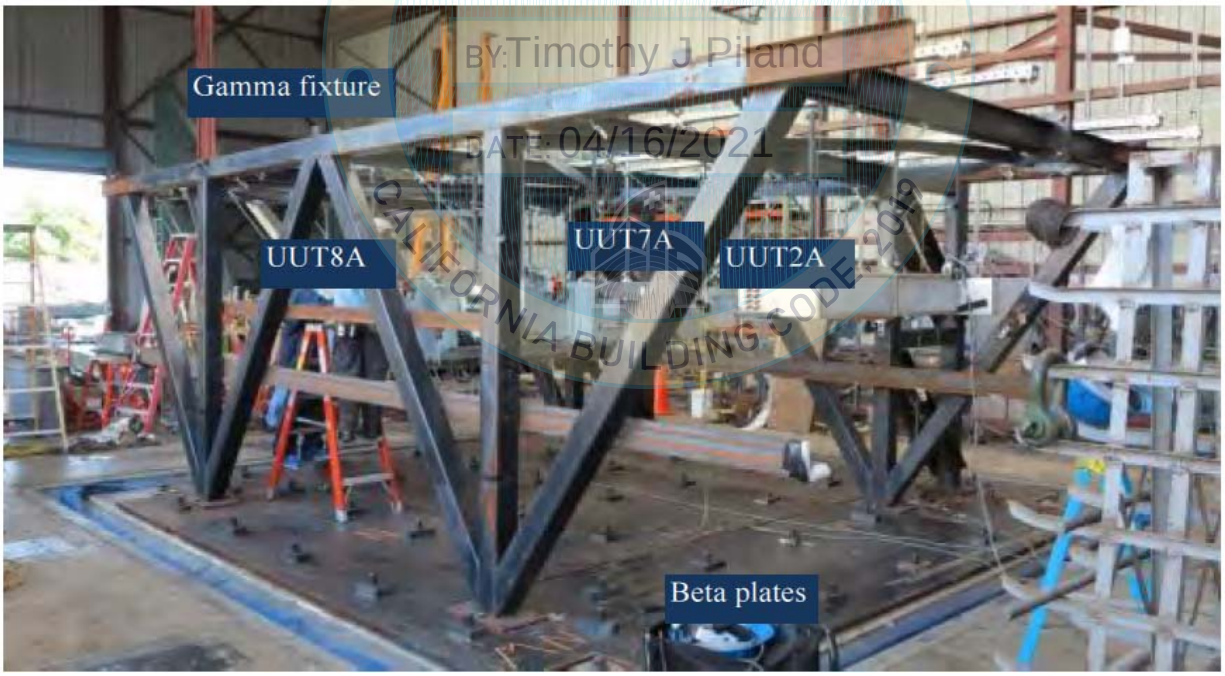
Component Summary:

Item	Dimensions			Operating Weight	Lowest Natural Frequency		
	Depth	Width	Height		F-B	S-S	V
Cabinet	30"	88"	15.6"	275 lb	na	na	na
Housed Fan							
Coil							
Electric Heater							
Mixing Box							

Seismic Test Parameters:

Qualification Method	Sds (g)	z/h	Ip	A_{flx}-H (g)	A_{rig}-H (g)	A_{flx}-V (g)	A_{rig}-V (g)
ICC-ES AC156	2.00	1	1.5	3.20	2.40	N/A	N/A
	2.50	0.0	1.5	N/A	N/A	1.67	0.67

The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained



UUT Mounting Description:

Ceiling suspended unit, (8) 3/8" A307 rods spaced at 30" in depth and 22, 43, 18" in width, (8) L1x1x1/4 Angle Rod Stiffeners, (24) VMC SRBC-1 Rod Clamps, (4) VMC SB-250 Cable Brackets, (4) 1/4" Cables

UUT #7B

Manufacturer: Price

Model Series: BCH Size 08

Cabinet Construction Summary:

Base:	18 Gauge galvanized carbon steel
Walls:	18 Gauge galvanized carbon steel
Roof:	18 Gauge galvanized carbon steel

Component Summary:

Item	Dimensions			Operating Weight	Lowest Natural Frequency		
	Depth	Width	Height		F-B	S-S	V
Cabinet	30"	88"	15.6"	275 lb	na	na	na
Housed Fan							
Coil							
Electric Heater							
Mixing Box							

Seismic Test Parameters:

Qualification Method	Sds (g)	z/h	Ip	A_{flx}-H (g)	A_{rig}-H (g)	A_{flx}-V (g)	A_{rig}-V (g)
ICC-ES AC156	2.00	1	1.5	3.20	2.40	N/A	N/A
	2.50	0.0	1.5	N/A	N/A	1.67	0.67

The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained

UUT Mounting Description:

Ceiling suspended unit, (6) 5/8" A307 rods spaced at 30" in depth and 22, 43, 18" in width, (6) L1x1x1/4 Angle Rod Stiffeners, (18) VMC SRBC-1 Rod Clamps, (4) VMC SB-250 Cable Brackets, (4) 1/4" Cables, (6) VMC HRSA-1B-50 Hanger Box Vibration Isolators

UUT #8A

Manufacturer: Price

Model Series: BCHQ Size 40

Cabinet Construction Summary:

Base:	18 Gauge galvanized carbon steel
Walls:	18 Gauge galvanized carbon steel
Roof:	18 Gauge galvanized carbon steel

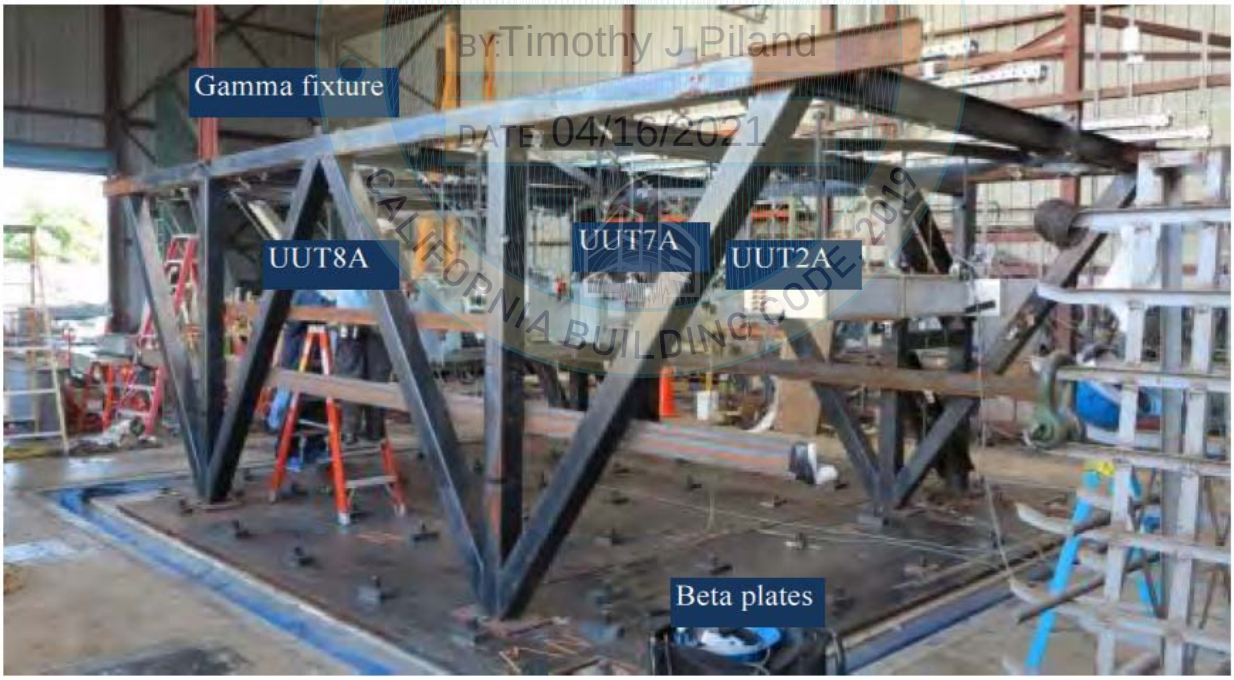
Component Summary:

Item	Dimensions			Operating Weight	Lowest Natural Frequency		
	Depth	Width	Height		F-B	S-S	V
Cabinet	65"	141"	25"	945 lb	na	na	na
Housed Fan							
Coil							
Electric Heater							
Mixing Box							
Discharge Silencer							

Seismic Test Parameters:

Qualification Method	Sds (g)	z/h	Ip	A_{flx}-H (g)	A_{rig}-H (g)	A_{flx}-V (g)	A_{rig}-V (g)
ICC-ES AC156	2.00	1	1.5	3.20	2.40	N/A	N/A
	2.50	0.0	1.5	N/A	N/A	1.67	0.67

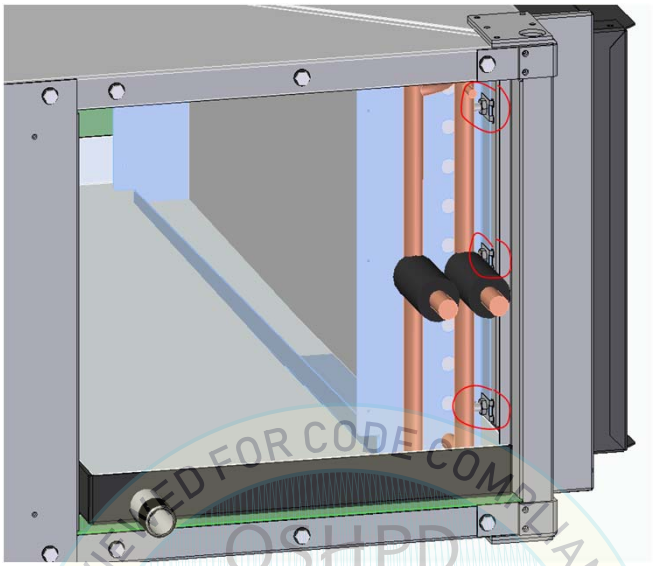
The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained, except for the anomaly resulting in the required design change noted on the following page.



UUT Mounting Description:

Ceiling suspended unit, (10) 3/8" A307 rods spaced at 65" in depth and 53, 1, 50, 27" in width, (10) L1x1x1/4 Angle Rod Stiffeners, (30) VMC SRBC-1 Rod Clamps, (12) VMC SB-250 Cable Brackets, (12) 1/4" Cables

UUT #8A Required Design Change
Required design change to address anomaly observed during testing:



The water coil attachment to the inlet panel of the unit casing shall be modified in production units to add a clip-on hex nut, 1/4"-20 thread, to each screw connection (three per each side, for a total of six per coil).

UUT #8B

Manufacturer: Price

Model Series: BCHQ Size 40

Cabinet Construction Summary:

Base:	18 Gauge galvanized carbon steel
Walls:	18 Gauge galvanized carbon steel
Roof:	18 Gauge galvanized carbon steel

Component Summary:

Item	Dimensions			Operating Weight	Lowest Natural Frequency		
	Depth	Width	Height		F-B	S-S	V
Cabinet	65"	141"	25"	945 lb	na	na	na
Housed Fan							
Coil							
Electric Heater							
Mixing Box							
Discharge Silencer							

Seismic Test Parameters:

Qualification Method	Sds (g)	z/h	Ip	A_{flx}-H (g)	A_{rig}-H (g)	A_{flx}-V (g)	A_{rig}-V (g)
ICC-ES AC156	2.00	1	1.5	3.20	2.40	N/A	N/A
	2.50	0.0	1.5	N/A	N/A	1.67	0.67

The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained

UUT Mounting Description:

Ceiling suspended unit, (8) 5/8" A307 rods spaced at 65" in depth and 53, 1, 50, 27" in width, (8) L1x1x1/4 Angle Rod Stiffeners, (24) VMC SRBC-1 Rod Clamps, (12) VMC SB-250 Cable Brackets, (12) 1/4" Cables, (8) VMC HRSA-1C-250 Hanger Box Vibration Isolators