APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0216

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: DriSteem Corporation

Manufacturer's Technical Representative: Jon Soland

Mailing Address: 14949 Technology Dr., Eden Prairie, MN 55344

Telephone: (952) 949-2415 Email: jon.soland@dristeem.com

Product Information

Product Name: Air Conditioning Units

Product Type: Humidification Systems

Product Model Number: VLC, STS, VM, XTP, Mini-Bank, GTS LX, Ultra-Sorb (See Attachment for complete listing)

General Description: Humidification systems and steam dispersion units.

Mounting Description: Several – See UUT Sheets, Units are limited to tested configurations and may only be used in rigid based mounted Air Handling Units (AHU), rigid mounted suspended ducts, surface wall mounted, and rigid base mounted configurations. All Ultra-Sorb units > 50 lbs require seismic cable braces at bottom of duct - See UUT Sheets.

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

Applicant Information

Applicant Company Name: Structural Integrity Associates, Inc., dba TRU Compliance

Contact Person: Andy Coughlin

Mailing Address: 4215 Hellyer Ave Suite 210, San Jose, CA 95138

Telephone: (844) 878-0200 Email: acoughlin@structint.com

Title: Manager, Structures Technology

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: APPLIED TECHNICAL SERVICES, INC. (ATS)

Contact Person: David Common

Mailing Address: 1049 Triad Court, Marietta GA 30062

Telephone: (888) 287-5227 Email: dcommon@atslab.com

Company Name: U.S. ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER, CONSTRUCTION ENGINEERING RESEARCH LABORATORY (CERL)

Contact Person: James Wilcoski

Mailing Address: 2902 Newmark Dr., Champaign IL 61822-1076

Telephone: (213) 373-6763 Email: james.wilcoski@usace.army.mil

Company Name: CLARK TESTING LABORATORY, INC.

Contact Person: Russell Matich

Mailing Address: 1801 Route 51, Jefferson Hills PA 15025

Telephone: (412) 387-1004 Email: rmatich@clarktesting.com

Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)

Contact Person: Jeremy Lange

Mailing Address: 11034 Indian Trail, Dallas TX 75229-3513

Telephone: (972) 247-9657 Email: jeremy@etl.com

Company Name: NATIONAL TECHNICAL SYSTEMS (NTS)

Contact Person: Anuj Kumar

Mailing Address: 38995 Cherry Street, Newark CA 94560

Telephone: (510) 578-3500 Email: Anuj.Kumar@nts.com

Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = Duct/AHU Mounted: 1.50 (SDS = 2.00, z/h = 1); Other: 1.44 (SDS = 2.00, z/h = 1); All: 1.13 (SDS = 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 (Amplification factor) = 2.5 (Duct/AHU mounted); 1.0 (others)

R_p (Response modification factor) = 6.0 (Duct/AHU mounted); 2.5 (others)

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: 2/18/2021

Name: Timothy Piland Title: Senior Structural Engineer

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

Condition of Approval (if applicable): All Ultra-Sorb units > 50 lbs require seismic cable braces at bottom of duct - See UUT Sheets.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENT MATRIX

1800819-CR-001-R3

Manufacturer: DriSteem Corporation
Model Line: Vaporstream (VLC-Leg Mounted)

TABLE 1a

Certified Product Construction Summary:
Constructed of a light gauge stainless steel enclosure.

Certified Options Summary:
See Table 9 for certified options.
See Table 8 for control panel specific certified options.
Certified for stand mounting. Max height above floor to bottom of equipment tank = 30.5".

Mounting Configuration:
Base mounted - rigid on carbon steel stand/support legs with plate carbon steel seismic cross bracing on all sides.
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}= *2.0 g* *z/h=1.0* S_{DS}= *2.5 g* *z/h=0.0* I_P= *1.5*

Model Line	Model	Dimensions (in)			Weight (lb)[3]	Notes	UUT
		Depth	Width	Height			
Vaporstream VLC (Leg Mounted)[1,2]	VLC2-1	14.8	34	30.3	181		1
	VLC3-1	14.8	34	30.3	181		Interp.
	VLC4-1	14.8	34	30.3	181		Interp.
	VLC5-1	14.8	34	30.3	181		Interp.
	VLC6-1	25.0	30	30.3	212		Interp.
	VLC9-1	25.0	30	30.3	212		Interp.
	VLC12-1	25.0	30	30.3	212		Interp.
	VLC16-1	25.0	30	30.3	212		Interp.
	VLC21-1	25.0	30	30.3	212		Interp.
	VLC25-1	25.0	30	30.3	212		Interp.
	VLC12-2	29.0	30	34.1	310		Interp.
	VLC18-2	29.0	30	34.1	310		Interp.
	VLC24-2	29.0	30	34.1	310		Interp.
	VLC32-2	29.0	30	34.1	310		Interp.
	VLC42-2	29.0	30	34.1	310		Interp.
	VLC50-2	29.0	30	34.1	310		Interp.
	VLC18-3	32.9	32	46.1	462		Interp.
	VLC27-3	32.9	32	46.1	462		Interp.
	VLC36-3	32.9	32	46.1	462		Interp.
	VLC48-3	32.9	32	46.1	462		Interp.

[1]Includes seismic upgrades of using captive fasteners to secure circuit board to cabinet for all future installations.
[2]See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

1800819-CR-001-R3

Manufacturer:	DriSteem Corporation	**TABLE 1a**
Model Line:	Vaporstream (VLC-Leg Mounted)	

Certified Product Construction Summary:

Constructed of a light gauge stainless steel enclosure.

Certified Options Summary:

See Table 9 for certified options.

See Table 8 for control panel specific certified options.

Certified for stand mounting. Max height above floor to bottom of equipment tank = 30.5".

Mounting Configuration:

Base mounted - rigid on carbon steel stand/support legs with plate carbon steel seismic cross bracing on all sides.

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}= ***2.0 g*** ***z/h=1.0*** S_{DS}= ***2.5 g*** ***z/h=0.0*** I_P= ***1.5***

Model Line	Model	Dimensions (in)			Weight (lb)[3]	Notes	UUT
		Depth	Width	Height			
Vaporstream VLC (Leg Mounted)[1,2,3]	VLC63-3	32.9	32	46.1	462		Interp.
	VLC75-3	32.9	32	46.1	462		Interp.
	VLC24-4	40.4	32	46.1	563		Interp.
	VLC36-4	40.4	32	46.1	563		Interp.
	VLC48-4	40.4	32	46.1	563		Interp.
	VLC64-4	40.4	32	46.1	563		Interp.
	VLC84-4	40.4	32	46.1	563		Interp.
	VLC100-4	40.4	32	46.1	563		3

[1]Includes seismic upgrades of using captive fasteners to secure circuit board to cabinet for all future installations.

[2]See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.

[3]Laboratory reported dry weight of 300 lb w/o water. Contents were included in testing per operating conditions.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

1800819-CR-001-R3

Manufacturer: DriSteem Corporation
Model Line: Vaporstream (VLC-In Weather Enclosure)

TABLE 1b

Certified Product Construction Summary:
VLC unit is constructed of a light gauge stainless steel enclosure. Weather enclosure constructed of structural tube carbon steel framing supporting both the unit on the interior and light gauge carbon steel sheet metal on the exterior.

Certified Options Summary:
See Table 9 for certified options.
See Table 8 for control panel specific certified options.

Mounting Configuration:
Base mounted - rigid within weather enclosure mounted on structural carbon steel tubes.
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}= *2.0 g* *z/h=1.0* S_{DS}= *2.5 g* *z/h=0.0* I_P= *1.5*

Model Line	Model	Dimensions (in)[1]			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Vaporstream VLC (In Weather Enclosure)[1,2]	VLC2-1	35	44	66	524		2
	VLC3-1	35	44	66	524		Interp.
	VLC4-1	35	44	66	524		Interp.
	VLC5-1	35	44	66	524		Interp.
	VLC6-1	35	44	66	607		Interp.
	VLC9-1	35	44	66	607		Interp.
	VLC12-1	35	44	66	607		Interp.
	VLC16-1	35	44	66	607		Interp.
	VLC21-1	35	44	66	607		Interp.
	VLC25-1	35	44	66	607		Interp.
	VLC12-2	39	44	66	740		Interp.
	VLC18-2	39	44	66	740		Interp.
	VLC24-2	39	44	66	740		Interp.
	VLC32-2	39	44	66	740		Interp.
	VLC42-2	39	44	66	740		Interp.
	VLC50-2	39	44	66	740		Interp.
	VLC18-3	44	44	66	927		Interp.
	VLC27-3	44	44	66	927		Interp.
	VLC36-3	44	44	66	927		Interp.
	VLC48-3	44	44	66	927		Interp.

[1]Dimensions reflect unit only, mounting stand dimensions are listed in Table 9.
[2]See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

1800819-CR-001-R3

Manufacturer: DriSteem Corporation
Model Line: Vaporstream (VLC-In Weather Enclosure)

TABLE 1b

Certified Product Construction Summary:
VLC unit is constructed of a light gauge stainless steel enclosure. Weather enclosure constructed of structural tube carbon steel framing supporting both the unit on the interior and light gauge carbon steel sheet metal on the exterior.

Certified Options Summary:
See Table 9 for certified options.
See Table 8 for control panel specific certified options.

Mounting Configuration:
Base mounted - rigid within weather enclosure mounted on structural carbon steel tubes.
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}= ***2.0 g*** ***z/h=1.0*** S_{DS}= ***2.5 g*** ***z/h=0.0*** I_P= ***1.5***

Model Line	Model	Dimensions (in)[1]			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Vaporstream VLC (In Weather Enclosure)[1,2]	VLC63-3	44	44	66	927		Interp.
	VLC75-3	44	44	66	927		Interp.
	VLC24-4	50	44	66	1063		Interp.
	VLC36-4	50	44	66	1063		Interp.
	VLC48-4	50	44	66	1063		Interp.
	VLC64-4	50	44	66	1063		Interp.
	VLC84-4	50	44	66	1063		Interp.
	VLC100-4	50	44	66	1063		4

[1]Dimensions reflect unit only, mounting stand dimensions are listed in Table 9.
[2]See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

1800819-CR-001-R3

Manufacturer: DriSteem Corporation
Model Line: STS

TABLE 2

Certified Product Construction Summary:
Constructed of light gauge stainless steel; carbon steel angle legs or “H” style carbon steel tubes for legs; all with plate carbon steel seismic cross bracing.

Certified Options Summary:
See Table 10 for certified options.
See Table 8 for control panel specific certified options.
Certified for stand mounting. STS-25 to STS-100: Max height above floor to bottom of equipment = 32"; STS-200 to STS-800: Max height above floor to bottom of equipment = 24".

Mounting Configuration:
Base mounted - rigid on carbon steel stand/support legs with plate carbon steel seismic cross bracing on all sides.
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}= ***2.0 g*** ***z/h=1.0*** S_{DS}= ***2.5 g*** ***z/h=0.0*** I_P= ***1.5***

Model Line	Model	Dimensions (in)[4]			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Standard Water Models (STS)[1, 2,3]	STS25 S	23.65	14.75	19.5	236	Stainless steel coil with carbon steel legs	6
	STS50 S	39.65	14.75	19.5	336		Interp.
	STS100 S	39.65	19.25	19.5	350		Interp.
	STS200 S	55.15	30.25	19.5	850		Interp.
	STS400 S	55.15	30.25	19.5	950		Interp.
	STS800 S	55.15	30.25	29.75	1250		Interp.
	STS25 SNC	23.65	14.75	19.5	175	Teflon coated stainless steel coil with carbon steel legs	Interp.
	STS50 SNC	39.65	14.75	19.5	336		Interp.
	STS100 SNC	39.65	19.25	19.5	350		Interp.
	STS200 SNC	55.15	30.25	19.5	850		Interp.
	STS400 SNC	55.15	30.25	19.5	950		Interp.
	STS800 SNC	55.15	30.25	29.75	1250		35
	STS25 C	23.65	14.75	19.5	175	Copper coil with "H" style with carbon steel legs	Interp.
	STS50 C	39.65	14.75	19.5	336		Interp.
	STS100 C	39.65	19.25	19.5	350		Interp.
	STS400 C	55.15	30.25	19.5	950		Interp.
	STS800 C	55.15	30.25	29.85	1250		7

[1]Includes seismic upgrades of using captive fasteners to secure circuit board to cabinet for all future installations.
[2]Includes seismic upgrades of using (4) 1/4" X 1" bolts to secure insulation behind control panel.
[3]See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.
[4]Dimension reflect unit only, mounting stand dimension are in Table 10

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

1800819-CR-001-R3

Manufacturer: DriSteem Corporation
Model Line: XTP Series Humidifier

TABLE 3

Certified Product Construction Summary:
Constructed of stainless steel back-bottom, top-side, and sub-panel panels with carbon steel door panels.

Certified Options Summary:
See Table 11 for certified options.

Mounting Configuration:
Wall 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}= ***2.0 g*** ***z/h=1.0*** S_{DS}= ***2.5 g*** ***z/h=0.0*** I_P= ***1.5***

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
XTP Series Humidifier[1]	XTP002	8.7	14.6	20.6	38		Extrap.
	XTP003	8.7	14.6	20.6	38		Extrap.
	XTP006	8.7	14.6	20.6	47		8
	XTP010	11.8	17.7	24.1	79		Interp.
	XTP017	11.8	17.7	24.1	79		Interp.
	XTP025	13.4	19.9	25.6	115		Interp.
	XTP033	13.4	19.9	25.6	115		Interp.
	XTP042	13.4	19.9	25.6	115		Interp.
	XTP048	13.4	19.9	25.6	115		Interp.
	XTP050	13.4	39.6	25.6	218		Interp.
	XTP067	13.4	39.6	25.6	218		Interp.
	XTP083	13.4	39.6	25.6	218		Interp.
	XTP096	13.4	39.6	25.6	218		9

[1]See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

1800819-CR-001-R3

Manufacturer: DriSteem Corporation
Model Line: Vapormist (VM)

TABLE 4

Certified Product Construction Summary:
Constructed of a stainless steel frame with carbon steel electrical sub-panel and housing and plastic enclosure.

Certified Options Summary:
See Table 12 for certified options.

Mounting Configuration:
Wall 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}= *2.0 g* *z/h=1.0* S_{DS}= *2.5 g* *z/h=0.0* I_P= *1.5*

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Vapormist (VM)[1]	VM2	24.2	16.1	18.6	95		13
	VM4	24.2	16.1	18.6	95		Interp.
	VM6	24.2	16.1	18.6	122		Interp.
	VM8	24.2	16.1	18.6	122		Interp.
	VM10	24.2	16.1	18.6	139		Interp.
	VM12	24.2	16.1	18.6	139		Interp.
	VM14	24.2	16.1	18.6	139		Interp.
	VM16	24.2	16.1	18.6	139		Interp.
	VM21	24.2	16.1	18.6	152		Interp.
	VM25	24.2	16.1	18.6	152		Interp.
	VM30	24.2	16.1	18.6	156		Interp.
	VM34	24.2	16.1	18.6	156		14

[1]See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

1800819-CR-001-R3

Manufacturer:	DriSteem Corporation	**TABLE 5a**
Model Line:	Mini-Bank Steam Injection	

Certified Product Construction Summary:

Constructed of square stainless steel tubes with nozzles punched along their length. The tubes are spaced at 3" and installed horizontal to the ground and perpendicular to the duct air flow using a stainless steel plate at one end and stainless steel piping at the other end. The number of tubes is dependent upon the duct height.

Certified Options Summary:

See Table 13 for certified options.

Mounting Configuration:

Certified for in line duct mounting applications in accordance with DriSteem connection details.

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}= ***2.0 g*** ***z/h=1.0*** S_{DS}= ***2.5 g*** ***z/h=0.0*** I_P= ***1.5***

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Mini-Bank Steam Injection (Duct Mounted)[1]	-	5	6	6	9	2 tubes	Extrap.
		5	12	12	16	3 tubes[2]	15
		5	…	…	…		Interp.
		5	48	24	36	7 tubes[2]	16

[1]See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.

[2]Weight reported reflect individual UUT weight, not mounting assembly as report in Test Report El: 9767.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

1800819-CR-001-R3

Manufacturer: DriSteem Corporation
Model Line: Mini-Bank Steam Injection

TABLE 5b

Certified Product Construction Summary:
Constructed of square stainless steel tubes with nozzles punched along their length. The tubes are spaced at 3" and installed horizontal to the ground and perpendicular to the AHU air flow using a stainless steel plate at one end and stainless steel piping at the other end. The number of tubes depends upon the AHU height.

Certified Options Summary:
See Table 13 for certified options.

Mounting Configuration:
Certified for Air Handling Unit applications in accordance with DriSteem connection details.
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}= ***2.0 g*** ***z/h=1.0*** S_{DS}= ***2.5 g*** ***z/h=0.0*** I_P= ***1.5***

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Mini-Bank Steam Injection (AHU Mounted)[1]	-	5	6	6	9	2 tubes	Extrap.
		5	12	12	16	3 tubes[2]	17
		5	…	…	…		Interp.
		5	48	24	36	7 tubes[2]	18

[1]See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.
[2]Weight reported reflect individual UUT weight, not mounting assembly as report in Test Report El: 9767.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

1800819-CR-001-R3

TABLE 6a

Manufacturer: DriSteem Corporation
Model Line: Ultra-Sorb

Certified Product Construction Summary:
Constructed of light gauge stainless steel or carbon steel sheet metal surrounds.

Certified Options Summary:
See Table 14 for certified options.

Mounting Configuration:
Certified for in line duct mounting applications in accordance with DriSteem connection details.
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}= ***2.0 g*** ***z/h=1.0*** S_{DS}= ***2.5 g*** ***z/h=0.0*** I_P= ***1.5***

Model Line	Model	Dimensions (in)[3]			Weight (lb)	Notes[4]	UUT
		Depth	Width	Height			
Ultra-Sorb (Duct Mounted)[1]	LH	5	12	12	23	UUT: carbon steel	26
		5	…	…	…		Interp.
		5	80	80	211	UUT29: carbon steel, 210 lbs. UUT43: stainless steel, 211.3 lbs.	29, 43
	LV	5	12	12	23	UUT: galv. carbon steel	25
		5	…	…	…		Interp.
		5	80	80	224	UUT28: carbon steel, 210 lbs. UUT44: stainless steel, 223.5 lbs.	28, 44
	XV[2]	7.2	12	12	23	UUT: carbon steel	27
		7.2	…	…	…		Interp.
		7.2	80	80	261.4	UUT30: carbon steel, 220 lbs. UUT45: stainless steel, 261.4 lbs.	30, 45

[1]See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.
[2]Includes seismic upgrade of closure plates at bottom tube to header connections
[3]All duct mounted Ultra-Sorb units > 50 lbs require seismic cable braces at the bottom of duct. See UUT Sheets.
[4]Face dimension, overall duct dimension reported in test reports.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

1800819-CR-001-R3

Manufacturer: DriSteem Corporation
Model Line: Ultra-Sorb

TABLE 6a

Certified Product Construction Summary:
Constructed of light gauge stainless steel or carbon steel sheet metal surrounds.

Certified Options Summary:
See Table 14 for certified options.

Mounting Configuration:
Certified for in line duct mounting applications in accordance with DriSteem connection details.
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}= ***2.0 g*** ***z/h=1.0*** S_{DS}= ***2.5 g*** ***z/h=0.0*** I_P= ***1.5***

Model Line	Model	Dimensions (in)[3]			Weight (lb)	Notes[4]	UUT
		Depth	Width	Height			
Ultra-Sorb (Duct Mounted)[1]	MP[2]	7.2	12	12	29.5	UUT: stainless steel	47
		7.2	…	…	…		Interp.
		7.5	12	24	50	UUT: carbon steel	33
		7.2	…	…	…		Interp.
	MP[2]	7.2	80	80	232	UUT34: carbon steel, 205 lbs. w/out water UUT46: stainless steel, 232.4 lbs. w/water	34, 46

[1]See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.
[2]Includes seismic upgrade of closure plates at bottom tube to header connections
[3]All duct mounted Ultra-Sorb units > 50 lbs require seismic cable braces at the bottom of duct. See UUT Sheets.
[4]Face dimension, overall duct dimension reported in test reports.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENT MATRIX

1800819-CR-001-R3

Manufacturer: DriSteem Corporation
Model Line: Ultra-Sorb

TABLE 6b

Certified Product Construction Summary:
Constructed of light gauge stainless steel or carbon steel sheet metal surrounds.

Certified Options Summary:
See Table 14 for certified options.

Mounting Configuration:
Certified for Air Handling Unit applications in accordance with DriSteem connection details.
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}= *2.0 g* *z/h=1.0* S_{DS}= *2.5 g* *z/h=0.0* I_P= *1.5*

Model Line	Model	Dimensions (in)[3]			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Ultra-Sorb (AHU Mounted)[1]	LH	5	12	12	23		20
		5	…	…	…		Interp.
		5	120	120	347		23
		5	…	…	…		Interp.
		5	120	120	347	UUT: stainless steel headers and enclosure	39
	LV[2]	5	12	12	23		19
		5	…	…	…		Interp.
		5	40	40	122	UUT: stainless steel headers and enclosure	37
		5	…	…	…		Interp.
		5	107	102	279	UUT: stainless steel headers and enclosure	38
		5	…	…	…		Interp.
		5	120	120	347	UUT: stainless steel headers and carbon steel enclosure[4]	22
		5	…	…	…		Interp.
		5	120	120	347	UUT: stainless steel headers and enclosure	36

[1]See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.
[2]Includes seismic upgrade of installing bracing to the floor of unit to support bottom header
[3]Face dimension , overall AHU dimension reported in test reports.
[4]Weight reported reflects individual UUT weight, not mounting assembly as report in Test Report JID-0228

SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENT MATRIX

1800819-CR-001-R3

Manufacturer: DriSteem Corporation
Model Line: Ultra-Sorb

TABLE 6b

Certified Product Construction Summary:
Constructed of light gauge stainless steel or carbon steel sheet metal surrounds.

Certified Options Summary:
See Table 14 for certified options.

Mounting Configuration:
Certified for Air Handling Unit applications in accordance with DriSteem connection details.
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}= ***2.0 g*** ***z/h=1.0*** S_{DS}= ***2.5 g*** ***z/h=0.0*** I_P= ***1.5***

Model Line	Model	Dimensions (in)[3]			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Ultra-Sorb (AHU Mounted)[1]	XV[2,3]	7.2	12	12	23		21
		7.2	…	…	…		Interp.
		7.2	110	116	352	UUT: stainless steel headers and carbon steel enclosure[5]	24
		7.2	…	…	…		Interp.
		7.2	110	116	352	UUT: stainless steel headers and enclosure	42
	MP	7.2	12	12	30	UUT31: stainless steel headers and carbon steel enclosure, 30 lbs.[6] UUT40: stainless steel headers and enclosure, 30 lbs.	31, 40
		7.2	…	…	…		Interp.
		7.2	110	116	308		32
		7.2	…	…	…		Interp.

[1]See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.
[2]Includes seismic upgrade of closure plates at bottom tube-to-header connections
[3]Includes seismic upgrade of installing bracing to the floor of unit to support bottom header
[4]Face dimension, overall AHU dimension reported in test reports.
[5]Weight reported reflects individual UUT weight, not mounting assembly as report in Test Report JID-0228
[6]Laboratory reported dry weight of 20 lb w/o water. Contents were included in testing per operating conditions.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

1800819-CR-001-R3

Manufacturer:	DriSteem Corporation
Model Line:	Ultra-Sorb

TABLE 6b

Certified Product Construction Summary:

Constructed of light gauge stainless steel or carbon steel sheet metal surrounds.

Certified Options Summary:

See Table 14 for certified options.

Mounting Configuration:

Certified for Air Handling Unit applications in accordance with DriSteem connection details.

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}= ***2.0 g*** ***z/h=1.0*** S_{DS}= ***2.5 g*** ***z/h=0.0*** I_P= ***1.5***

Model Line	Model	Dimensions (in)[3]			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Ultra-Sorb (AHU Mounted)[1]	MP	7.2	110	116	308	UUT: stainless steel headers and enclosure	41

[1]See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.

[2]Includes seismic upgrade of closure plates at bottom tube-to-header connections

[3]Includes seismic upgrade of installing bracing to the floor of unit to support bottom header

[4]Face dimension, overall AHU dimension reported in test reports.

[5]Weight reported reflects individual UUT weight, not mounting assembly as report in Test Report JID-0228

[6]Laboratory reported dry weight of 20 lb w/o water. Contents were included in testing per operating conditions.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

1800819-CR-001-R3

Manufacturer: DriSteem Corporation
Model Line: GTS LX Humidifier

TABLE 7

Certified Product Construction Summary:
Constructed of a light gauge aluminum (indoor) or carbon steel (outdoor) enclosure.

Certified Options Summary:
See Table 15 for certified options.
Certified for curb mounting. Max curb height 14".

Mounting Configuration:
Base mounted - rigid or curb 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}= *2.0 g* *z/h=1.0* S_{DS}= *2.5 g* *z/h=0.0* I_P= *1.5*

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
GTS Humidifier (Indoor w/o enclosure)[1]	LX-50	23.3	23.3	42.8	310	UUT: Indoor w/o enclosure.	50
	LX-75	23.3	23.3	42.8	310		Interp.
	LX-100	23.3	23.3	42.8	31		Interp.
	LX-150	32.3	23.3	42.8	450		Interp.
	LX-200	56	22	47	706		Interp.
	LX-250	56	22	47	706		Interp.
	LX-300	56	22	47	709		Interp.
	LX-400	56	34	53	1259		Interp.
	LX-500	56	34	53	1259		Interp.
	LX-600	56	34	53	1286	UUT: Indoor w/o enclosure.	53
GTS Humidifier (Outdoor or indoor w/ enclosure)1	LX-50	36	27.4	57	579	UUT48: Indoor w/ enclosure, 325.5 lbs. UUT49: Outdoor w/ enclosure and mounted on 14" curb., 578.5 lbs.	48, 49
	LX-75	36	27.4	57	479		Interp.
	LX-100	36	27.4	57	475		Interp.
	LX-150	45	27.4	57	629		Interp.
	LX-200	57.4	27.4	62	914		Interp.
	LX-250	57.4	27.4	62	914		Interp.
	LX-300	57.4	27.4	62	916		Interp.
	LX-400	57.4	39.1	62	1606		Interp.

[1]See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

1800819-CR-001-R3

Manufacturer: DriSteem Corporation
Model Line: GTS LX Humidifier

TABLE 7

Certified Product Construction Summary:
Constructed of a light gauge aluminum (indoor) or carbon steel (outdoor) enclosure.

Certified Options Summary:
See Table 15 for certified options.
Certified for curb mounting. Max curb height 14".

Mounting Configuration:
Base mounted - rigid or curb 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}= ***2.0 g*** ***z/h=1.0*** S_{DS}= ***2.5 g*** ***z/h=0.0*** I_P= ***1.5***

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
GTS Humidifier (Outdoor or indoor w/ enclosure)[1]	LX-500	57.4	39.1	62	1606		Interp.
	LX-600	57.4	39.1	62	1796	UUT51: Indoor w/ enclosure, 1338.5 lbs. UUT52: Outdoor w/ enclosure and mounted on 14" curb., 1795.5 lbs.	51, 52

[1]See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

1800819-CR-001-R2

Manufacturer: DriSteem Corporation
Model Line: VLC, STS
Table Description: Control Panel

TABLE 8

Building Code: CBC 2019
Seismic Certification Limits: S_{DS} = 2.0 g z/h = 1.0; S_{DS} = 2.5 g z/h = 0.0; I_P = 1.5

Model Line (Manufacturer)	Model	Dimension (in)			Weight[1] (lb)	Material	Notes[2,3]	UUT
		Depth	Width	Height				
Control Panel (Identified by size)	NEMA 4	6	12	12	24	Light gauge carbon steel enclosure		7, 35
		6	14	16	37			Interp.
		6	20	20	60			Interp.
		8	24	24	81			Interp.
		8	24	30	103			3
	NEMA 12	6	12	12	20			6
		6	14	16	32			1
		7	20	20	55			Interp.
		7	24	24	73			2
		9	24	30	91			4
		…	…	…	…		Rigid wall mounted only	Interp.
		9	30	36	130		Rigid wall mounted only	5

Notes:
[1]Control Panels listed in Table 8 may only be mounted on equipment, which was initially tested with a control panel, whose mass is within 10% of the tested panel and must be mounted at same location, with supports and attachments of similar configuration, with equivalent strength and stiffness, as the tested panel. Interpolated models must adhere to the same requirements.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

1800819-CR-001-R2

Manufacturer:	DriSteem Corporation	***Table Description:***	Vaporstream VLC	**TABLE 9**
Model Line:	VLC			

Building Code: CBC 2019 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h = 1.0 I_P = 1.5
S_{DS} = 2.5 g z/h = 0.0

Component Type	Manufacturer	Model	Description	Notes	UUT
Cabinet	Wiegmann	B16146CH	Carbon steel, body 14 ga., door 16 ga.		1,2
		B202007CH			Interp.
		B24247CH			Interp.
		B30249CH			4
		B36309CH			Interp.
		BN416146CH			Interp.
		N420206	Carbon steel, body and door 14 ga.		Interp.
		N424248			Interp.
		N436308			Interp.
		N430248			3
Weather enclosure	DriSteem	902401	Carbon steel, 18 ga.		2
		902402			Interp.
		902403			Interp.
		902404			Interp.
		902405			4
Water level controller	DriSteem	406303-011	Fiberglass Thermoset Polyester w/SST Rods		1,2,3,4
Water overflow port	DriSteem	250230-0012	Stainless Steel Fitting		1,2,3,4
Electric Heating Elements	Chromalox	409600-006	Brass Fitting w/ incoloy sheathing		1,2
		409600-039	Brass Fitting w/incoloy sheathing		3,4
Temperature Sensor	Johnson Controls	A99BC-25C	Stainless Steel Bulb		1,2,3,4
Over-temp thermostat	Therm-O-Disc	330821-60T25 M-2	Stainless Steel mounting bracket w/stainless steel & thermoplastic body		1,2,3,4

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

1800819-CR-001-R2

Manufacturer:	DriSteem Corporation	***Table Description:***	Vaporstream VLC	**TABLE 9**
Model Line:	VLC			

Building Code: CBC 2019 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h = 1.0; S_{DS} = 2.5 g z/h = 0.0 I_P = 1.5

Component Type	Manufacturer	Model	Description	Notes	UUT
DI fill float valve	DriSteem	505210	All stainless steel construction		1,2,3,4
Steam Outlet	DriSteem	122425-002	Stainless Steel		1,2
		162765-003	Stainless Steel		3,4
Drain Valve	DriSteem	505401-002	Brass, w/ plastic molded housing		1,2,3,4
Transformer	Tyco Electronics	4000-08J41K999	Carbon steel core and frame		1,2,3,4
Power Block	Marathon	985GP03	Phenolic		1,2
		1433553	Phenolic		3,4,5
Contactor	Siemens	407010-001	Molded plastic housing		1,2
		407010-002	Molded plastic housing		3,4,5
Keypad	Control Products	408495-002	Molded plastic housing		1,2,3,4
SS Relay	Control Concepts	3224-50A	Extruded aluminum heatsink/mount		1,5
Stand	DriSteem	1900735-004	22" x 7.2" x 43", 18.7 lbs.	carbon steel legs with plate steel sesimic cross bracing.	1
		1900735-005	22" x 12.5" x 43", 18.8 lbs.		Interp.
		1900735-006	22" x 20" x 43", 19 lbs.		Interp.
		1900735-007	22" x 27.5" x 43", 19.3 lbs.		Interp.
		1900735-008	22" x 35" x 43", 19.6 lbs.		3

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

1800819-CR-001-R2

Manufacturer: DriSteem Corporation
Model Line: STS
Table Description: STS (Steam-to-Steam) Humidifier

TABLE 10

Building Code: CBC 2019
Seismic Certification Limits: S_{DS} = 2.0 g z/h = 1.0; S_{DS} = 2.5 g z/h = 0.0; I_P = 1.5

Component Type	Manufacturer	Model	Description	Notes	UUT
Cabinet	Wiegmann	B12126CH	Carbon steel, body 14 ga., door 16 ga.		6,7,35
Heat Exchanger	DriSteem	164436-101	Stainless steel		6
		164422-004	Teflon coated stainless steel		35
		164420-101	Copper		7
Vapor Logic Controller	Quantum	408496-006	Glass reinforced epoxy on nylon snap lock mounts		6,7
Electronic Water Level Controller	DriSteem	406303-008	Fiberglass Thermoset Polyester w/SST rods		6
		406303-009	Fiberglass Thermoset Polyester w/SST rods		7,35
Water skimmer	Miller Machine	250230-0012	Stainless Steel Fitting		6,7,35
Temperature Sensor	Johnson Controls	A99BC-25C	Stainless steel Bulb		6,7,35
Steam outlet	DriSteem	122425-002	Stainless steel		6
		162765-003	Stainless steel		7,35
Drain Valve	DriSteem	505401-001	Brass valve, w/ plastic molded actuator housing		6
		193768-001	Stainless steel valve, w/ plastic & steel actuator housing		7,35
Transformer	Tyco	4000-08J41K999	Carbon steel core and frame		6,7,35
Terminal	Marathon	MIK3, MIKE10	Molded plastic din rail mount		6,7,35
Keypad/Board	Control Products	408495-002	Molded plastic housing		6,7,35

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

1800819-CR-001-R2

driSteem™

TRU COMPLIANCE

Manufacturer: DriSteem Corporation	***Table Description:*** STS (Steam-to-Steam) Humidifier	**TABLE 10**
Model Line: STS		

Building Code: CBC 2019 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h = 1.0; S_{DS} = 2.5 g z/h = 0.0 I_P = 1.5

Component Type	Manufacturer	Model	Description	Notes	UUT
Stand	DriSteem	1900735-001	23.7" x 14.8" x 43", 18.9 lbs., STS-25	carbon steel legs with plate steel sesimic cross bracing	6
		1900735-002	39.7" x 14.8" x 43", 19.5 lbs., STS-50		Interp.
		1900735-003	39.7" x 19.3" x 43", 19.6 lbs., STS-100		Interp.
		1900735-009	59.2" x 30.3" x 38", 37.2 lbs., STS200/400/800		7, 35

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

1800819-CR-001-R2

driSteem™

TRU COMPLIANCE

Manufacturer:	DriSteem Corporation	***Table Description:*** XTP Electrode Steam Humidification System	**TABLE 11**
Model Line:	XTP Series Humidifier		

Building Code: CBC 2019 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h = 1.0 I_P = 1.5; S_{DS} = 2.5 g z/h = 0.0

Component Type	Manufacturer	Model	Description	Notes	UUT
Cabinet	DriSteem	160727-101	Stainless Steel, top/back/bottom 18 ga., sub panel 14 ga.;Carbon Steel, door 18ga.		8
		160727-102			Interp.
		160727-103			Interp.
		160727-104			Interp.
		160727-001	Stainless Steel, top/back/bottom 18 ga., sub panel 14 ga.; Carbon steel, door 18ga.		Interp.
		160727-002			Interp.
		160727-003			Interp.
		160727-004			9
Controller	Quantum Controls	408496-006	Glass reinforced epoxy on nylon snap lock mounts		8,9
Interface Board	Control Products	408495-004	Molded plastic housing		8,9
Boiling Chamber	DriSteem	194600-008	Polypropylene		8
		194600-028	Polypropylene		9
Electronic Controller	Control Products	530013-004	Glass reinforced epoxy on nylon snap lock mounts		8
		530013-005	Glass reinforced epoxy on nylon snap lock mounts		9
Drain Valve	OEM Solutions, Inc	405901	Glass filled nylon		8,9
Fill Valve	GEMS Sensors	505096	Stainless Steel Valve		8,9
Contactor	Siemens	3RT1025-1AC20	Molded plastic housing		8
		3RT1035-1AC20	Molded plastic housing		9
Fill Cup Assembly	DriSteem	194605-004	Glass filled nylon & thermoplastic rubber		8
		194605-006	Glass filled nylon & thermoplastic rubber		9

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

1800819-CR-001-R2

driSteem™

TRU COMPLIANCE

Manufacturer:	DriSteem Corporation	***Table Description:*** XTP Electrode Steam Humidification System		**TABLE 11**
Model Line:	XTP Series Humidifier			

Building Code: CBC 2019 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h = 1.0 I_P = 1.5; S_{DS} = 2.5 g z/h = 0.0

Component Type	Manufacturer	Model	Description	Notes	UUT
Transformer	Tyco Electronics	408965-001	Carbon steel core and frame		8,9
Electrical Door	O & A Mfg.	530013-204	Carbon steel, 18 ga.		8
		530013-205			Interp.
		530013-206			Interp.
		530013-207			9
Cylinder Door	O & A Mfg.	530013-200	Carbon steel, 18 ga.		8
		530013-201			Interp.
		530013-203			9
Inlet Orifice	Vernay	VL3007-105	EPDM		8
		VL3007-110	EPDM		Interp.
		VL3007-157	EPDM		9

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

1800819-CR-001-R2

Manufacturer:	DriSteem Corporation	***Table Description:*** Vapormist (VM)	**TABLE 12**
Model Line:	VM		

Building Code: CBC 2019 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h = 1.0 I_P = 1.5; S_{DS} = 2.5 g z/h = 0.0

Component Type	Manufacturer	Model	Description	Notes	UUT
Cabinet	DriSteem	120277	Stainless steel, back panel 18 ga. Carbon steel, sub panel 14 ga., electrical panel 18ga.		13,14
Vapor Logic Controller	Quantum	408496-006	Glass reinforced epoxy on nylon snap lock mounts		13,14
Electric heating elements	Chromalox	409600-006	Brass Fitting w/incoloy sheathing		13
		409600-039	Brass Fitting w/incoloy sheathing		14
		409600-046	Brass Fitting w/incoloy sheathing		14
Water Probes	DriSteem	406303-005	Fiberglass Thermoset Polyester w/Stainless Steel rods		13
		406303-006	Fiberglass Thermoset Polyester w/Stainless Steel rods		14
Boiling Chamber	DriSteem	160013-001	All stainless steel construction		13
		160013-004	All stainless steel construction		14
Steam Outlet	DriSteem	122425-002	Stainless Steel		13
		122435-002	Stainless Steel		14
Drain Valve	Honeywell	V8043A1029/B	Brass Body		13,14
Fill Valve	Gem	B2026-S19	Stainless Steel Valve		13,14
Temperature Sensor	Johnson Controls	A99BC-25C	Stainless Steel Bulb		13,14
Transformer	Tyco Electronics	4000-08J41K999	Carbon steel core and frame		13,14
Contactor	Siemens	407010-001	Molded Plastic Housing		13
		407010-002	Molded Plastic Housing		14

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

1800819-CR-001-R2

Manufacturer:	DriSteem Corporation	***Table Description:***	Mini-Bank Humidification System	**TABLE 13**
Model Line:	Mini-Bank			

Building Code: CBC 2019 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h = 1.0; S_{DS} = 2.5 g z/h = 0.0 I_P = 1.5

Component Type	Manufacturer	Model	Description	Notes	UUT
Duct Plate	DriSteem	162500-004	Stainless Steel	Mounted in Duct only - Ceiling suspended rigid	15
		162501-004	Carbon Steel	Mounted in Duct only - Ceiling suspended rigid	16
Deflector Plate	DriSteem	12330-001	Stainless Steel	Mounted in Duct or AHU	15, 16, 17, 18
Multi-baffle Plate	Engle Diversified	280002-005	Stainless Steel	Mounted in Duct or AHU	15, 16, 17, 18
Steam Valve	Schneider Electric	520201-008	Electric Brass Valve	Mounted in Duct or AHU	16, 18
		520201-006	Pneumatic Brass Valve	Mounted in Duct or AHU	15, 17
Brass Tublet	BRO Machine Co.	203450-002	Brass	Mounted in Duct or AHU	15, 16, 17, 18

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

1800819-CR-001-R2

driSteem™

TRU COMPLIANCE

Manufacturer:	DriSteem Corporation	***Table Description:***	Ultra-Sorb Humidification System	**TABLE 14**
Model Line:	Utlra-Sorb			

Building Code: CBC 2019 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h = 1.0; S_{DS} = 2.5 g z/h = 0.0 I_P = 1.5

Component Type	Manufacturer	Model	Description	Notes	UUT
Steam Valve	Schneider Electric	510700-004	Electric brass valve	Mounted in AHU Only - Base mounted rigid	20
		510701-002		Mounted in Duct only - Ceiling suspended rigid	30
		502803-009		Mounted in Duct only - Ceiling suspended rigid	27
		520200-014		Mounted in Duct only - Ceiling suspended rigid	28
		520200-025		Mounted in Duct only - Ceiling suspended rigid	26
		520202-004		Mounted in AHU Only - Base mounted rigid	21
		520201-004	Pneumatic brass valve	Mounted in AHU Only - Base mounted rigid	19
		520201-014		Mounted in Duct only - Ceiling suspended rigid	29
		520203-025		Mounted in Duct only - Ceiling suspended rigid	25

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

1800819-CR-001-R2

driSteem™

TRU COMPLIANCE

Manufacturer:	DriSteem Corporation	***Table Description:***	Ultra-Sorb Humidification System	**TABLE 14**
Model Line:	Utlra-Sorb			

Building Code: CBC 2019 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h = 1.0; S_{DS} = 2.5 g z/h = 0.0 I_P = 1.5

Component Type	Manufacturer	Model	Description	Notes	UUT
Thermal-resin Tubelet	Steinwall	310275-001	Plastic	Mounted in AHU Only - Base mounted rigid	19,20,21
		310275-003	Plastic	Mounted in Duct only - Ceiling suspended rigid	28,29,30
		310275-004	Plastic	Mounted in Duct only - Ceiling suspended rigid	25,26,27
Internal Drying Tube	DriSteem	100032-010	Copper	Mounted in AHU Only - Base mounted rigid	21,24
		100032-070	Copper	Mounted in Duct only - Ceiling suspended rigid	27
		100032-118	Copper	Mounted in Duct only - Ceiling suspended rigid	30

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

1800819-CR-001-R2

Manufacturer: DriSteem Corporation
Model Line: GTS-LX
Table Description: GTS-LX Mechanical & Electrical

TABLE 15

Building Code: CBC 2019
Seismic Certification Limits: S_{DS} = 2.0 g z/h = 1.0; S_{DS} = 2.5 g z/h = 0.0; I_P = 1.5

Component Type	Manufacturer	Model	Description	Notes	UUT
Tank Weld Flange	DriSteem	600436-10x	LX 50/75/100, 304/316, 48 lbs.[1]		48,49,50
		600436-15x	LX 150, 304/316, 80 lbs.[1]		Interp.
		600414-xxx	LX 200-300, 304/316, 135 lbs.[1]		Interp.
		600157-xxx	LX 200-300, 304/316, 135 lbs.[2]		Interp.
		600295-xxx	LX 400/600 ,304/316, 178 lbs.[3]		52
		600087-xxx	LX 400-600, 316, 178 lbs.[2]		51,53
Steam Distributions	Ferguson Ent.	250540-00x	Coupling, 2" NPT Shld Half, 2 lbs.[1]		48,50
		205500-0xx	Flange 3" Ø Back-up 304/316 SST, 5.9 lbs.[3]		Interp.
		205500-003	Flange 3" Ø Back-up Steel, 4.8 lbs.[3]		Interp.
		205500-0xx	Flange 4" Ø Back-up 304/316 SST, 8 lbs.[3]		52
		205500-004	Flange 4" Ø Back-up Steel, 6.4 lbs.[3]		52
Primary Heat Exchangers	DriSteem	600553-076	LX50/75 Assy 316 SST, 32 lbs.[1]		48,49,50
		600553-075	LX50/75 Assy 304 SST, 32 lbs.[1]		48,49,50
		600553-101	LX 100 Assy 316 SST, 32 lbs.[1]		Interp.
		600553-100	LX 100 Assy 304 SST, 32 lbs.[1]		Interp.
		600553-151	LX 150 Assy 316 SST, 32 lbs. [1]		Interp.
		600553-150	LX 150 Assy 304 SST, 32 lbs.[1]		Interp.
		600249-001	200/250 19.16" Centr Assy 316, 77 lbs.[1]		Interp.
		600249	200/250 19.16" Centr Assy 304, 77 lbs.[1]		Interp.
		600161-001	300 19.16" Centr Assy 316, 87 lbs.[1]		Interp.

Note
[1]Indoor/Outdoor, [2]Indoor, [3]Outdoor, [4]Skinless Indoor

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

1800819-CR-001-R2

Manufacturer:	DriSteem Corporation	***Table Description:***	GTS-LX Mechanical & Electrical	**TABLE 15**
Model Line:	GTS-LX			

Building Code: CBC 2019 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h = 1.0; S_{DS} = 2.5 g z/h = 0.0 I_P = 1.5

Component Type	Manufacturer	Model	Description	Notes	UUT
Primary Heat Exchangers	DriSteem	600161	300 19.16" Centr Assy 304, 87 lbs.[1]		Interp.
		600250-001	400/500 19.16" Centr Assy 316, 147 lbs.[1]		Interp.
		600250	400/500 19.16" Centr Assy 304, 147 lbs.[1]		Interp.
		600088-001	600 19.16" Centr Assy 316, 168 lbs.[1]		51,52,53
		600088	600 19.16" Centr Assy 304, 168 lbs.[1]		51,52,53
Secondary Heat Exchangers	DriSteem	600373	Sec 19 Hole Rolled Weldment, 30 lbs.[1]		48,49,50
		600190	Sec 19 Hole Rolled Weldment, 45 lbs.[1]		51,52,53
Burner Assembly	DriSteem	600445	Burner Assy. 50/75/100, 6.5 lbs.[1]		48,49,50
		600446	Burner Assy. 150, 6.5 lbs.[1]		Interp.
		600396	Burner Assy. 200 to 600, 6.5 lbs.[1]		51,52,53
Probe	DriSteem	184315-003	Probe Assy., 9.07, 3 lbs.[1]		48,49,50, 51,52,53
Ignition Control	Fenwal	405811-011	24VAC Spark, 1 per burner, 2 lbs.[1]		48,49,50, 51,52,53
Pressure Switch	Cleveland Controls	127601-001	1" WC, 1 per burner, 1lb.[1]		48,49,50, 51,52,53
Thermal Cut-Out	Themo-0-Disc	409560-001	VF/VM/CRU/VLC, 0.045 lbs.[1]		48,49,50, 51,52,53

Note
[1]Indoor/Outdoor, [2]Indoor, [3]Outdoor, [4]Skinless Indoor

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

1800819-CR-001-R2

Manufacturer:	DriSteem Corporation	***Table Description:***	GTS-LX Mechanical & Electrical	**TABLE 15**
Model Line:	GTS-LX			

Building Code: CBC 2019 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h = 1.0 I_P = 1.5; S_{DS} = 2.5 g z/h = 0.0

Component Type	Manufacturer	Model	Description	Notes	UUT
Tank Temperature Sensor	Probes Unlimited	405763	Sensor 1/4" NPT, 0.45 lbs.[1]		48,49,50, 51,52,53
Drain Sensor	Probes Unlimited	406774-002	Sensor 1/8" NPT, 0.45 lbs. [1]		48,49,50, 51,52,53
Flue Sensor	Probes Unlimited	600430	Sensor 155F 1/4" NPT, 1 lb.[1]		48,49,50, 51,52,53
Fill Assembly	DriSteem	600432-001	Water Fill Manifold 1/2" NPT GTS LX O.E. , 1 per burner, 4 lbs.[1]		48,49,50, 51,52,53
Drain Manifold	Busch Brothers	600024	SST Block Drain, 5 lbs.[1]		48,49,50, 51,52,53
		600024-100	Al Block Drain, 2 lbs. [1]		49
Drain Assembly	DriSteem	600199-103	Drain manifold Assy, 4 lbs.[3]		49,52
		600199-100	Drain manifold Assy, 4 lbs.[2]		48,50,51, 53
Heater	Chromalox	600390	Heater O.E 120V 400W, 1 lb.[3]		49,52
Mount	DriSteem	127593-001	Intake/exhaust flue adaptor, 1.8 lbs.[4]		50,53
		600217	Intake/exhaust flue adaptor, 2.7 lbs.[4]		Interp.
		600133	Intake/exhaust flue adaptor, 3.5 lbs.[4]		53
Sub Panel Cover	DriSteem	600105	Cover sub panel[4]		50,53

Note
[1]Indoor/Outdoor, [2]Indoor, [3]Outdoor, [4]Skinless Indoor

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

1800819-CR-001-R2

Manufacturer: DriSteem Corporation
Model Line: GTS-LX
Table Description: GTS-LX Mechanical & Electrical

TABLE 15

Building Code: CBC 2019
Seismic Certification Limits: S_{DS} = 2.0 g z/h = 1.0; S_{DS} = 2.5 g z/h = 0.0; I_P = 1.5

Component Type	Manufacturer	Model	Description	Notes	UUT
Control Cabinet	DriSteem	600284-001	Subpanel Assy Indoor 1 Burner, 20 lbs.[2]		48,50
		600284-002	Subpanel Assy Outdoor 1 Burner, 20 lbs.[3]		49
		600562-001	Subpanel Assy Indoor 2 Burner, 20 lbs.[2]		51,53
		600562-002	Subpanel Assy Outdoor 2 Burner, 20 lbs.[3]		52
Curbs	DriSteem	600683-001	Seismic Curb 50-100 O.E., 18 lbs[3]		49
		600683-002	Seismic Curb 150 O.E., 22 lbs[3]		Interp.
		600683-003	Seismic Curb 200-300 O.E., 27 lbs[3]		Interp.
		600683-004	Seismic Curb 400-600 O.E., 37 lbs[3]		52
Seismic Mounting Brackets	DriSteem	600783	LX50-100, 2.3 lbs.[2]		48,50
		600782	LX150, 3.6 lbs[2]		Interp.
		600781	LX200-600, 6.2 lbs[2]		51,53

Note
[1]Indoor/Outdoor, [2]Indoor, [3]Outdoor, [4]Skinless Indoor

UNIT UNDER TEST (UUT) SUMMARY SHEET

1800819-CR-001-R2

Manufacturer: DriSteem Corporation

Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb

UUT	Unit Description	Report Number	Testing Laboratory	S_{DS}	z/h	I_P
1	VLC 2-1	JID: 17-0228 (UUT 5)	Clark Testing	2.0	1	1.5
				2.5	0	
2	VLC 2-1 (w/ weather enclosure)	EL: 9706 (UUT 2)	Clark Testing	2.0	1	1.5
				2.5	0	
3	VLC 100-4	EL: 9706 (UUT 3)	Clark Testing	2.0	1	1.5
				2.5	0	
4	VLC 100-4 (w/ weather enclosure)	EL: 9706 (UUT 4)	Clark Testing	2.0	1	1.5
				2.5	0	
5	Control Panel XXL	EL: 9675 (UUT 5)	Clark Testing	2.0	1	1.5
				2.5	0	
6	STS 25S	JID: 17-0228 (UUT 6)	Clark Testing	2.0	1	1.5
				2.5	0	
7	STS 800C	EL: 9706 (UUT 7)	Clark Testing	2.0	1	1.5
				2.5	0	
8	XTP-006	D252672 (UUT 1)	Applied Technical Services	2.0	1	1.5
				2.5	0	
9	XTP-096	D252672 (UUT 2)	Applied Technical Services	2.0	1	1.5
				2.5	0	
13	VM-2	EL: 9675 (UUT 11)	Clark Testing	2.0	1	1.5
				2.5	0	
14	VM-34	EL: 9675 (UUT 12)	Clark Testing	2.0	1	1.5
				2.5	0	
15	Mini-Bank – 12”x12” Duct	EL: 9767 (UUT 13)	Clark Testing	2.1	1	1.5
				2.5	0	
16	Mini-Bank – 24”x48” Duct	EL: 9767 (UUT 14)	Clark Testing	2.2	1	1.5
				2.5	0	
17	Mini-Bank – 12”x12” AHU	EL: 9767 (UUT 15)	Clark Testing	2.5	1	1.5
				2.5	0	
18	Mini-Bank – 24”x48” AHU	EL: 9767 (UUT 15)	Clark Testing	2.5	1	1.5
				2.5	0	
19	Ultra-Sorb LV - 12”x12” AHU	EL: 9767 (UUT 15)	Clark Testing	2.5	1	1.5
				2.5	0	

Notes:

See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1800819-CR-001-R2

Manufacturer: DriSteem Corporation

Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb

UUT	Unit Description	Report Number	Testing Laboratory	S_{DS}	z/h	I_P
20	Ultra-Sorb LH - 12”x12” AHU	EL: 9767 (UUT 15)	Clark Testing	2.5	1	1.5
				2.5	0	
21	Ultra-Sorb XV - 12”x12” AHU	EL: 9767 (UUT 15)	Clark Testing	2.5	1	1.5
				2.5	0	
22	Ultra-Sorb LV - 120”x120” AHU	JID: 17-0228 (UUT 2)	Clark Testing	2.0	1	1.5
				2.5	0	
23	Ultra-Sorb LH - 120”x120” AHU	EL: 9767 (UUT 15)	Clark Testing	2.5	1	1.5
				2.5	0	
24	Ultra-Sorb XV - 110”x116” AHU	JID: 17-0228 (UUT 2)	Clark Testing	2.0	1	1.5
				2.5	0	
25	Ultra-Sorb LV - 12”x12” Duct	EL: 9767 (UUT 13)	Clark Testing	2.1	1	1.5
				2.5	0	
26	Ultra-Sorb LH - 12”x12” Duct	EL: 9767 (UUT 13)	Clark Testing	2.1	1	1.5
				2.5	0	
27	Ultra-Sorb XV - 12”x12” Duct	EL: 9767 (UUT 13)	Clark Testing	2.1	1	1.5
				2.5	0	
28	Ultra-Sorb LV - 80”x80” Duct	JID: 17-0228 (UUT 3)	Clark Testing	2.0	1	1.5
				2.5	0	
29	Ultra-Sorb LH - 80”x80” Duct	JID: 17-0228 (UUT 3)	Clark Testing	2.0	1	1.5
				2.5	0	
30	Ultra-Sorb XV - 80”x80” Duct	JID: 17-0228 (UUT 3)	Clark Testing	2.0	1	1.5
				2.5	0	
31	Ultra-Sorb MP - 12”x12” AHU	JID: 17-0228 (UUT 2)	Clark Testing	2.0	1	1.5
				2.5	0	
32	Ultra-Sorb MP - 110”x116” AHU	JID: 17-0228 (UUT 2)	Clark Testing	2.0	1	1.5
				2.5	0	
33	Ultra-Sorb MP - 12”x12” Duct	JID: 17-0228 (UUT 4)	Clark Testing	2.0	1	1.5
				2.5	0	
34	Ultra-Sorb MP - 80”x80” Duct	JID: 17-0228 (UUT 3)	Clark Testing	2.0	1	1.5
				2.5	0	
35	STS800 SNC	PR069604.02 (UUT1)	National Technical Systems - Silicon Valley	2.0	1	1.5
				2.5	0	

Notes:

See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1800819-CR-001-R2

Manufacturer: DriSteem Corporation

Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb

UUT	Unit Description	Report Number	Testing Laboratory	S_{DS}	z/h	I_P
36	Ultra-Sorb LV - 120”x120” AHU Stainless	1700754-TR-001 R2 (UUT5)	ERDC-CERL	2.0	1	1.5
				2.5	0	
37	Ultra-Sorb LV - 40”x40” AHU Stainless	1700754-TR-001 R2 (UUT6a)	ERDC-CERL	2.0	1	1.5
				2.5	0	
38	Ultra-Sorb LV - 107”x102” AHU Stainless	1700754-TR-001 R2 (UUT10)	ERDC-CERL	2.0	1	1.5
				2.5	0	
39	Ultra-Sorb LH - 120”x120” AHU Stainless	1801166-TR-001 R0 (UUT13)	PEER	2.0	1	1.5
				2.5	0	
40	Ultra-Sorb MP - 12”x12” AHU Stainless	1801166-TR-001 R0 (UUT13)	PEER	2.0	1	1.5
				2.5	0	
41	Ultra-Sorb MP - 110”x116” AHU Stainless	1801166-TR-001 R0 (UUT13)	PEER	2.0	1	1.5
				2.5	0	
42	Ultra-Sorb XV - 110”x116” AHU Stainless	1801166-TR-001 R0 (UUT13)	PEER	2.0	1	1.5
				2.5	0	
43	Ultra-Sorb LH - 80"x80" Stainless	1800819-TR-001-R1	Environmental Testing Laboratory (ETL)	2.0	1	1.5
				2.5	0	
44	Ultra-Sorb LV - 80"x80" Stainless	1800819-TR-001-R1	Environmental Testing Laboratory (ETL)	2.0	1	1.5
				2.5	0	
45	Ultra-Sorb XV - 80"x80" Stainless	1800819-TR-001-R1	Environmental Testing Laboratory (ETL)	2.0	1	1.5
				2.5	0	
46	Ultra-Sorb MP - 80"x80" Stainless	1800819-TR-001-R1	Environmental Testing Laboratory (ETL)	2.0	1	1.5
				2.5	0	
47	Ultra-Sorb MP - 12"x12" Stainless	1800819-TR-001-R1	Environmental Testing Laboratory (ETL)	2.0	1	1.5
				2.5	0	
48	GTS LX 50 Indoor (w/ enclosure)	1800819-TR-001-R1	Environmental Testing Laboratory (ETL)	2.0	1	1.5
				2.5	0	
49	GTS LX 50 Outdoor (w/ enclosure)	1800819-TR-001-R1	Environmental Testing Laboratory (ETL)	2.0	1	1.5
				2.5	0	
50	GTS LX 50 (w/o enclosure)	1800819-TR-001-R1	Environmental Testing Laboratory (ETL)	2.0	1	1.5
				2.5	0	
51	GTS LX 600 Indoor (w/ enclosure)	1800819-TR-001-R1	Environmental Testing Laboratory (ETL)	2.0	1	1.5
				2.5	0	

Notes:

See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1800819-CR-001-R2

Manufacturer: DriSteem Corporation

Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb

UUT	Unit Description	Report Number	Testing Laboratory	S_{DS}	z/h	I_P
52	GTS LX 600 Outdoor (w/ enclosure)	1800819-TR-001-R1	Environmental Testing Laboratory (ETL)	2.0	1	1.5
				2.5	0	
53	GTS LX 600 (w/o enclosure)	1800819-TR-001-R1	Environmental Testing Laboratory (ETL)	2.0	1	1.5
				2.5	0	

Notes:

See DriSteem seismic certification option installation manual at end of OSP, in addition to UUT specific installation requirements.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1800819-CR-001-R2

UUT 1

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	VLC 2-1	***Serial Number:***	1252334-01-01

Product Construction Summary:

Constructed of light gauge stainless steel with insulating pads on all sides; carbon steel angle legs with plate steel seismic cross bracing (DriSteem Part #190735-004).

Options/Subcomponent Summary:

16x14x6 NEMA-12 control cabinet: Tyco: Transformer 120/208/240/277/480/600x24 Copper winding; Marathon: Terminal 20A, Power Block 35A; Siemens: Contactor 35A; Ferraz Shawmut 0.5-30A fuse; ABB: 480V breaker 4A; Control Products: Vaporlogic keypad and board. Drain valve, Fill Valve, Float Switch, Temp Sensor.

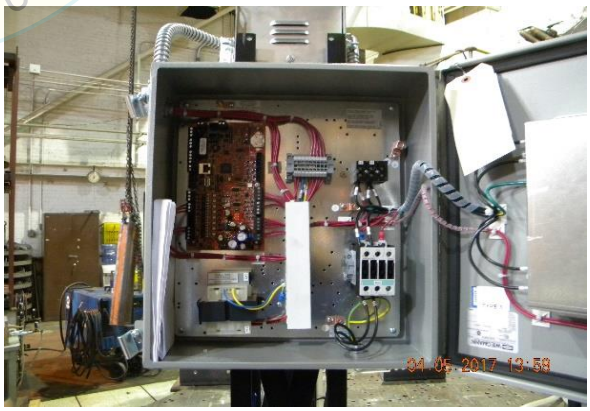
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
181.0	14.8	34.0	30.3	23.4	11.4	> 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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



Unit attached to seismic support legs which are secured to the table platen using four (4) 3/8" dia. Grade 5 bolts. One at each leg. 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

1800819-CR-001-R2

UUT 2

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	VLC 2-1 (W/ Weather Enclosure)	***Serial Number:***	N/A

Product Construction Summary:

The weather enclosure is constructed of structural carbon steel tubing with 18 ga. carbon steel panels enclosing the unit. The unit is constructed of light gauge stainless steel with insulating pads on all sides, mounted directly onto weather enclosure structural carbon steel tubing.

Options/Subcomponent Summary:

16x14x6 NEMA-12 control cabinet: Tyco: Transformer 120/208/240/277/480/600x24 copper winding; Marathon: Terminal 20A, Power Block 35A; Siemens: Contactor 35A; Ferraz Shawmut: 0.5-30A fuse 600V; ABB: 480V 1.6A breaker; Control Products: Vapor-logic keypad and board. Drain valve, Fill Valve, Float Switch, Temp Sensor.

UUT Properties

Weight[1] (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
524.0	35.0	44.0	66.0	19.0	16.1	19.9

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

Unit directly bolted to the table platen using four (4) 3/8" Dia. Grade 2 bolts. One at each leg. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

[1]Laboratory reported dry weight of 300 lbs. w/o water. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1800819-CR-001-R2

UUT 3

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	VLC 100-4	***Serial Number:***	1192577-03-01

Product Construction Summary:

Constructed of light gauge stainless steel with insulating pads on all sides; carbon steel angle legs with plate steel seismic cross bracing (DriSteem Part #190735-008).

Options/Subcomponent Summary:

30x24x8 NEMA-4 control cabinet: Tyco: Transformer 120/208/240/480x24 copper winding; Marathon: Terminal 20A, Power Block 335A; Siemens: Contactor 35A; Ferraz Shawmut 35-60A fuse 480V; ABB: 480V 4A breaker; Control Products: Vapor-logic keypad and board. Drain valve, Fill Valve, Float Switch, Temp Sensor.

UUT Properties

Weight[1] (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
563	40.35	32	46.11	15.5	20	> 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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

Unit attached to seismic support legs which are secured to the table platen using four (4) 3/8" dia. Grade 2 bolts. One at each leg. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

[1]Laboratory reported dry weight of 435 lbs. w/o water. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1800819-CR-001-R2

UUT 4

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	VLC 100-4 (w/ Weather Enclosure)	***Serial Number:***	N/A

Product Construction Summary:

The weather enclosure is constructed of structural carbon steel tubing with 18 ga. carbon steel panels enclosing the unit. The unit is constructed of light gauge stainless steel with insulating pads on all sides; with insulating pads on all sides, mounted directly onto weather enclosure structural carbon steel tubing.

Options/Subcomponent Summary:

30x24x8 NEMA-12 control cabinet: Tyco: Transformer 120/208/240/277/480/600x24 copper winding; Marathon: Terminal 20A, Power Block 335A; Siemens: Contactor 35A; Ferraz Shawmut 35-60A 480V fuse; ABB: 480V breaker; Control Products: Vapor-logic keypad and board. Drain valve, Fill Valve, Float Switch, Temp Sensor.

UUT Properties

Weight[1] (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
1063.0	50.0	44.0	66.0	12.4	16.1	27.3

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

Unit directly bolted to the table platen using four (4) 3/8" Dia. Grade 2 bolts. One at each leg. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

[1]Laboratory reported dry weight of 655 lbs. w/o water. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1800819-CR-001-R2

UUT 5

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: Extra Extra Large (XXL) Control Panel ***Serial Number:*** 1192577-37-01-CC

Product Construction Summary:
NEMA 12 rated control panel.

Options/Subcomponent Summary:
36x30x9 NEMA-12 control cabinet: Tyco: Transformer 120/208/240/277/480/600x24 copper winding; Marathon: Terminal 20A, Power Block 175A; Siemens: Contactor 35A; Ferraz Shawmut 10-60A 600V fuse; ABB: 480V 4A breaker; Control Products: Vapor-logic keypad and board. Drain valve, Fill Valve, Float Switch, Temp Sensor.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
130.0	9.0	30.0	36.0	N/A	N/A	N/A

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

Unit mounted to wall test fixture using four (4) 3/8” dia. Grade 2 bolts with washer, lock washer and nut. 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

1800819-CR-001-R2

UUT 6

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	STS-25 S	***Serial Number:***	1252334-02-01

Product Construction Summary:

Constructed of light gauge stainless steel; carbon steel angle legs with plate carbon steel seismic cross bracing (DriSteem Part #190735-001).

Options/Subcomponent Summary:

Ball float valve, stainless steel heat exchanger, automatic steam valve, and temperature sensor. Attached 12x12x6 NEMA-12 control cabinet: Tyco: Transformer 120/208/240/480x24 copper winding; Marathon: Terminal 20A; Siemens: Contactor 35A; Ferraz Shawmut 35-60A 480V fuse; ABB: 480V 1.6A breaker; Control Products: Vapor-logic keypad and board. Drain valve, Fill Valve, Float Switch, Temp Sensor. with Vapor-logic interface controller attached to exterior of door panel.

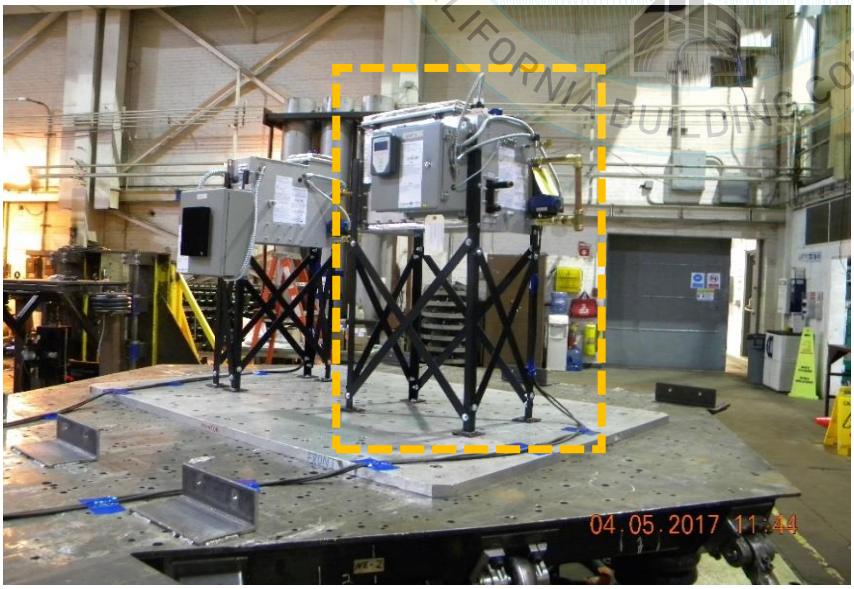
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
236.0	23.7	14.8	19.5	23.4	11.4	> 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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



Unit attached to seismic support legs which are secured to the table platen using a total of four (4) 3/8" dia. Grade 5 bolts; One at each leg. 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

1800819-CR-001-R2

UUT 7

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: STS-800 C ***Serial Number:*** 1192577-06-01

Product Construction Summary:
Constructed of light gauge stainless steel mounted on "H" style carbon steel tubes with carbon steel plate seismic cross bracing (DriSteem Part #190735-009).

Options/Subcomponent Summary:
Copper heat exchanger. Attached 12x12x6 NEMA-12 control cabinet: Tyco: Transformer 120/208/240/480x24 copper winding; Marathon: Terminal 20A; Siemens: Contactor 35A; Ferraz Shawmut 35-60A 480V fuse; ABB: 480V 4A breaker; Control Products: Vapor-logic keypad and board. Drain valve, Fill Valve, Float Switch, Temp Sensor. with Vapor-logic interface controller attached to exterior of door panel.

UUT Properties

Weight[1] (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
1250.0	55.2	30.3	29.8	19.6	17.4	> 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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

Unit attached to seismic support legs which are secured to the table platen using a total of eight (8) 3/8" dia. Grade 2 bolts; two at each leg. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

[1]Laboratory reported dry weight of 520 lb w/o water. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1800819-CR-001-R2

UUT 8

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	XTP006B1	***Serial Number:***	1242630-01-01

Product Construction Summary:

The unit, 208V-Single Phase, is constructed of 18ga. stainless steel back/bottom/top/side, and 14 ga. stainless steel sub-panel panels with 18 ga. carbon steel door panels.

Options/Subcomponent Summary:

Cabinet (160727-101), Controller (408496-006), Interface Board (408495-004), Boiling Chamber (194600-008), Electronic Controller (530013-004), Drain Valve (405901), Fill Valve (505096), Contactor (3RT1025-1AC20), Fill Cup Assembly (194605-004), Transformer (408965-001), Electrical Door (530013-204), Cylinder Door (530013-200), Inlet Orifice (VL3007-105)

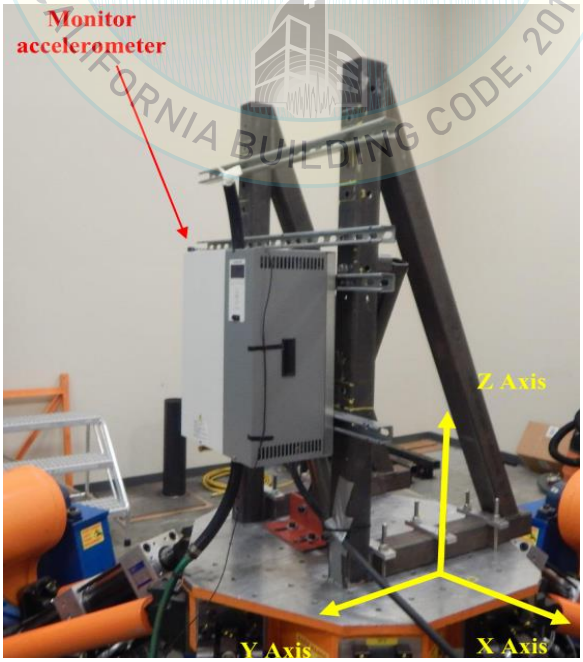
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
47.0	8.7	14.6	20.6	N/A	N/A	N/A

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



Unit mounted to wall fixture using four (4) 3/8" dia. Grade 2 bolts with washer, lock washer and nut. 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

1800819-CR-001-R2

UUT 9

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	XTP096P3	***Serial Number:***	1242630-02-01

Product Construction Summary:

The unit, 600V-Three Phase, is constructed of 18ga. stainless steel back/bottom/top/side, and 14 ga. stainless steel sub-panel panels with 18 ga. carbon steel door panels.

Options/Subcomponent Summary:

Cabinet (160727-004), Controller (408496-006), Interface Board (408495-004), Boiling Chamber (194600-028), Electronic Controller (530013-005), Drain Valve (405901), Fill Valve (505096), Contactor (3RT1035-1AC20), Fill Cup Assembly (194605-006), Transformer (408965-001), Electrical Door (530013-207), Cylinder Door (530013-203), Inlet Orifice (VL3007-157)

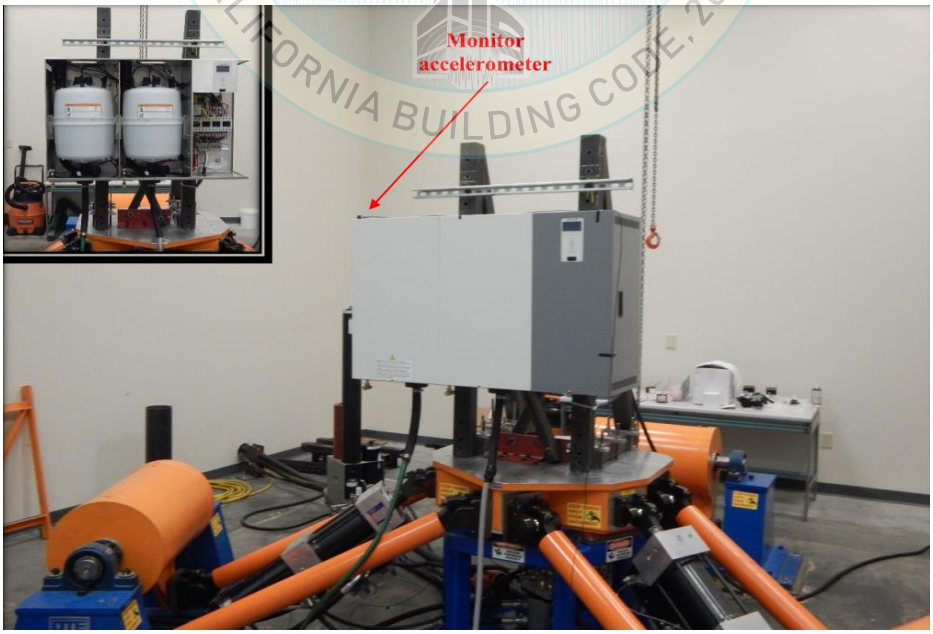
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
218.0	13.4	39.6	25.6	N/A	N/A	N/A

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



Unit mounted to wall fixture using four (6) 3/8" dia. Grade 2 bolts with washer, lock washer and nut. 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

1800819-CR-001-R2

UUT 13

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	VM-2	***Serial Number:***	1192577-13-01

Product Construction Summary:

The VM models are constructed of a 14 ga. carbon steel sub-panel, 18ga. carbon steel electrical cover, and 18ga. stainless steel back panels with a thin plastic housing over entire unit.

Options/Subcomponent Summary:

Tyco: Transformer 120/208/240/480x24 copper winding; Siemens: Contractor 35A; Marathon: Terminal 20A, Power Block 85A; Control Products: Vapor-logic controller; Carlo Gavazzi: SSR 1 pole 480V 50A, ABB: 480V 4A breaker. Drain Valve, Fill Valve, Float switch, Temp sensor. Resistive electric heating elements, conductive water probes, stainless steel boiling chamber, and steam outlet for distribution.

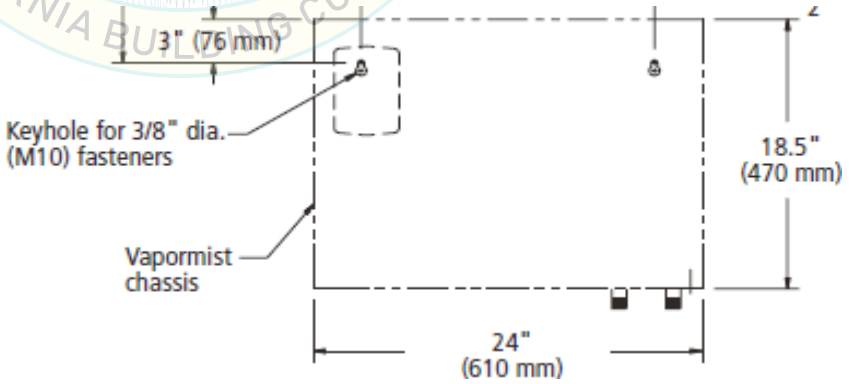
UUT Properties

Weight[1] (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
95.0	24.2	1621.0	18.6	N/A	N/A	N/A

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



Unit mounted to wall test fixture using two (2) 3/8" dia. grade 2 bolts with washer, lock washer and nut. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

[1]Laboratory reported dry weight of 55 lb w/o water. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1800819-CR-001-R2

UUT 14

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	VM-34	***Serial Number:***	1192577-14-01

Product Construction Summary:

The VM models are constructed of a 14 ga. carbon steel sub-panel, 18ga. galvanized carbon steel electrical cover, and 18ga. stainless steel back panels with a thin plastic housing over entire unit.

Options/Subcomponent Summary:

Tyco: Transformer 120/208/240/480x24 copper winding; Siemens: Contractor 55A; Marathon: Terminal 20A, Power Block 85A; Control Products: Vapor-logic controller; Carlo Gavazi: SSR 2 pole 480V 50A, SSR 1 pole 480 V 63A; ABB: 480V 1.6A breaker. Drain Valve, Fill Valve, Float switch, Temp sensor. Resistive electric heating elements, conductive water probes, stainless steel boiling chamber, and steam outlet for distribution.

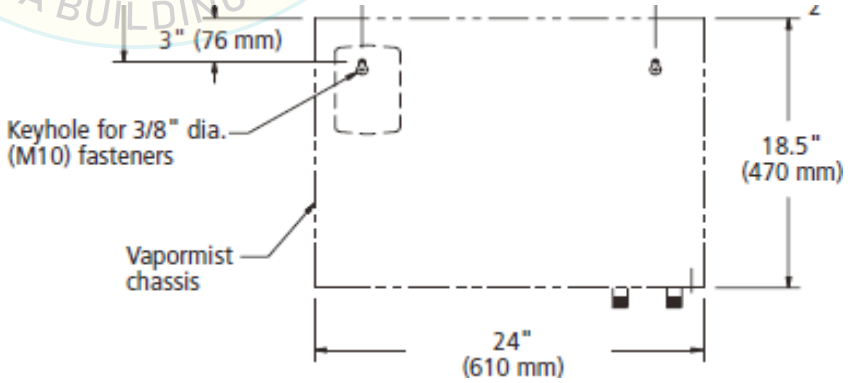
UUT Properties

Weight[1] (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
156.0	16.1	24.2	18.6	N/A	N/A	N/A

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



Unit mounted to wall test fixture using two (2) 3/8" dia. grade 2 bolts with washer, lock washer and nut. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

[1]Laboratory reported dry weight of 75 lb w/o water. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1800819-CR-001-R2

UUT 15

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	12”x12” Mini-Bank (Duct Mounted)	***Serial Number:***	N/A

Product Construction Summary:

Constructed of square stainless steel metal tubes with nozzles punched along their length. The tubes are spaced at 3” and installed horizontal to the ground and perpendicular to the duct air flow using a stainless steel plate at one end and stainless steel piping at the other end. The number of tubes depends upon the duct height.

Options/Subcomponent Summary:

Deflector plate, multi-baffle plate, internal drying tube, steam valve, and thermal-resin tubelet.

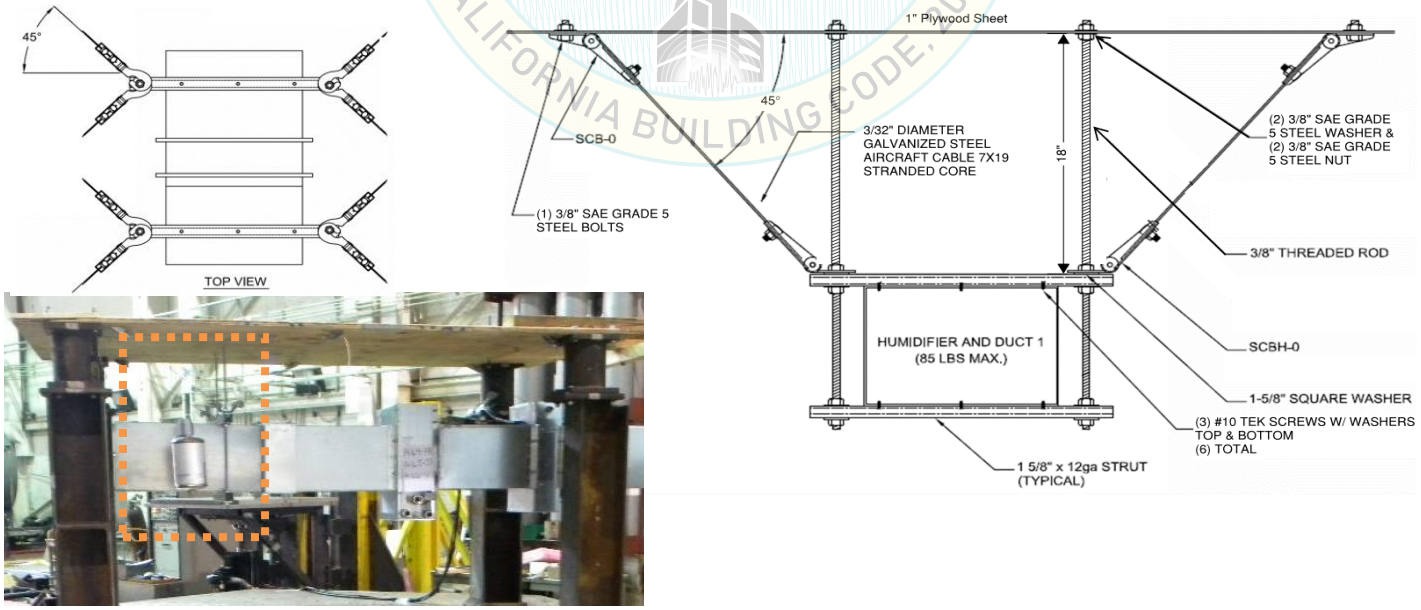
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
16.0	5.0	12.0	12.0	N/A	N/A	N/A

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 (2010)	2.1	1.0	1.5	3.36	2.52	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



Mini-bank is attached to the duct through a cut opening on one side which is secured with metal cover plates and attached to duct with self-tapping screws. The opposite side is secured to the duct using three (3) 1/8” dia. screws through duct into a threaded hole in the end plate of the Mini-bank unit. 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

1800819-CR-001-R2

UUT 16

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: 24”x48” Mini-Bank (Duct Mounted) ***Serial Number:*** N/A

Product Construction Summary:
Constructed of square stainless steel metal tubes with nozzles punched along their length. The tubes are spaced at 3” and installed horizontal to the ground and perpendicular to the duct air flow using a stainless steel plate at one end and stainless steel piping at the other end. The number of tubes depends upon the duct height.

Options/Subcomponent Summary:
Deflector plate, multi-baffle plate, internal drying tube, steam valve, and thermal-resin tubelet.

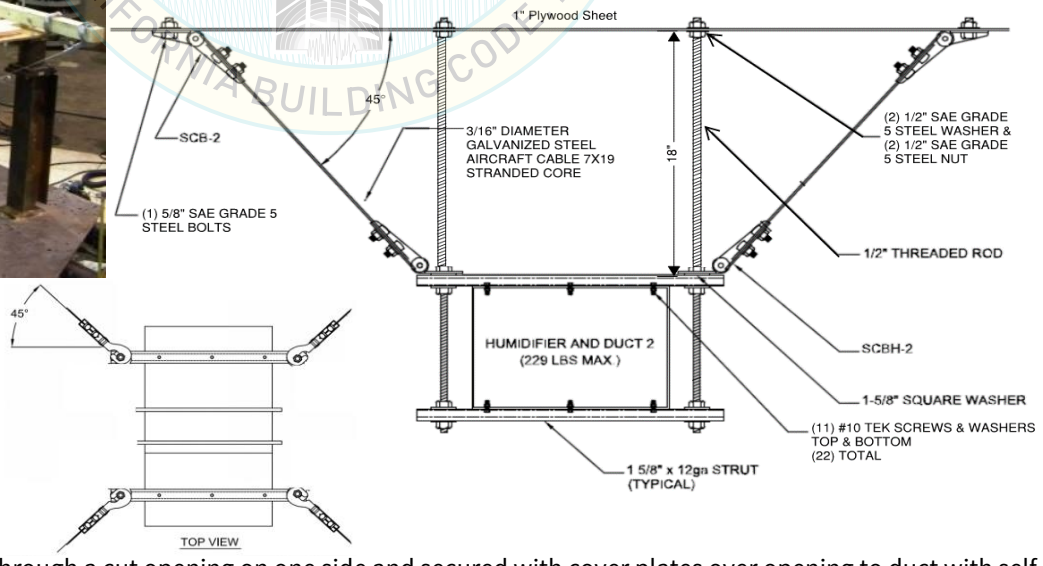
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
36.0	5.0	48.0	24.0	N/A	N/A	N/A

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 (2010)	2.2	1.0	1.5	3.52	2.64	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



Mini-bank is attached to the duct through a cut opening on one side and secured with cover plates over opening to duct with self-tapping screws. The opposite side is secured to the inside face of duct using six (6) 1/8” dia. screws through duct into the threaded end of the Mini-bank unit. The entire duct assembly is attached to ceiling fixture using Mason SCB/H Seismic Cable Bracing Assembly. 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

1800819-CR-001-R2

UUT 17

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: 12” x 12” Mini-Bank (AHU Mounted) ***Serial Number:*** N/A

Product Construction Summary:
Constructed of square stainless steel tubes with nozzles punched along their length. The tubes are spaced at 3” and installed horizontal to the ground and perpendicular to the AHU air flow using a stainless steel plate at one end and stainless steel piping at the other end. The number of tubes depends upon the desired height.

Options/Subcomponent Summary:
Deflector plate, multi-baffle plate, internal drying tube, steam valve, and thermal-resin tubelet.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
16.0	5	12.0	12.0	4.7	5.8	12.3

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 (2010)	2.5	1.0	1.5	4.00	3.00	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

Mini-bank is attached to the Air Handling Unit using vertical 1-5/8" 12 gauge strut-rails on both ends of the tubes and one along the top: Secured to the AHU using 3 sets of ¼” dia self-tapping screws through ¼” thick angles per leg; Strut-rail secured to the Mini-Bank unit using 3/8” dia. through bolts at base and one side. 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

1800819-CR-001-R2

UUT 18

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: 24" x 48" Mini-Bank (AHU Mounted) ***Serial Number:*** N/A

Product Construction Summary:
Constructed of square stainless steel tubes with nozzles punched along their length. The tubes are spaced at 3" and installed horizontal to the ground and perpendicular to the AHU air flow using a stainless steel plate at one end and stainless steel piping at the other end. The number of tubes depends upon the desired height.

Options/Subcomponent Summary:
Deflector plate, multi-baffle plate, internal drying tube, steam valve, and thermal-resin tubelet.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
36.0	5.0	48.0	24.0	4.7	5.8	12.3

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 (2010)	2.5	1.0	1.5	4.00	3.00	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

Mini-bank is attached to the Air Handling Unit using vertical 1-5/8" 12 gauge strut-rails on both ends of the tubes and one along the top: Secured to the AHU using 3 sets of ¼" dia self-tapping screws through ¼" thick angles per leg; Strut-rail secured to the Mini-Bank unit using 3/8" dia. through bolts at base and one side. 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

1800819-CR-001-R2

UUT 19

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: 12” x 12” Ultra-Sorb LV (AHU Mounted) ***Serial Number:*** N/A

Product Construction Summary:
Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented vertical to the ground and perpendicular to the AHU air flow.

Options/Subcomponent Summary:
There are no other internal components.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
23.0	5.0	12.0	12.0	4.7	5.8	12.3

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 (2010)	2.5	1.0	1.5	4.00	3.00	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

Mounted on parallel 1-5/8" 12 gauge strut-rails, which run from the AHU floor to ceiling, using four (4) 3/8” dia. through bolts; One at each corner. Strut-rails secured to AHU using ¼” dia. self taping screws through ¼” thick angle plate. 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

1800819-CR-001-R2

UUT 20

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: 12” x 12” Ultra-Sorb LH (AHU Mounted) ***Serial Number:*** N/A

Product Construction Summary:
Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented horizontal to the ground and perpendicular to the AHU air flow.

Options/Subcomponent Summary:
There are no other internal components.

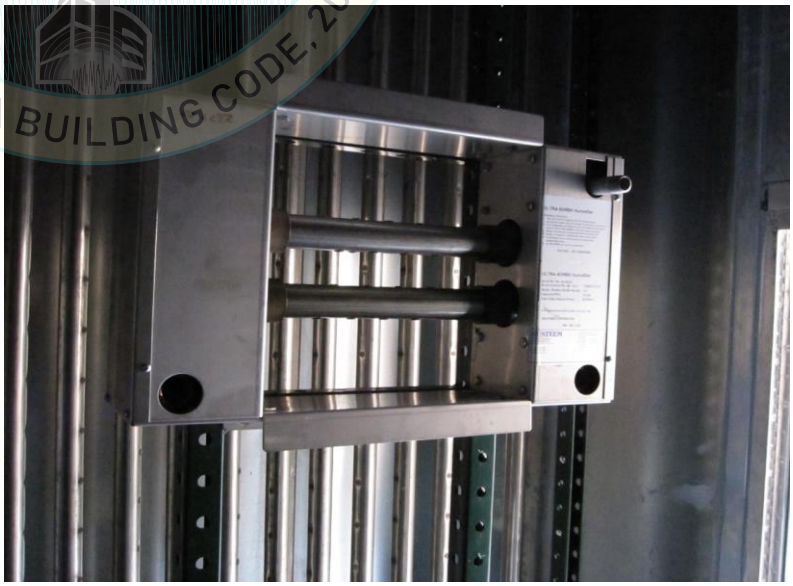
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
23.0	5.0	12.0	12.0	4.7	5.8	12.3

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 (2010)	2.5	1.0	1.5	4.00	3.00	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



Mounted on parallel 1-5/8" 12 gauge strut-rails, which run from the AHU floor to ceiling, using four (4) 3/8” dia. through bolts; One at each corner. Strut-rails secured to AHU using ¼” dia. self taping screws through ¼” thick angle plate. 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

1800819-CR-001-R2

UUT 21

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: 12” x 12” Ultra-Sorb XV (AHU Mounted) ***Serial Number:*** N/A

Product Construction Summary:
Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented vertical to the ground and perpendicular to the AHU air flow.

Options/Subcomponent Summary:
There are no other internal components.

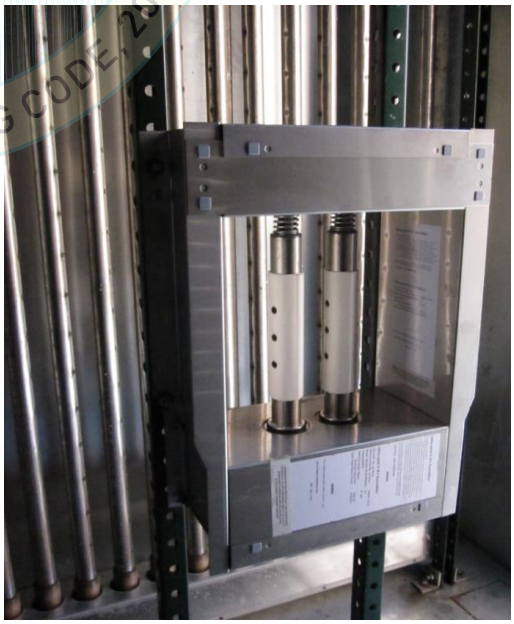
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
23.0	7.2	12.0	12.0	4.7	5.8	12.3

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 (2010)	2.5	1.0	1.5	4.00	3.00	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



Mounted on parallel 1-5/8" 12 gauge strut-rails, which run from the AHU floor to ceiling, using four (4) 3/8” dia. through bolts; One at each corner. Strut-rails secured to AHU using ¼” dia. self taping screws through ¼” thick angle plate. 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

1800819-CR-001-R2

Manufacturer:	DriSteem Corporation	**UUT 22**	
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	120” x 120” Ultra-Sorb LV (AHU Mounted)	***Serial Number:***	1250998-01-01

Product Construction Summary:

Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented vertical to the ground and perpendicular to the AHU air flow.

Options/Subcomponent Summary:

There are no other internal components.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
347.0	5.0	120.0	120.0	8.2	9.4	12.7

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

AHU was mounted onto the seismic table using (6) L 6"X 4" X 3/8" X 12" angle brackets (3 on each side - 6 total). Brackets were mounted to the AHU using (2) 1/2" - 13 grade bolts, washers, lock washers and nuts per each bracket. The brackets are welded to the seismic table using (4) 1/4" X 3" fillet welds. the unit was mounted to the AHU using Strut-rails (1-5/8" 12 gauge) placed vertically along each side and center of unit and secured with 3/8” dia. bolts and nyloc nuts spaced at 6” on center. Strut-rails secured to the AHU at roof and floor level using 3 sets of ¼” dia. self taping screws through ¼” thick angle plate. Bracing from unit wall was 1'-0" upstream of unit in test. 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

1800819-CR-001-R2

UUT 23

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: 120” x 120” Ultra-Sorb LH (AHU Mounted) ***Serial Number:*** N/A

Product Construction Summary:
Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented horizontal to the ground and perpendicular to the AHU air flow.

Options/Subcomponent Summary:
There are no other internal components.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
347.0	5.0	120.0	120.0	4.7	5.8	12.3

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 (2010)	2.5	1.0	1.5	4.00	3.00	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

Strut-rails (1-5/8" 12 gauge) placed vertically along each side and center of unit and secured with 3/8” dia. bolts spaced at 6” on center. Strut-rails secured to the AHU at roof and floor level using 3 sets of ¼” dia. self taping screws through ¼” thick angle plate. Bracing from unit wall was 1'-0" upstream of unit in test. 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

1800819-CR-001-R2

Manufacturer:	DriSteem Corporation	**UUT 24**	
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	116” x 110” Ultra-Sorb XV (AHU Mounted)	***Serial Number:***	1250998-02-01

Product Construction Summary:

Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented vertical to the ground and perpendicular to the AHU air flow.

Options/Subcomponent Summary:

Exterior insulated tubes.

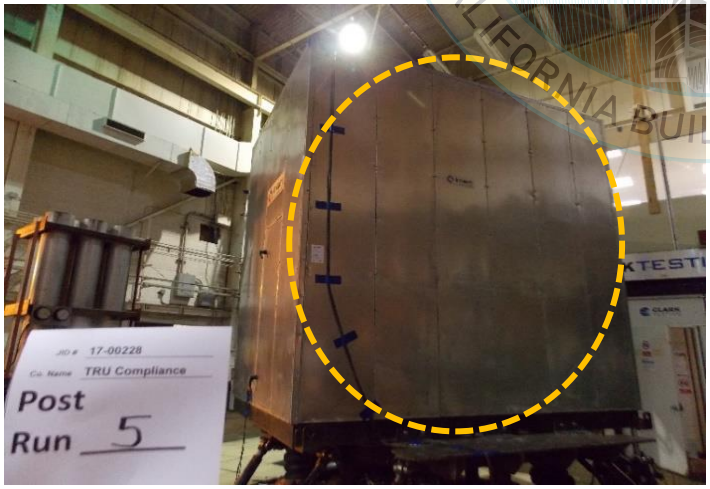
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
352.0	7.2	110.0	116.0	9.0	8.7	14.4

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



AHU was mounted onto the seismic table using (6) L 6"X 4" X 3/8" X 12" angle brackets (3 on each side - 6 total). Brackets were mounted to the AHU using (2) 1/2" - 13 grade bolts, washers, lock washers and nuts per each bracket. The brackets are welded to the seismic table using (4) 1/4" X 3" fillet welds. the unit was mounted to the AHU using Strut-rails (1-5/8" 12 gauge) placed vertically along each side and center of unit and secured with 3/8” dia. bolts and nyloc nuts spaced at 6” on center. Strut-rails secured to the AHU at roof and floor level using 3 sets of ¼” dia. self taping screws through ¼” thick angle plate. Bracing from unit wall was 1'-0" upstream of unit in test. 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

1800819-CR-001-R2

UUT 25

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	12” x 12” Ultra-Sorb LV (Duct Mounted)	***Serial Number:***	N/A

Product Construction Summary:

Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented vertical to the ground and perpendicular to the duct air flow.

Options/Subcomponent Summary:

There are no other internal components.

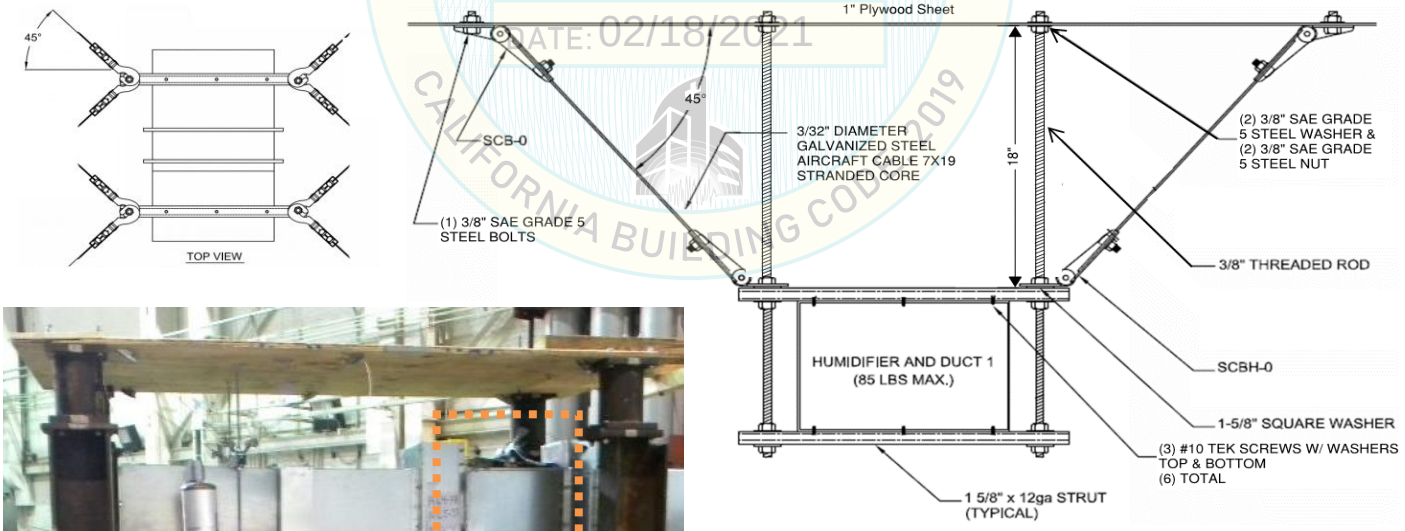
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
23.0	5.0	12.0	12.0	N/A	N/A	N/A

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 (2010)	2.1	1.0	1.5	3.36	2.52	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



Ultra-Sorb LV is attached to the duct along both vertical sides using an angle bracket with ½” dia. bolts: two (2) to the duct and three (3) to the Ultra-Sorb. The entire duct assembly is attached to ceiling fixture using Mason SCB/H Seismic Cable Bracing Assembly. 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

1800819-CR-001-R2

UUT 26

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	12” x 12” Ultra-Sorb LH (Duct Mounted)	***Serial Number:***	N/A

Product Construction Summary:

Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented horizontal to the ground and perpendicular to the duct air flow.

Options/Subcomponent Summary:

There are no other internal components.

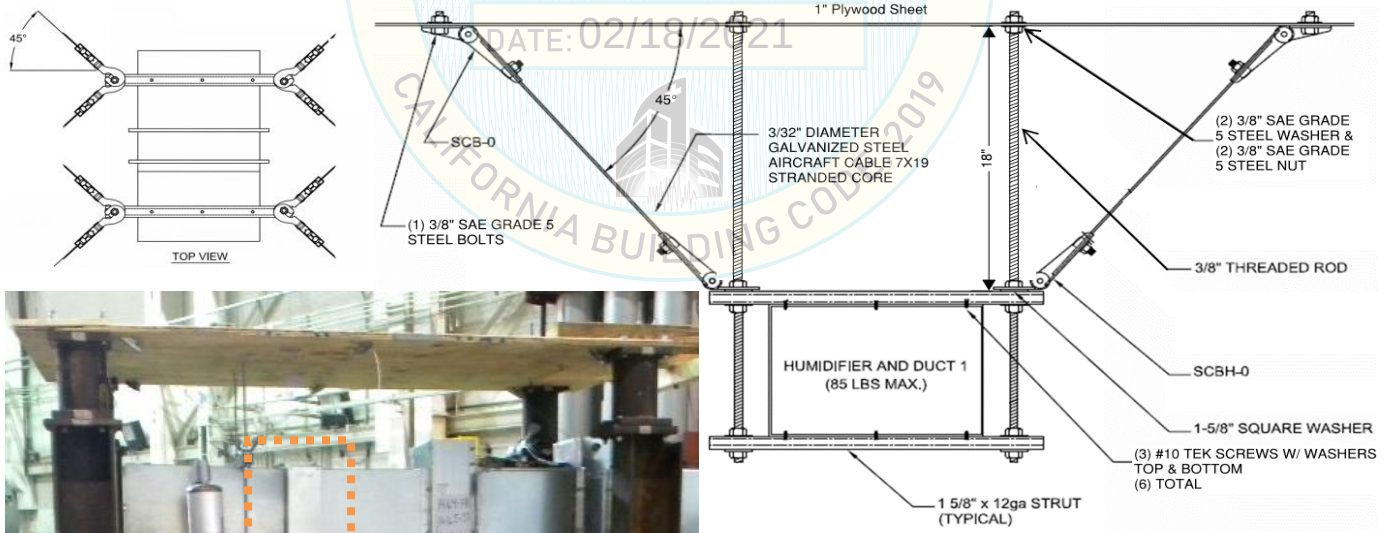
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
23.0	5.0	12.0	12.0	N/A	N/A	N/A

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 (2010)	2.1	1.0	1.5	3.36	2.52	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



Ultra-Sorb LH is attached to the duct along both top and bottom sides using an angle bracket with ½” dia. bolts: two (2) to the duct and three (3) to the Ultra-Sorb. The entire duct assembly is attached to ceiling fixture using Mason SCB/H Seismic Cable Bracing Assembly. 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

1800819-CR-001-R2

UUT 27

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: 12” x 12” Ultra-Sorb XV (Duct Mounted) ***Serial Number:*** N/A

Product Construction Summary:
Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented vertical to the ground and perpendicular to the duct air flow.

Options/Subcomponent Summary:
Exterior insulated tubes.

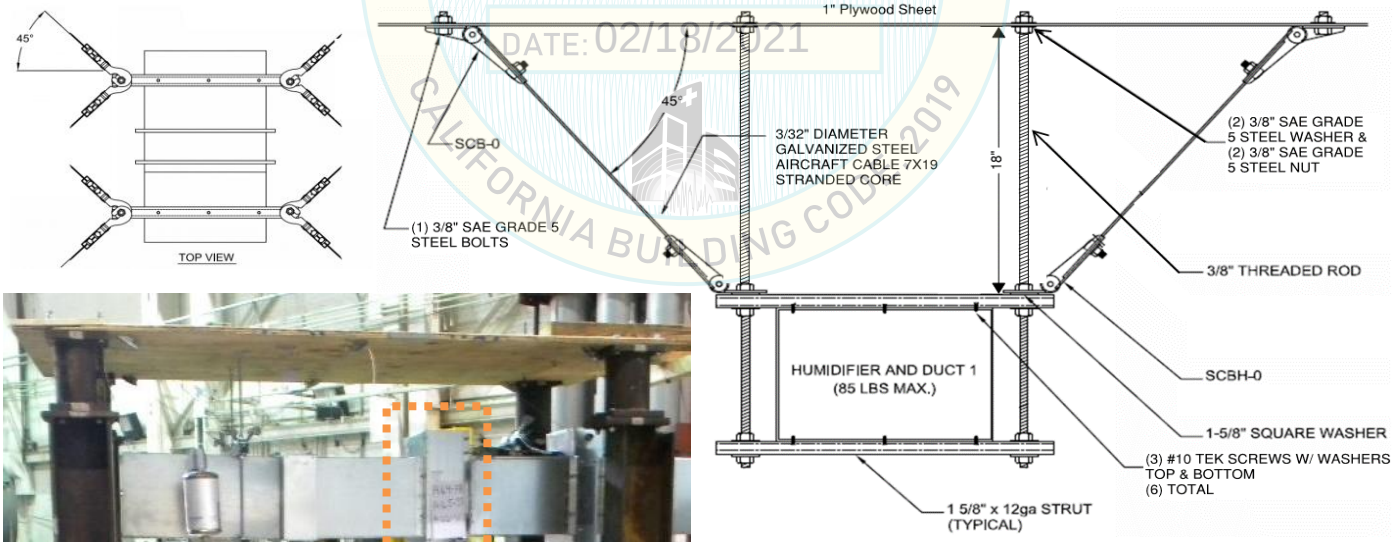
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
23.0	7.2	12.0	12.0	N/A	N/A	N/A

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 (2010)	2.1	1.0	1.5	3.36	2.52	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



Ultra-Sorb XV is attached to duct along each vertical side using an angle bracket with ½” dia. bolts: two (2) to the duct and three (3) to the Ultra-Sorb. All bolts use washers on both ends, and nylon locknuts. The entire duct assembly is attached to ceiling fixture using Mason SCB/H Seismic Cable Bracing Assembly (attached). 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

1800819-CR-001-R2

UUT 28

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	80” x 80” Ultra-Sorb LV (Duct Mounted)	***Serial Number:***	1252334-03-01

Product Construction Summary:

Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented vertical to the ground and perpendicular to the duct air flow.

Options/Subcomponent Summary:

Horizontal dispersion tubes, Insulated piping, deflector plate, multi-baffle plate, internal drying tube, steam valve, and thermal-resin tubelet.

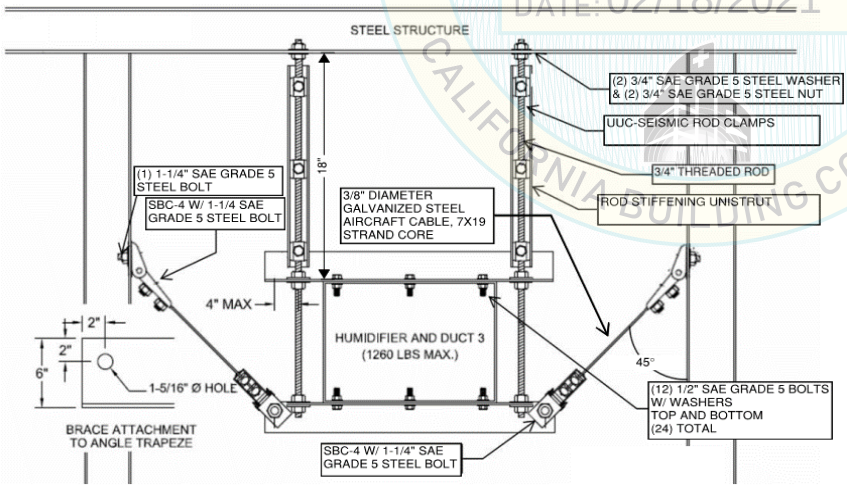
UUT Properties

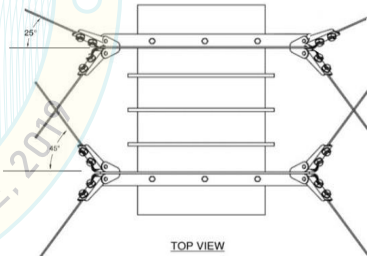
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
210.0	5.0	80.0	80.0	N/A	N/A	N/A

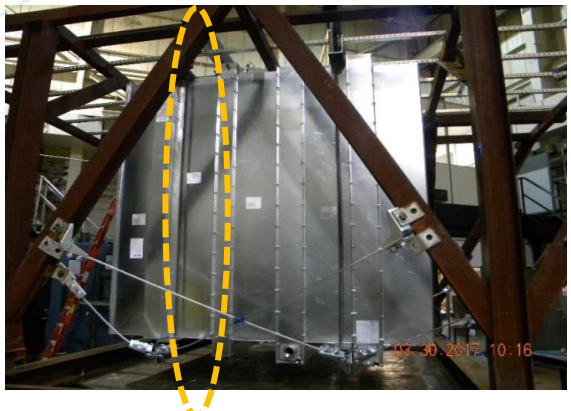
UUT Highest Passed Seismic Run Information

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:







Duct Mounted using ¼” dia. thru bolts along top and bottom spaced at 6” O.C. and ¼-20 self taping screws along sides spaced at 6” O.C. The entire duct assembly is supported using 1/8” SS angle hangers secured with ¼” thru bolts spaced at 6” and 3/4” dia. thread rod through both up to ceiling support fixture. Each corner is laterally supported with two (2) 3/8” dia. aircraft cables. 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

1800819-CR-001-R2

UUT 29

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: 80” x 80” Ultra-Sorb LH (Duct Mounted) ***Serial Number:*** 1252334-04-01

Product Construction Summary:
Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented horizontal to the ground and perpendicular to the duct air flow.

Options/Subcomponent Summary:
Horizontal dispersion tubes, Insulated piping, deflector plate, multi-baffle plate, internal drying tube, steam valve, and thermal-resin tubelet.

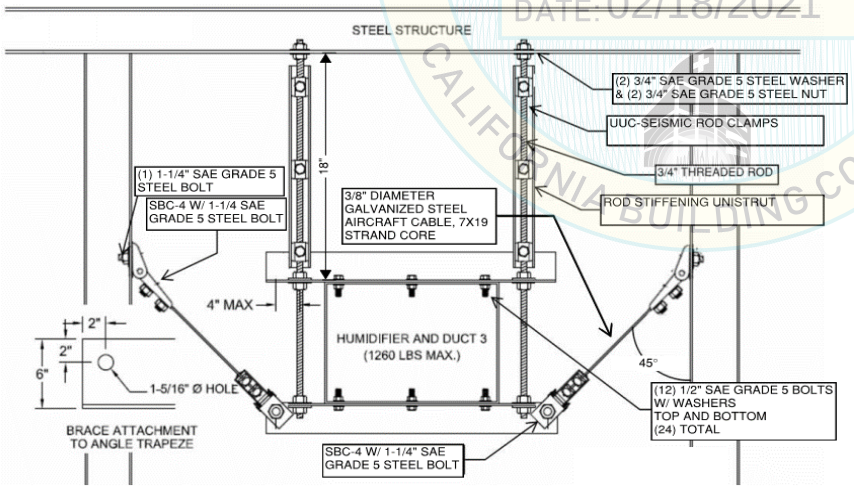
UUT Properties

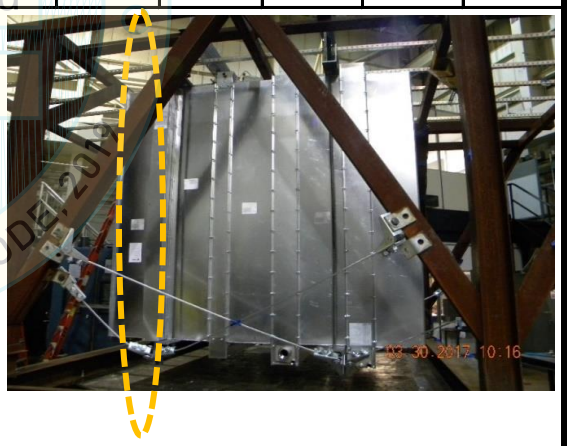
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
210.0	5.0	80.0	80.0	N/A	N/A	N/A

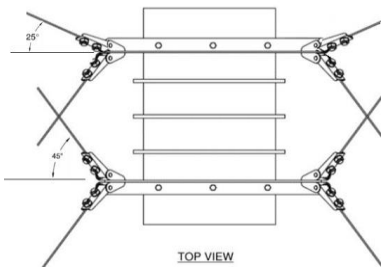
UUT Highest Passed Seismic Run Information

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:







Duct Mounted using ¼” dia. thru bolts along top and bottom spaced at 6” O.C. and ¼-20 self taping screws along sides spaced at 6” O.C. The entire duct assembly is supported using 1/8” SS angle hangers secured with ¼” thru bolts spaced at 6” and 3/4” dia. thread rod through both up to ceiling support fixture. Each corner is laterally supported with two (2) 3/8” dia. aircraft cables. 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

1800819-CR-001-R2

UUT 30

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	80” x 80” Ultra-Sorb XV (Duct Mounted)	***Serial Number:***	1252334-05-01

Product Construction Summary:

Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented horizontal to the ground and perpendicular to the duct air flow.

Options/Subcomponent Summary:

Exterior insulated tubes.

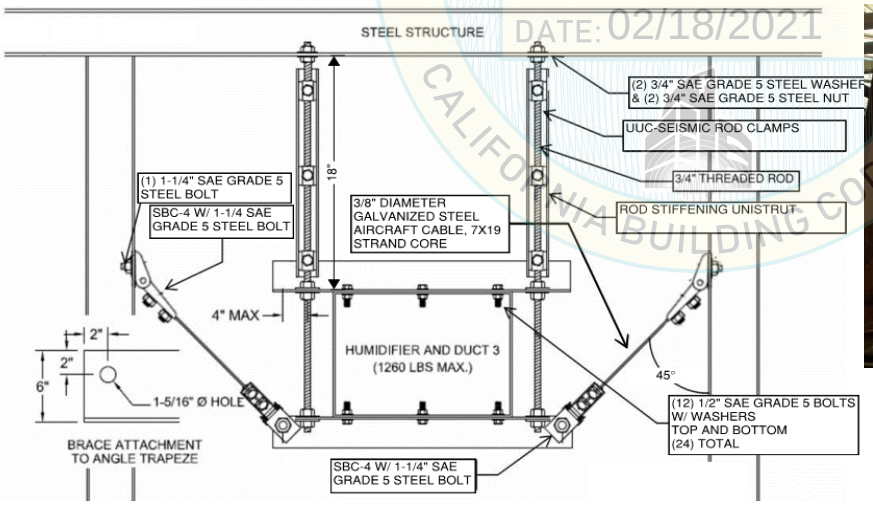
UUT Properties

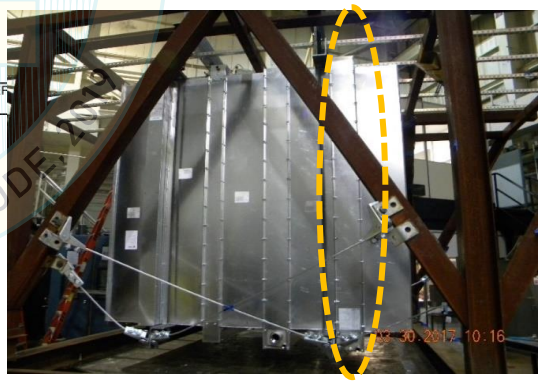
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
220.0	7.2	80.0	80.0	N/A	N/A	N/A

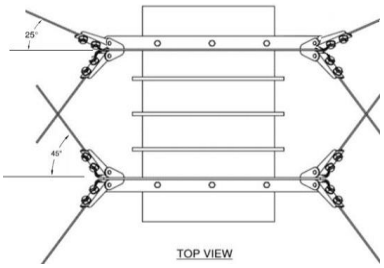
UUT Highest Passed Seismic Run Information

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:







Duct Mounted using ¼” dia. thru bolts along top and bottom spaced at 6” O.C. and ¼-20 self taping screws along sides spaced at 6” O.C. The entire duct assembly is supported using 1/8” SS angle hangers secured with ¼” thru bolts spaced at 6” and 3/4” dia. thread rod through both up to ceiling support fixture. Each corner is laterally supported with two (2) 3/8” dia. aircraft cables. 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

1800819-CR-001-R2

UUT 31

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	12” x 12” Ultra-Sorb MP (AHU Mounted)	***Serial Number:***	1250998-04-01

Product Construction Summary:

Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented vertical to the ground and perpendicular to the AHU air flow.

Options/Subcomponent Summary:

There are no other internal components.

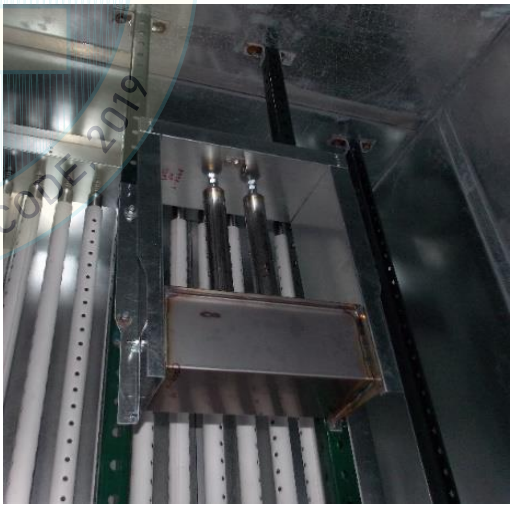
UUT Properties

Weight[1] (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
30.0	7.2	12.0	12.0	9.0	8.7	14.4

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



AHU was mounted onto the seismic table using (6) L 6"X 4" X 3/8" X 12" angle brackets (3 on each side - 6 total). Brackets were mounted to the AHU using (2) 1/2" - 13 grade bolts, washers, lock washers and nuts per each bracket. The brackets are welded to the seismic table using (4) 1/4" X 3" fillet welds. The unit was mounted to the AHU using Strut-rails (1-5/8" 12 gauge) placed vertically along each side and center of unit and secured with 3/8” dia. bolts and nyloc nuts spaced at 6” on center. Strut-rails secured to the AHU at roof and floor level using 3 sets of ¼” dia. self taping screws through ¼” thick angle plate. Bracing from unit wall was 1'-0" upstream of unit in test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

[1]Laboratory reported dry weight of 20 lb w/o water. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1800819-CR-001-R2

Manufacturer:	DriSteem Corporation	**UUT 32**	
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	110" X 116" Ultra-Sorb MP (AHU Mounted)	***Serial Number:***	1250998-03-01

Product Construction Summary:

Constructed of a light gauge stainless steel header, sill and 1.5" dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented vertical to the ground and perpendicular to the AHU air flow.

Options/Subcomponent Summary:

There are no other internal components.

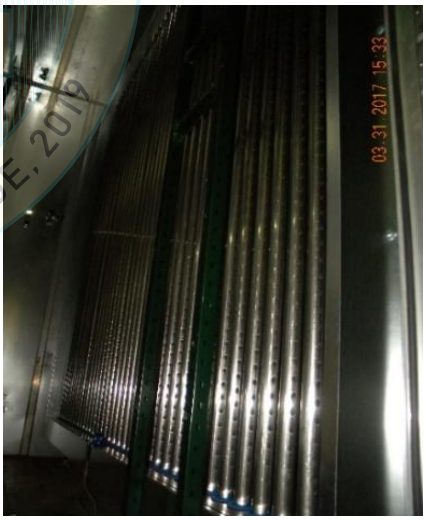
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
308.0	7.2	110.0	116.0	8.2	9.4	12.7

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



AHU was mounted onto the seismic table using (6) L 6"X 4" X 3/8" X 12" angle brackets (3 on each side - 6 total). Brackets were mounted to the AHU using (2) 1/2" - 13 grade bolts, washers, lock washers and nuts per each bracket. The brackets are welded to the seismic table using (4) 1/4" X 3" fillet welds. the unit was mounted to the AHU using Strut-rails (1-5/8" 12 gauge) placed vertically along each side and center of unit and secured with 3/8" dia. bolts and nyloc nuts spaced at 6" on center. Strut-rails secured to the AHU at roof and floor level using 3 sets of ¼" dia. self taping screws through ¼" thick angle plate. Bracing from unit wall was 1'-0" upstream of unit in test. 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

1800819-CR-001-R2

UUT 33

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	12” x 12” Ultra-Sorb MP (Duct Mounted)	***Serial Number:***	1251143-01-01

Product Construction Summary:

Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented horizontal to the ground and perpendicular to the duct air flow.

Options/Subcomponent Summary:

There are no other internal components.

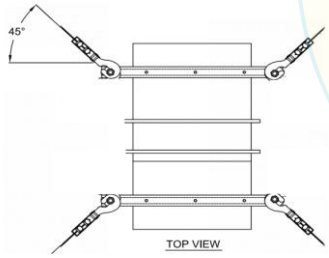
UUT Properties

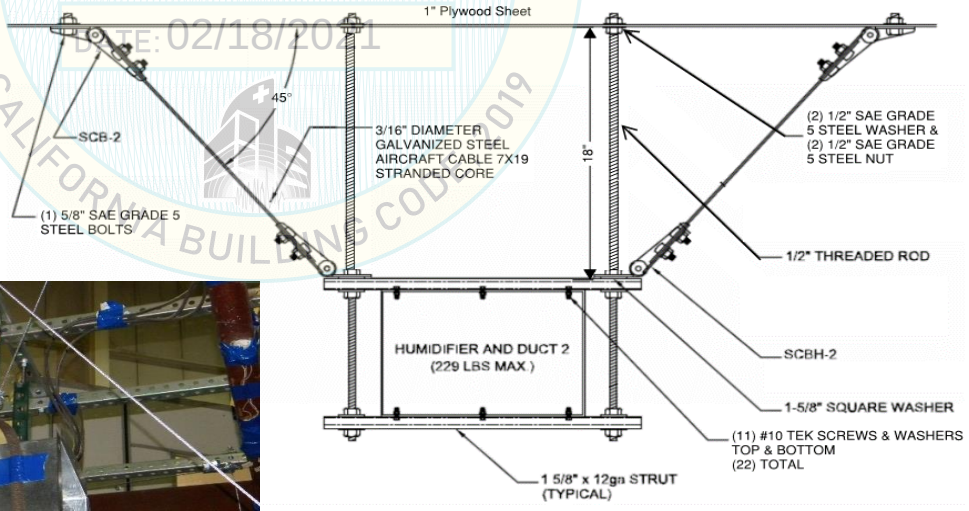
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
50.0	7.2	24.0	12.0	N/A	N/A	N/A

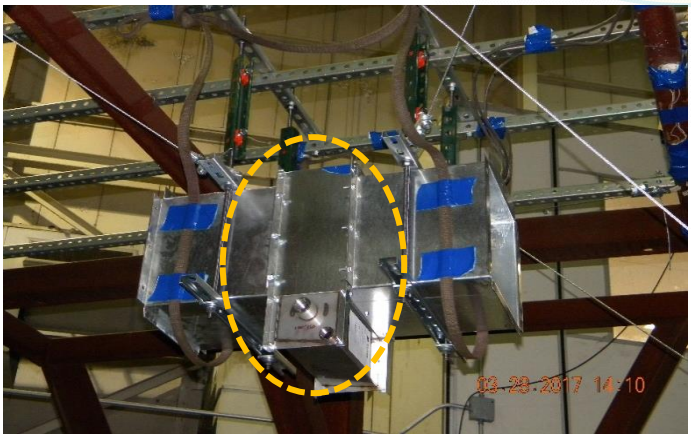
UUT Highest Passed Seismic Run Information

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:







Ultra-Sorb LV is attached to the duct along both vertical sides using an angle bracket with ½” dia. bolts: two (2) to the duct and three (3) to the Ultra-Sorb. The entire duct assembly is attached to ceiling fixture using Mason SCB/H Seismic Cable Bracing Assembly. 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

1800819-CR-001-R2

UUT 34

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	80” x 80” Ultra-Sorb MP (Duct Mounted)	***Serial Number:***	1251143-01-02

Product Construction Summary:

Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented horizontal to the ground and perpendicular to the duct air flow.

Options/Subcomponent Summary:

Horizontal dispersion tubes, Insulated piping, deflector plate, multi-baffle plate, internal drying tube, steam valve, and thermal-resin tubelet.

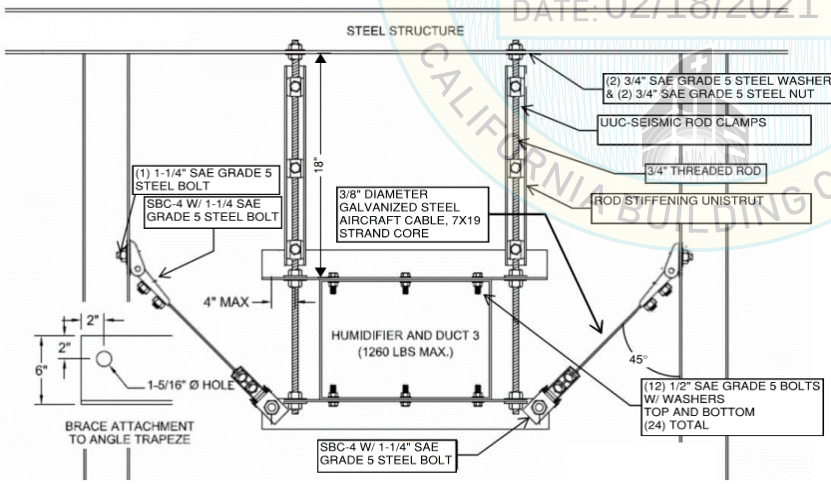
UUT Properties

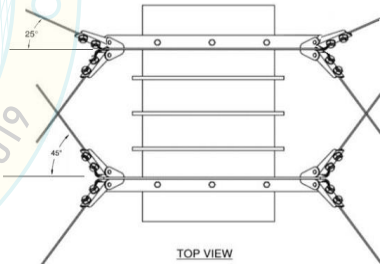
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
205.0	7.2	80.0	80.0	N/A	N/A	N/A

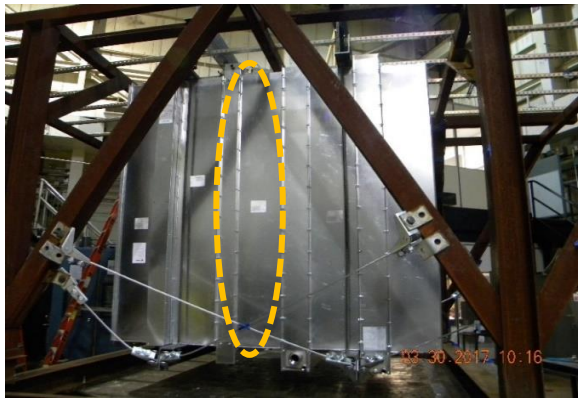
UUT Highest Passed Seismic Run Information

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:







Duct Mounted using ¼” dia. thru bolts along top and bottom spaced at 6” O.C. and ¼-20 self taping screws along sides spaced at 6” O.C. The entire duct assembly is supported using 1/8” SS angle hangers secured with ¼” thru bolts spaced at 6” and 3/4” dia. thread rod through both up to ceiling support fixture. Each corner is laterally supported with two (2) 3/8” dia. aircraft cables. 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

1800819-CR-001-R2

UUT 35

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: STS-800 SNC ***Serial Number:*** 1256563-02-01

Product Construction Summary:
Constructed of light gauge stainless steel mounted on "H" style carbon steel tubes with carbon steel plate seismic cross bracing (DriSteem Part #190735-009).

Options/Subcomponent Summary:
Teflon Stainless Steel heat exchanger. Attached 12x12x6 NEMA-12 control cabinet: Tyco: Transformer 120/208/240/480x24 copper winding; Marathon: Terminal 20A; Siemens: Contactor 35A; Ferraz Shawmut 35-60A 480V fuse; ABB: 480V 4A breaker; Control Products: Vapor-logic keypad and board. Drain valve, Fill Valve, Float Switch, Temp Sensor. with Vapor-logic interface controller attached to exterior of door panel.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
1250.0	55.2	30.3	29.8	> 33.3	29.0	> 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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

Unit attached to seismic support legs which are secured to the table platen using a total of eight (8) 3/8" dia. Grade 5 bolts; two at each leg. 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

1800819-CR-001-R2

UUT 36

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: 120"x120" Ultra Sorb LV (AHU Mounted) ***Serial Number:*** N/A

Product Construction Summary:
Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented vertical to the ground and perpendicular to the AHU air flow.

Options/Subcomponent Summary:
There are no other internal components.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
347	5	120	120	6.42	7.71	22.08

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

AHU was mounted onto the seismic table's interface frame using six (6) 5/8" SAE Grade 8 bolts. The base frame was mounted to the table using thirty-six (36) 1-1/4" SAE Grade 8 bolts.
Mounting details for the Ultra Sorb LV within the AHU are detailed on the next page.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

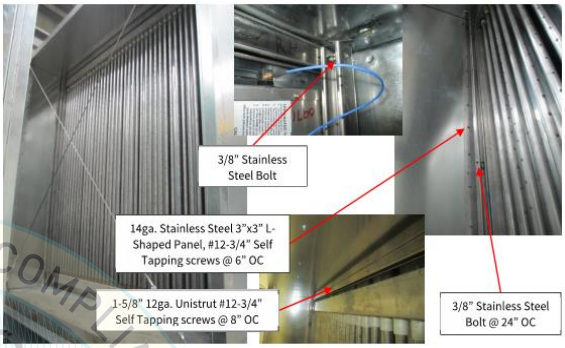
UNIT UNDER TEST (UUT) SUMMARY SHEET

1800819-CR-001-R2

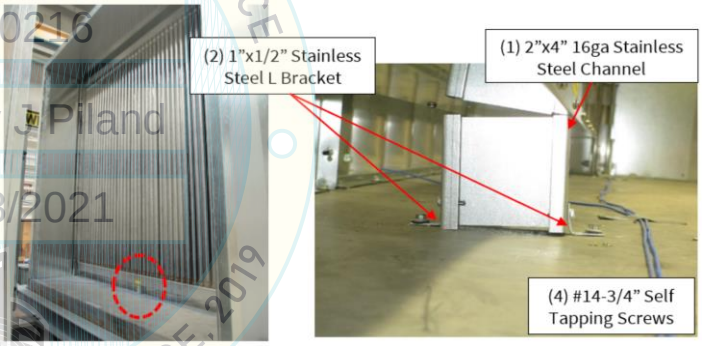
Manufacturer:	DriSteem Corporation		**UUT 36**
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	120"x120" Ultra Sorb LV (AHU Mounted)	***Serial Number:***	N/A

Seismic Upgrades Implemented:

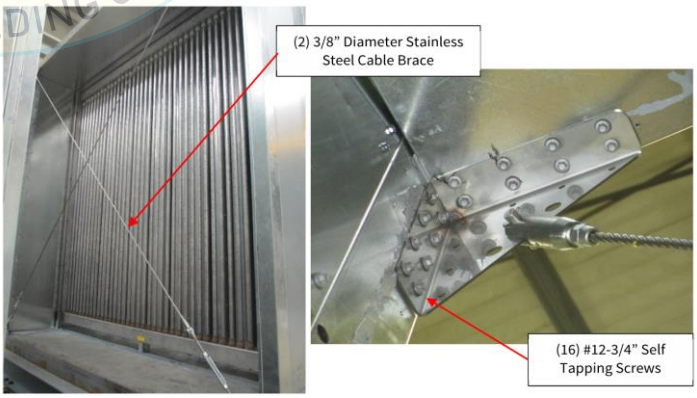
Attachment of the humidifier grid: 1-5/8" 12ga Unistrut member was attached to the ceiling with #12-3/4" self tapping screws at 8" O.C. The Unistrut member was attached to the vertical humidifier supports via 3/8"f stainless steel thru bolts. (2) 3"x3" L-shaped blank offs were added to the vertical Unistrut supports and wall panels. Blank offs were attached to the vertical Unistrut via 3/8"f stainless steel thru bolts at 24" O.C., and to the wall panel with #12-3/4" self tapping screws at 6" O.C.



Bearing Support of Humidifier Grid: (1) 16 ga. stainless steel 2"x4" channel that was cut to length to bear against the base structure and the bottom of the humidifier header tube. The channel was mounted to the floor using (4) #14-3/4" self tapping screws and (2) 1"x1/2" 12 ga. stainless steel L-brackets.



Additional Lateral Bracing: (2) 3/8" stainless steel braces fastened with (16) #12-3/4" self tapping screws per 12 ga. stainless steel mounting bracket.



UNIT UNDER TEST (UUT) SUMMARY SHEET

1800819-CR-001-R2

UUT 37

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: 40"x40" Ultra Sorb LV (AHU Mounted) ***Serial Number:*** N/A

Product Construction Summary:
Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented vertical to the ground and perpendicular to the AHU air flow.

Options/Subcomponent Summary:
There are no other internal components.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
122	5	40	40	11.0	6.4	28.7

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

AHU was mounted to the shake tables interface frame using six (6) 5/8" SAE Grade 8 bolts. The base frame was mounted to the table using thirty-six (36) 1-1/4" SAE Grade 8 bolts.
Mounting details for the Ultra Sorb LV within the AHU are detailed on the next page.
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

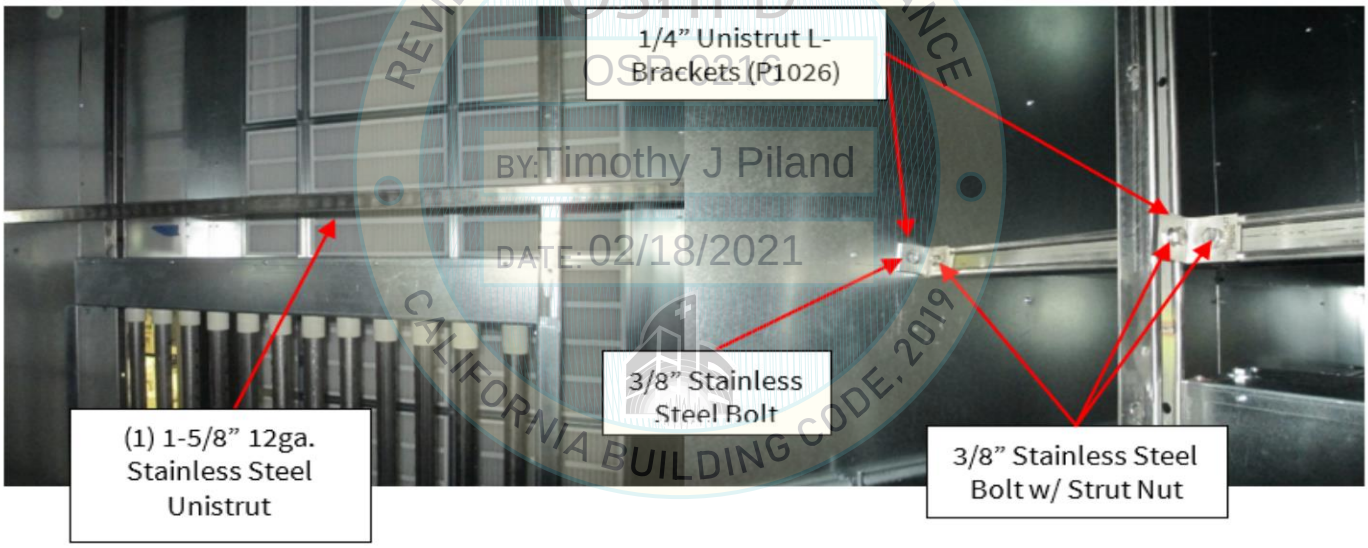
1800819-CR-001-R2

Manufacturer:	DriSteem Corporation		**UUT 37**
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	40"x40" Ultra Sorb LV (AHU Mounted)	***Serial Number:*** N/A	

Seismic Upgrades Implemented:

UUT37 was mounted within the AHU and seismic upgrades consisted of mounting a 1-5/8” stainless steel 12 ga. Unistrut (P1000) cut to the width of the unit and mounted to the wall and vertical Unistrut support of the humidifier. The wall and Unistrut interface connection consisted of a 3/8” stainless steel bolt and 1/4” stainless steel Unistrut L-bracket (P1026), while the Unistrut to Unistrut connection consisted of a 3/8” stainless steel bolt, strut nut, and 1/4” Unistrut L-bracket (P1026).

UUT37 was mounted to the Unistrut with 3/8" bolts, nyloc nuts and washers at 24" intervals and screwed to the wall with #12 self-drilling screws.



UNIT UNDER TEST (UUT) SUMMARY SHEET

1800819-CR-001-R2

UUT 38

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: 107"x102" Ultra Sorb LV (AHU Mounted) ***Serial Number:*** N/A

Product Construction Summary:
Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented vertical to the ground and perpendicular to the AHU air flow.

Options/Subcomponent Summary:
There are no other internal components.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
279	5	107	102	10.1	10.0	25.1

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

AHU was base mounted- rigid onto the seismic table interface frame using twelve (12) 3/4" SAE Grade 8 bolts.
Mounting details for the Ultra Sorb LV within the AHU are detailed on the next page.
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

1800819-CR-001-R2

Manufacturer:	DriSteem Corporation		**UUT 38**
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	107"x102" Ultra Sorb LV (AHU Mounted)	***Serial Number:*** N/A	

Seismic Upgrades Implemented:

The seismic upgrade for UUT10 consisted of mounting a 16ga 2”x4” stainless steel channel that was cut to length to bear against the edge of the drain pan and the bottom of the humidifier header tube. The channel was mounted to the blank off using (2) #12-3/4” self tapping screws.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1800819-CR-001-R2

UUT 39

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: 120"x120" Ultra Sorb LH (AHU Mounted) ***Serial Number:*** N/A

Product Construction Summary:
Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented horizontal to the ground and perpendicular to the AHU air flow.

Options/Subcomponent Summary:
There are no other internal components.

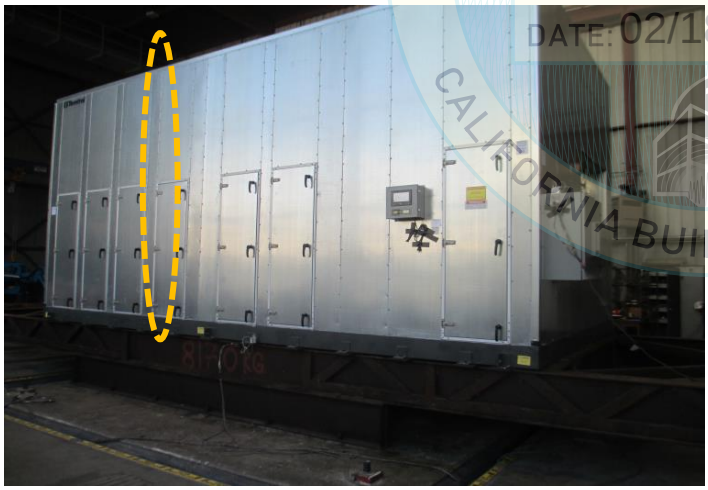
UUT Properties

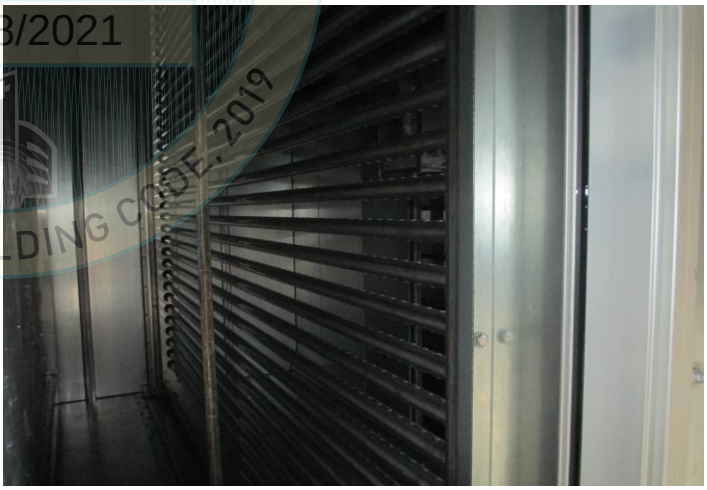
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
347	5	120	120	15.4	29.3	21.7

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:





The AHU was mounted to an I-beam test frame using twenty-four (24) 3/4" SAE grade 8 bolts with flat washers (spaced at 24" OC max along the long directions).
Strut-rails (1-5/8" 12 gauge) placed vertically along each side and center of unit and secured with 3/8” dia. bolts spaced at 6” on center. Strut-rails secured to the AHU at roof and floor level using 3 sets of ¼” dia. self taping screws through ¼” thick angle plate.
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

1800819-CR-001-R2

UUT 40

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: 12"x12" Ultra Sorb MP (AHU Mounted) ***Serial Number:*** N/A

Product Construction Summary:
Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented vertical to the ground and perpendicular to the AHU air flow.

Options/Subcomponent Summary:
There are no other internal components.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
30	7.2	12	12	15.4	29.3	21.7

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The AHU was mounted to an I-beam test frame using twenty-four (24) 3/4" SAE grade 8 bolts with flat washers (spaced at 24" OC max along the long directions).
Strut-rails (1-5/8" 12 gauge) placed vertically along each side and center of unit and secured with 3/8” dia. bolts spaced at 6” on center. Strut-rails secured to the AHU at roof and floor level using 3 sets of ¼” dia. self taping screws through ¼” thick angle plate.
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

1800819-CR-001-R2

UUT 41

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: 110"x116" Ultra Sorb MP (AHU Mounted) ***Serial Number:*** N/A

Product Construction Summary:
Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented vertical to the ground and perpendicular to the AHU air flow.

Options/Subcomponent Summary:
There are no other internal components.

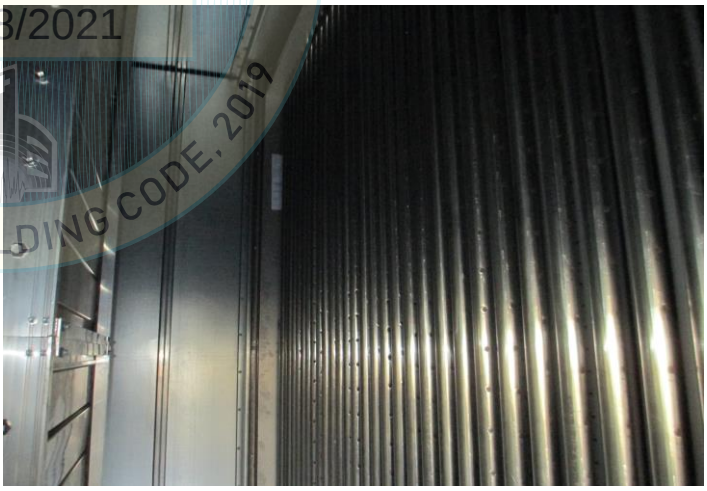
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
308	7.2	110	116	15.4	29.3	21.7

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



The AHU was mounted to an I-beam test frame using twenty-four (24) 3/4" SAE grade 8 bolts with flat washers (spaced at 24" OC max along the long directions).
Strut-rails (1-5/8" 12 gauge) placed vertically along each side and center of unit and secured with 3/8” dia. bolts spaced at 6” on center. Strut-rails secured to the AHU at roof and floor level using 3 sets of ¼” dia. self taping screws through ¼” thick angle plate.
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

1800819-CR-001-R2

UUT 42

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: 110"x116" Ultra Sorb XV (AHU Mounted) ***Serial Number:*** N/A

Product Construction Summary:
Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented vertical to the ground and perpendicular to the AHU air flow.

Options/Subcomponent Summary:
There are no other internal components.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
352	7.2	110	116	15.4	29.3	21.7

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

The AHU was mounted to an I-beam test frame using twenty-four (24) 3/4" SAE grade 8 bolts with flat washers (spaced at 24" OC max along the long directions).
Strut-rails (1-5/8" 12 gauge) placed vertically along each side and center of unit and secured with 3/8” dia. bolts spaced at 6” on center. Strut-rails secured to the AHU at roof and floor level using 3 sets of ¼” dia. self taping screws through ¼” thick angle plate.
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

1800819-CR-001-R2

UUT 43

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: Ultra-Sorb LH ***Serial Number:*** 1281776-06-01

Product Construction Summary:
Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented horizontal to the ground.

Options/Subcomponent Summary:
There are no other internal components.

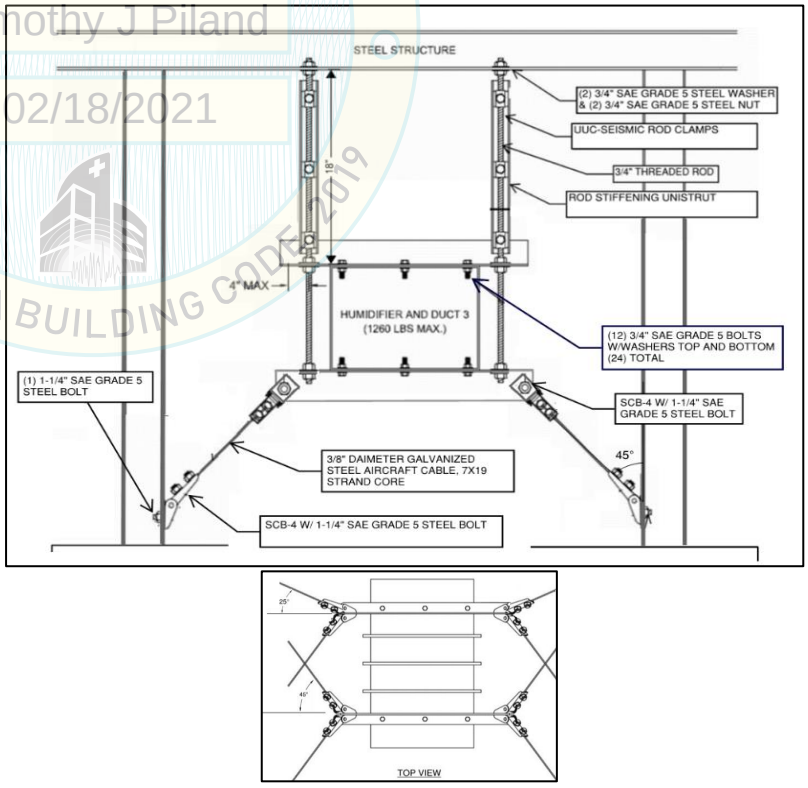
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
211.25	5	80	80	N/A	N/A	N/A

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



Duct mounted using twenty (20) #10 self tapping screws at vertical mounting junctions, screws 6" O.C. Unit mounted to horizontal mounting junction using twenty-one (21) 1/4" ø thru bolts spaced at 6" O.C.
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

1800819-CR-001-R2

Manufacturer:	DriSteem Corporation	**UUT 44**	
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	Ultra-Sorb LV	***Serial Number:***	1281776-05-01

Product Construction Summary:

Constructed of a light gauge stainless steel header, sill and 1.5" dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented vertical to the ground.

Options/Subcomponent Summary:

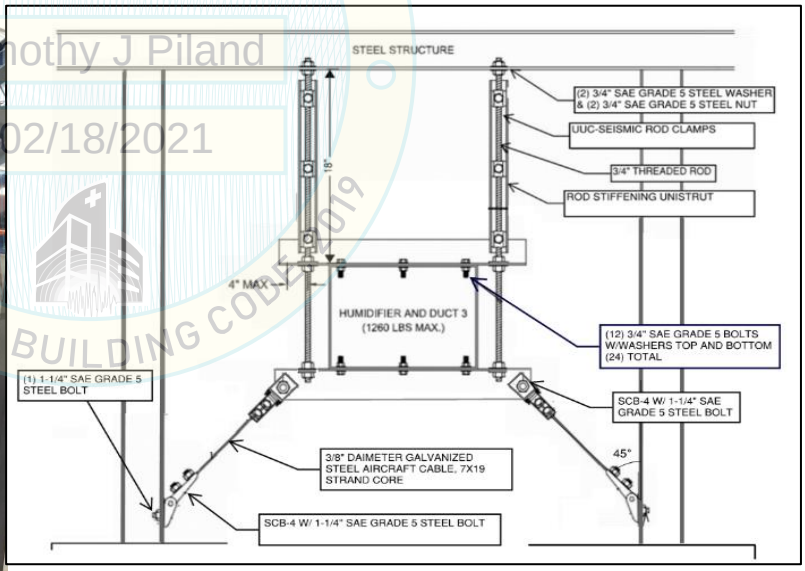
There are no other internal components.

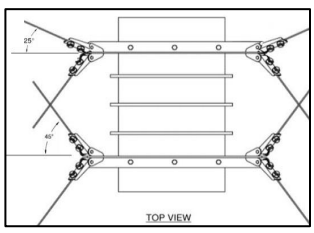
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
223.5	5	80	80	N/A	N/A	N/A

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:





Duct mounted using twenty (20) #10 self tapping screws at horizontal mounting junctions, screws 6" O.C. Unit mounted to vertical mounting junction using twenty-one (21) 1/4" ø thru bolts spaced at 6" O.C.

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

1800819-CR-001-R2

UUT 45

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	Ultra-Sorb XV	***Serial Number:***	1281776-07-01

Product Construction Summary:

Constructed of a light gauge stainless steel header, sill and 1.5" dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented vertical to the ground.

Options/Subcomponent Summary:

There are no other internal components.

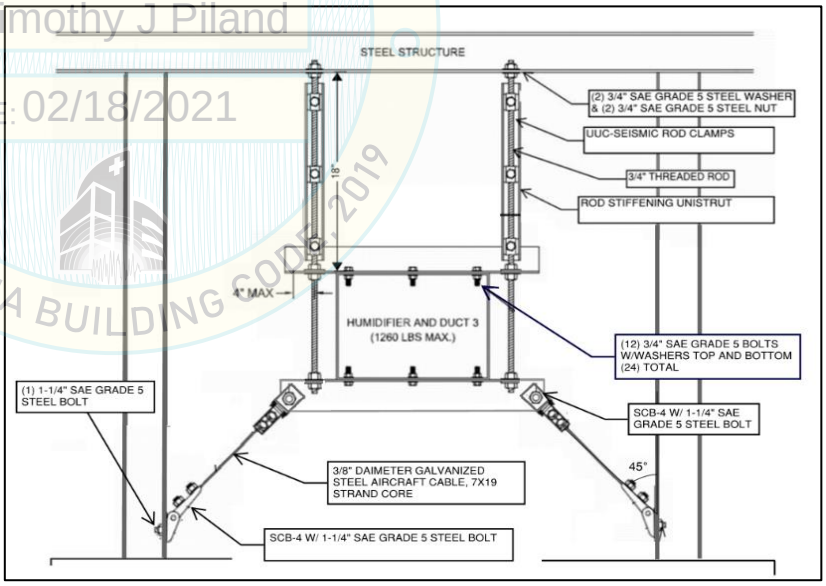
UUT Properties

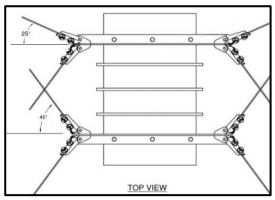
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
261.4	7.2	80	80	N/A	N/A	N/A

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:





Duct mounted using twenty-one (21) #10 self tapping screws at horizontal mounting junctions, screws 6" O.C. Unit mounted to vertical mounting junction using twenty-one (21) 1/4" ø thru bolts spaced at 6" O.C.

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

1800819-CR-001-R2

UUT 46

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	Ultra-Sorb MP	***Serial Number:***	1281776-08-01

Product Construction Summary:

Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are oriented vertical to the ground.

Options/Subcomponent Summary:

There are no other internal components.

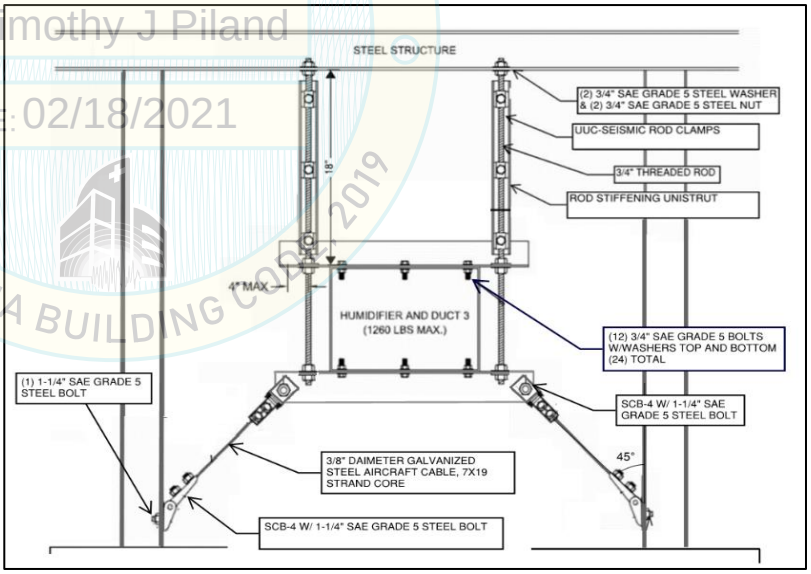
UUT Properties

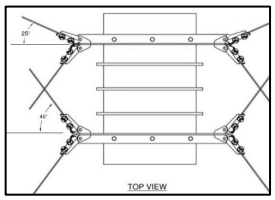
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
232.4	7.2	80	80	N/A	N/A	N/A

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:





Duct mounted using twenty-seven (27) #10 self tapping screws on top horizontal mounting junctions and twenty (20) #10 self tapping screws on bottom horizontal mounting junctions. Unit mounted to vertical mounting junction (flange) using twenty-one (21) 1/4" ø thru bolts spaced at 6" O.C.

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

1800819-CR-001-R2

UUT 47

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	Ultra-Sorb MP	***Serial Number:***	1281776-08-01

Product Construction Summary:

Constructed of a light gauge stainless steel header, sill and 1.5” dia. stainless steel tubes with nozzles punched along their length. The tubes are orientedverticalto the ground.

Options/Subcomponent Summary:

There are no other internal components.

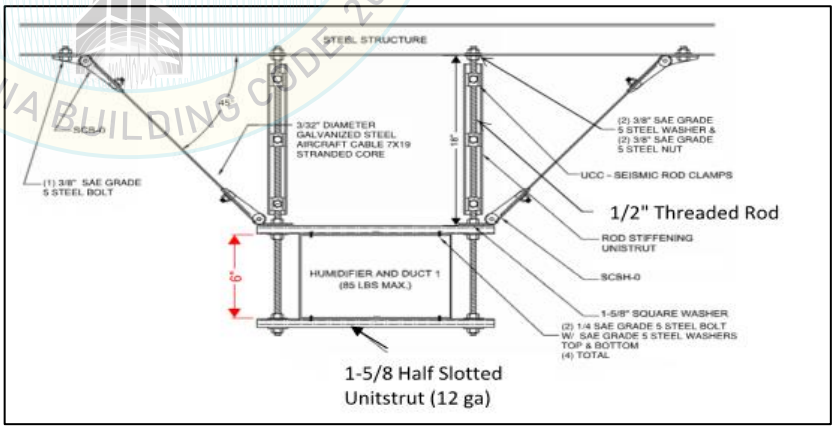
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
29.5	7.2	12	12	N/A	N/A	N/A

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



Unit mounted with 1/2" threaded rod, rod stiffening Unistrut, and Mason SCB-0/SCBH-0. 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

1800819-CR-001-R2

UUT 48

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	GTS LX-50 Indoor w/ Enclosure	***Serial Number:***	1281776-01-01

Product Construction Summary:

Constructed of carbon steel base and aluminum with carbon steel enclosure.

Options/Subcomponent Summary:

Tank Weld Flange (600436-10x), Steam Distributions (250540-00x), Primary Heat Exchangers (600553-076, 600533-075), Secondary Heat Exchangers (600373), Burner Assembly (600445), Probe (184315-003), Ignition Control (405811-011), Pressure Switch (127601-001), Thermal Cut-Out (409560-001), Tank Temperature Sensor (405763), Drain Sensor (406774-002), Flue Sensor (600430), Fill Assembly (600432-001), Drain Manifold-SS (600024), Drain Assembly (600199-100), Control Cabinet (600284-001)

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
326.5	36	27.4	57	12.1	12.6	19.5

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

UUT base mounted-rigid to shake table with two (2) 3/8" grade 8 bolts and washers in each DriSteem seismic angle (PN: 600783). Each of the two seismic angle attached to the sides of the unit with two (2) 1/4"-20 grade 5 integral washer self tapping screws. 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

1800819-CR-001-R2

UUT 49

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	GTS LX-50 Outdoor w/ Enclosure	***Serial Number:***	1281776-02-01

Product Construction Summary:

Constructed of carbon steel base and aluminum with carbon steel enclosure.

Options/Subcomponent Summary:

Tank Weld Flange (600436-10x), Primary Heat Exchangers (600553-076, 600533-075), Heater (600390), Burner Assembly (600445), Probe (184315-003), Ignition Control (405811-011), Pressure Switch (127601-001), Thermal Cut-Out (409560-001), Tank Temperature Sensor (405763), Drain Sensor (406774-002), Flue Sensor (600430), Fill Assembly (600432-001), Drain Manifold-Aluminum (600024-100), Drain Assembly (600199-103), Control Cabinet (600284-002)

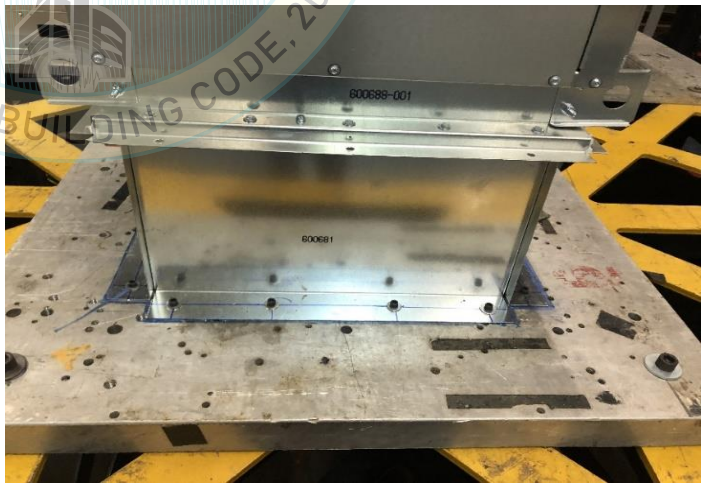
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
578.5	36	27.4	57	17.72	5.27	>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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



UUT mounted to DriSteem curb (PN: 600683-001). A bead of Dowsil 732 RTV (PN: 732-300ML CLR MIL-A-46106) was placed on the top of the curb before the unit was attached with twenty-two (22) 1/4"-20 bolts and washer on both sides of the curb-unit junction. Five (5) bolts were used on the shorter side of the unit space 6" O.C. "and Six (bolts) were used on the long side of the unit spaced 6" O.C. Curb mounted to the shake table with sixteen 3/8" Grade 8 bolts and washers, four (4) per side of unit. 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

1800819-CR-001-R2

UUT 50

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	GTS LX-50 Indoor w/o Enclosure	***Serial Number:***	1281776-01-01

Product Construction Summary:

Constructed of carbon steel base and aluminum and carbon steel frame.

Options/Subcomponent Summary:

Sub Panel Cover (600105), Flue adaptor bracket (127593-001), Tank Weld Flange (600436-10x), Steam Distributions (250540-00x), Primary Heat Exchangers (600533-075, 600533-76), Secondary Heat Exchangers (600373), Burner Assembly (600445), Probe (184315-003), Ignition Control (405811-011), Pressure Switch (127601-001), Thermal Cut-Out (409560-001), Tank Temperature Sensor (405763), Drain Sensor (406774-002), Flue Sensor (600430), Fill Assembly (600432-001), Drain Manifold-SS (600024), Drain Assembly (600199-100), Control Cabinet (600284-001)

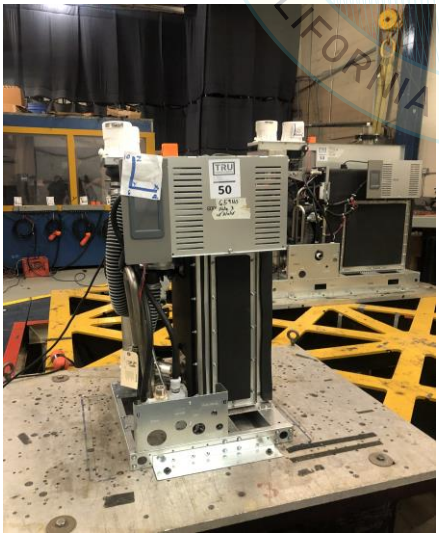
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
310	23.3	23.3	43	4.98	7.52	7.58

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:



UUT base mounted-rigid to shake table with two (2) 3/8" grade 8 bolts and washers in each DriSteem seismic angle (PN: 600783). Each of the two seismic angle attached to the sides of the unit with two (2) 1/4"-20 grade 5 integral washer self tapping screws. 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

1800819-CR-001-R2

UUT 51

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	GTS LX-600 Indoor w/ Enclosure	***Serial Number:***	1281776-04-01

Product Construction Summary:

Constructed of carbon steel base and aluminum with carbon steel enclosure.

Options/Subcomponent Summary:

Tank Weld Flange (600087-xxx), Primary Heat Exchangers (600088-001, 600088), Secondary Heat Exchangers (600190), Burner Assembly (600396), Probe (184315-003), Ignition Control (405811-011), Pressure Switch (127601-001), Thermal Cut-Out (409560-001), Tank Temperature Sensor (405763), Drain Sensor (406774-002), Flue Sensor (600430), Fill Assembly (600432-001), Drain Manifold-(600024), Drain Assembly (600199-100), Control Cabinet (600562-001)

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
1338.5	57.4	39.1	62	9.00	8.99	26.11

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

UUT base mounted-rigid to shake table with five (5) 3/8" grade 8 bolts and square washers in each DriSteem seismic angle (PN: 600781). Angle attached to unit with four (4) 1/4"-20 grade 5 integral washer self tapping screws. 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

1800819-CR-001-R2

UUT 52

Manufacturer:	DriSteem Corporation		
Model Line:	VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb		
Model Number:	GTS LX-600 Outdoor w/ Enclosure	***Serial Number:***	1281776-03-01

Product Construction Summary:

Constructed of carbon steel base and aluminum with carbon steel enclosure.

Options/Subcomponent Summary:

Tank Weld Flange (600295-xxx), Steam Distributions (205500-0xx, 205500-004), Primary Heat Exchangers (600088-001, 600088), Secondary Heat Exchangers (600190), Heater (600390), Burner Assembly (600396), Probe (184315-003), Ignition Control (405811-011), Pressure Switch (127601-001), Thermal Cut-Out (409560-001), Tank Temperature Sensor (405763), Drain Sensor (406774-002), Flue Sensor (600430), Fill Assembly (600432-001), Drain Manifold-(600024), Drain Assembly (600199-103), Control Cabinet (600562-002)

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
1795.5	57.4	39.1	62	7.05	7.82	26.65

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

UUT mounted to DriSteem curb (PN: 600683-004). A bead of Dowsil 732 RTV (PN: 732-300ML CLR MIL-A-46106) was placed on the top of the curb before the unit was attached with thirty-four (34) 1/4"-20 bolts and washer on both sides of the curb-unit junction. Seven (7) bolts were used on the shorter side of the unit space 6" O.C. "and ten (10) bolts were used on the long side of the unit spaced 6" O.C. Curb mounted to the shake table with sixteen 3/8" Grade 8 bolts and washers, four (4) per side of unit. 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

1800819-CR-001-R2

UUT 53

Manufacturer: DriSteem Corporation
Model Line: VLC, STS, VM, XTP, GTS LX, Mini-Bank, Ultra-Sorb
Model Number: GTS LX-600 Indoor w/o Enclosure ***Serial Number:*** 1281776-04-01

Product Construction Summary:
Constructed of carbon steel base and aluminum.

Options/Subcomponent Summary:
Sub Panel Cover(600105), Flue adaptor bracket (600133), Tank Weld Flange (60087-xxx), Primary Heat Exchangers (600088-001, 600088), Secondary Heat Exchangers (600190), Burner Assembly (600396), Probe (184315-003), Ignition Control (405811-011), Pressure Switch (127601-001), Thermal Cut-Out (409560-001), Tank Temperature Sensor (405763), Drain Sensor (406774-002), Flue Sensor (600430), Fill Assembly (600432-001), Drain Manifold-(60024), Drain Assembly (600199-100), Control Cabinet (600562-001)

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
1286	56	34	53	8.52	8.14	8.56

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 (2010)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test Mounting Details:

UUT base mounted-rigid to shake table with five (5) 3/8" grade 8 bolts and square washers in each DriSteem seismic angle (PN:600781). Mounting angle attached to unit with four (4) 1/4"-20 grade 5 integral washer self tapping screws. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

SEISMIC

Certification Option

Installation Manual

driSteem

Warnings and cautions

⚠ WARNING	CAUTION
Indicates a hazardous situation that could result in death or serious injury if instructions are not followed.	Indicates a hazardous situation that could result in damage to or destruction of property if instructions are not followed.

mc_051508_1145

⚠ WARNING

Read all warnings and instructions

This page provides important safety instructions; it is intended to supplement — not replace — the humidifier's Installation, Operation, and Maintenance Manual (IOM). Read the IOM that was provided with the humidifier before performing service or maintenance procedures on any part of the system other than installing the Seismic Certification option. Failure to follow all warnings and instructions could produce the hazardous situations described here and in the IOM, resulting in property damage, personal injury, or death.

If the IOM is missing, go to www.dristeem.com to download a replacement.

Hot surfaces and hot water

Steam humidification systems have extremely hot surfaces, and water in tanks, electrode cylinders, steam pipes, and dispersion assemblies can be as hot as 212 °F (100 °C). To avoid severe burns, allow the entire humidification system to cool.

Follow the cool-down procedure in the humidifier's IOM before performing service or maintenance procedures on any part of the system.

mc_071608_0911

Shut down the energy source

Before performing service or maintenance procedures on any part of the humidification system, verify that all energy sources are off. Energy sources can be electricity, gas, steam, or hot liquid. Failure to shut down the energy source could result in carbon monoxide poisoning, fire, explosion, electrical shock, and other hazardous conditions. These hazardous conditions could cause property damage, personal injury, or death.

Contact with energized circuits can cause property damage, severe personal injury or death as a result of electrical shock or fire. Do not remove the shroud/cover, electrical panel cover/door, access panels, or heater terminal cover until electrical power is disconnected.

Follow the shutdown procedure in the humidifier's IOM before performing service or maintenance procedures on any part of the system.

mc_050808_1551

Electrical shock hazard

If the humidifier starts up at a call for humidity during maintenance, severe bodily injury or death from electrical shock could occur. To prevent such start-up, follow the procedure below before performing service or maintenance procedures on this humidifier (after the tank has cooled down and drained):

1. Use the Vapor-logic keypad to change the control mode to Standby.
2. Shut off all electrical power to the humidifier using the field-installed fused disconnect, and lock all power disconnect switches in the OFF position.
3. Close the field-installed manual water supply shut-off valve.

mc_050808_1540

⚠ CAUTION

Damage from hot discharge water

Discharge water can be as hot as 212 °F (100 °C) and can damage the drain plumbing.

If the humidifier is equipped with a water tempering device such as a DriSteem Drane-kooler™, it needs fresh make-up water in order to function properly. Make sure the water supply to the Drane-kooler remains open during draining.

If the humidifier is not equipped with a water tempering device, allow the tank to cool before opening the drain valve.

mc_111308_1345

Table of contents

DriSteem humidification systems listed in this manual meet OSHPD Special Seismic Certification Preapproval (OSP) requirements for healthcare facilities in California. These requirements also satisfy IBC 2015 and ICC-ES AC-156 test criteria throughout North America.

DriSteem's Seismic Certification option validates that the product meets OSP criteria for preapproval. It is available for specific configurations of STS, Vapormist, Vaporstream, XT (humidifiers and steam blowers), Mini-bank, and Ultra-sorb.

The OSHPD and IBC certificates are available on www.dristeem.com/home.

STS-25 through STS-100 floor mount installation drawing

⚠ WARNING

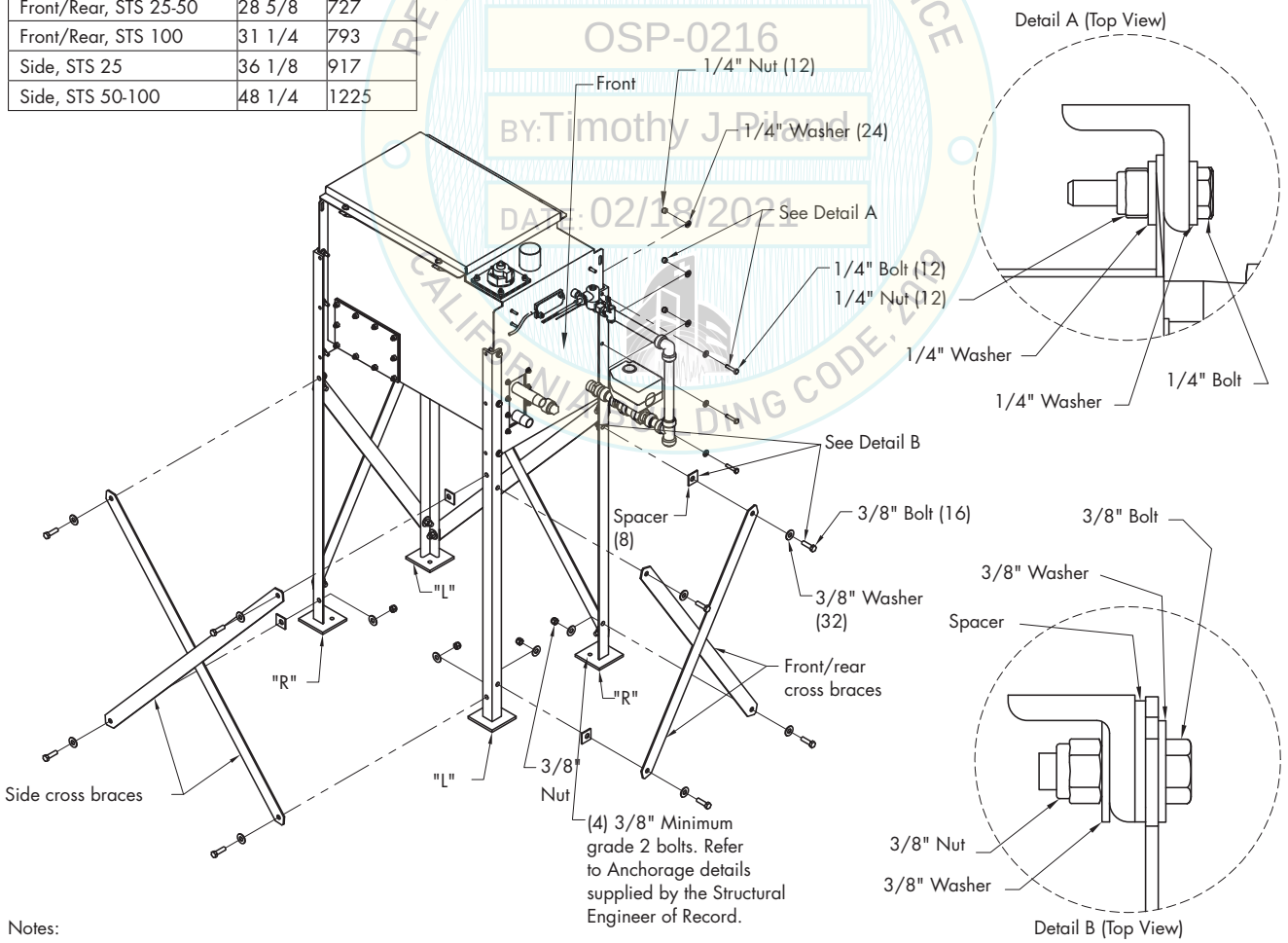
Mount humidifier per the instructions in this manual and to a structurally stable surface. Improper mounting of the humidifier can cause it to fall or to tip, resulting in severe personal injury or death.

mc_020212_1059

Refer to the STS IOM for all other installation, operation, and maintenance instructions. Complete the seismic installation as shown in Figure 2-1 and the installation steps on the next page.

FIGURE 2-1: STS-25 THROUGH STS-100 FLOOR MOUNT SEISMIC CERTIFICATION OPTION INSTALLATION

Crossbrace	Length	
	in	mm
Front/Rear, STS 25-50	28 5/8	727
Front/Rear, STS 100	31 1/4	793
Side, STS 25	36 1/8	917
Side, STS 50-100	48 1/4	1225



Notes:

1. The height from floor to bottom of tank is 32 1/8 in (815 mm).
2. All hardware shown supplied by DriSteem.
3. All cabinet mounted keypads require captive bracket. All controllers require captive standoffs.

DM-11911

STS-25 through STS-100 floor mount installation steps

1. Attach legs to tank assembly. See Detail A in Figure 2-1.
   a. Identify "Front Right" and "Back Left" leg weldments. The side of the humidifier with the drain assembly and heat exchanger connections is the front. The two leg weldments with "R" marked on the bottom of the feet are used in these locations. Holding the leg weldments so that the angle iron is in the shape of an "L" when looking at it from the top, these have the fourth hole closer to the third hole on the horizontal part of the "L". Reference Figure 2-1 for proper locations.
   b. The other two weldments, marked "L" on the bottom of the feet, are used in the "Front Left" and "Back Right" locations. See Figure 2-1 for back view callout. Callout will help orientation during installation.
   c. Use supplied 1/4"-20 x 1/4" bolts to attach leg weldments to tank. Use all three bolt locations on all legs.
   d. Leave these bolts loose until after cross braces are completely assembled and tightened in step 2.
2. Attach cross braces to legs. See Detail B in Figure 2-1.
   a. Attach cross braces to legs as shown. Use three square spacers on each side of the outer cross braces to prevent bowing.
   b. Torque all cross brace bolts to 30 ft-lbs (40 N-m).
3. Torque all leg bolts to 8 ft-lbs (10 N-m).
4. Attach legs to support structure using all four bolt hole locations and in accordance to instructions by the Structural Engineer of Record.
5. Refer to the STS IOM for all other installation, operation, and maintenance instructions.

⚠ WARNING

Mount humidifier per the instructions in this manual and to a structurally stable surface. Improper mounting of the humidifier can cause it to fall or to tip, resulting in severe personal injury or death.
mc_020212_1059

STS-200 through STS-800 floor mount installation drawing

⚠ WARNING

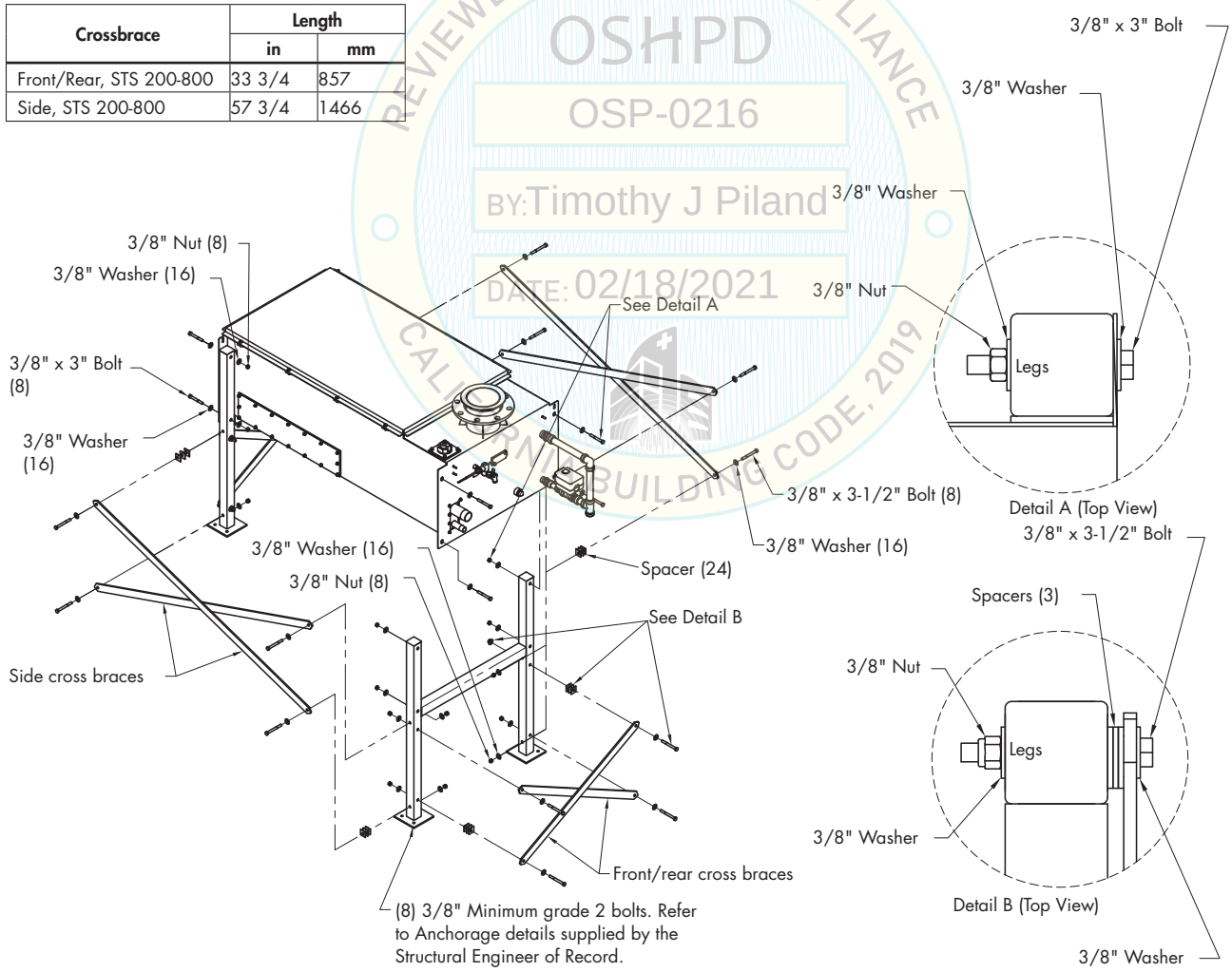
Mount humidifier per the instructions in this manual and to a structurally stable surface. Improper mounting of the humidifier can cause it to fall or to tip, resulting in severe personal injury or death.

mc_020212_1059

Refer to the Steam-to-Steam (STS® humidifier) IOM for all other installation, operation, and maintenance instructions. Complete the seismic installation as shown in Figure 4-1 and the installation steps on the next page.

FIGURE 4-1: STS-200 THROUGH STS-800 FLOOR MOUNT SEISMIC CERTIFICATION OPTION INSTALLATION

Crossbrace	Length	
	in	mm
Front/Rear, STS 200-800	33 3/4	857
Side, STS 200-800	57 3/4	1466



Notes:

1. The height from floor to bottom of tank is 23 7/8 in (606 mm).
2. All hardware shown supplied by DriSteem.
3. All cabinet mounted keypads require captive bracket. All controllers require captive standoffs.

DM-11912

STS-200 through STS-800 floor mount installation steps

1. Attach legs to tank assembly. See Detail A in Figure 4-1.
   a. Use supplied 3/8" x 3" bolts to attach leg weldments to tank. Use both bolt locations on all legs.
   b. Leave these bolts loose until after cross braces are completely assembled and tightened in step 2.
2. Attach cross-braces to legs. See Detail B in Figure 4-1.
   a. Use supplied 3/8" x 31/2" bolts to attach cross braces to legs as shown. Use three square spacers on each side of the outer cross braces to prevent bending.
   b. Torque all cross-brace bolts to 30 ft-lbs (40 N-m).
3. Torque all leg bolts to 30 ft-lbs (40 N-m).
4. Attach legs to support structure using all eight bolt hole locations and in accordance to instructions by the Structural Engineer of Record.
5. Refer to the STS IOM for all other installation, operation, and maintenance instructions.

⚠ WARNING

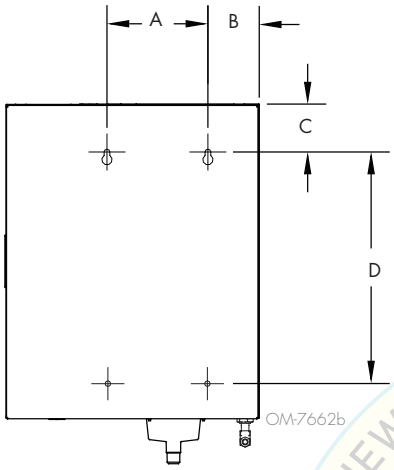
Mount humidifier per the instructions in this manual and to a structurally stable surface. Improper mounting of the humidifier can cause it to fall or to tip, resulting in severe personal injury or death.

mc_020212_1059

Mounting

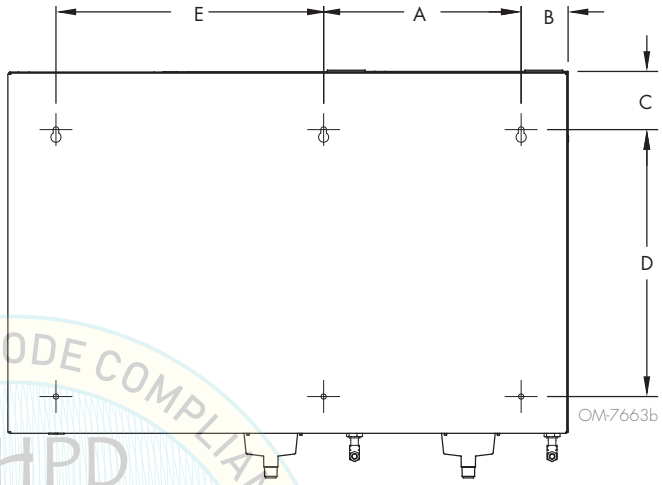
FIGURE 6-1: XT SERIES HUMIDIFIER SEISMIC CERTIFICATION OPTION WALL MOUNT INSTALLATION

Models XTS / XTP 002 through 048



Mounting hardware to be (four) 3/8" diameter grade 2 (minimum) bolts with washers, lock washers, and nuts.

Models XTP 050 through 096



Mounting hardware to be (six) 3/8" diameter grade 2 (minimum) bolts with washers, lock washers, and nuts.

Note: Refer to the anchorage details supplied by the Structural Engineer of Record

Table 6-1:
XT Series humidifier mounting keyhole dimensions

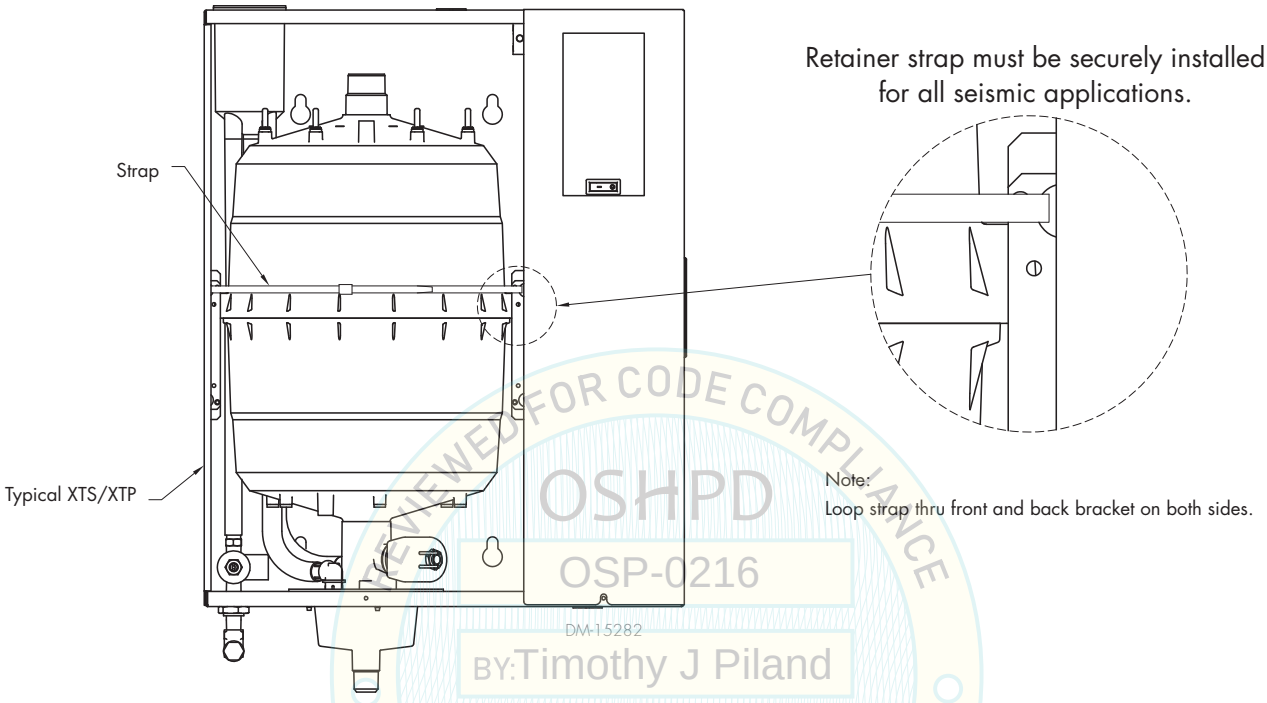
Dimension	Model XTS / XTP							
	002, 003, 006		010, 017		025, 033, 042, 048		050*, 067*, 083*, 096*	
	inches	mm	inches	mm	inches	mm	inches	mm
A	3.9	100	7.1	180	7.5	190	14.0	356
B	3.0	75	3.6	92	3.4	86	3.3	84
C	3.2	81	4.4	112	4.1	104	4.1	104
D	14.0	355	16.3	414	18.9	480	18.9	480
E	—	—	—	—	—	—	19.0	483

* Model XTP only

mc_051712_1227

Mounting

FIGURE 7-1: SEISMIC CERTIFICATION RETAINING STRAP INSTALLATION



Vaporstream: Floor mount installation drawing

⚠ WARNING

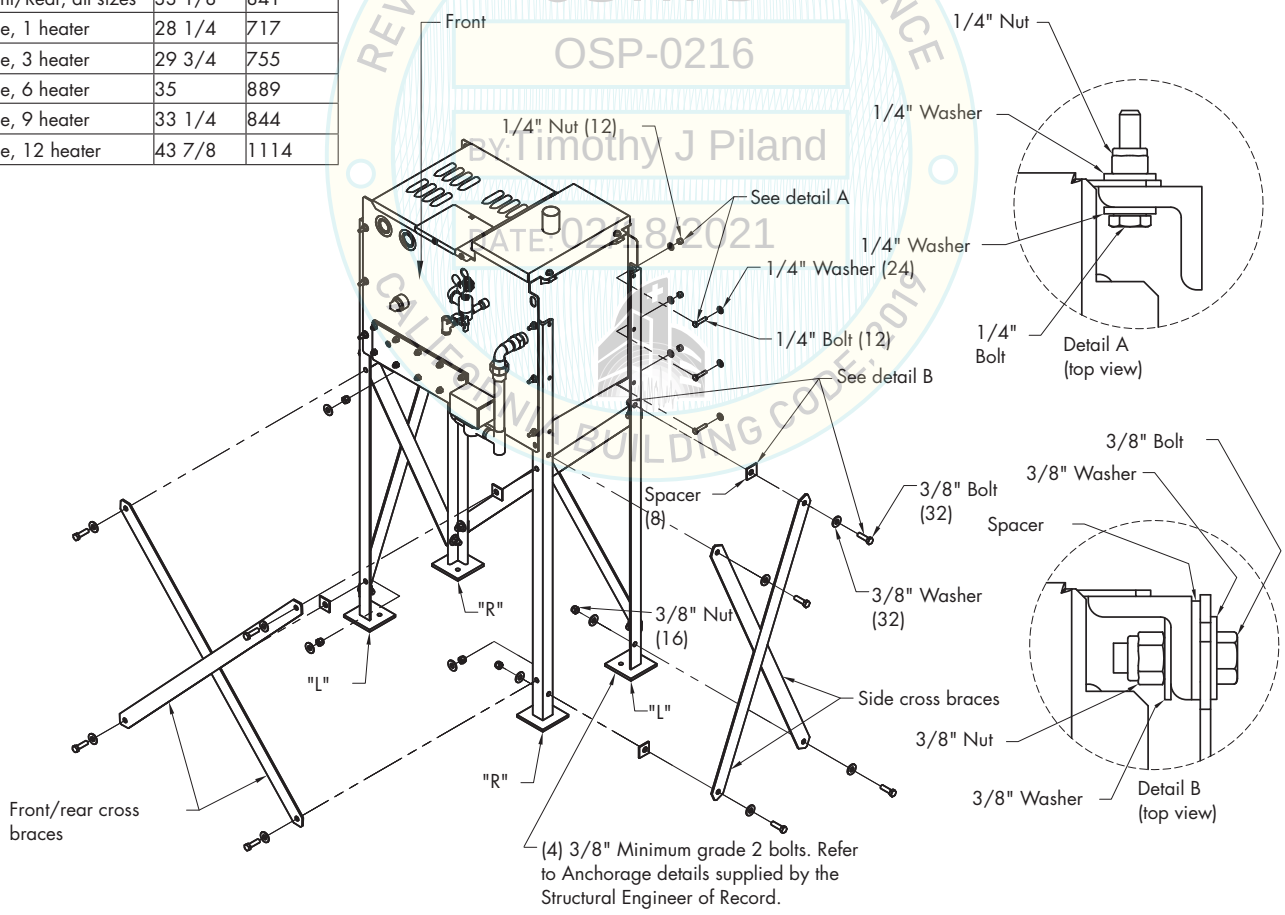
Mount humidifier per the instructions in this manual and to a structurally stable surface. Improper mounting of the humidifier can cause it to fall or to tip, resulting in severe personal injury or death.

mc_020212_1059

Refer to the Vaporstream® IOM for all other installation, operation, and maintenance instructions. Complete the seismic installation as shown in Figure 8-1 and the installation steps on the next page.

FIGURE 8-1: VAPORSTREAM FLOOR MOUNT SEISMIC CERTIFICATION OPTION INSTALLATION

Crossbrace	Length	
	in	mm
Front/Rear, all sizes	33 1/8	841
Side, 1 heater	28 1/4	717
Side, 3 heater	29 3/4	755
Side, 6 heater	35	889
Side, 9 heater	33 1/4	844
Side, 12 heater	43 7/8	1114



Notes:

1. The two leg weldments with "R" marked on the bottom of the feet are used in these locations. Holding the leg weldments so that the angle iron is in the shape of an "L" when looking at it from the top, these have the fourth hole closer to the third hole on the vertical part of the "L".
2. The height from floor to bottom of tank is 30 ½ in (774 mm).
3. All hardware shown supplied by DriSteem.
4. All cabinet mounted keypads require captive bracket. All controllers require captive standoffs.

DM-11906

Vaporstream: Floor mount installation steps

1. Attach legs to tank assembly - See Detail A in Figure 8-1.
   a. Vaporstream with remote control cabinet - identify “Front Right” and “Back Left” leg weldments. Side of the tank with drain assembly and clean-out plate is front.
      - Weldments marked "L" on the bottom of feet are used in “Front Left” and “Back Right” locations.
      - Use 1/4"-20 x 1¼" bolts to attach leg weldments to tank. Use all three bolt locations on all legs.
      - Leave these bolts loose until after cross braces are completely assembled and tightened (Step 2).
   b. Vaporstream with control cabinet factory mounted on humidifier - identify “Front Right” and “Back Left” leg weldments. Side of the tank with drain assembly and clean-out plate is considered front. See Figure 8-1 for front view callout. Callout will help orientation during installation.
      - Remove the control cabinet from tank and support it within range of motion the flexible conduit allows.
      - Two weldments, marked "L" on the bottom of feet, are used in “Front Left” and “Back Right” locations.
      - Use included 1/4”-20 x 1¼” bolts to attach leg weldments to tank. Use all three bolt locations on all legs.

      Note: Available space between control cabinet brackets and tank flange is tight. It is recommended to insert bolts and washers though the holes in leg assembly and tape them in place before assembling them to tank. Once washers and nuts are started on bolts, tape can be removed.
      - Leave bolts loose until after cross braces are completely assembled and tightened (Step 2).
2. Attach cross-braces to legs - See Detail B in Figure 8-1.
   a. Use square spacers on one of each side's set of cross-braces. Vaporstream with control cabinet factory mounted on humidifier:
      - Attach the cross-braces on the control cabinet side.
      - Attach cross-braces to legs.
      - Depending on tank and control cabinet size there may be slots in the control cabinet support brackets. Insert cross-braces through slots.
      - Torque all cross brace bolts to 30 ft-lbs (40.7 N-m).
      - Replace control cabinet onto tank.
3. Torque all leg bolts to 8 ft-lbs (10.8 N-m).
4. Attach legs to support structure using all four bolt hole locations and in accordance with instructions by the Structural Engineer of Record.

⚠ WARNING

Mount humidifier per the instructions in this manual and to a structurally stable surface. Improper mounting of the humidifier can cause it to fall or to tip, resulting in severe personal injury or death.

mc_020212_1059

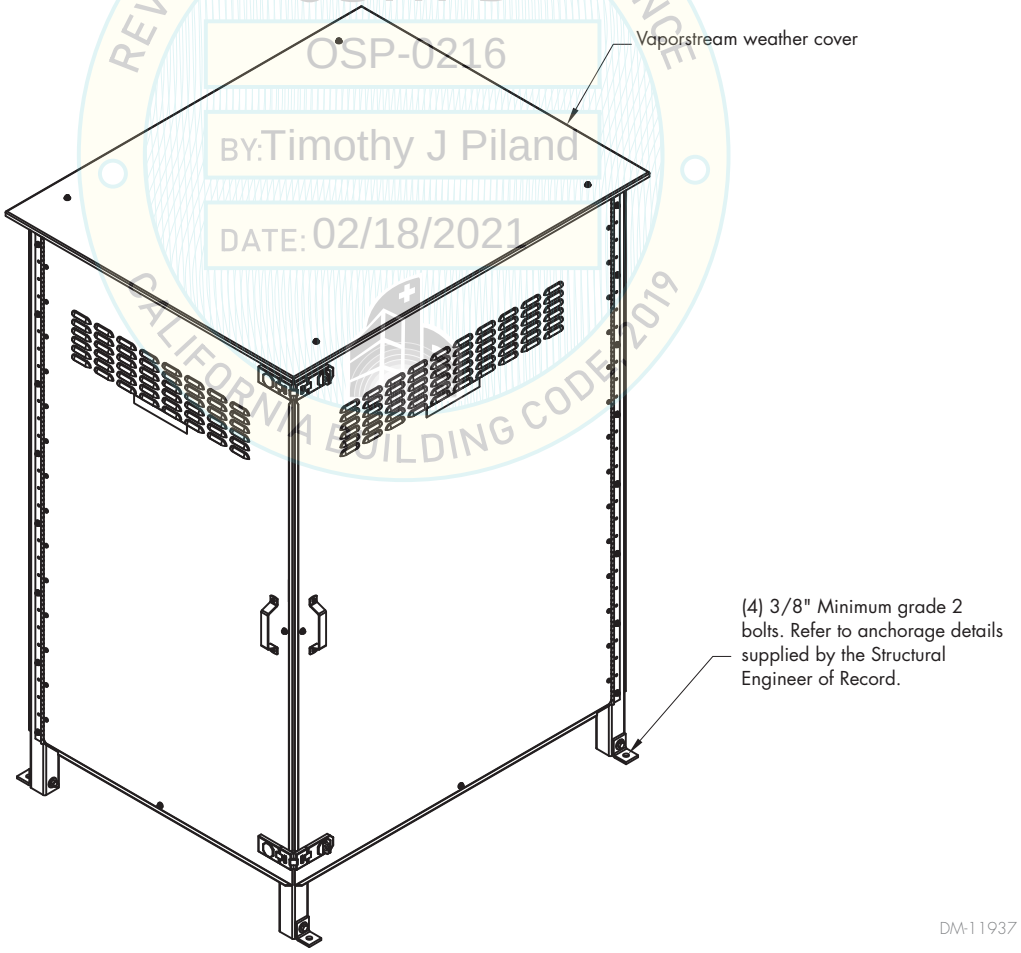
Vaporstream: Weather cover installation drawing

⚠ WARNING

Mount humidifier per the instructions in this manual and to a structurally stable surface. Improper mounting of the humidifier can cause it to fall or to tip, resulting in severe personal injury or death.
mc_020212_1059

Refer to the Vaporstream IOM for all other installation, operation, and maintenance instructions. Complete the seismic installation as shown in Figure 10-1.

FIGURE 10-1: VAPORSTREAM WEATHER COVER SEISMIC CERTIFICATION OPTION INSTALLATION



Vapormist: Wall mount installation drawing

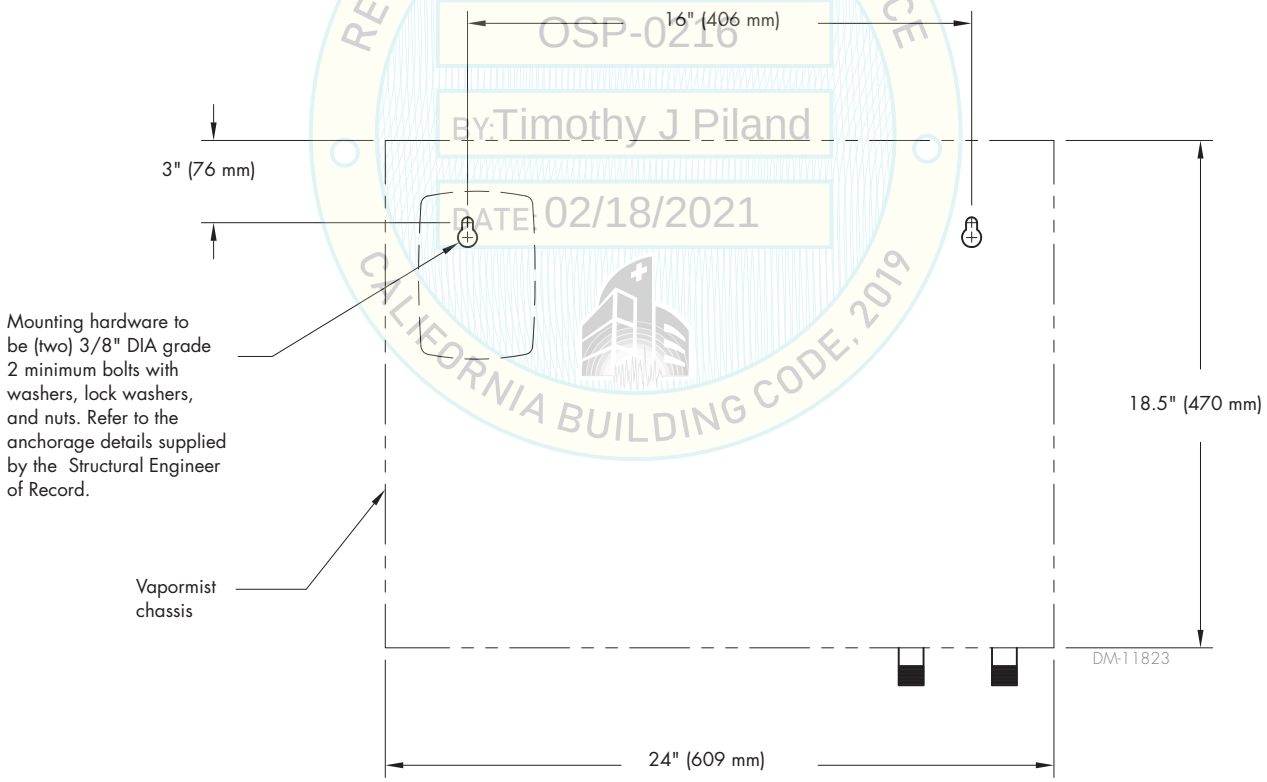
Refer to the Vapormist® IOM for all other installation, operation, and maintenance instructions. Complete the seismic installation as shown in Figure 11-1.

⚠ WARNING

Mount humidifier per the instructions in this manual and to a structurally stable surface. Improper mounting of the humidifier can cause it to fall or to tip, resulting in severe personal injury or death.

mc_020212_1059

FIGURE 11-1: VAPORMIST SEISMIC CERTIFICATION OPTION WALL MOUNT INSTALLATION



Mini-bank: Installation drawing in an air handling unit

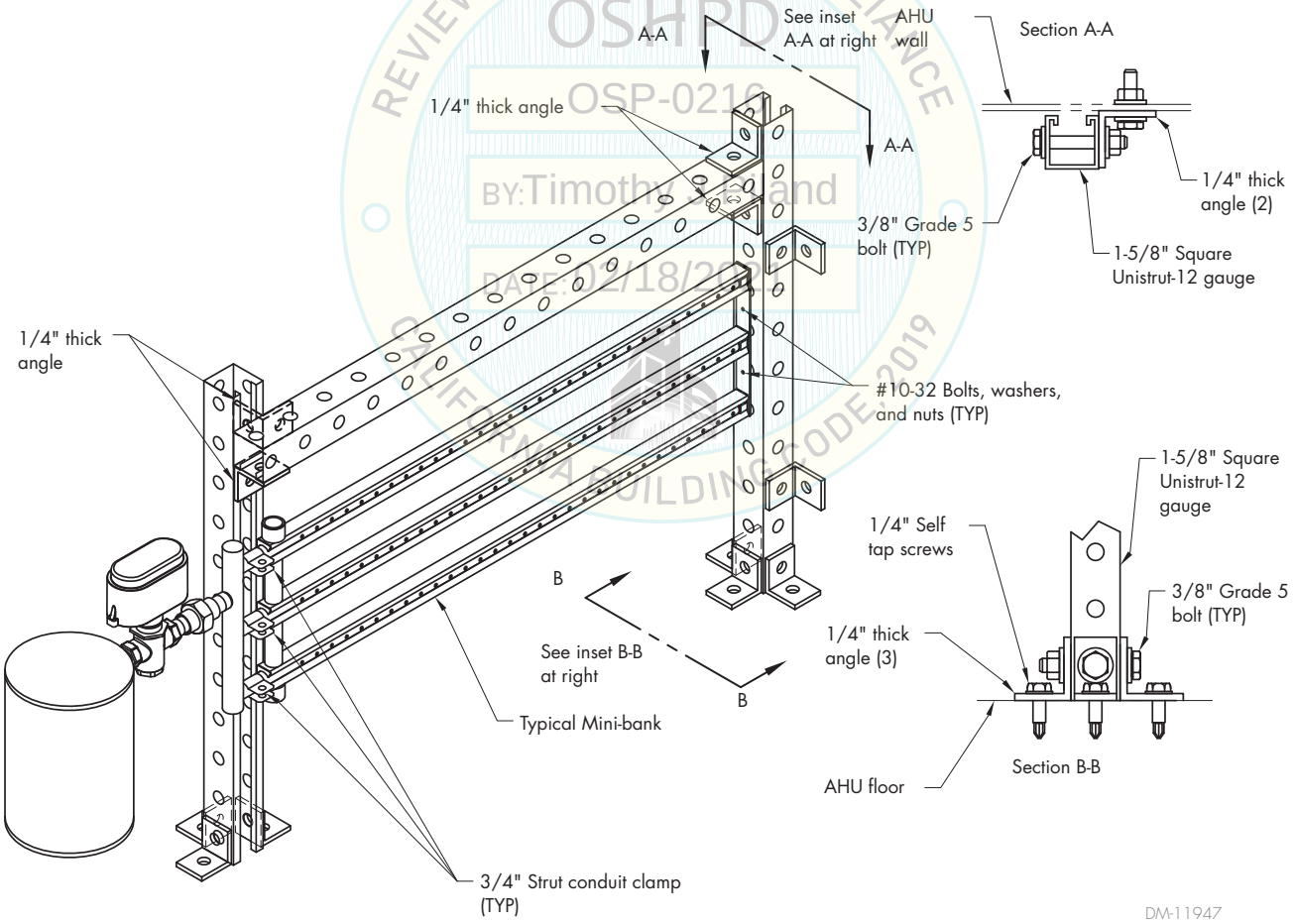
⚠ WARNING

Mount humidifier per the instructions in this manual and to a structurally stable surface. Improper mounting of the humidifier can cause it to fall or to tip, resulting in severe personal injury or death.

mc_020212_1059

Refer to the Steam Injection IOM for all other installation, operation, and maintenance instructions. Complete the seismic installation as shown in Figure 12-1.

FIGURE 12-1: MINI-BANK SEISMIC CERTIFICATION OPTION INSTALLATION IN AN AIR HANDLING UNIT



Note: Use Nylon style locking nuts on all UniStrut hardware connections.

Mini-bank: Installation drawing in a duct

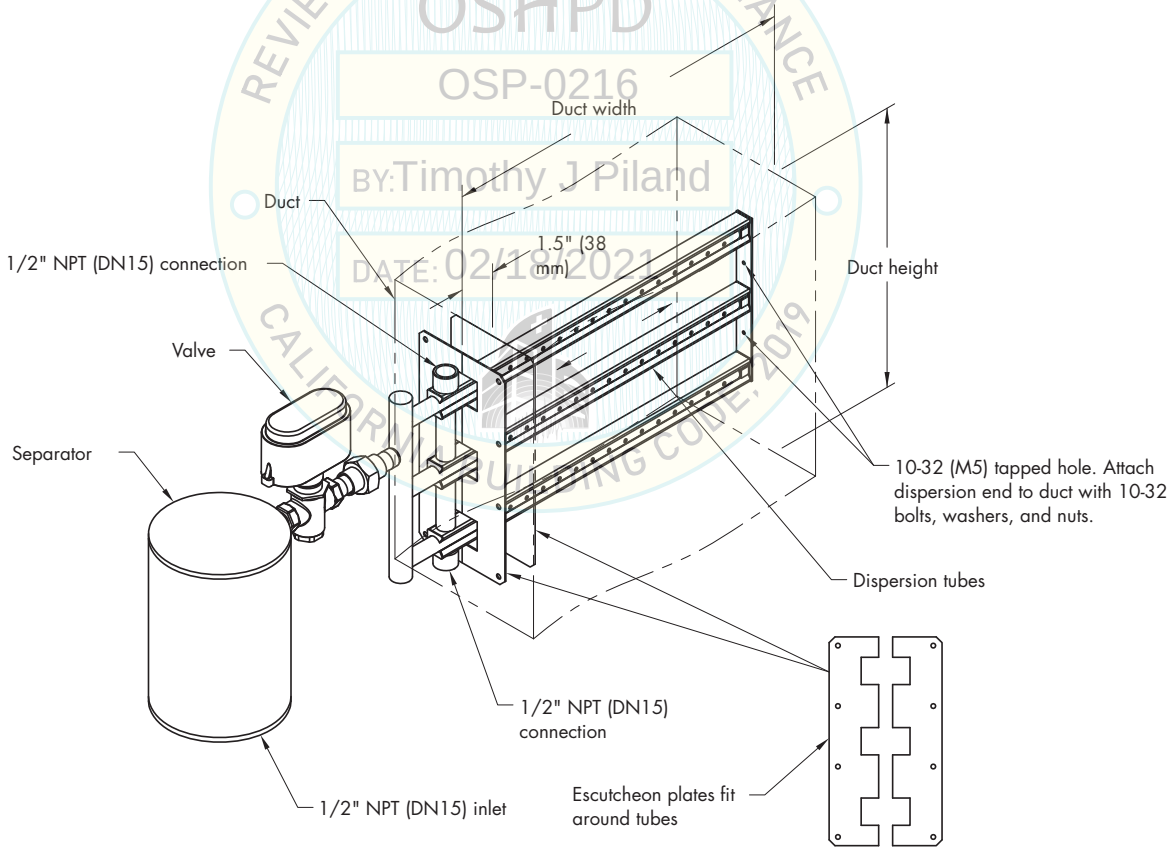
Refer to the Steam Injection IOM for all other installation, operation, and maintenance instructions. Complete the seismic installation as shown in Figure 13-1.

⚠ WARNING

Mount humidifier per the instructions in this manual and to a structurally stable surface. Improper mounting of the humidifier can cause it to fall or to tip, resulting in severe personal injury or death.

mc_020212_1059

FIGURE 13-1: MINI-BANK SEISMIC CERTIFICATION OPTION INSTALLATION IN A DUCT



DM-11946

Ultra-sorb: Model LV Installation drawing in an air handling unit

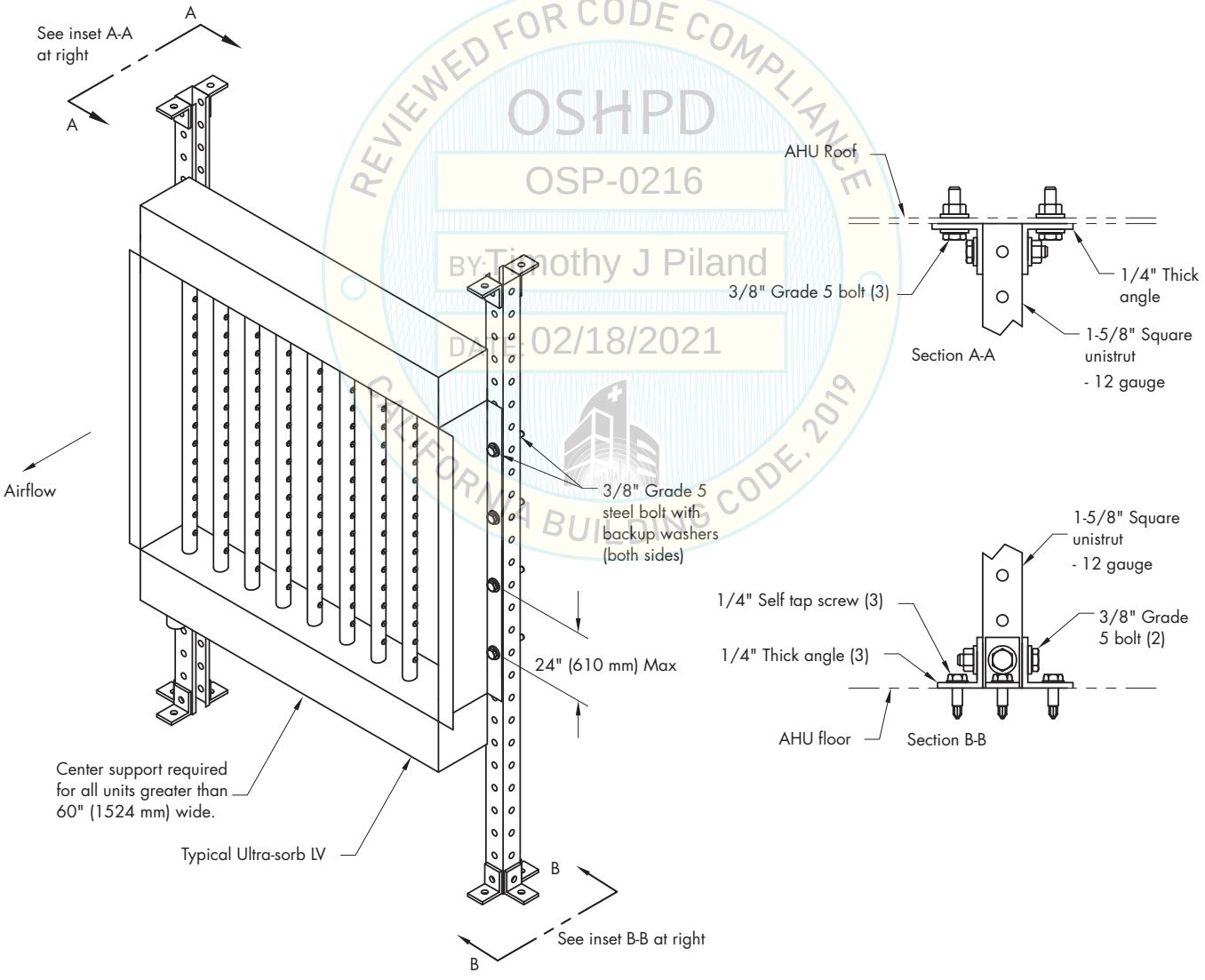
⚠ WARNING

Mount humidifier per the instructions in this manual and to a structurally stable surface. Improper mounting of the humidifier can cause it to fall or to tip, resulting in severe personal injury or death.

mc_020212_1059

Refer to the Ultra-sorb® Models LV and LH IOM for all other installation, operation, and maintenance instructions. Complete the seismic installation as shown in Figure 14-1.

FIGURE 14-1: ULTRA-SORB MODEL LV SEISMIC CERTIFICATION OPTION INSTALLATION IN AN AIR HANDLING UNIT



DM-11805

Notes:

- Use Nylon style locking nuts on all UniStrut hardware connections.
- Air handling unit end wall or lateral bracing shall be spaced at no great than 96" (2438 mm) o.c.

Ultra-sorb: Model LV Installation drawing in a duct

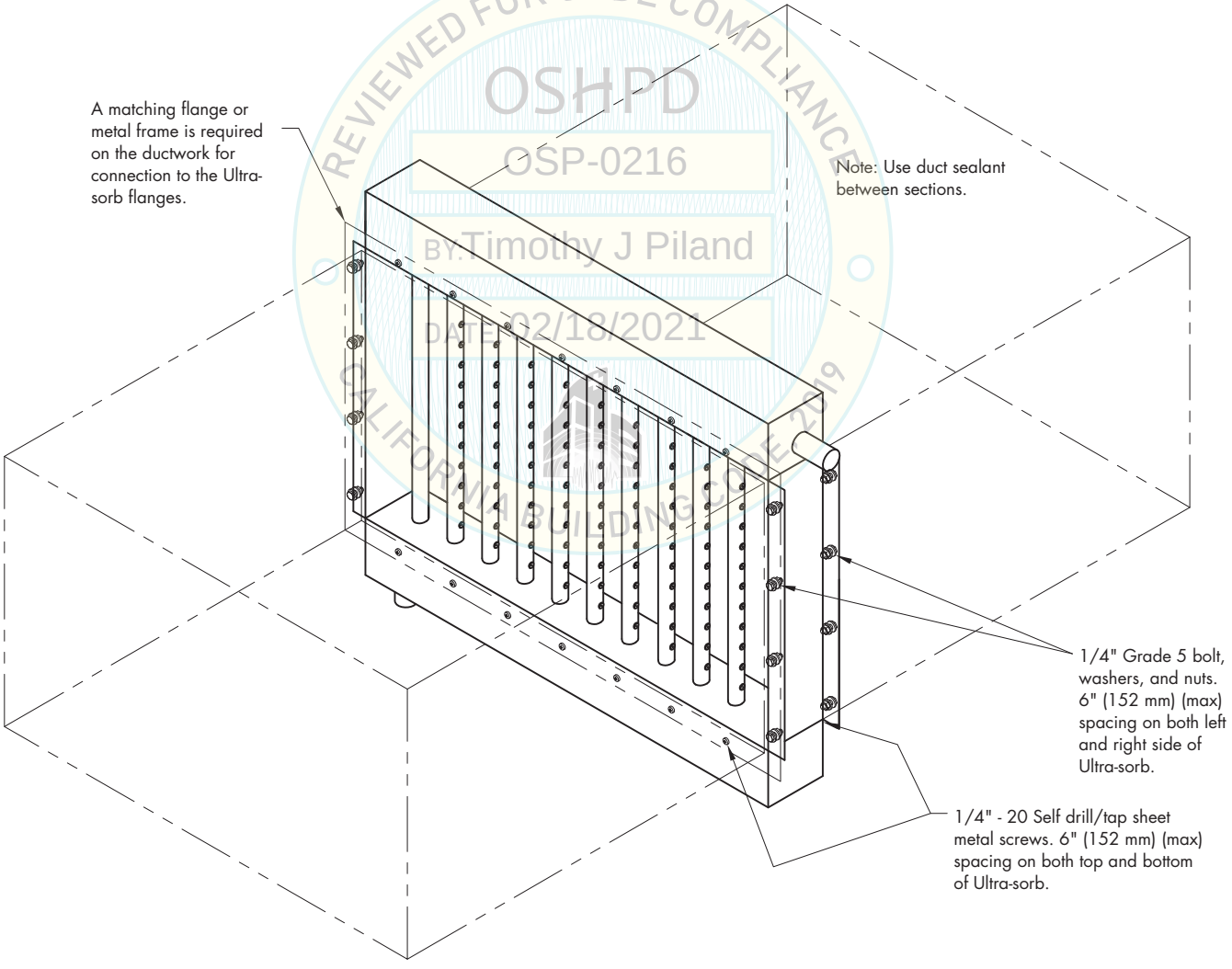
Refer to the Ultra-sorb Models LV and LH IOM for all other installation, operation, and maintenance instructions. Complete the seismic installation as shown in Figure 15-1.

⚠ WARNING

Mount humidifier per the instructions in this manual and to a structurally stable surface. Improper mounting of the humidifier can cause it to fall or to tip, resulting in severe personal injury or death.

mc_020212_1059

FIGURE 15-1: ULTRA-SORB MODEL LV SEISMIC CERTIFICATION OPTION INSTALLATION IN A DUCT



Note:

- To avoid damaging the header, screws and drill bits must not penetrate more than 3/4" (20 mm) into the header assembly.

DM-11822

Ultra-sorb: Model LH Installation drawing in an air handling unit

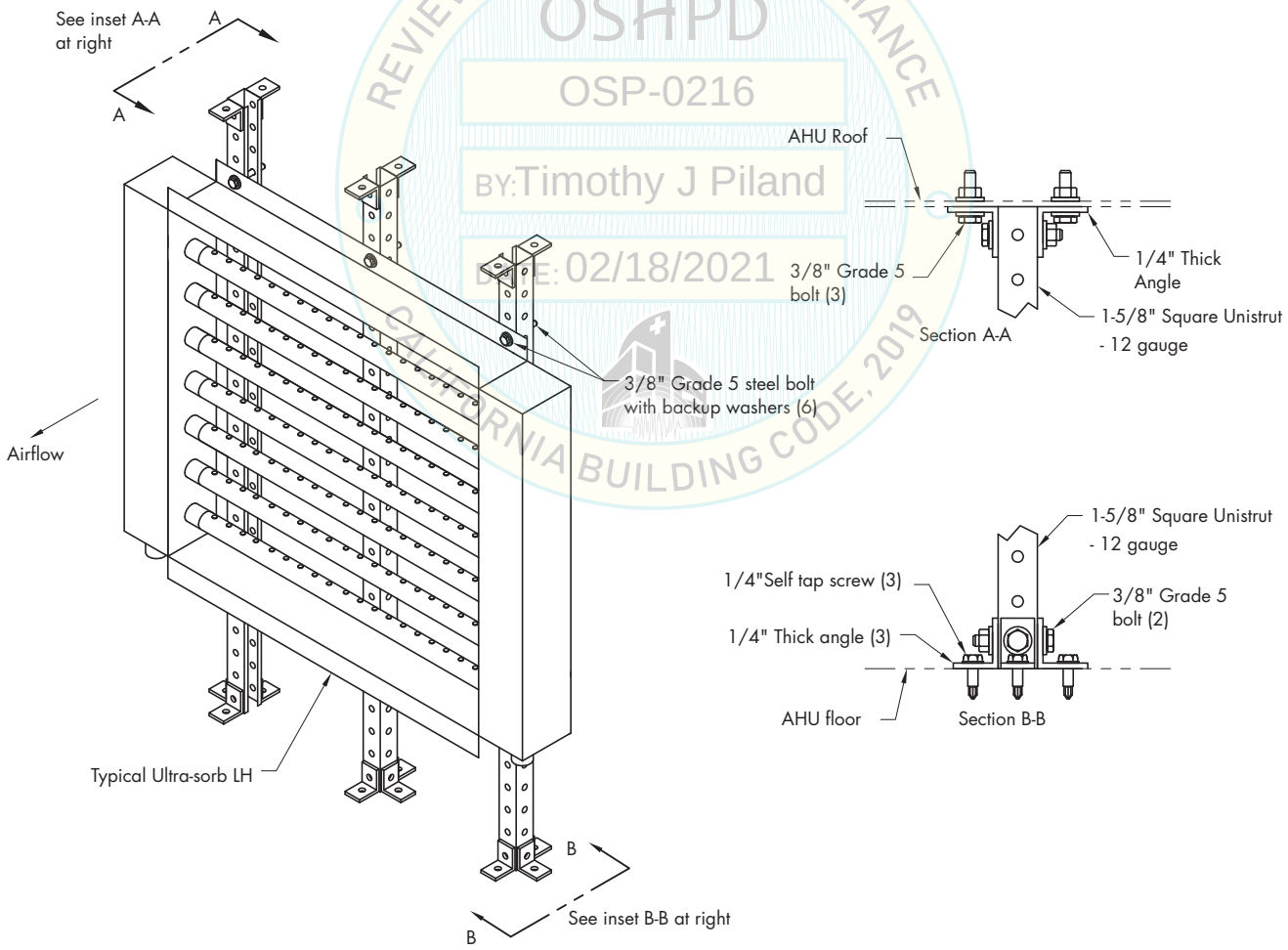
⚠ WARNING

Mount humidifier per the instructions in this manual and to a structurally stable surface. Improper mounting of the humidifier can cause it to fall or to tip, resulting in severe personal injury or death.

mc_020212_1059

Refer to the Ultra-sorb Models LV and LH IOM for all other installation, operation, and maintenance instructions. Complete the seismic installation as shown in Figure 16-1.

FIGURE 16-1: ULTRA-SORB MODEL LH SEISMIC CERTIFICATION OPTION INSTALLATION IN AN AIR HANDLING UNIT



Notes:

- Use Nylon style locking nuts on all UniStrut hardware connections.
- Air handling unit end wall or lateral bracing shall be spaced at no great than 96" (2438 mm) o.c.

DM-11814

Ultra-sorb: Model LH Installation drawing in a duct

Refer to the Ultra-sorb Models LV and LH IOM for all other installation, operation, and maintenance instructions. Complete the seismic installation as shown in Figure 17-1.

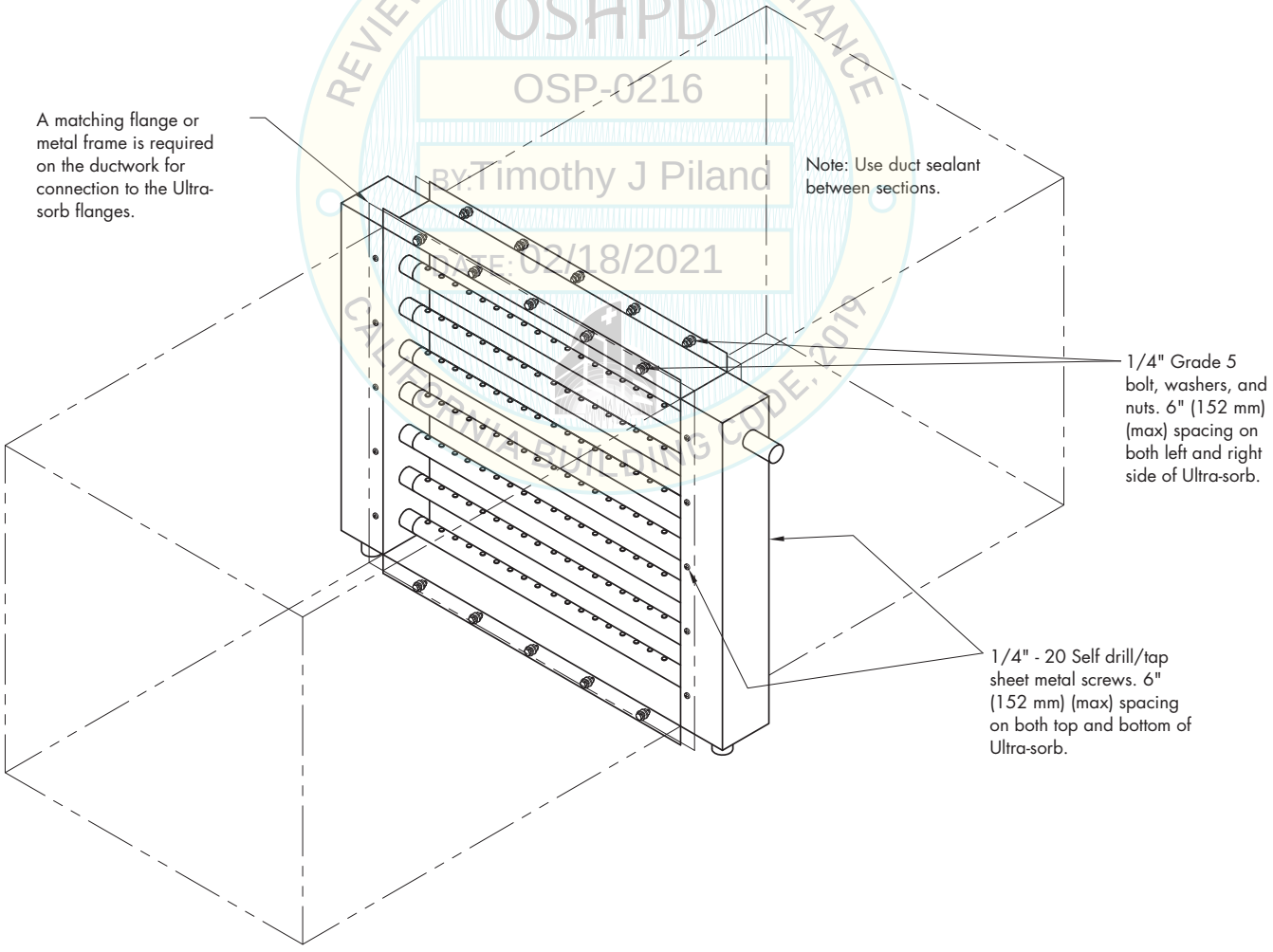
Note: For Model LH, seismic certification is only available with horizontal airflow.

⚠ WARNING

Mount humidifier per the instructions in this manual and to a structurally stable surface. Improper mounting of the humidifier can cause it to fall or to tip, resulting in severe personal injury or death.

mc_020212_1059

FIGURE 17-1: ULTRA-SORB MODEL LH SEISMIC CERTIFICATION OPTION INSTALLATION IN A DUCT



Note:

- To avoid damaging the header, screws and drill bits must not penetrate more than 3/4" (20 mm) into the header assembly.

DM-11829

Ultra-sorb: Model XV Installation drawing in an air handling unit

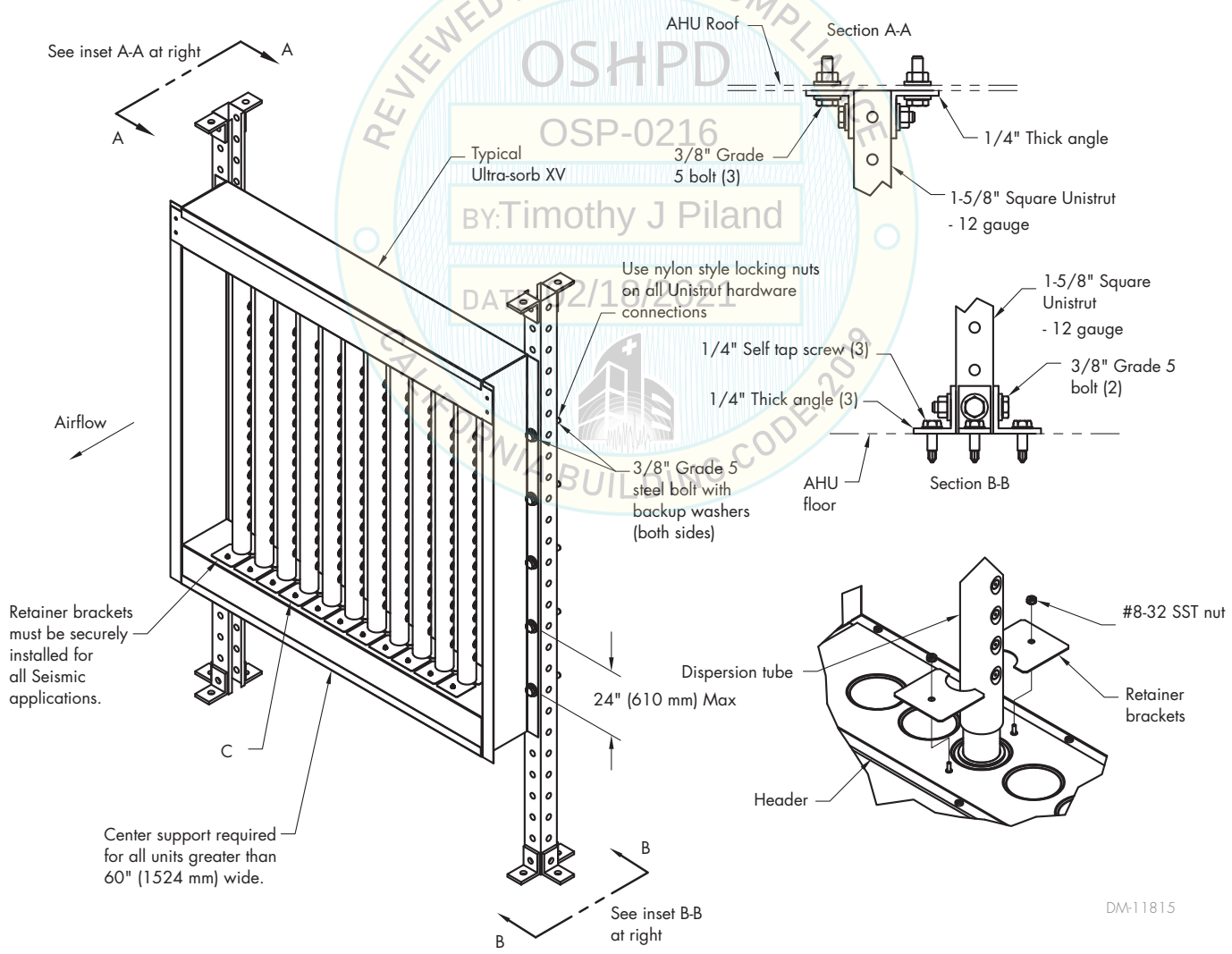
⚠ WARNING

Mount humidifier per the instructions in this manual and to a structurally stable surface. Improper mounting of the humidifier can cause it to fall or to tip, resulting in severe personal injury or death.

mc_020212_1059

Refer to the Ultra-sorb Model XV IOM for all other installation, operation, and maintenance instructions. Complete the seismic installation as shown in Figure 18-1.

FIGURE 18-1: ULTRA-SORB MODEL XV SEISMIC CERTIFICATION OPTION INSTALLATION IN AN AIR HANDLING UNIT



Notes:

- Use Nylon style locking nuts on all UniStrut hardware connections.
- Air handling unit end wall or lateral bracing shall be spaced at no great than 96" (2438 mm) o.c.

Ultra-sorb: Model XV Installation drawing in a duct

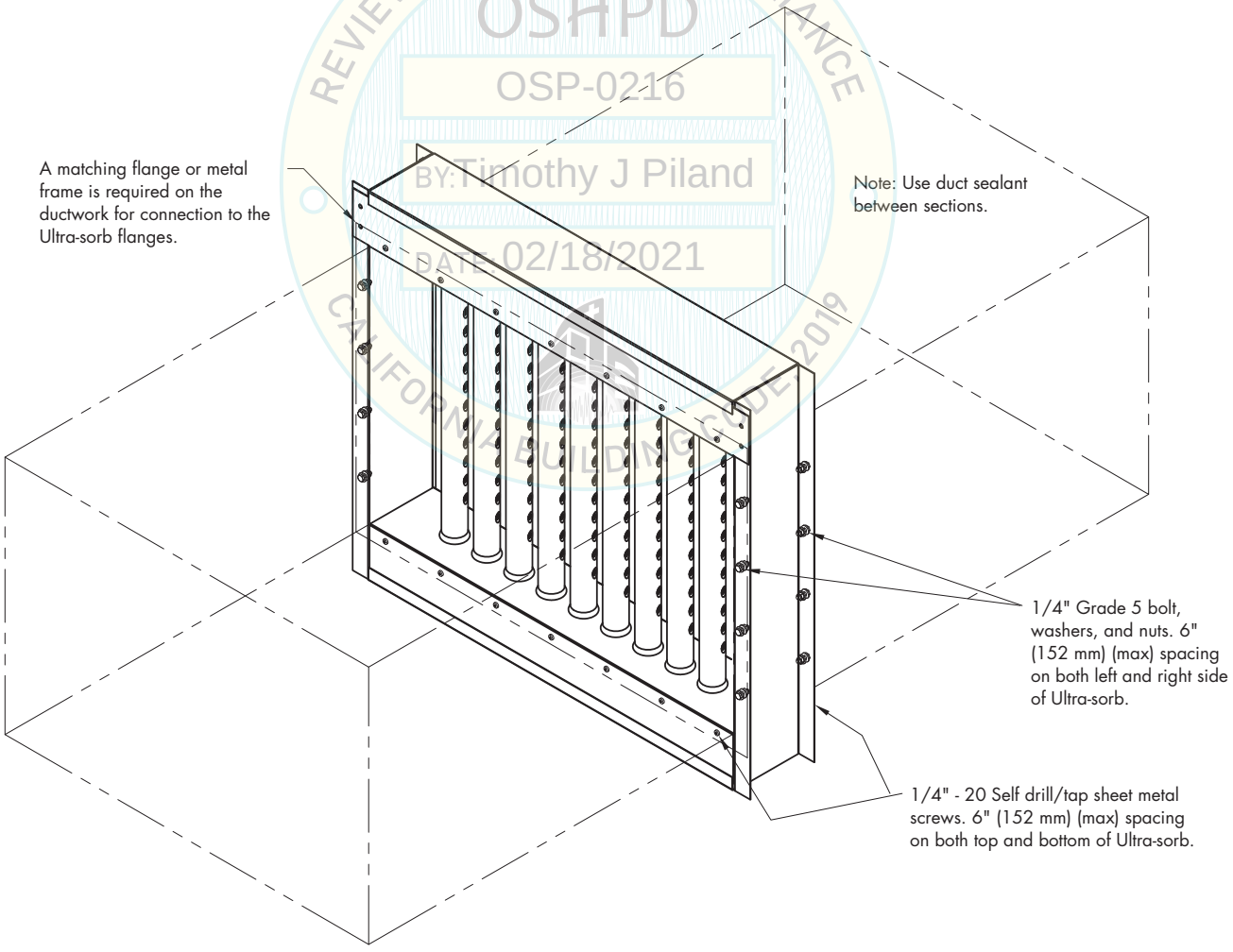
Refer to the Ultra-sorb Model XV IOM for all other installation, operation, and maintenance instructions. Complete the seismic installation as shown in Figure 19-1.

⚠ WARNING

Mount humidifier per the instructions in this manual and to a structurally stable surface. Improper mounting of the humidifier can cause it to fall or to tip, resulting in severe personal injury or death.

mc_020212_1059

FIGURE 19-1: ULTRA-SORB MODEL XV SEISMIC CERTIFICATION OPTION INSTALLATION IN A DUCT



Note:

- To avoid damaging the header, screws and drill bits must not penetrate more than 3/4" (20 mm) into the header assembly.

DM-11844

Ultra-sorb: Model MP Installation drawing in an air handling unit

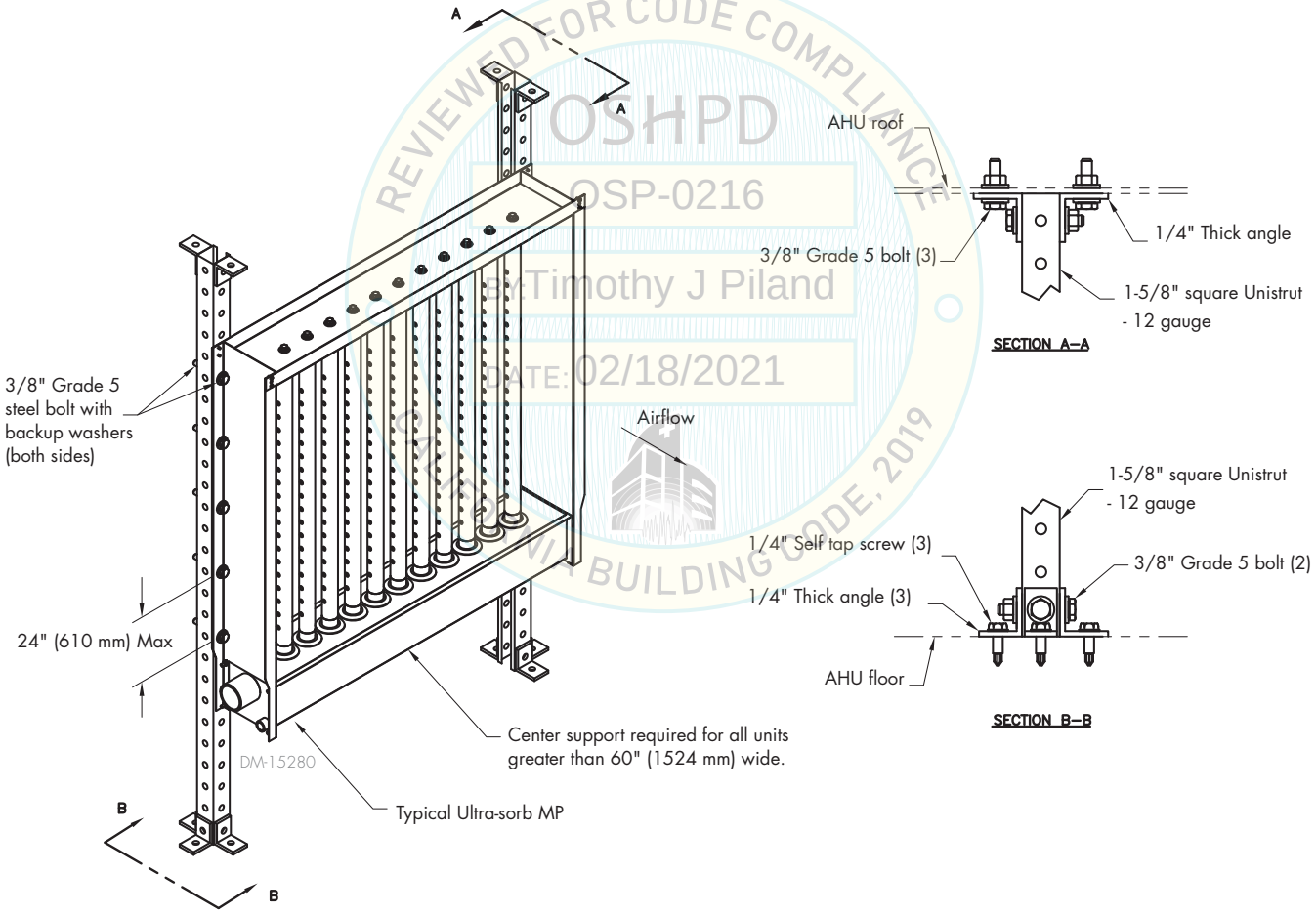
⚠ WARNING

Mount humidifier per the instructions in this manual and to a structurally stable surface. Improper mounting of the humidifier can cause it to fall or to tip, resulting in severe personal injury or death.

mc_020212_1059

Refer to the Ultra-sorb Model MP IOM for all other installation, operation, and maintenance instructions. Complete the seismic installation as shown in Figure 18-1.

FIGURE 20-1: ULTRA-SORB MODEL MP SEISMIC CERTIFICATION OPTION INSTALLATION IN AN AIR HANDLING UNIT



Notes:

- Use Nylon style locking nuts on all UniStrut hardware connections.
- Air handling unit end wall or lateral bracing shall be spaced at no great than 96" (2438 mm) o.c.

Ultra-sorb: Model MP Installation drawing in a duct

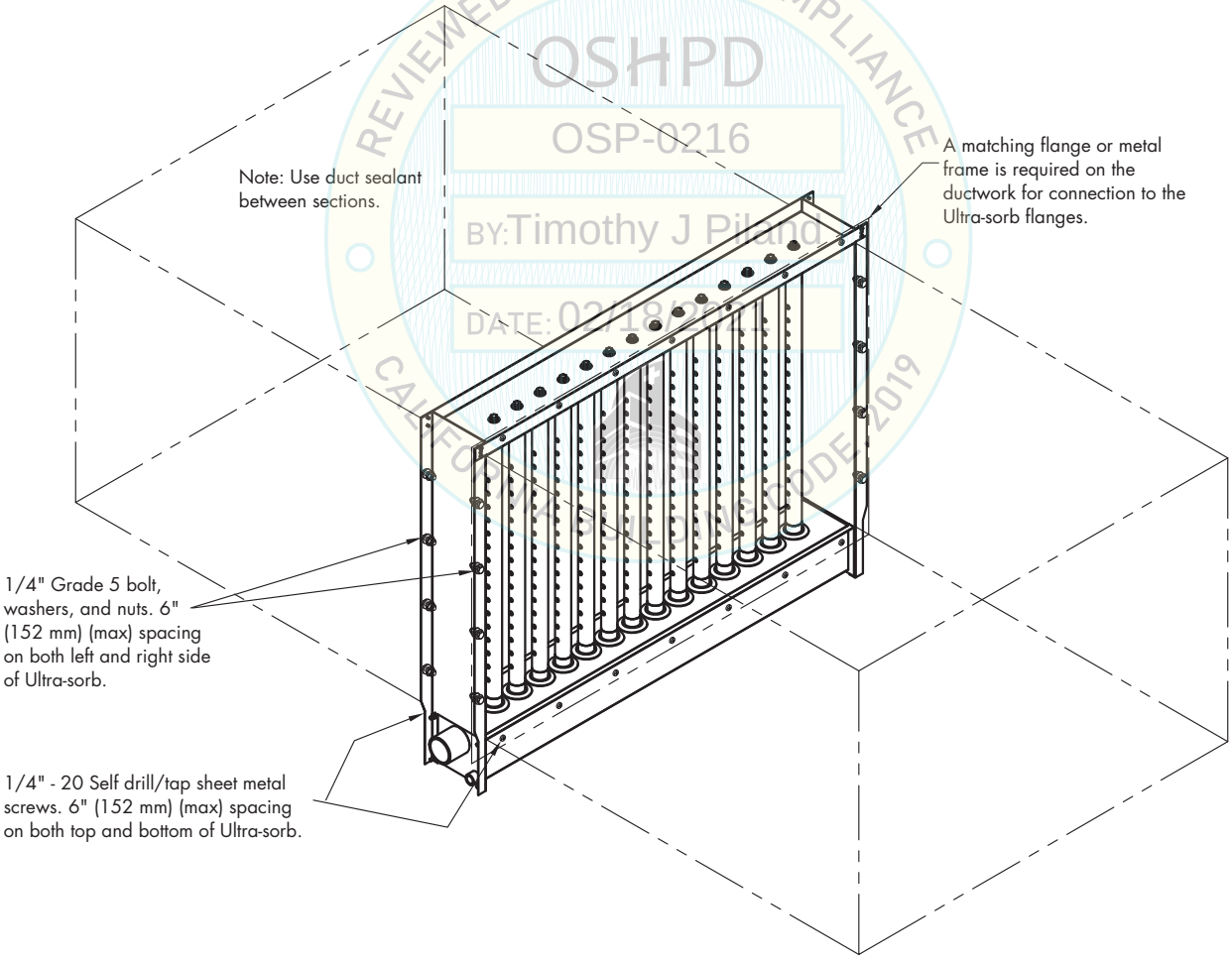
Refer to the Ultra-sorb Model MP IOM for all other installation, operation, and maintenance instructions. Complete the seismic installation as shown in Figure 19-1.

⚠ WARNING

Mount humidifier per the instructions in this manual and to a structurally stable surface. Improper mounting of the humidifier can cause it to fall or to tip, resulting in severe personal injury or death.

mc_020212_1059

FIGURE 21-1: ULTRA-SORB MODEL MP SEISMIC CERTIFICATION OPTION INSTALLATION IN A DUCT



Note:

- To avoid damaging the header, screws and drill bits must not penetrate more than 3/4" (20 mm) into the header assembly.

DM-15281

Expect quality from the industry leader

Since 1965, DriSteem has led the industry with innovative methods for humidifying and cooling air with precise control. Our focus on ease of ownership is evident in the design of the Wetted Media System. DriSteem also leads the industry with a Two-year Limited Warranty and optional extended warranty.

For more information

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sales@dristeem.com

For the most recent product information visit our website: www.dristeem.com

DRI-STEEM Corporation
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Continuous product improvement is a policy of DriSteem; therefore, product features and specifications are subject to change without notice.

Form No. SEISMIC-IOM-EN-0118
Part No. 890000-450 Rev D

TWO-YEAR LIMITED WARRANTY

DRI-STEEM Corporation ("DriSteem") warrants to the original user that its products will be free from defects in materials and workmanship for a period of two (2) years after installation or twenty-seven (27) months from the date DriSteem ships such product, whichever date is the earlier.

If any DriSteem product is found to be defective in material or workmanship during the applicable warranty period, DriSteem's entire liability, and the purchaser's sole and exclusive remedy, shall be the repair or replacement of the defective product, or the refund of the purchase price, at DriSteem's election. DriSteem shall not be liable for any costs or expenses, whether direct or indirect, associated with the installation, removal or reinstallation of any defective product. Excluded from the Limited Warranty are all consumable and wear and tear items such as cylinders, membranes, filters, or media replacements. These items are subject to usual wear and tear during usage.

DriSteem's Limited Warranty shall not be effective or actionable unless there is compliance with all installation and operating instructions furnished by DriSteem, or if the products have been modified or altered without the written consent of DriSteem, or if such products have been subject to accident, misuse, mishandling, tampering, negligence or improper maintenance. Any warranty claim must be submitted to DriSteem in writing within the stated warranty period. Defective parts may be required to be returned to DriSteem. Excluded from the Limited Warranty are all consumable and wear and tear items such as cylinders, membranes, filters, or media replacements. These items are subject to usual wear and tear during usage.

DriSteem's Limited Warranty is made in lieu of, and DriSteem disclaims all other warranties, whether express or implied, including but not limited to any IMPLIED WARRANTY OF MERCHANTABILITY, ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, any implied warranty arising out of a course of dealing or of performance, custom or usage of trade.

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By purchasing DriSteem's products, the purchaser agrees to the terms and conditions of this Limited Warranty.

EXTENDED WARRANTY

The original user may extend the term of the DriSteem Limited Warranty for a limited number of months past the initial applicable warranty period and term provided in the first paragraph of this Limited Warranty. All the terms and conditions of the Limited Warranty during the initial applicable warranty period and term shall apply during any extended term. An extended warranty term of an additional twelve (12) months or twenty four (24) months of coverage may be purchased. The extended warranty term may be purchased until eighteen (18) months after the product is shipped, after which time no extended warranties are available. When a Dristeem humidifier is purchased with a DriSteem RO system, an extended twenty-four (24) month coverage is included.

Any extension of the Limited Warranty under this program must be in writing, signed by DriSteem, and paid for in full by the purchaser.