



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP – 0342 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type:  New  Renewal

Manufacturer Information

Manufacturer: FireFlex

Manufacturer's Technical Representative: Suzon Gauthier

Mailing Address: 1935 Lionel-Bertrand Blvd., Boisbriand, QC J7H 1N8, Canada

Telephone: 450-437-3473 Email: SGauthier@fireflex.com

Product Information

Product Name: Dual & 1230

Product Type: Integrated Fire Suppression Systems

Product Model Number: See Certified Product Listing tables, attached.

(List all unique product identification numbers and/or part numbers)

General Description: The system consists of floor-mounted fire suppression systems containing pumps, valves, air compressors, control panels, batteries, and accessories. Seismic enhancements made to the test units and modifications required to address the anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Rigid floor mounted

Applicant Information

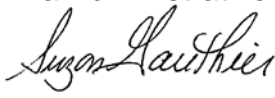
Applicant Company Name: FireFlex

Contact Person: Suzon Gauthier

Mailing Address: 1935 Lionel-Bertrand Blvd., Boisbriand, QC J7H 1N8, Canada

Telephone: 450-437-3473 Email: SGauthier@fireflex.com

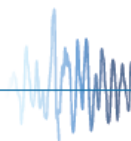
I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant: 

Date: July 28, 2014

Title: Operations Manager Company Name: FireFlex

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"



OSHPD



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

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

Company Name: Forell/Elsesser Engineers, Inc.

Name: Marco Scanu, SE California License Number: S4454

Mailing Address: 160 Pine St., 6<sup>th</sup> Flr., San Francisco, CA 94111

Telephone: (415) 837-0700 Email: m.scanu@forell.com

**Supports and Attachments Preapproval**

- Supports and attachments are preapproved under OPM- \_\_\_\_\_  
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
- Supports and attachments are not preapproved

**Certification Method**

- Testing in accordance with:  ICC-ES AC156
- Other (Please Specify): \_\_\_\_\_

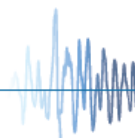
**Testing Laboratory**

Company Name: National Technical Systems

Contact Name: Jim Gaudette

Mailing Address: 533 Main Street, Acton, MA 01720

Telephone: (978) 263-9515 Email: jim.gaudette@nts.com





OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
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Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: [X] Yes [ ] No

Design Basis of Equipment or Components (Fp/Wp) = 1.60

Sds (Design spectral response acceleration at short period, g) = 2.22

ap (In-structure equipment or component amplification factor) = 1.0

Rp (Equipment or component response modification factor) = 2.5

Omega\_0 (System overstrength factor) = 2.5

Ip (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See UUT Summary pages

Overall dimensions and weight (or range thereof) = See Certified Product Listing tables

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: [ ] Yes [X] No

Design Basis of Equipment or Components (V/W) =

Sds (Design spectral response acceleration at short period, g) =

Sd1 (Design spectral response acceleration at 1 second period, g) =

R (Response modification coefficient) =

Omega\_0 (System overstrength factor) =

Cd (Deflection amplification factor) =

Ip (Importance factor) = 1.5

Height to Center of Gravity above base =

Equipment or Component Natural Frequencies (Hz) =

Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2010: [ ] Yes [X] No

List of Attachments Supporting Special Seismic Certification

[X] Test Report(s) [ ] Drawings [X] Calculations [X] Manufacturer's Catalog

[X] Other(s) (Please Specify): Enclosure, Component, UUT Lists

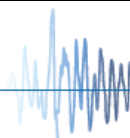
OSHPD Approval (For Office Use Only) - Approval Expires on December 31, 2019

Signature: [Signature] Date: December 24, 2014

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : Sds (g) = 2.22 z/h = 1

Condition of Approval (if applicable):



Certified FIREFLEX 1230 Product Line

ENCLOSURE UNITS (carbon steel)							
Main Model number	Unit	Width (in)	Height (in)	Depth (in)	Operating Weight (lb)	Mount	Test Status
FLX1230001	40 lb single cylinder without control panel	23	77.25	25	356 to 380	Floor mounted	Extrapolated
FLX1230002	76 lb single cylinder without control panel	23	77.25	25	390 to 417		Extrapolated
FLX1230003	164 lb single cylinder without control panel	23	77.25	25	476 to 574		Extrapolated
FLX1230004	322 lb single cylinder without control panel	23	77.25	25	672 to 865		Extrapolated
FLX1230005	601 lb single cylinder without control panel	23	77.25	25	862 to 1222		Extrapolated
FLX1230007	40 lb single cylinder with control panel	23	77.25	25	400		TR027686-14N-SEI UUT-1
FLX1230007	40 lb single cylinder with control panel	23	77.25	25	356 to 380		Interpolated
FLX1230008	76 lb single cylinder with control panel	23	77.25	25	390 to 417		Interpolated
FLX1230009	164 lb single cylinder with control panel	23	77.25	25	476 to 574		Interpolated
FLX1230010	322 lb single cylinder with control panel	23	77.25	25	672 to 865		Interpolated
FLX1230011	601 lb single cylinder with control panel	23	77.25	25	862 to 1222		Interpolated
FLX1230011	601 lb single cylinder with control panel	23	77.25	25	1050		TR016191-13I-SEI UUT-1
FLX1230013	2 x 40 lb double cylinder Main/reserve without control panel	35.75	77.25	25	485 to 523		Extrapolated
FLX1230014	2 x 76 lb double cylinder Main/ reserve without control panel	35.75	77.25	25	548 to 638		Extrapolated
FLX1230015	2 x 164 lb double cylinder Main/ reserve without control panel	35.75	77.25	25	715 to 911		Extrapolated
FLX1230016	2 x 322 lb double cylinder Main/ reserve without control panel	46	77.25	25	1156 to 1552		Extrapolated
FLX1230017	2 x 601 lb double cylinder Main/ reserve without control panel	46	77.25	25	1578 to 2298		Extrapolated
FLX1230019	2 x 40 lb double cylinder Main/ reserve with control panel	35.75	77.25	25	485 to 523		Extrapolated
FLX1230020	2 x 76 lb double cylinder Main/ reserve with control panel	35.75	77.25	25	548 to 638		Extrapolated
FLX1230021	2 x 164 lb double cylinder Main/ reserve with control panel	35.75	77.25	25	715 to 911		Extrapolated
FLX1230022	2 x 322 lb double cylinder Main/ reserve with control panel	46	77.25	25	1156 to 1552		Extrapolated
FLX1230023	2 x 601 lb double cylinder Main/ reserve with control panel	46	77.25	25	1578 to 2298		Extrapolated
FLX1230023	2 x 601 lb double cylinder Main/ reserve with control panel	46	77.25	25	1900		TR-303911-10I-2 UUT-1
FLX1230025	2 x 40 lb double cylinder Main/slave without control panel	35.75	77.25	25	485 to 523		Interpolated
FLX1230026	2 x 76 lb double cylinder Main/slave without control panel	35.75	77.25	25	548 to 638		Interpolated
FLX1230027	2 x 164 lb double cylinder Main/slave without control panel	35.75	77.25	25	715 to 911		Interpolated
FLX1230028	2 x 322 lb double cylinder Main/slave without control panel	46	77.25	25	1156 to 1552		Interpolated
FLX1230029	2 x 601 lb double cylinder Main/slave without control panel	46	77.25	25	1578 to 2298		Interpolated

Certified FIREFLEX 1230 Product Line, cont'd

ENCLOSURE UNITS (carbon steel)							
Main Model number	Unit	Width (in)	Height (in)	Depth (in)	Operating Weight (lb)	Mount	Unit
FLX1230031	2 x 40 lb double cylinder Main/slave with control panel	35.75	77.25	25	485 to 523	Floor mounted	Interpolated
FLX1230031	2 x 40 lb double cylinder Main/slave with control panel	35.75	77.25	25	600		TR027686-14N-SEI UUT-3
FLX1230032	2 x 76 lb double cylinder Main/slave with control panel	35.75	77.25	25	548 to 638		Extrapolated
FLX1230033	2 x 164 lb double cylinder Main/slave with control panel	35.75	77.25	25	715 to 911		Extrapolated
FLX1230034	2 x 322 lb double cylinder Main/slave with control panel	46	77.25	25	1156 to 1552		Extrapolated
FLX1230035	2 x 601 lb double cylinder Main/slave with control panel	46	77.25	25	1578 to 2298		Extrapolated

Note: Quantity of NOVEC Fluid is calculated for each project.

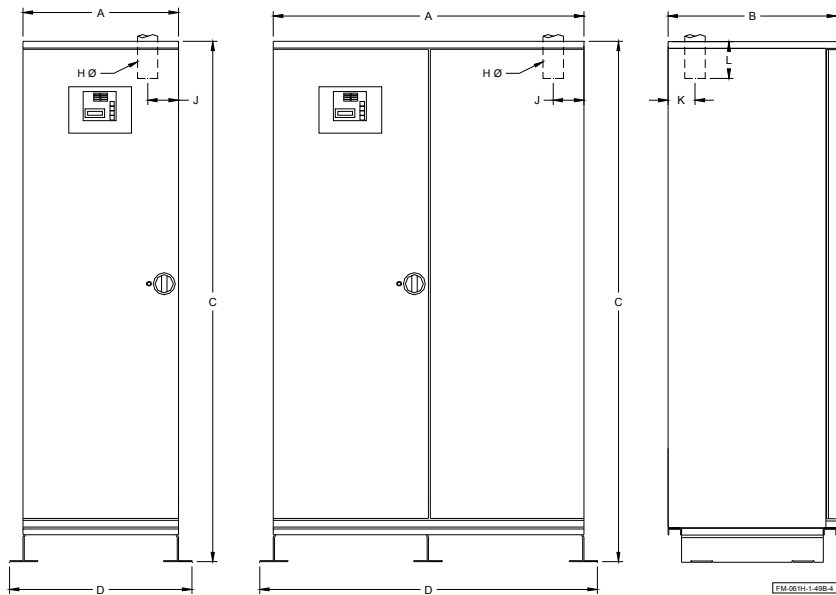


Table 1 - Cabinet dimensions

Size	A	B	C	D	E	F	G
24"	23"	25"	77 <sup>1</sup> / <sub>8</sub> "	29"	15"	27"	N / A
36"	35 <sup>3</sup> / <sub>4</sub> "	25"	77 <sup>1</sup> / <sub>8</sub> "	39 <sup>3</sup> / <sub>4</sub> "	15"	37 <sup>3</sup> / <sub>4</sub> "	12 <sup>3</sup> / <sub>4</sub> "
46"	46"	25"	77 <sup>1</sup> / <sub>8</sub> "	50"	15"	48"	23"

Table 2 - NOVEC 1230 piping installation

Lbs	H	J	K	L
40	1"	2 <sup>3</sup> / <sub>4</sub> "	6"	3 <sup>1</sup> / <sub>4</sub> "
76	1"	2 <sup>3</sup> / <sub>4</sub> "	6"	3 <sup>1</sup> / <sub>4</sub> "
164	1 <sup>1</sup> / <sub>4</sub> "	2 <sup>3</sup> / <sub>4</sub> "	6"	1 <sup>3</sup> / <sub>4</sub> "
322	2 <sup>1</sup> / <sub>2</sub> "	6 <sup>3</sup> / <sub>4</sub> "	6"	4 <sup>3</sup> / <sub>4</sub> "
601	2 <sup>1</sup> / <sub>2</sub> "	6 <sup>1</sup> / <sub>2</sub> "	6"	3 <sup>3</sup> / <sub>4</sub> "

Note: Dimensions may slightly differ from real unit.

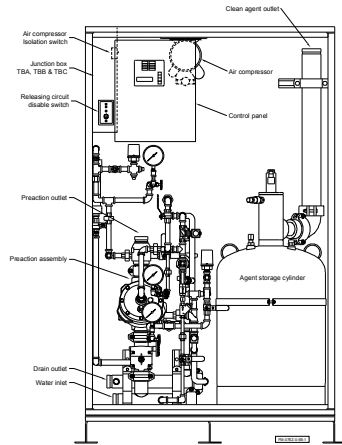
**Certified FIREFLEX DUAL Product Line**

<b>ENCLOSURE UNITS (carbon steel)</b>							
<b>Main Model number</b>	<b>Unit</b>	<b>Width (in)</b>	<b>Height (in)</b>	<b>Depth (in)</b>	<b>Operating Weight (lb)</b>	<b>Mount</b>	<b>Test Status</b>
FLXDUALS01	2" Single int+ NOVEC 1230 40lbs cylinder cabinet without control panel	35.75	77.25	25	597 to 621	Floor mounted	Extrapolated
FLXDUALS02	2" Single int+ NOVEC 1230 76lbs cylinder cabinet without control panel	35.75	77.25	25	626 to 671		Extrapolated
FLXDUALS03	2" Single int+ NOVEC 1230 164lbs cylinder cabinet without control panel	46	77.25	25	762 to 860		Extrapolated
FLXDUALS04	2" Single int+ NOVEC 1230 322lbs cylinder cabinet without control panel	46	77.25	25	953 to 1146		Extrapolated
FLXDUALS05	2" Single int+ NOVEC 1230 601lbs cylinder cabinet without control panel	46	77.25	25	1208 to 1568		Extrapolated
FLXDUALS07	2" Single int+ NOVEC 1230 40lbs cylinder cabinet with control panel	35.75	77.25	25	597 to 621		Extrapolated
FLXDUALS08	2" Single int+ NOVEC 1230 76lbs cylinder cabinet with control panel	35.75	77.25	25	626 to 671		Extrapolated
FLXDUALS09	2" Single int+ NOVEC 1230 164lbs cylinder cabinet without control panel	46	77.25	25	762 to 860		Extrapolated
FLXDUALS10	2" Single int+ NOVEC 1230 322lbs cylinder cabinet with control panel	46	77.25	25	953 to 1146		Extrapolated
FLXDUALS11	2" Single int+ NOVEC 1230 601lbs cylinder cabinet without control panel	46	77.25	25	1208 to 1568		Extrapolated
FLXDUALD01	2" Double int+ NOVEC 1230 40lbs cylinder cabinet without control panel	35.75	77.25	25	597 to 621		Extrapolated
FLXDUALD02	2" Double int+ NOVEC 1230 76lbs cylinder cabinet without control panel	35.75	77.25	25	626 to 671		Extrapolated
FLXDUALD03	2" Double int+ NOVEC 1230 164lbs cylinder cabinet without control panel	46	77.25	25	762 to 860		Extrapolated
FLXDUALD04	2" Double int+ NOVEC 1230 322lbs cylinder cabinet without control panel	46	77.25	25	953 to 1146		Extrapolated
FLXDUALD05	2" Double int+ NOVEC 1230 601lbs cylinder cabinet without control panel	46	77.25	25	1208 to 1568		Extrapolated
FLXDUALD07	2" Double int+ NOVEC 1230 40lbs cylinder cabinet with control panel	35.75	77.25	25	597 to 621		Extrapolated
FLXDUALD07	2" Double int+ NOVEC 1230 40lbs cylinder cabinet with control panel	35.75	77.25	25	720		TR027686-14N-SEI UUT-5
FLXDUALD08	2" Double int+ NOVEC 1230 76lbs cylinder cabinet with control panel	35.75	77.25	25	626 to 671		Interpolated
FLXDUALD09	2" Double int+ NOVEC 1230 164lbs cylinder cabinet with control panel	46	77.25	25	762 to 860		Interpolated
FLXDUALD10	2" Double int+ NOVEC 1230 322lbs cylinder cabinet with control panel	46	77.25	25	953 to 1146		Interpolated
FLXDUALD11	2" Double int+ NOVEC 1230 601lbs cylinder cabinet with control panel	46	77.25	25	1208 to 1568		Interpolated
FLXDUALD11	2" Double int+ NOVEC 1230 601lbs cylinder cabinet with control panel	46	77.25	25	1300	TR-303911-10I-2 UUT-2	

Note: Quantity of NOVEC Fluid is calculated for each project.

Certified FIREFLEX DUAL Product Line, cont'd

**ENCLOSURE UNITS (carbon steel)**



**Table 3 - FIREFLEX® DUAL capacity of cabinet (cylinder quantity)**

Cabinet width	Size of cylinder (lbs)				
	40	76	164	322	601
36"	1	1	1	n/a	n/a
46"	n/a	n/a	n/a	1	1

CERTIFIED SUBCOMPONENT LIST				
MECHANICAL SECTION				
Manufacturer	Model number	Description	Size	Test Status
Viking Corp.	F-1, 12057	Deluge Valve straight through style	2"	TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
	L-1, 11059	In-line swing check valve grooved	2"	TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
	H-1	Pneumatic actuator		TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
	11591	Solenoid valve 24VDC/NC 250 psi	½"	TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
	D-1, 10730	Drip check del & flow valve		TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
	D-3, 16970	Pressure operated relief valve (PORV)		TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
	10110	1/4" x .062" Restriction orifice		TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
	05781A	swing check valve with .067 hole	1/2"	TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
	04947A	spring loaded check valve	1/4"	TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
Potter Electric	1340101	PS10-1 single pressure switch		TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
Fireflex	T3PIPPMA20	Main pipe	2"	TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
	T3PIPPDR20	Drain pipe	1-1/2"	TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
	SEBOGG1001	CED 40 A-53 Seamless pipe	1"	Extrapolated
	SEBOGG1002	CED 40 A-53 Seamless pipe	1"	TR027686-14N-SEI UUT-5
	SEBOGG1003	CED 40 A-53 Seamless pipe	1"	TR027686-14N-SEI UUT-5
	SEBOTG1001	CED 40 A-53 Seamless pipe	1"	TR027686-14N-SEI UUT-1
	SEBOTG1003	CED 40 A-53 Seamless pipe	1-1/4"	Interpolated
	SEBOTG1005	CED 40 A-53 Seamless pipe	1-1/4"	Interpolated
	SEBPIPE251	CED 40 A-53 Seamless pipe	2-1/2"	TR-303911-10I-2 UUT-1
	SEBPIPE255	CED 40 A-53 Seamless pipe	2-1/2"	TR-303911-10I-2 UUT-1
	SEBPRI101	CED 40 A-53 Seamless pipe	1"	TR027686-14N-SEI UUT-1
	SEBPRI102	CED 40 A-53 Seamless pipe	1"	TR027686-14N-SEI UUT-3
	SEBPRI103	CED 40 A-53 Seamless pipe	1-1/4"	Interpolated
	SEBPRI106	CED 40 A-53 Seamless pipe	1-1/4"	Interpolated
	SEBPRI107	CED 40 A-53 Seamless pipe	1-1/4"	Interpolated
	SEBPRI111	CED 40 A-53 Seamless pipe	1"	Interpolated
	SEBPRI251	CED 40 A-53 Seamless pipe	2-1/2"	TR-303911-10I-2 UUT-2
	SEBPRI252	CED 40 A-53 Seamless pipe	2-1/2"	TR016191-13I-SEI UUT-1
Standard Pipe Manufacturer	Various	Grooved Fittings (elbow, tee, cap)	1-1/4"	TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
	Various	Grooved Fittings (elbow, tee, cap)	1-1/2"	TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
	Various	Grooved couplings & Fittings (elbow, tee, cap)	2"	TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
	Various	Heavy duty flex grooved coupling	1"	TR027686-14N-SEI UUT-1, TR027686-14N-SEI UUT-3 and TR027686-14N-SEI UUT-5
	Various	Heavy duty flex grooved coupling	1-1/4"	Interpolated
	Various	Heavy duty flex grooved coupling	2-1/2"	TR-303911-10I-2 UUT-1, TR-303911-10I-2 UUT-2
Anvil	Gruvlock 78FP	Check valve	2-1/2"	TR016191-13I-SEI UUT-1, TR027686-14N-SEI UUT-3, TR-303911-10I-2 UUT-1



**CERTIFIED SUBCOMPONENT LIST (continued)**

**MECHANICAL SECTION (continued)**

<b>Manufacturer</b>	<b>Model number</b>	<b>Description</b>	<b>Size</b>	<b>Test Status</b>
Armetco	FM061M1228	Seismic cylinder strap	10"	TR027686-14N-SEI UUT-1, TR027686-14N-SEI UUT-3, TR027686-14N-SEI UUT-5
	FM061M1227	Seismic cylinder strap	13"	Interpolated
	FM061M1226	Seismic cylinder strap	20"	TR016191-13I-SEI UUT-1, TR-303911-10I-2 UUT-1, TR-303911-10I-2 UUT-2
Victaulic	728	1-1/2" grooved end valve	1-1/2"	Interpolated
	728	2" grooved end valve	2"	TR027686-14N-SEI UUT-3, TR30311-10-2 UUT-1
Nibco	T-FP-600A, NL998H4	Ball Valve – Brass, Two-Piece, Full Port, NPT x NPT	1/4"	TR027686-14N-SEI UUT-3, TR30311-10-2 UUT-1
	T-FP-600A, NL998H6	Ball Valve – Brass, Two-Piece, Full Port, NPT x NPT	1/2"	TR027686-14N-SEI UUT-3, TR30311-10-2 UUT-1
	T-FP-600A, NL998H8	Ball Valve – Brass, Two-Piece, Full Port, NPT x NPT	3/4"	TR027686-14N-SEI UUT-1, TR027686-14N-SEI UUT-3, TR027686-14N-SEI UUT-5, TR30311-10-2 UUT-1, TR30311-10-2 UUT-2, TR016191-13I-SEI UUT-1
KVC Industries	F-1 100T	600 WOG FP NPTFORGED BRASS BALL VALVE	1/4"	TR026390-14N-SEI UUT-1
	F-1 100T	600 WOG FP NPTFORGED BRASS BALL VALVE	1/2"	TR026390-14N-SEI UUT-1
	F-1 100T	600 WOG FP NPTFORGED BRASS BALL VALVE	3/4"	TR026390-14N-SEI UUT-1
Wika	50021214	Water gauge kilo 0-300 psi/kPa	1/4" NPT	TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
	4279931	Air gauge kilo 0-80 and 250 psi/kPa	1/4" NPT	TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
Winters	PFE3933	Water gauge kilo 0-300 psi/kPa	1/4" NPT	TR026390-14N-SEI UUT-4
	PFE3932	Air gauge kilo 0-80 and 250 psi/kPa	1/4" NPT	TR026390-14N-SEI UUT-4
United Brass	200-50 ME	Strainer 50 mesh	1/4"	TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
Fireflex	T3EMERG001	Emergency release assembly for unit in a cabinet		TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
Standard Pipe Manufacturer		Threaded fittings and nipples	1/2", 3/4"	TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
Viking Corp	01285A	Dehydrator		TR027686-14N-SEI UUT-5
	04624A	Air pressure maintenance device AMPD		TR027686-14N-SEI UUT-5
	14800	Anti-column Device LD-1		TR026390-14N-SEI UUT-2

**CERTIFIED SUBCOMPONENT LIST (continued)**

**MECHANICAL SECTION (continued)**

<b>Manufacturer</b>	<b>Model number</b>	<b>Description</b>	<b>Size</b>	<b>Test Status</b>
SEVO	CV 140069-500	Cylinder / 1" threaded valve ass'y	40LB	TR027686-14N-SEI UUT-1, TR027686-14N-SEI UUT-3, TR027686-14N-SEI UUT-5
	CV 140079-500	Cylinder / 1" threaded valve ass'y	76LB	Extrapolated
	CV 14817-500	Cylinder / 1-1/4" threaded valve ass'y	164LB	Extrapolated
	CV 148057-500	Cylinder / 2-1/2" valve ass'y	322LB	Extrapolated
	CV 14813-500	Cylinder / 2-1/2" threaded valve ass'y	601LB	TR016191-13I-SEI UUT-1, TR-303911-10I-2 UUT-1, TR-303911-10I-2 UUT-2
	SOL EA45	Electric Solenoid 24VDC – stackable *		TR027686-14N-SEI UUT-1, TR027686-14N-SEI UUT-3, TR027686-14N-SEI UUT-5, TR30311-10-2 UUT-1, TR30311-10-2 UUT-2, TR016191-13I-SEI UUT-1
	PS10-500	Pressure supervisory SW (NO/NC)		TR027686-14N-SEI UUT-1, TR027686-14N-SEI UUT-3, TR027686-14N-SEI UUT-5, TR30311-10-2 UUT-1, TR30311-10-2 UUT-2, TR016191-13I-SEI UUT-1
	MA 3033	Mechanical actuator		TR-303911-10I-2 UUT-1
	PA 3000	Piston actuator		TR027686-14N-SEI UUT-3
	PS 37	Pressure operating switch NO/NC SPDT		TR-303911-10I-2 UUT-1
	SOL 20195	Main reserve switch		TR-303911-10I-2 UUT-1
	LL 30020-1	Liquid level indicator for 322 LB cylinder		Extrapolated
	LL 30020-2	Liquid level indicator for 601LB cylinder		TR016191-13I-SEI UUT-1, TR-303911-10I-2 UUT-1, TR-303911-10I-2 UUT-2
	M5011-500	500 Psi pressure gauge		TR027686-14N-SEI UUT-1, TR027686-14N-SEI UUT-3, TR027686-14N-SEI UUT-5, TR30311-10-2 UUT-1, TR30311-10-2 UUT-2, TR016191-13I-SEI UUT-1
N 1230	NOVEC fluid 1230 **		Extrapolated	

**VERY IMPORTANT:**

**\* The number of solenoid installed depends on the configuration of each system.**

**\*\*Quantity varies for each project. Maximum in equivalent of water for testing**

CERTIFIED SUBCOMPONENT ELECTRICAL SECTION				
Manufacturer	Model number	Description	Size	Test Status
Viking Corp.	VFR-400	Control panel board		TR027686-14N-SEI UUT-1, TR016191-13I-SEI UUT-1, TR027686-14N-SEI UUT-3 and TR-303911-10I-2 UUT-1
Notifier	NFS-320	Notifier 320 control panel, 120 VAC		TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
Power Max	SB 1275	Batteries 12V 7.5 Ah		TR027686-14N-SEI UUT-1
	SB 12120	Batteries 12V 12 Ah		TR027686-14N-SEI UUT-3
	SB 12180	Batteries 12V 18 Ah		TR027686-14N-SEI UUT-5
Enerwatt, AGM	WP7.5-12	Batteries 12V 7.5 Ah		TR016191-13I-SEI UUT-1
	WP12-12	Batteries 12V 12 Ah		Interpolated
	WP20-12	Batteries 12V 20 Ah		TR-303911-10I-2 UUT-2
Fireflex	SEWIRING01	Electrical wiring Fireflex1230 for 1 cylinder with VFR-400 panel		TR027686-14N-SEI UUT-1
	SEWIRING02	Electrical wiring Fireflex1230 main/reserve with VFR-400 panel		TR027686-14N-SEI UUT-3
	SEWIRING03	Electrical wiring Fireflex1230 main/slave with VFR-400 panel		TR-303911-10I-2 UUT-1
	SEWIRING05	Electrical wiring for panel in a junction box if Panel is installed by others, outside of the unit		Interpolated
	SEWIRING06	Electrical wiring for FlxDual with NFS-320		TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
	SEWIRIPS37	Electrical wiring for optional PS37 installed on a cylinder		TR027686-14N-SEI UUT-5
General Air Products *	OL12516A	Air compressor manual 120/220V 60Hz	1/6 HP	TR027686-14N-SEI UUT-5
	OL25033A	Air compressor manual 120/220V 60Hz	1/3 HP	Interpolated
	OL36550A	Air compressor manual 120/220V 60Hz	1/2 HP	TR-303911-10I-2 UUT-2
Hallen Bradley	HBL 1221I	Elect switch for compressor on off		TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
Furnas	69HA3	Pressure switch		TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
Swagelock	B-8CP2-1/3	1/2" spring loaded check valve for air compressor		TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
Viking Corp.	A-1 10883	1/2" Float check valve for air compressor		TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
Potter Electric	1340103	PS10-1 switch 10-175 psi		TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
	1340403	PS40-1 switch 10-175 psi		TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
	1340404	PS40-2 switch 10-175 psi		TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2
	RCDS	Maintenance switch		TR027686-14N-SEI UUT-5, TR-303911-10I-2 UUT-2

NOTE: \*Air supplies are tankless

**Test Report TR027686-14N-SEI – UUT1**

Fireflex 1230 Single Cylinder 40 Lbs (500 PSI)

77-1/8”H X 23”W X 25”D

Weight: 400 lbs

Floor Mounted with (4) – 1/2” – 13 grade 5 bolts



Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	Horizontal		Vertical	
				A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2013	ICC-ES AC 156	2.22	1	3.55	2.66	1.50	0.59
Natural Frequencies			Test Results				
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. Unit full of contents.				
17.8 Hz	4.75 Hz	> 33 Hz					

Internal Components	Manufacturer	Part #
1" CED 40 A-53 Seamless pipe	Fireflex	SEBOTG1001
1" CED 40 A-53 Seamless pipe	Fireflex	SEBP1R101
10" Seismic cylinder strap	Artmetco	FM061M1228
3/4" Ball Valve – Brass, Two-Piece, Full Port, NPT x NPT	Nibco	T-FP-600A, NL998H8
40 LB Cylinder / 1" threaded valve ass'y	SEVO	CV 140069-500
Electric Solenoid 24VDC – stackable	SEVO	SOL EA45
Pressure supervisory SW (NO/NC)	SEVO	PS10-500
500 Psi pressure gauge	SEVO	M5011-500
Control panel board	Viking Corp.	VFR-400
Batteries 12V 7.5 Ah	Power Max	SB 1275
Electrical wiring Fireflex1230 for 1 cylinder with VFR-400 panel	Fireflex	SEWIRING01

**Test Report TR027686-14N-SEI – UUT3**

Fireflex 1230 Main/Slave 40 Lbs (500 PSI)

77-1/8”H X 36”W X 25”D

Weight: 600 lbs

Floor Mounted with (4) – ½” – 13 grade 5 bolts



Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	Horizontal		Vertical	
				A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2013	ICC-ES AC 156	2.22	1	3.55	2.66	1.50	0.59
<b>Natural Frequencies</b>			<b>Test Results</b>				
<b>F-B</b>	<b>S-S</b>	<b>V</b>	The UUT maintained structural integrity and functionality after the AC156 test. Unit full of contents.				
12.8 Hz	6.4 Hz	29 Hz					

Internal Components	Manufacturer	Part #
1" CED 40 A-53 Seamless pipe	Fireflex	SEBOGG1002
1" CED 40 A-53 Seamless pipe	Fireflex	SEBOGG1003
1" CED 40 A-53 Seamless pipe	Fireflex	SEBPIRI102
2-1/2" Check valve	Anvil	Gruvlock 78FP
10" Seismic cylinder strap	Artmetco	FM061M1228
2" grooved end valve	Victaulic	728
1/4" Ball Valve – Brass, Two-Piece, Full Port, NPT x NPT	Nibco	T-FP-600A, NL998H4
1/2" Ball Valve – Brass, Two-Piece, Full Port, NPT x NPT	Nibco	T-FP-600A, NL998H6
3/4" Ball Valve – Brass, Two-Piece, Full Port, NPT x NPT	Nibco	T-FP-600A, NL998H8
40 LB Cylinder / 1" threaded valve ass'y	SEVO	CV 140069-500
Electric Solenoid 24VDC – stackable	SEVO	SOL EA45
Pressure supervisory SW (NO/NC)	SEVO	PS10-500
Piston actuator	SEVO	PA 3000
500 Psi pressure gauge	SEVO	M5011-500
Control panel board	Viking Corp.	VFR-400
Batteries 12V 12 Ah	Power Max	SB 12120
Electrical wiring Fireflex1230 main/reserve with VFR-400 panel	Fireflex	SEWIRING02

**Test Report TR027686-14N-SEI – UUT5**

Preaction Double Interlocked 2" Cylinder 40 Lbs assembly  
77-1/8" H X 36" W X 25" D  
Weight: 720 lbs  
Floor Mounted with (4) – 1/2" – 13 grade 5 bolt



Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	Horizontal		Vertical	
				A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2013	ICC-ES AC 156	2.22	1	3.55	2.66	1.50	0.59
<b>Natural Frequencies</b>			<b>Test Results</b>				
<b>F-B</b>	<b>S-S</b>	<b>V</b>	The UUT maintained structural integrity and functionality after the AC156 test. Unit full of contents.				
10.7 Hz	4.3 Hz	> 33 Hz					

Internal Components	Manufacturer	Part #
2" Deluge Valve straight through style	Viking Corp.	F-1, 12057
2" In-line swing check valve grooved	Viking Corp.	L-1, 11059
Pneumatic actuator	Viking Corp.	H-1
1/2" solenoid valve 24VDC/NC 250 psi	Viking Corp.	11591
Drip check del & flow valve	Viking Corp.	D-1, 10730
Pressure operated relief valve (PORV)	Viking Corp.	D-3, 16970
1/4" x .062" Restriction orifice	Viking Corp.	10110
1/2" swing check valve with .067 hole	Viking Corp.	05781A
1/4" spring loaded check valve	Viking Corp.	04947A
PS10-1 single pressure switch	Potter Electric	1340101
2" Main pipe	Fireflex	T3PIPPMA20
1-1/2" Drain pipe	Fireflex	T3PIPPDR20
10" Seismic cylinder strap	Artmetco	FM061M1228
3/4" Ball Valve – Brass, Two-Piece, Full Port, NPT x NPT	Nibco	T-FP-600A, NL998H8
1/4" NPT Water gauge kilo 0-300 psi/kPa	Wika	50021214
1/4" NPT Air gauge kilo 0-80 and 250 psi/kPa	Wika	4279931
1/4" Strainer 50 mesh	United Brass	200-50 ME
Emergency release assembly for unit in a cabinet	Fireflex	T3EMERG001
Dehydrator	Viking Corp	01285A
Air pressure maintenance device AMPD	Viking Corp	04624A
40 LB Cylinder / 1" threaded valve ass'y	SEVO	CV 140069-500
Electric Solenoid 24VDC – stackable	SEVO	SOL EA45
Pressure supervisory SW (NO/NC)	SEVO	PS10-500
500 Psi pressure gauge	SEVO	M5011-500
Notifier 320 control panel, 120 VAC	Notifier	NFS-320
Batteries 12V 18 Ah	Power Max	SB 12180
Electrical wiring for FlxDual with NFS-320	Fireflex	SEWIRING06
Electrical wiring for optional PS37 installed on a cylinder	Fireflex	SEWIRIPS37
1/6 HP Air compressor manual 120/220V 60Hz	General Air Products	OL12516A
Elect switch for compressor on off	Hallen Bradley	HBL 1221I
Pressure switch	Furnas	69HA3
1/2" spring loaded check valve for air compressor	Swagelock	B-8CP2-1/3
1/2" Float check valve for air compressor	Viking Corp.	A-1 10883
PS10-1 switch 10-175 psi	Potter Electric	1340103
PS40-1 switch 10-175 psi	Potter Electric	1340403
PS40-2 switch 10-175 psi	Potter Electric	1340404
Maintenance switch	Potter Electric	RCDS

**Test Report TR026390-14N-SEI – UUT1 – T3PDPASK15**

1 ½" Preaction Double Interlock

Electric-Pneumatic Skid-mounted Unit

Shown without enclosure

59"H X 23"W X 25"D

Weight: 250 lbs

Floor Mounted with (4) – ½" – 13 grade 5 bolts



Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	Horizontal		Vertical	
				A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2013	ICC-ES AC 156	2.22	1	3.55	2.66	1.50	0.59
Natural Frequencies			Test Results				
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. Unit full of contents.				
7.1 Hz	6.8 Hz	> 33 Hz					

Internal Components	Manufacturer	Part #
1 ½" Deluge valve	Viking Corp.	F-1, 12125
1 ½" In-line swing check valve, groomed	Viking Corp.	L-1, 11054
Pneumatic actuator	Viking Corp.	H-1
½" Solenoid valve 24 VDC/NC 250 psi	Viking Corp.	11591
Drip check del. and flow valve	Viking Corp.	D-1, 10730
Pressure operated relief valve	Viking Corp.	D-3, 16970
¼" x 0.62" Restriction orifice	Viking Corp.	10110
½" Swing check valve with 0.67" hole	Viking Corp.	05781A
¼" Spring loaded check valve	Viking Corp.	04947A
PS10-1 Single pressure switch	Potter Electric	1340101
1 ½" Main pipe	FireFlex	T3PIPPMA15
1 ½" Drain pipe	FireFlex	T3PIPPDR15
1 ½" Grooved end valve	Victaulic	728
¼" Ball valve – brass, 2-piece, full port, NPT x NPT	Nibco	T-FP-600A, NL998H4
½" Ball valve – brass, 2-piece, full port, NPT x NPT	Nibco	T-FP-600A, NL998H6
¾" Ball valve – brass, 2-piece, full port, NPT x NPT	Nibco	T-FP-600A, NL998H8
¼" 600 WOG FP NPT Forged brass ball valve	KVC industries	F-1, 100T
½" 600 WOG FP NPT Forged brass ball valve	KVC industries	F-1, 100T
¾" 600 WOG FP NPT Forged brass ball valve	KVC industries	F-1, 100T
¼" NPT Water gauge kilo 0-300 psi/kPa	Wika	50021214
¼" NPT Air gauge kilo 0-80 and 250 psi/kPa	Wika	4279931
Emergency release assembly	FireFlex	T3EMBOX001
Air pressure maintenance device AMPD	Viking Corp.	04624A
PS10-1 Switch 10-175 psi	Potter Electric	1340103
PS40-1 Switch 10-175 psi	Potter Electric	1340403

**Test Report TR026390-14N-SEI – UUT2**

4" Dry Cabinet

77" H X 36" W X 25" D

Weight: 710 lbs

Floor Mounted with (4) – ½" – 13 grade 5 bolts



Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	Horizontal		Vertical	
				A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2013	ICC-ES AC 156	2.22	1	3.55	2.66	1.50	0.59
<b>Natural Frequencies</b>			<b>Test Results</b>				
<b>F-B</b>	<b>S-S</b>	<b>V</b>	The UUT maintained structural integrity and functionality after the AC156 test. Unit full of contents.				
7.7 Hz	6.6 Hz	> 33 Hz					

Internal Components	Manufacturer	Part #
4" Dry pipe valve	Viking Corp.	F-1, 07627
Pneumatic actuator	Viking Corp.	H-1
Drip check for dry valve	Viking Corp.	D-3, 10732
¼" x 0.62" Restriction orifice	Viking Corp.	10110
½" Swing check valve with 0.67" hole	Viking Corp.	05781A
¼" Spring loaded check valve	Viking Corp.	04947A
PS10-1 Single pressure switch	Potter Electric	1340101
¼" Ball valve – brass, 2-piece, full port, NPT x NPT	Nibco	T-FP-600A, NL998H4
½" Ball valve – brass, 2-piece, full port, NPT x NPT	Nibco	T-FP-600A, NL998H6
¾" Ball valve – brass, 2-piece, full port, NPT x NPT	Nibco	T-FP-600A, NL998H8
¼" 600 WOG FP NPT Forged brass ball valve	KVC industries	F-1, 100T
½" 600 WOG FP NPT Forged brass ball valve	KVC industries	F-1, 100T
¼" NPT Water gauge kilo 0-300 psi/kPa	Wika	50021214
¼" NPT Air gauge kilo 0-80 and 250 psi/kPa	Wika	4279931
Emergency release assembly	FireFlex	T3EMERG001
Accelerator E-1 with anti-flood device for dry pipe system	Viking Corp.	08116
Anti-column device LD-1	Viking Corp.	14800
½ hp Air compressor manual 120/220V 60Hz	General Air Products	OL36550A
Pressure switch	Furnas	69HA3
½" Spring loaded check valve for air compressor	Swagelock	B-8CP2-1/3
½" Float check valve for air compressor	Viking Corp.	A-1 10883
PS40-1 Switch 10-175 psi	Potter Electric	1340403



**Test Report TR026390-14N-SEI – UUT4**

4" Preaction Double interlock  
Electric-Pneumatic Cabinet w/ Control Panel  
77" H X 36" W X 25" D  
Weight: 770 lbs  
Floor Mounted with (4) – ½" – 13 grade 5 bolts



Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	Horizontal		Vertical	
				A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2013	ICC-ES AC 156	2.22	1	3.55	2.66	1.50	0.59
<b>Natural Frequencies</b>			<b>Test Results</b>				
<b>F-B</b>	<b>S-S</b>	<b>V</b>	The UUT maintained structural integrity and functionality after the AC156 test. Unit full of contents.				
8.2 Hz	7.6 Hz	> 33 Hz					

Internal Components	Manufacturer	Part #
4" Deluge valve	Viking Corp.	F-1, 11513
4" Easy riser swing check valve, groomed	Viking Corp.	F-1, 08510
Pneumatic actuator	Viking Corp.	H-1
½" Solenoid valve 24 VDC/NC 250 psi	Viking Corp.	11591
Drip check del. and flow valve	Viking Corp.	D-1, 10730
Pressure operated relief valve	Viking Corp.	D-3, 16970
¼" x 0.62" Restriction orifice	Viking Corp.	10110
½" Swing check valve with 0.67" hole	Viking Corp.	05781A
¼" Spring loaded check valve	Viking Corp.	04947A
PS10-1 Single pressure switch	Potter Electric	1340101
4" Main pipe	FireFlex	T3PIPPMA40
4" Drain pipe	FireFlex	T3PIPPDR40
¼" Ball valve – brass, 2-piece, full port, NPT x NPT	Nibco	T-FP-600A, NL998H4
½" Ball valve – brass, 2-piece, full port, NPT x NPT	Nibco	T-FP-600A, NL998H6
¾" Ball valve – brass, 2-piece, full port, NPT x NPT	Nibco	T-FP-600A, NL998H8
2" Ball valve – brass, 2-piece, full port, NPT x NPT	Nibco	T-FP-600A, NL998HD
4" Grooved butterfly valve	Fivalco	Fireriser HPG
¼" 600 WOG FP NPT Forged brass ball valve	KVC industries	F-1, 100T
½" 600 WOG FP NPT Forged brass ball valve	KVC industries	F-1, 100T
2" 600 WOG FP NPT Forged brass ball valve	KVC industries	F-1, 100T
¼" NPT Water gauge kilo 0-300 psi/kPa	Winters	PFE3933
¼" NPT Air gauge kilo 0-80 and 250 psi/kPa	Winters	PFE3932
Emergency release assembly	FireFlex	T3EMERG001
Accelerator E-1 w/o anti-flood device	Viking Corp.	08055
Control Panel	Viking Corp.	VFR-400
Batteries 12V 7.5 Ah	Power Max	SB 1275
Batteries 12V 7.5 Ah	Enerwatt, AGM Series	WP7.5-12
1/3 hp Air compressor manual 120/220V 60Hz	General Air Products	OL25033A
Pressure switch	Furnas	69HA3
½" Spring loaded check valve for air compressor	Swagelock	B-8CP2-1/3
½" Float check valve for air compressor	Viking Corp.	A-1 10883
PS10-1 Switch 10-175 psi	Potter Electric	1340103
PS40-1 Switch 10-175 psi	Potter Electric	1340403

**Test Report TR-303911-10I-2 – UUT1**

Fireflex 1230 Double

77-1/8”H X 46”W X 25”D

Weight: 1900 lbs

Floor Mounted with (4) – 1/2” – 13 grade 5 bolts



Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	Horizontal		Vertical	
				A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2013	ICC-ES AC 156	2.22	1	3.55	2.66	1.50	0.59
Natural Frequencies			Test Results				
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. Unit full of contents.				
5.01 Hz	5.76 Hz	25.68 Hz					

Internal Components	Manufacturer	Part #
2-1/2" CED 40 A-53 Seamless pipe	Fireflex	SEBPIPE251
2-1/2" CED 40 A-53 Seamless pipe	Fireflex	SEBPIPE255
2-1/2" Check valve	Anvil	Gruvlock 78FP
20" Seismic cylinder strap	Artmetco	FM061M1226
2" grooved end valve	Victaulic	728
1/4" Ball Valve – Brass, Two-Piece, Full Port, NPT x NPT	Nibco	T-FP-600A, NL998H4
1/2" Ball Valve – Brass, Two-Piece, Full Port, NPT x NPT	Nibco	T-FP-600A, NL998H6
3/4" Ball Valve – Brass, Two-Piece, Full Port, NPT x NPT	Nibco	T-FP-600A, NL998H8
601 LB Cylinder / 2-1/2" threaded valve ass'y	SEVO	CV 14813-500
Electric Solenoid 24VDC – stackable	SEVO	SOL EA45
Pressure supervisory SW (NO/NC)	SEVO	PS10-500
Mechanical actuator	SEVO	MA 3033
Pressure operating switch NO/NC SPDT	SEVO	PS 37
Main reserve switch	SEVO	SOL 20195
Liquid level indicator for 601LB cylinder	SEVO	LL 30020-2
500 Psi pressure gauge	SEVO	M5011-500
Control panel board	Viking Corp.	VFR-400
Electrical wiring Fireflex1230 main/slave with VFR-400 panel	Fireflex	SEWIRING03

**Test Report TR-303911-10I-2 – UUT2**

Fireflex Dual

77-1/8”H X 46”W X 25”D

Weight: 1300 lbs

Floor Mounted with (4) – 1/2” – 13 grade 5 bolts



Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	Horizontal		Vertical	
				A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2013	ICC-ES AC 156	2.22	1	3.55	2.66	1.50	0.59
Natural Frequencies			Test Results				
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. Unit full of contents.				
5.5 Hz	6.41 Hz	24.35 Hz					

Internal Components	Manufacturer	Part #
2" Deluge Valve straight through style	Viking Corp.	F-1, 12057
2" In-line swing check valve grooved	Viking Corp.	L-1, 11059
Pneumatic actuator	Viking Corp.	H-1
1/2" solenoid valve 24VDC/NC 250 psi	Viking Corp.	11591
Drip check del & flow valve	Viking Corp.	D-1, 10730
Pressure operated relief valve (PORV)	Viking Corp.	D-3, 16970
1/4" x .062" Restriction orifice	Viking Corp.	10110
1/2" swing check valve with .067 hole	Viking Corp.	05781A
1/4" spring loaded check valve	Viking Corp.	04947A
PS10-1 single pressure switch	Potter Electric	1340101
2" Main pipe	Fireflex	T3PIPPMA20
1-1/2" Drain pipe	Fireflex	T3PIPPDR20
2-1/2" CED 40 A-53 Seamless pipe	Fireflex	SEBPIRI251
20" Seismic cylinder strap	Artmetco	FM061M1226
3/4" Ball Valve – Brass, Two-Piece, Full Port, NPT x NPT	Nibco	T-FP-600A, NL998H8
1/4" NPT Water gauge kilo 0-300 psi/kPa	Wika	50021214
1/4" NPT Air gauge kilo 0-80 and 250 psi/kPa	Wika	4279931
1/4" Strainer 50 mesh	United Brass	200-50 ME
Emergency release assembly for unit in a cabinet	Fireflex	T3EMERG001
601 LB Cylinder / 2-1/2" threaded valve ass'y	SEVO	CV 14813-500
Electric Solenoid 24VDC – stackable	SEVO	SOL EA45
Pressure supervisory SW (NO/NC)	SEVO	PS10-500
Liquid level indicator for 601LB cylinder	SEVO	LL 30020-2
500 Psi pressure gauge	SEVO	M5011-500
Notifier 320 control panel, 120 VAC	Notifier	NFS-320
Batteries 12V 20 Ah	Enerwatt, AGM Series	WP20-12
Electrical wiring for FlxDual with NFS-320	Fireflex	SEWIRING06
1/2 HP Air compressor manual 120/220V 60Hz	General Air Products	OL36550A
Elect switch for compressor on off	Hallen Bradley	HBL 1221I
Pressure switch	Furnas	69HA3
1/2" spring loaded check valve for air compressor	Swagelock	B-8CP2-1/3
1/2" Float check valve for air compressor	Viking Corp.	A-1 10883
PS10-1 switch 10-175 psi	Potter Electric	1340103
PS40-1 switch 10-175 psi	Potter Electric	1340403
PS40-2 switch 10-175 psi	Potter Electric	1340404
Maintenance switch	Potter Electric	RCDS

**Test Report TR016191-13N-SEI – UUT1**

Fireflex 1230 Single System Cabinet

77-1/8”H X 23”W X 25”D

Weight: 1050 lbs

Floor Mounted with (4) – 1/2” – 13 grade 5 bolts



Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	Horizontal		Vertical	
				A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2013	ICC-ES AC 156	2.39	1	3.84	2.87	1.60	0.65
<b>Natural Frequencies</b>			<b>Test Results</b>				
<b>F-B</b>	<b>S-S</b>	<b>V</b>	The UUT maintained structural integrity and functionality after the AC156 test. Unit full of contents.				
7.4 Hz	7.1 Hz	> 33 Hz					

Internal Components	Manufacturer	Part #
2-1/2" CED 40 A-53 Seamless pipe	Fireflex	SEBP1R1252
20" Seismic cylinder strap	Artmetco	FM061M1226
3/4" Ball Valve – Brass, Two-Piece, Full Port, NPT x NPT	Nibco	T-FP-600A, NL998H8
601 LB Cylinder / 2-1/2" threaded valve ass'y	SEVO	CV 14813-500
Electric Solenoid 24VDC – stackable	SEVO	SOL EA45
Pressure supervisory SW (NO/NC)	SEVO	PS10-500
Liquid level indicator for 601LB cylinder	SEVO	LL 30020-2
500 Psi pressure gauge	SEVO	M5011-500
Control panel board	Viking Corp.	VFR-400
Batteries 12V 7.5 Ah	Enerwatt, AGM	WP7.5-12