



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
ACTIVITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY

APPLICATION #: OSP – 0341-10

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: TotalPac3

Product Type: Preaction System

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 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.

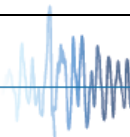
Signature of Applicant: 

Date: April 4, 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
LICENSING AND REGULATORY SERVICES 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., 6th Flr., San Francisco, CA94111

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): _____

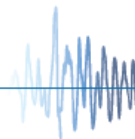
Testing Laboratory

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
ACTIVITIES DEVELOPMENT DIVISION**

Seismic Parameters

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

Design Basis of Equipment or Components (F_p/W_p) = 1.80

S_{DS} (Design spectral response acceleration at short period, g) = 2.22

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

R_p (Equipment or component response modification factor) = 2.5

Ω_0 (System overstrength factor) = 2.5

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = n/a

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 No

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

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

S_{D1} (Design spectral response acceleration at 1 second period, g) = _____

R (Response modification coefficient) = _____

Ω_0 (System overstrength factor) = _____

C_d (Deflection amplification factor) = _____

I_p (Importance factor) = 1.5

Height to Center of Gravity above base = _____

Equipment or Component Natural Frequencies (Hz) = _____

Overall dimensions and weight (or range thereof) = _____

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

List of Attachments Supporting Special Seismic Certification

Test Report(s) Drawings Calculations Manufacturer's Catalog

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

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

Signature: 

Date: 5/7/2014

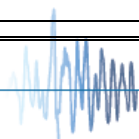
Print Name: M. R. Karim

Title: SHFR

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.22

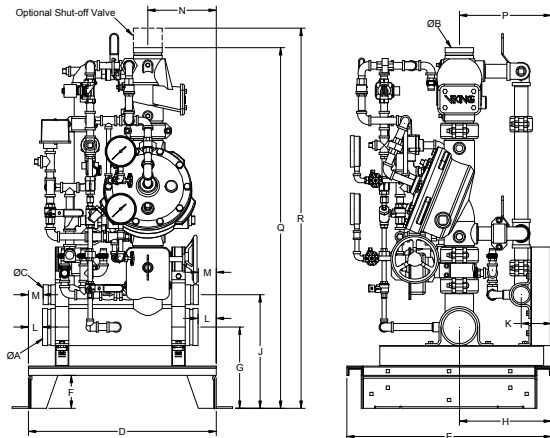
z/h = 1.0

Condition of Approval (if applicable): _____



TOTALPAC3 Product Line Summary

SKID BASE UNITS WITHOUT CONTROL PANEL AND ENCLOSURE								
Main Model number	Unit	Width (in)	Height (in)	Depth (in)	Operating Weight (lb)	Mount ^A	S _{DS} (g) z/h =1	Unit
T3PXXXSK15	1-1/2" Preaction skid mounted unit	23	45	25	285	Floor mounted	2.22	UUT-1
T3PXXXSK20	2" Preaction skid mounted unit	23	45	25	290		2.22	Interpolated
T3PXXXSK30	3" Preaction skid mounted unit	36	48	25	477		2.22	Interpolated
T3PXXXSK40	4" Preaction skid mounted unit	36	53	25	490		2.22	Interpolated
T3PXXXSK60	6" Preaction skid mounted unit	46	65	25	695		2.22	Interpolated
T3DXXXSK15	1-1/2" Deluge skid mounted unit	23	45	25	280		2.22	Interpolated
T3DXXXSK20	2" Deluge skid mounted unit	23	45	25	285		2.22	Interpolated
T3DXXXSK30	3" Deluge skid mounted unit	36	48	25	395		2.22	Interpolated
T3DXXXSK40	4" Deluge skid mounted unit	36	53	25	410		2.22	Interpolated
T3DXXXSK60	6" Deluge skid mounted unit	46	65	25	665		2.22	Interpolated
T3FXXXSK15	1-1/2" Firecylce skid mounted unit	23	45	25	295		2.22	Interpolated
T3FXXXSK20	2" Firecylce skid mounted unit	23	45	25	300		2.22	Interpolated
T3FXXXSK30	3" Firecylce skid mounted unit	36	48	25	485		2.22	Interpolated
T3FXXXSK40	4" Firecylce skid mounted unit	36	53	25	500		2.22	Interpolated
T3FXXXSK60	6" Firecylce skid mounted unit	46	65	25	705		2.22	Interpolated
T3SXXXSK15	1-1/2" Surefire skid mounted unit	23	45	25	305		2.22	Interpolated
T3SXXXSK20	2" Surefire skid mounted unit	23	45	25	310		2.22	Interpolated
T3SXXXSK30	3" Surefire skid mounted unit	36	48	25	495		2.22	Interpolated
T3SXXXSK40	4" Surefire skid mounted unit	36	53	25	510		2.22	Interpolated
T3SXXXSK60	6" Surefire skid mounted unit	46	65	25	715		2.22	Interpolated
T3DRXXSK40	4" Dry pipe skid mounted unit	36	53	25	445	2.22	Interpolated	
T3DRXXSK60	6" Dry pipe skid mounted unit	46	65	25	665	2.22	Interpolated	



A = Main Inlet Manifold Diameter
 B = Sprinkler Riser Diameter
 C = Drain Manifold Diameter

System Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
1 1/2"	2"	1 1/2"	2"	23"	25"	4"	8 3/4"	11 1/2"	13 1/2"	3 3/4"	2"	2"	2"	11"	38"	45"
2"	2"	2"	2"	23"	25"	4"	8 3/4"	11 1/2"	13 1/2"	3 3/4"	2"	2"	2"	11"	38"	45"
3"	4"	3"	2"	36"	25"	4"	10"	11 1/2"	13 1/2"	3 3/4"	2"	2"	2"	11 1/4"	44"	48"
4"	4"	4"	2"	36"	25"	4"	10"	11 1/2"	13 1/2"	3 3/4"	2"	2"	16"	11 1/4"	48"	53"
6"	6"	6"	2"	46"	25"	4"	11"	11 1/2"	13 1/2"	3 3/4"	2"	2"	22 1/4"	11 1/4"	60"	65"

Note: Dimensions are nominal and may vary ±1/4"

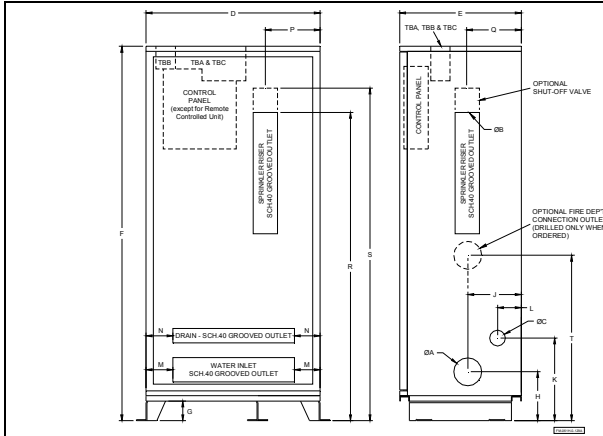
Enclosures are 14ga cold-formed steel

All TOTALPAC3 products are of similar construction and configuration

TOTALPAC3 Product Line Summary

ENCLOSURE UNITS *WITHOUT* CONTROL PANEL

Main Model number	Unit	Width (in)	Height (in)	Depth (in)	Operating Weight (lb)	Mount ^A	S _{DS} (g) z/h =1	Unit
T3PXXXNP15	1-1/2" Preaction enclosure unit	23	77	25	450	Floor mounted	2.22	Interpolated
T3PXXXNP20	2" Preaction enclosure unit	23	77	25	455		2.22	Interpolated
T3PXXXNP30	3" Preaction enclosure unit	36	77	25	730		2.22	Interpolated
T3PXXXNP40	4" Preaction enclosure unit	36	77	25	755		2.22	Interpolated
T3PXXXNP60	6" Preaction enclosure unit	46	77	25	1025		2.22	Interpolated
T3PXXXNP80	8" Preaction enclosure unit	54	81	31	1475		2.22	Interpolated
T3DXXXNP15	1-1/2" Deluge enclosure unit	23	77	25	455		2.22	Interpolated
T3DXXXNP20	2" Deluge enclosure unit	23	77	25	450		2.22	Interpolated
T3DXXXNP30	3" Deluge enclosure unit	36	77	25	690		2.22	Interpolated
T3DXXXNP40	4" Deluge enclosure unit	36	77	25	705		2.22	Interpolated
T3DXXXNP60	6" Deluge enclosure unit	46	77	25	1010		2.22	Interpolated
T3DXXXNP80	8" Deluge enclosure unit	54	81	31	1470		2.22	Interpolated
T3FXXXNP15	1-1/2" Firecycle enclosure unit	23	77	25	460		2.22	Interpolated
T3FXXXNP20	2" Firecycle enclosure unit	23	77	25	465		2.22	Interpolated
T3FXXXNP30	3" Firecycle enclosure unit	36	77	25	740		2.22	Interpolated
T3FXXXNP40	4" Firecycle enclosure unit	36	77	25	755		2.22	Interpolated
T3FXXXNP60	6" Firecycle enclosure unit	46	77	25	1035		2.22	Interpolated
T3FXXXNP80	8" Firecycle enclosure unit	54	81	31	1485		2.22	Interpolated
T3SXXXNP15	1-1/2" Surefire enclosure unit	23	77	25	470		2.22	Interpolated
T3SXXXNP20	2" Surefire enclosure unit	23	77	25	475		2.22	Interpolated
T3SXXXNP30	3" Surefire enclosure unit	36	77	25	750	2.22	Interpolated	
T3SXXXNP40	4" Surefire enclosure unit	36	77	25	765	2.22	Interpolated	
T3SXXXNP60	6" Surefire enclosure unit	46	77	25	1045	2.22	Interpolated	
T3SXXXNP80	8" Surefire enclosure unit	54	81	31	1495	2.22	Interpolated	
T3DRXXXNP40	4" Dry pipe enclosure unit	36	77	25	710	2.22	UUT-2	
T3DRXXXNP60	6" Dry pipe enclosure unit	46	77	25	995	2.22	Extrapolated	



System Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
1 1/2"	2"	1 1/2"	2"	23"	25"	77"	4"	8 3/4"	11 1/2"	13 1/2"	3 3/4"	2"	2"	8 3/4"	11"	38"	45"	34"
2"	2"	2"	2"	23"	25"	77"	4"	8 3/4"	11 1/2"	13 1/2"	3 3/4"	2"	2"	8 3/4"	11"	38"	45"	34"
3"	4"	3"	2"	36"	25"	77"	4"	10"	11 1/2"	13 1/2"	3 3/4"	2"	2"	10"	11 1/4"	44"	48"	37"
4"	4"	4"	2"	36"	25"	77"	4"	10"	11 1/2"	13 1/2"	3 3/4"	2"	2"	16"	11 1/4"	48"	53"	42"
6"	6"	6"	2"	46"	25"	77"	4"	11"	11 1/2"	13 1/2"	3 3/4"	2"	2"	22 1/4"	11 1/4"	60"	65"	N/A
8"	8"	8"	2"	54"	31"	81"	4"	12"	13 1/4"	17 1/2"	3 3/4"	4"	4"	23 1/2"	13 1/4"	70"	75"	N/A

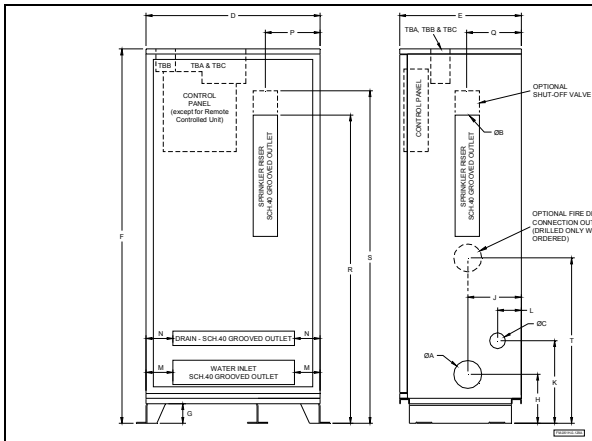
Note: Dimensions are nominal and may vary ±1/4"
Enclosures are 14ga cold-formed steel

All TOTALPAC3 products are of similar construction and configuration

TOTALPAC3 Product Line Summary

ENCLOSURE UNITS WITH CONTROL PANEL VFR-400

Main Model number	Unit	Width (in)	Height (in)	Depth (in)	Operating Weight (lb)	Mount ^A	S _{DS} (g) z/h =1	Unit
T3PXXXWP15	1-1/2" Preaction enclosure unit	23	77	25	475	Floor mounted	2.22	Extrapolated
T3PXXXWP20	2" Preaction enclosure unit	23	77	25	480		2.22	UUT-3
T3PXXXWP30	3" Preaction enclosure unit	36	77	25	755		2.22	Interpolated
T3PXXXWP40	4" Preaction enclosure unit	36	77	25	770		2.22	UUT-4
T3PXXXWP60	6" Preaction enclosure unit	46	77	25	1050		2.22	Interpolated
T3PXXXWP80	8" Preaction enclosure unit	54	81	31	1500		2.22	UUT-5
T3DXXXWP15	1-1/2" Deluge enclosure unit	23	77	25	470		2.22	Interpolated
T3DXXXWP20	2" Deluge enclosure unit	23	77	25	475		2.22	Interpolated
T3DXXXWP30	3" Deluge enclosure unit	36	77	25	715		2.22	Interpolated
T3DXXXWP40	4" Deluge enclosure unit	36	77	25	730		2.22	Interpolated
T3DXXXWP60	6" Deluge enclosure unit	46	77	25	1035		2.22	Interpolated
T3DXXXWP80	8" Deluge enclosure unit	54	81	31	1495		2.22	Interpolated
T3FXXXWP15	1-1/2" Firecycle enclosure unit	23	77	25	485		2.22	Interpolated
T3FXXXWP20	2" Firecycle enclosure unit	23	77	25	490		2.22	Interpolated
T3FXXXWP30	3" Firecycle enclosure unit	36	77	25	765		2.22	Interpolated
T3FXXXWP40	4" Firecycle enclosure unit	36	77	25	780		2.22	Interpolated
T3FXXXWP60	6" Firecycle enclosure unit	46	77	25	1060		2.22	Interpolated
T3FXXXWP80	8" Firecycle enclosure unit	54	81	31	1510		2.22	Interpolated
T3SXXXWP15	1-1/2" Surefire enclosure unit	23	77	25	495		2.22	Interpolated
T3SXXXWP20	2" Surefire enclosure unit	23	77	25	500		2.22	Interpolated
T3SXXXWP30	3" Surefire enclosure unit	36	77	25	775		2.22	Interpolated
T3SXXXWP40	4" Surefire enclosure unit	36	77	25	790		2.22	Interpolated
T3SXXXWP60	6" Surefire enclosure unit	46	77	25	1070		2.22	UUT-6
T3SXXXWP80	8" Surefire enclosure unit	54	81	31	1520		2.22	Extrapolated



System Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
1 1/2"	2"	1 1/2"	2"	23"	25"	77"	4"	8 3/4"	11 1/2"	13 1/2"	3 3/4"	2"	2"	8 3/4"	11"	38"	45"	34"
2"	2"	2"	2"	23"	25"	77"	4"	8 3/4"	11 1/2"	13 1/2"	3 3/4"	2"	2"	8 3/4"	11"	38"	45"	34"
3"	4"	3"	2"	36"	25"	77"	4"	10"	11 1/2"	13 1/2"	3 3/4"	2"	2"	10"	11 1/4"	44"	48"	37"
4"	4"	4"	2"	36"	25"	77"	4"	10"	11 1/2"	13 1/2"	3 3/4"	2"	2"	16"	11 1/4"	48"	53"	42"
6"	6"	6"	2"	46"	25"	77"	4"	11"	11 1/2"	13 1/2"	3 3/4"	2"	2"	22 1/4"	11 1/4"	60"	65"	N/A
8"	8"	8"	2"	54"	31"	81"	4"	12"	13 1/4"	17 1/2"	3 3/4"	4"	4"	23 1/2"	13 1/4"	70"	75"	N/A

Note: Dimensions are nominal and may vary ±1/4"
Enclosures are 14ga cold-formed steel

All TOTALPAC3 products are of similar construction and configuration

TOTALPAC3 Product Line Summary

COMPONENT LIST				
MECHANICAL SECTION				
Manufacturer	Model number	Description	Size	Test in UUT
Viking Corp.	F-1, 12125	Deluge Valve* straight through style	1-1/2"	UUT-1
	F-1, 12057	Deluge Valve* straight through style	2"	UUT-3
	F-1, 12022	Deluge Valve* straight through style	3"	Interpolated
	F-1, 11513	Deluge Valve* straight through style	4"	UUT-4
	F-1, 11524	Deluge Valve* straight through style	6"	UUT-6
	F-1, 11018	Deluge Valve* straight through style	8"	UUT-5
Viking Corp.	J-1, 12129	Flow control Valve*	1-1/2"	Interpolated
	J-1, 12061	Flow control Valve*	2"	Interpolated
	J-1, 12024	Flow control Valve*	3"	Interpolated
	J-1, 11516	Flow control Valve*	4"	Interpolated
	J-1, 11527	Flow control Valve*	6"	Interpolated
	J-1, 11019	Flow control Valve*	8"	Interpolated
Viking Corp.	F-1, 07627	Dry pipe Valve	4"	UUT-2
	F-1, 12654	Dry pipe Valve	6"	Extrapolated
Viking Corp.	L-1, 11054	In-line swing check valve grooved	1-1/2"	UUT-1
	L-1, 11059	In-line swing check valve grooved	2"	UUT-3
Viking Corp.	F-1, 08507	Easy riser swing check valve	3"	Interpolated
	F-1, 08510	Easy riser swing check valve	4"	UUT-4
	F-1, 08513	Easy riser swing check valve	6"	UUT-6
	F-1, 08516	Easy riser swing check valve	8"	UUT-5
Viking Corp.	H-1	Pneumatic actuator		All UUT
Viking Corp.	11591	solenoid valve 24VDC/NC 250 psi	1/2"	UUT-1, UUT-3, UUT-4, UUT-6
Viking Corp.	11595	solenoid valve 24V.DC/NO 250psi	1/2"	UUT-5

VERY IMPORTANT: * These valves are physically the same, only one of the three valves is used in a system. Differences between the systems are the number of fittings, length of nipples and settings for the VFR-400 release control Panel if installed.

TOTALPAC3 Product Line Summary

COMPONENT LIST (continued)				
MECHANICAL SECTION (continued)				
Manufacturer	Model number	Description	Size	Test in UUT
Viking Corp.	D-1, 10730	Drip check del & flow valve		UUT-1, UUT-3, UUT-4, UUT-5 and UUT-6
Viking Corp.	D-3, 10732	Drip check for dry valve		UUT-2
Viking Corp.	D-3, 16970	Pressure operated relief valve (PORV)		UUT-1, UUT-3, UUT-4, UUT-5 and UUT-6
Viking Corp.	10110	1/4" x .062" Restriction orifice		All UUT
Viking Corp.	05781A	swing check valve with .067 hole	1/2"	All UUT
Viking Corp.	04947A	spring loaded check valve	1/4"	All UUT
Potter Electric	1340101	PS10-1 single pressure switch		All UUT
Fireflex	T3PIPPMA15	Main pipe	1-1/2"	UUT-1
	T3PIPPMA20	Main pipe	2"	UUT-3
	T3PIPPMA30	Main pipe	3"	Interpolated
	T3PIPPMA40	Main pipe	4"	UUT-4
	T3PIPPMA60	Main pipe	6"	UUT-6
	T3PIPPMA80	Main pipe	8"	UUT-5
Fireflex	T3PIPPDR15	Drain pipe	1-1/2"	UUT-1
	T3PIPPDR20	Drain pipe	2"	UUT-3
	T3PIPPDR30	Drain pipe	3"	Interpolated
	T3PIPPDR40	Drain pipe	4"	UUT-4
	T3PIPPDR60	Drain pipe	6"	UUT-6
	T3PIPPDR80	Drain pipe	8"	UUT-5
Various	Various	Grooved couplings & Fittings (elbow, tee, cap)	1-1/2"	UUT-1
	Various	Grooved couplings & Fittings (elbow, tee, cap)	2"	UUT-3
	Various	Grooved couplings & Fittings (elbow, tee, cap)	3"	Interpolated
	Various	Grooved couplings & Fittings (elbow, tee, cap)	4"	UUT-4
	Various	Grooved couplings & Fittings (elbow, tee, cap)	6"	UUT-6
	Various	Grooved couplings & Fittings (elbow, tee, cap)	8"	UUT-5

TOTALPAC3 Product Line Summary

COMPONENT LIST (continued)				
MECHANICAL SECTION (continued)				
Manufacturer	Model number	Description	Size	Test in UUT
Victaulic	728	1-1/2" grooved end valve	1-1/2"	UUT-1
	728	2" grooved end valve	2"	UUT-3
Nibco	GD4765-8N	3" Grooved butterfly valve	3"	Interpolated
	GD4765-8N	4" Grooved butterfly valve	4"	Interpolated
	GD4765-8N	6" Grooved butterfly valve	6"	UUT-6
	GD4765-8N	8" Grooved butterfly valve	8"	UUT-5
Nibco	T-FP-600A, NL998H4	Ball Valve – Brass, Two-Piece, Full Port, NPT x NPT	1/4"	All UUT
	T-FP-600A, NL998H6	Ball Valve – Brass, Two-Piece, Full Port, NPT x NPT	1/2"	All UUT
	T-FP-600A, NL998H8	Ball Valve – Brass, Two-Piece, Full Port, NPT x NPT	3/4"	All UUT
	T-FP-600A, NL998HB	Ball Valve – Brass, Two-Piece, Full Port, NPT x NPT	1-1/4"	Interpolated
	T-FP-600A, NL998HD	Ball Valve – Brass, Two-Piece, Full Port, NPT x NPT	2"	UUT-3, UUT-4, UUT-5 and UUT-6
Fivalco	Fireriser HPG	3" Grooved butterfly valve	3"	Extrapolated
	Fireriser HPG	4" Grooved butterfly valve	4"	UUT-4
	Fireriser HPG	6" Grooved butterfly valve	6"	Interpolated
	Fireriser HPG	8" Grooved butterfly valve	8"	UUT-5
KVC Industries	F-1 100T	600 WOG FP NPTFORGED BRASS BALL VALVE	1/4"	All UUT
	F-1 100T	600 WOG FP NPTFORGED BRASS BALL VALVE	1/2"	All UUT
	F-1 100T	600 WOG FP NPTFORGED BRASS BALL VALVE	3/4"	UUT-1, UUT-3
	F-1 100T	600 WOG FP NPTFORGED BRASS BALL VALVE	1-1/4"	Interpolated
	F-1 100T	600 WOG FP NPTFORGED BRASS BALL VALVE	2"	UUT-4, UUT-5, UUT-6
Wika	50021214	Water gauge kilo 0-300 psi/kPa	1/4" NPT	UUT-1, UUT-2, UUT-3, UUT-5, UUT-6
Wika	4279931	Air gauge kilo 0-80 and 250 psi/kPa	1/4" NPT	UUT-1, UUT-2, UUT-3, UUT-5, UUT-6
Winters	PFE3933	Water gauge kilo 0-300 psi/kPa	1/4" NPT	UUT-4
Winters	PFE3932	Air gauge kilo 0-80 and 250 psi/kPa	1/4" NPT	UUT-4
United Brass	200-50 ME	Strainer 50 mesh	1/4"	All UUT

TOTALPAC3 Product Line Summary

COMPONENT LIST (continued)				
MECHANICAL SECTION (continued)				
Manufacturer	Model number	Description	Size	Test in UUT
Fireflex	T3EMERG001	Emergency release assembly for unit in a cabinet		UUT-2, UUT-3, UUT-4, UUT-5, UUT-6
Fireflex	T3EMBOX001	Emergency release assembly in a box for skid units		UUT-1
Various		Threaded fittings and nipples	1/2", 3/4"	All UUT
Viking Corp	08055	Accelerator E-1 without anti-flood device		UUT-4
Viking Corp	08116	Accelerator E-1 With anti-flood device fro dry pipe system		UUT-2
Viking Corp	01285A	Dehydrator		UUT-3
Viking Corp	04624A	Air pressure maintenance device AMPD		UUT-1
Viking Corp	14800	Anti-column Device LD-1		UUT-2
Fireflex	T3EMERG001	Emergency release assembly for unit in a cabinet		UUT-2, UUT-3, UUT-4, UUT-5, UUT-6

ELECTRICAL SECTION				
Manufacturer	Model number	Description	Size	Test in UUT
Viking Corp.	VFR-400	Control panel board		All UUT
Power Max	SB 1275	Batteries 12V 7.5 Ah		UUT-3, UUT-4
	SB 12120	Batteries 12V 12 Ah		UUT-6
	SB 12180	Batteries 12V 18 Ah		UUT-5
Enerwatt, AGM Series	WP7.5-12	Batteries 12V 7.5 Ah		UUT-3, UUT-4
	WP12-12	Batteries 12V 12 Ah		UUT-6
	WP20-12	Batteries 12V 20 Ah		UUT-5
Fireflex	T3WIRING01	Electrical wiring for VFR-400 panel in a junction box		UUT-3, UUT-4, UUT-5, UUT-6
	T3WIRING02	Electrical wiring for VFR-400 panel in a junction box if Panel is installed by others, outside of the unit		Extrapolated

TOTALPAC3 Product Line Summary

COMPONENT LIST (continued)				
ELECTRICAL SECTION (continued)				
Manufacturer	Model number	Description	Size	Test in UUT
General Air Products *	OL12516A	Air compressor manual 120/220V 60Hz	1/6 HP	UUT-3
	OL25033A	Air compressor manual 120/220V 60Hz	1/3 HP	UUT-4
	OL36550A	Air compressor manual 120/220V 60Hz	1/2 HP	UUT-2
	OL615100A	Air compressor manual 120/220V 60Hz	1 HP	UUT-6
	OL915150A	Air compressor manual 120/220V 60Hz	1-1/2 HP	Interpolated
	OL1225200A	Air compressor manual 120/220V 60Hz	2 HP	UUT-5
Hallen Bradley	HBL 1221I	Elect switch for compressor on off		All UUT
Furnas	69HA3	Pressure switch		UUT-2, UUT-3, UUT-4, UUT-5, UUT-6
Swagelock	B-8CP2-1/3	1/2" spring loaded check valve for air compressor		UUT-2, UUT-3, UUT-4, UUT-5, UUT-6
Viking Corp.	A-1 10883	1/2" Float check valve for air compressor		UUT-2, UUT-3, UUT-4, UUT-5, UUT-6
Potter Electric	1340103	PS10-1 switch 10-175 psi		UUT-1, UUT-3, UUT-4, UUT-5, UUT-6
	1340403	PS40-1 switch 10-175 psi		UUT-1, UUT-3, UUT-4, UUT-5, UUT-6
	1340404	PS40-2 switch 10-175 psi		UUT-2, UUT-6

NOTE: *Air supplies are tankless

Totalpac3 Nomenclature sheet for model numbers

Skid units

Model Number	Description	Model Description					
		T3	P	XXX (configuration)		SK	2 last digits
T3PXXXSK15	1-1/2" Preaction skid mounted unit	Totalpac3	Preaction	XXX (configuration)		Skid unit	Size of the valve
				SEL	Single electric		
				SPN	Single pneumatic		
				NEL	Non-interlocked electric		
				NPN	Non-interlocked pneumatic		
				DPA	Double electric-pneumatic		
				DEP	Double electric-pneu-lectric		
				DPP	Double pneumatic-pneumatic		
T3DXXXSK15	1-1/2" Deluge skid mounted unit	Totalpac3	Deluge	XXX (configuration)		Skid unit	Size of the valve
				EEL	Deluge electric		
				EPN	Deluge pneumatic		
				EHY	Deluge hydraulic		
T3FXXXSK15	1-1/2" Firecycle skid mounted unit	Totalpac3	Firecycle	XXX (configuration)		Skid unit	Size of the valve
				SIN	Single interlocked		
				DOU	Double Interlocked		
				DEL	Deluge		
				WET	Wet		
T3SXXXSK15	1-1/2" Surefire skid mounted unit	Totalpac3	SureFire	XXX (configuration)		Skid unit	Size of the valve
				SIN	Single interlocked		
				DOU	Double Interlocked		
T3DRXXSK40	4" Dry pipe skid mounted unit	Totalpac3	Dry	XX (configuration)		Skid unit	Size of the valve
				YE	Dry pipe 175 psi		
				HP	HP Dry 250 psi		

Enclosure WITHOUT control panel

Model	Description	Model Description					Enclosure	2 last digits
		T3	P	XXX (configuration)		NP		
T3PXXXNP15	1-1/2" Preaction skid mounted unit	Totalpac3	Preaction	XXX (configuration)		Enclosure WITHOUT control panel	Size of the valve	
				SEL	Single electric			
				SPN	Single pneumatic			
				NEL	Non-interlocked electric			
				NPN	Non-interlocked pneumatic			
				DPA	Double electric-pneumatic			
				DEP	Double electric-pneumatic			
				DPP	Double pneumatic-pneumatic			
T3DXXXNP15	1-1/2" Deluge skid mounted unit	Totalpac3	Deluge	XXX (configuration)		Enclosure WITHOUT control panel	Size of the valve	
				EEL	Deluge electric			
				EPN	Deluge pneumatic			
				EHY	Deluge hydraulic			
T3FXXXNP15	1-1/2" Firecycle skid mounted unit	Totalpac3	Firecycle	XXX (configuration)		Enclosure WITHOUT control panel	Size of the valve	
				SIN	Single interlocked			
				DOU	Double Interlocked			
				DEL	Deluge			
				WET	Wet			
T3SXXXNP15	1-1/2" Surefire skid mounted unit	Totalpac3	SureFire	XXX (configuration)		Enclosure WITHOUT control panel	Size of the valve	
				SIN	Single interlocked			
				DOU	Double Interlocked			
T3DRXXXNP40	4" Dry pipe skid mounted unit	Totalpac3	Dry	XX (configuration)		Enclosure WITHOUT control panel	Size of the valve	
				YE	Dry pipe 175 psi			
				HP	HP Dry 250 psi			

Enclosure WITH VFR-400 control panel

T3PXXXWP15	1-1/2" Preaction skid mounted unit	Model Description					WP	2 last digits
		T3	P	XXX (configuration)		Enclosure WITH control panel		
T3PXXXWP15	1-1/2" Preaction skid mounted unit	Totalpac3	Preaction	SEL	Single electric		Enclosure WITH control panel	2 last digits
				SPN	Single pneumatic			
				NEL	Non-interlocked electric			
				NPN	Non-interlocked pneumatic			
				DPA	Double electric-pneumatic			
				DEP	Double electric-pneu-lectric			
				DPP	Double pneumatic-pneumatic			
T3DXXXWP15	1-1/2" Deluge skid mounted unit	Totalpac3	D Deluge	XXX (configuration)		WP Enclosure WITH control panel	2 last digits Size of the valve	
				EEL	Deluge electric			
				EPN	Deluge pneumatic			
				EHY	Deluge hydraulic			
T3FXXXWP15	1-1/2" Firecycle skid mounted unit	Totalpac3	F Firecycle	XXX (configuration)		WP Enclosure WITH control panel	2 last digits Size of the valve	
				SIN	Single interlocked			
				DOU	Double Interlocked			
				DEL	Deluge			
				WET	Wet			
T3SXXXWP15	1-1/2" Surefire skid mounted unit	Totalpac3	S SureFire	XXX (configuration)		WP Enclosure WITH control panel	2 last digits Size of the valve	
				SIN	Single interlocked			
				DOU	Double Interlocked			
T3DRXXWP40	4" Dry pipe skid mounted unit	Totalpac3	DR Dry	XX (configuration)		WP Enclosure WITH control panel	2 last digits Size of the valve	
				YE	Dry pipe 175 psi			
				HP	HP Dry 250 psi			

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



The UUT was full of content during the tests.

The height and weight differs from that in the Product Summary due to the installation of optional parts, included in the Internal Component list below.

Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
				A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
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.				
7.1 Hz	6.8 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 –T3DRYENP40

4" Dry Cabinet

77"H X 36"W X 25"D

Weight: 710 lbs

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



The UUT was full of content during the tests.

Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
				A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
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.				
7.7 Hz	6.6 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 – UUT3 – T3PDPAWP20

2" Preaction Double interlock
Electric-Pneumatic Cabinet w/ Control Panel
77" H X 23" W X 25" D
Weight: 480 lbs
Floor Mounted with (4) – ½" – 13 grade 5 bolts



The UUT was full of content during the tests.

Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
				A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
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.				
9.8 Hz	6.9 Hz	-					

Internal Components	Manufacturer	Part #
2" Deluge valve	Viking Corp.	F-1, 12057
2" In-line swing check valve, groomed	Viking Corp.	L-1, 11059
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
2" Main pipe	FireFlex	T3PIPPMA20
2" Drain pipe	FireFlex	T3PIPPDR20
2" 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
2" Ball valve – brass, 2-piece, full port, NPT x NPT	Nibco	T-FP-600A, NL998HD
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	T3EMERG001
Dehydrator	Viking Corp.	01285A
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
1/6 hp Air compressor manual 120/220V 60Hz	General Air Products	OL12516A
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 TR026390-14N-SEI – UUT4 – T3PDPAWP40

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



The UUT was full of content during the tests.

Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
				A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
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.				
8.2 Hz	7.6 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 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 TR026390-14N-SEI – UUT5 – T3PDPAWP80

8" Preaction Double interlock
Electric-Pneumatic Cabinet w/ Control Panel
81" H X 54" W X 31" D
Weight: 1500 lbs
Floor Mounted with (4) – ½" – 13 grade 5 bolts



The UUT was full of content during the tests.

Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
				A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
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.				
4.0 Hz	5.4 Hz	13.8 Hz					

Internal Components	Manufacturer	Part #
8" Deluge valve	Viking Corp.	F-1, 11018
8" Easy riser swing check valve, groomed	Viking Corp.	F-1, 08516
Pneumatic actuator	Viking Corp.	H-1
½" Solenoid valve 24 VDC/NO 250 psi	Viking Corp.	11595
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
8" Main pipe	FireFlex	T3PIPPMA80
8" Drain pipe	FireFlex	T3PIPPDR80
8" Grooved butterfly valve	Nibco	GD4765-8N
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
8" 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	Wika	50021214
¼" NPT Air gauge kilo 0-80 and 250 psi/kPa	Wika	4279931
Emergency release assembly	FireFlex	T3EMERG001
Control Panel	Viking Corp.	VFR-400
Batteries 12V 18 Ah	Power Max	SB 12180
Batteries 12V 20 Ah	Enerwatt, AGM Series	WP20-12
2 hp Air compressor manual 120/220V 60Hz	General Air Products	OL1225200A
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 TR026390-14N-SEI – UUT6 – T3SFDOWP60

6" Surefire Double interlock
Cabinet w/ Control Panel
77"H X 46"W X 31"D
Weight: 1520 lbs
Floor Mounted with (4) – ½" – 13 grade 5 bolts



The UUT was full of content during the tests.

Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
				A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
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.				
5.4 Hz	7.8 Hz	-					

Internal Components	Manufacturer	Part #
6" Deluge valve	Viking Corp.	F-1, 11524
6" Easy riser swing check valve, groomed	Viking Corp.	F-1, 08513
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
6" Main pipe	FireFlex	T3PIPPMA60
6" Drain pipe	FireFlex	T3PIPPDR60
6" Grooved butterfly valve	Nibco	GD4765-8N
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
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	Wika	50021214
¼" NPT Air gauge kilo 0-80 and 250 psi/kPa	Wika	4279931
Emergency release assembly	FireFlex	T3EMERG001
Control Panel	Viking Corp.	VFR-400
Batteries 12V 12 Ah	Power Max	SB 12120
Batteries 12V 12 Ah	Enerwatt, AGM Series	WP12-12
1 hp Air compressor manual 120/220V 60Hz	General Air Products	OL615100A
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
PS40-2 Switch 10-175 psi	Potter Electric	1340404