



APPLICATION FOR PREAPPROVAL

SPECIAL SEISMIC CERTIFICATION OF EQUIPMENT AND COMPONENTS

For Office Use Only

APPLICATION NO.
OSP – 0104-10

Check whether application is: NEW RENEWAL

1.0	Fireflex Systems Inc <i>Manufacturer</i> 1935 Lionel-Bertrand Boulevard	Suzon Gauthier <i>Manufacturer's Technical Representative</i> Boisbriand, Quebec, Canada J7H 1N8
	<i>Mailing Address</i>	
	450-437-3473 <i>Telephone</i>	sgauthier@fireflex.com <i>E-mail Address</i>

2.0	Totalpac2 <i>Product Name</i>	Integrated Fire protection Systems <i>Product Type</i>
	<i>See Attachment A for components included</i>	
	<i>Product model No (List all unique product identification numbers and/or serial numbers)</i>	
	<i>General Description: Preaction, Deluge, Sure-Fire, Firecycle III, Dry and Wet Integrated Fire Protection Systems on a skid base OR on a skid base with a cabinet, anchored at the base.</i>	

3.0	Fireflex Systems Inc <i>Applicant Company Name</i> 1935 Lionel-Bertrand Boulevard	Suzon Gauthier <i>Contact Person</i> Boisbriand, Quebec, Canada J7H 1N8
	<i>Mailing Address</i>	
	450-437-3473 <i>Telephone</i>	sgauthier@fireflex.com <i>E-mail Address</i>

I hereby agree to reimburse the Office of Statewide Health Planning and Development for the actual costs incurred by the department for review.

Suzon Gauthier

10/19/2010

Signature of Applicant

Date

Operation Director
Title

Fireflex Systems Inc
Company Name

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Registered Design Professional Preparing the Report

4.0 David O. Roberts, P.E., Inc.
Company Name

David O. Roberts C 46813
Contact Name *California License Number*

343 Third St., Ste 103 Laguna Beach, CA 92651
Mailing Address

(949) 497-1229 dave@DORoberts.com
Telephone *E-mail Address*

California Licensed Structural Engineer Review and Acceptance of the Report

5.0 Dale Christian / Structural Engineer Inc.
Company Name

Richard Suzuki, S.E. S 2705
Contact Name *California License Number*

1744 West Katella Avenue, Suite 107 Orange, CA 92867
Mailing Address

714-997-1145 rsuzuki@dalechristian.com
Telephone *E-mail Address*

Anchorage Pre-Approval

6.0 Anchorage is pre-approved under OPA-
 (Separate application for anchorage pre-approval is required)

Anchorage is not Pre-approved

Certification Method

70. Testing in accordance with: ICC-ES AC-156 Other (Please Specify):

Analysis

Experience data

Combination of Testing, Analysis, and/or Experience Data (Please Specify):

Testing Laboratory (if applicable)

8.0 NTS Clayton Forbes
Company Name *Contact Name*

1146 Massachusetts Ave. Boxborough MA 01719
Mailing Address

978-266-1001 Clayton.forbes@ntscorp.com
Telephone *E-mail:*



Approval Parameters

9.0

Design in accordance with ASCE 7-05 Chapter 13: Yes No

Design Basis of Equipment or Components (F_p/W_p) = 2.65g

S_{DS} (Spectral response acceleration at short period) = 2.21g

a_p (In-structure equipment or component amplification factor) = 1

R_p (Equipment or component response modification factor) = 1.5

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1

Equipment or Component fundamental period(s) = See Attachment

Building period limits (if any) = None

Overall dimensions and weight (or range thereof) = See Attachment

Equipment or Components @ grade designed in accordance with ASCE 7-05 Chapter 15: Yes No

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

S_{DS} (Spectral response acceleration at short period) =

S_1 (Spectral response acceleration at 1 second period) =

R (Response modification coefficient) = 1.0

Ω_0 (System overstrength factor) = 1.0

C_d (Deflection amplification factor) = 1.0

I_p (Importance factor) = 1.5

Height to Center of Gravity above base =

Equipment or Component fundamental period(s) = Sec


Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2007: Yes No

10.0 List of attachments supporting the special seismic certification of equipment or components:

- Test Report
- Drawings
- Manufacturer's Catalog
- Calculations
- Others (Please Specify):

11.0 OSHPD Approval (For Office Use Only)

 Signature & Date Chris Tokas, SHFR Name & Title	10/27/10	December 31, 2016 Approval Expiration Date
		Sps (g) = 2.21 z/h = 1.0 Special Seismic Certification Valid Up to
Condition of Approval (if any): Approval is limited to components listed in the attachment.		

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ATTACHMENT A – System Component Physical Characteristics

General notes:

- A) Self Contained is the most conservative test due to the Control Panel installed in it.
- B) The base and attachment is the same for all three units.

ENCLOSURED TESTED WITH CONTROL PANEL SECTION						
Unit	Width (in)	Height (in)	Depth (in)	Weight (lb)	Enclosure	Mount ^A
Totalpac2 1-1/2"	36	71	20	450	All NEMA 1	Floor mounted
Totalpac2 6"	46	71	24	975	All NEMA 1	Floor mounted

Note: Worse cases. Smallest and largest systems.

- A) "Floor mounted" refers to the base of cabinet bolted to the floor, inlet and outlet pipes are fixed to the building by others.

ENCLOSURED WITH CONTROL PANEL SECTION (NOT TESTED)						
Unit	Width (in)	Height (in)	Depth (in)	Weight (lb)	Enclosure	Mount ^A
Totalpac2 2"	36	71	20	675	All NEMA 1	Floor mounted
Totalpac2 3"	36	71	20	750	All NEMA 1	Floor mounted
Totalpac2 4"	46	71	24	830	All NEMA 1	Floor mounted

Note: Available system sizes between the smallest and the largest tested.

- A) "Floor mounted" refers to the base of cabinet bolted to the floor, inlet and outlet pipes are fixed to the building by others.

ENCLOSURED WITHOUT CONTROL PANEL SECTION (NOT TESTED)						
Unit	Width (in)	Height (in)	Depth (in)	Weight (lb)	Enclosure	Mount ^A
Totalpac2 1-1/2"	36	57	20	400	All NEMA 1	Floor mounted
Totalpac2 2"	36	57	20	625	All NEMA 1	Floor mounted
Totalpac2 3"	36	57	20	700	All NEMA 1	Floor mounted
Totalpac2 4"	46	57	24	780	All NEMA 1	Floor mounted
Totalpac2 6"	46	57	24	925	All NEMA 1	Floor mounted

Note: Additional available systems within scope of tested units.

- A) "Floor mounted" refers to the base of cabinet bolted to the floor; inlet and outlet pipes are fixed to the building by others.

Same mechanical system as above without top electrical section.

SKID BASE UNITS WITHOUT CONTROL PANEL AND ENCLOSURE (NOT TESTED)						
Unit	Width (in)	Height (in)	Depth (in)	Weight (lb)	Enclosure	Mount ^A
Totalpac2 1-1/2"	36	57	20	265	N/A	Floor mounted
Totalpac2 2"	36	57	20	320	N/A	Floor mounted
Totalpac2 3"	36	57	20	420	N/A	Floor mounted
Totalpac2 4"	46	57	24	510	N/A	Floor mounted
Totalpac2 6"	46	57	24	690	N/A	Floor mounted

Note: A) "Floor mounted" refers to the base bolted to the floor; inlet and outlet pipes are fixed to the building by others.

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Resonance Frequency

Unit	Front-back (Hz)	Side-side (Hz)	Vertical (Hz)
Totalpac2 1-1/2"	7.85	7.18	20.3
Totalpac2 6"	9.72	6.59	30

MECHANICAL SECTION					
Manufacturer	Product Line	Models	Mounting	System type	Notes
Viking Corp.	Deluge Valve*	E-1, size 1-1/2"	BB & BS	Totalpac2 Praction & SureFire System	Tested
		E-1, size 2"	BB & BS	Totalpac2 Praction System	Interpolated
		E-1, size 3"	BB & BS	Totalpac2 Praction & SureFire System	Interpolated
		E-1, size 4"	BB & BS	Totalpac2 Praction & SureFire System	Interpolated
		E-1, size 6"	BB & BS	Totalpac2 Praction & SureFire System	Tested
Viking Corp.	Deluge Valve*	E-1, size 1-1/2"	BB & BS	Totalpac2 Praction System	Interpolated
		E-1, size 2"	BB & BS	Totalpac2 Praction System	Interpolated
		E-1, size 3"	BB & BS	Totalpac2 Praction System	Interpolated
		E-1, size 4"	BB & BS	Totalpac2 Praction System	Interpolated
		E-1, size 6"	BB & BS	Totalpac2 Praction System	Interpolated
Viking Corp.	Flow control Valve*	H-3, size 1-1/2"	BB & BS	Firecycle System	Interpolated
		H-1, size 2"	BB & BS	Firecycle System	Interpolated
		H-1, size 3"	BB & BS	Firecycle System	Interpolated
		H-1, size 4"	BB & BS	Firecycle System	Interpolated
		H-1, size 6"	BB & BS	Firecycle System	Interpolated
Viking Corp.	Alarm Check Valve	J-1, size 3"	BB & BS	Wet System	Interpolated
		J-1, size 4"	BB & BS	Wet System	Interpolated
		J-1, size 6"	BB & BS	Wet System	Interpolated
Viking Corp.	Dry pipe Valve	F, size 4"	BB & BS	Dry System	Interpolated
		F, size 6"	BB & BS	Dry System	Interpolated

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 configuration for the VFR-400 release control Panel if installed.

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MECHANICAL SECTION (continued)					
Manufacturer	Product Line	Models	Mounting	System type	Notes
Viking Corp.	In-line swing check valve grooved	L-1, size 1-1/2"	Valve	Totalpac2 Praction, Firecycle III & SureFire Systems	Tested
		L-1, size 2"	Valve	Totalpac2 Praction, Firecycle III & SureFire Systems	Interpolated
		G-1, size 3"	Valve	Totalpac2 Praction & SureFire Systems	Interpolated
		G-1, size 4"	Valve	Totalpac2 Praction & SureFire Systems	Interpolated
		G-1, size 6"	Valve	Totalpac2 Praction & SureFire Systems	Tested
Viking Corp.	Pneumatic actuator	H-1	Valve	Totalpac2 Praction, Deluge, Firecycle III & SureFire Systems	Tested on the 1-1/2" & 6" units. 2", 3" & 4" interpolated
Viking Corp.	1/2" solenoid valve 24VDC/NC 250 psi	11591	Valve	Totalpac2 Praction, Deluge, Firecycle III & SureFire Systems	Tested on the 1-1/2" & 6" units. 2", 3" & 4" interpolated
Viking Corp.	Drip check del & flow valve	D-1	Valve	Totalpac2 Praction, Deluge, Firecycle III & SureFire Systems	Tested on the 1-1/2" & 6" units. 2", 3" & 4" interpolated
Viking Corp.	Drip check for dry valve	D-3	Valve	Dry systems	Interpolated
Viking Corp.	Pressure operated relief valve (PORV)	D-1	Valve	Totalpac2 Praction, Deluge, Firecycle III & SureFire Systems	Tested on the 1-1/2" & 6" units. 2", 3" & 4" interpolated
Viking Corp.	1/4" x .062" Restriction orifice	10110	Valve	Totalpac2 Praction, Deluge, Firecycle III & SureFire Systems	Tested on the 1-1/2" & 6" units. 2", 3" & 4" interpolated
Viking Corp.	1/2" swing check valve with .067 hole	05781A	Valve	Totalpac2 Praction, Deluge, Firecycle III & SureFire Systems	Tested on the 1-1/2" & 6" units. 2", 3" & 4" interpolated

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MECHANICAL SECTION (continued)					
Manufacturer	Product Line	Models	Mounting	System type	Notes
Viking Corp.	1/4" spring loaded check valve	04947A	Valve	Totalpac2 Praction, Deluge, Firecycle & SureFire Systems	Tested on the 1-1/2" & 6" units. 2", 3" & 4" interpolated
Potter Electric	PS10-1 single pressure switch	1340101	Valve	Totalpac2 Praction, Deluge, Firecycle & SureFire Systems	Tested on the 1-1/2" & 6" units. 2", 3" & 4" interpolated
Fireflex	Main pipe	TIIPPMAI15	BS	Totalpac2 Praction, Deluge, Firecycle & SureFire Systems	Tested
		TIIPPMAI20	BS	Totalpac2 Praction, Deluge, Firecycle & SureFire Systems	Interpolated
		TIIPPMAI30	BS	Totalpac2 Praction, Deluge, Firecycle & SureFire Systems	Interpolated
		TIIPPMAI40	BS	Totalpac2 Praction, Deluge, Firecycle & SureFire Systems	Interpolated
		TIIPPMAI60	BS	Totalpac2 Praction, Deluge, Firecycle & SureFire Systems	Tested
Fireflex	Drain pipe	TIIPPDRA15	BB	Totalpac2 Praction, Deluge, Firecycle & SureFire Systems	Tested
		TIIPPDRA20	BB	Totalpac2 Praction, Deluge, Firecycle & SureFire Systems	Interpolated
		TIIPPDRA30	BB	Totalpac2 Praction, Deluge, Firecycle & SureFire Systems	Interpolated
		TIIPPDRA40	BB	Totalpac2 Praction, Deluge, Firecycle & SureFire Systems	Interpolated
		TIIPPDRA60	BB	Totalpac2 Praction, Deluge, Firecycle & SureFire Systems	Tested

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MECHANICAL SECTION (continued)					
Manufacturer	Product Line	Models	Mounting	System type	Notes
Various	Grooved couplings & Fittings (elbow, tee, cap)	1-1/2"	Valve	All Totalpac2	Tested
		2"	Valve	All Totalpac2	Interpolated
		3"	Valve	All Totalpac2	Interpolated
		4"	Valve	All Totalpac2	Interpolated
		6"	Valve	All Totalpac2	Tested
Various	Grooved end valve	1-1/2"	Valve	All Totalpac2	Tested
		2"	Valve	All Totalpac2	Interpolated
Various	Grooved end butterfly valve	3"	Valve	All Totalpac2	Interpolated
		4"	Valve	All Totalpac2	Interpolated
		6"	Valve	All Totalpac2	Tested
WIKA	Water gauge kilo 0-300 psi	50021214	Valve	All Totalpac2	Tested on the 1-1/2" & 6" units. 2", 3" & 4" interpolated
United Brass	1/4" strainer 50 mesh	200-50 ME	Valve	All Totalpac2	Tested on the 1-1/2" & 6" units. 2", 3" & 4" interpolated
Nibco	Ball valve	TFP600 – 1/4", 1/2", 3/4" or 1"	Valve	All Totalpac2	Tested on the 1-1/2" & 6" units. 2", 3" & 4" interpolated
Fireflex	Emergency release assembly	T2EMERG154, 1-1/2", 2", 3" & 4"	Valve	All Totalpac2	Tested on the 1-1/2" unit. 2", 3" & 4" interpolated
Fireflex	Emergency release assembly	T2EMERG060, 6"	Valve	All Totalpac2	Tested on the 6"
Various	Threaded fittings and nipples	1/2", 3/4"	Valve	All totalpac2	Tested on the 1-1/2" & 6" units. 2", 3" & 4" interpolated

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CONTROL SECTION (IF REQUIRED)					
Manufacturer	Product Line	Models	Mounting	System type	Notes
Viking Corp.	Control panel board	VFR-400	TSH	Preaction, Deluge, Firecycle & SureFire Systems	Tested
Power Max	Batteries	SB 1275	FTH	Preaction, Deluge, Firecycle & SureFire Systems	Tested
		SB 12120	FTH	Preaction, Deluge, Firecycle & SureFire Systems	Interpolated (ampere only is different)
		SB 12260	FTH	Preaction, Deluge, Firecycle & SureFire Systems	Interpolated (ampere only is different)
Fireflex	Panel plate assembly	T2PLAQPAN1	FTH	Preaction, Deluge, Firecycle & SureFire Systems	Tested
Fireflex	Electrical wiring for VFR-400 panel	T2WIRING01	FTH	Preaction, Deluge, Firecycle & SureFire Systems	Tested

AIR COMPRESSOR SECTION					
Manufacturer	Product Line	Models	Mounting	System type	
General Air Products	Air compressor 120V 60Hz	OL11016A	FTL	Preaction, Firecycle and Dry Systems	Tested with 1-1/2" system
		OL21533A	FTL	Preaction, Firecycle and Dry Systems	Interpolated
		OL33550A	FTL	Preaction, Firecycle and Dry Systems	Tested with 6" system
		OL610V100A	FTL	Preaction, Firecycle and Dry Systems	Interpolated
Hallen Bradley	Elect switch for compressor on off	HBL 1221I	FTL	Preaction, Firecycle and Dry Systems	Tested
Furnas	Furnas pressure switch	69HA3	Compressor	Preaction, Firecycle and Dry Systems	Tested
Swagelock	1/2" spring loaded check valve	B-8CP2-1/3	Compressor	Preaction, Firecycle and Dry Systems	Tested
WIKA	Air gauge kilo 0-80 and 250 psi	4279931	Compressor	Preaction, Firecycle and Dry Systems	Tested

NOTE: Air supplies are tankless

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AIR COMPRESSOR SECTION (continued)					
Manufacturer	Product Line	Models	Mounting	System type	
Viking Corp.	1/2" Float check valve	A-1 10883	Compressor	Preaction, Firecycle and Dry Systems	Tested
Artmetco	Support for compressor	T2SUPPCOMP	FTL	Preaction, Firecycle and Dry Systems	Tested
Potter Electric	PS40-1 switch 10-175 psi	PS401AN	Compressor	Preaction, Firecycle and Dry Systems	Tested
Nibco	Ball valve	TFP600 - 1/2"	Compressor	Preaction, Firecycle and Dry Systems	Tested
Various	Threaded fittings and nipples	1/4", 1/2"	Compressor	Preaction, Firecycle and Dry Systems	Tested

NOTE: Air supplies are tankless

Mounting designation:

BB: Bolted on channel fixed to the back of the cabinet

BS: Bolted on channel fixed to the base skid of the cabinet

COMPRESSOR: Assembled with the trim of the air compressor

VALVE: Assembled on the Deluge or Flow Valve

TSH: Bolted in the top of the electrical section of the cabinet

FTH: Fixed in the electrical of the higher section of the cabinet

FTL: Fixed in the top of the mechanical section of the cabinet

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