

# DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC	OFFICE USE ONLY
CERTIFICATION PREAPPROVAL (OSP)	APPLICATION #: OSP-0767
HCAI Special Seismic Certification Preapproval (OSP)	
Type: X New Renewal	
Manufacturer Information	
Manufacturer: Fuel Oil Systems	
Manufacturer's Technical Representative: Doug Nakano	
Mailing Address: 17500 Murphy Parkway, Lathrop, CA 95330	
Telephone: (925) 556-5424 Email: dnakano@fueloils	systems.net
Product Information	10,
Product Name: Emergency and Standby Power Systems	E.
Product Type: Fuel Tanks	72
Product Model Number: UL 2085 Fuel Tanks	- m
General Description: Welded carbon steel inner and outer tanks meeting	UL 208 <mark>5.</mark>
Mounting Description: Rigid, Floor Mounted	
Tested Seismic Enhancements: Seismic enhancements made to the test anomalies during the tests shall be incorr	units and/or modifications required to address porated into the production units.
Applicant Information	
Applicant Company Name: Manwill Engineering LLC	
Contact Person: Derek Manwill	
Mailing Address: PO Box 1194, Bend, OR 97709	
Telephone: (541) 241-2102 Email: derek@manwillse	e.com
Title: President	

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





# DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION FACILITIES DEVELOPMENT DIVISION

California Licensed Structural Engineer Re	esponsible for the Engineering and Test Report(s)
Company Name: MANWILL ENGINEERING LLC	
Name: Derek Manwill	California License Number: S6266
Mailing Address: PO Box 1194, Bend, OR 97709	
Telephone: (541) 241-2102	Email: derek@manwillse.com
Certification Method	
GR-63-Core X ICC-ES AC156	☐ IEEE 344
Other (Please Specify):	
	EORCODE
Testing Laboratory	Mp.
Company Name: ENVIRONMENTAL TESTING L	ABORATORIES, INC. (ETL)
Contact Person: Jeremy Lange	2000.0202
Mailing Address: 11034 Indian Trail, Dallas TX 75	5229-3513 m
Telephone: (972) 247-9657	Email: Jeremy@etIdallas.com
	ATE: 05/24/2023
RN	
CALIFORN	ABUILDING

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#### **Seismic Parameters**

Design Basis of Equipment or Components	(Fp/Wp) = 1.44 (SDS=2.00, z/h=1)	, 1.13 (SDS	S=2.50, z/h=0)
SDS (Design spectral response accele	eration at short period, g) = $2.00 (z/h)$	=1), 2.50 (z	:/h=0)
ap (Amplification factor) =	1.0		
Rp (Response modification factor) =	2.5		
$\Omega_0$ (System overstrength factor) =	2.0		
lp (Importance factor) =	1.5		
z/h (Height ratio factor) =	1 and 0		
Natural frequencies (Hz) =	See Attachment		
Overall dimensions and weight =	See Attachment		
HCAI Approval (For Office Use Only)	Approval Expires on 05/24/2029	THE REAL	
Date: 5/24/2023	OSP-0767	1 G	
Name: Mohammad Karim		Title:	Supervisor, Health Facilities
Special Seismic Certification Valid Up to: Sc	os (g) = See Above	 z/h =	See Above
Condition of Approval (if applicable):	DATF: 05/24/2023		
	PRVIA BUILDING COD	202	

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STATE OF CALIFORNIA - HEALTH AND HUMAN SERVICES AGENCY







## **ATTACHMENT 1: CERTIFIED COMPONENTS**

SPECIAL SEISMIC CERTIFICATION

**DOCUMENT NO.: 22095CR1.0** 

#### TABLE 1

MANUFACTURER: FUEL OIL SYSTEMS

#### PRODUCT FAMILY: UL 2085 FUEL TANKS

MODEL NUMBER	DI	MENSIONS	(in)	MAX. WT.	DESCRIPTION / NOTES	BASIS
MODEL NOMBER	DEPTH	WIDTH	HEIGHT	(lb)	DESCRIPTION / NOTES	BASIS
UL 2085 Fuel Tanks						
250-Gal UL 2085 Tank	78.4	50.4	37.4	4,913		UUT 2
500-Gal UL 2085 Tank	94.0	50.0	52.0	8,006		UUT 1
				SEISMIC	$S_{DS} = 2.0g$ for z/h = 1	I <sub>P</sub> = 1.5
<b>MOUNTING:</b> Rigid floor mounted.				LEVELS:	$S_{DS} = 2.5g$ for z/h = 0	$I_{\rm P} = 1.5$
NOTES						

#### NOTES:

Product Construction: Welded carbon steel inner and outer tanks. Options/Subcomponents: None.



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## ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

## SPECIAL SEISMIC CERTIFICATION

#### **UUT 1**

#### **DOCUMENT NO.: 22095CR1.0**

MANUFAC	TURER:	FUEL OIL	SYSTEMS			
MODEL NU	JMBER:	500-Gal U	L 2085 TANK	<u> </u>		
UNIT FUNC	CTION:	FUEL TAN	١K			
SERIAL NU	JMBER:	N/A				
DIN	MENSIONS	(in)	WEIGHT	RES.	FREQ	. (Hz)
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V
94.0	50.0	52.0	8,006	10.4	13.7	14.9
CODE & CI	RITERIA:	2022 CBC	, ICC-ES AC	156		
TEST LAB	ORATORY:	ENVIRON	MENTAL TES	STING LAI	BORAT	ORY
REPORT: 2	22095TR1.0 (	dated 5/22/23	), tested on 0	2/28/2023		
S <sub>DS</sub> (g)	z/h	А <sub>FLX-Н</sub> (g)	А <sub>RIG-Н</sub> (g)	A <sub>FLX-V</sub> (	g) A <sub>F</sub>	<sub>кіб-</sub> (g)
2.00	1					
2.00	•	2 20	2 40	1 60		0 60
2.50		3.20	2.40	1.68	2 CO	0.68
2.50 IMPORTA Unit was fu maintained	0 ANCE FACT ull of operatin d structural in nt after shake	<b>FOR, I<sub>P</sub> = 1.</b> g content durit tegrity and relevant test.	5 ing the shake mained function	table test. onal per m	Unit anufac	
2.50 IMPORTA Unit was fu maintained requireme	ANCE FACT ull of operatin d structural in nt after shake	<b>FOR, I<sub>P</sub> = 1.</b> g content durit tegrity and rep table test. Rigid floor	5 ing the shake mained function mounted to f	table test. onal per m	Unit aanufac g (4) 5/	DDE turer 8" Grade
2.50 IMPORTA Unit was fu maintained requireme MOUNTING CONSTRU	ANCE FACT ull of operatin d structural in nt after shake 3: CTION:	<b>FOR, I<sub>P</sub> = 1.</b> g content duri tegrity and rei table test. Rigid floor Welded ca	5 ing the shake mained function	table test. onal per m	Unit aanufac g (4) 5/	DDE turer 8" Grade
2.50 IMPORTA Unit was fu maintained requireme MOUNTING CONSTRUG SUBCOMP	ANCE FACT ull of operatin d structural in nt after shake G: CTION: ONENTS:	<b>FOR, I<sub>P</sub> = 1.</b> g content duri tegrity and rei table test. Rigid floor Welded ca None.	5 ing the shake mained function mounted to f	table test. onal per m	Unit aanufac g (4) 5/	DDE turer 8" Grade
2.50 IMPORTA Unit was fu maintained	ANCE FACT ull of operatin d structural in nt after shake G: CTION: ONENTS:	<b>FOR, I<sub>P</sub> = 1.</b> g content duri tegrity and rei table test. Rigid floor Welded ca	5 ing the shake mained function mounted to f	table test. onal per m	Unit aanufac g (4) 5/	DDE turer 8" Grade

CONSTRUCTION:   Welded carbon steel inner and outer tanks.     SUBCOMPONENTS:   None.						0110111	11110101
UNIT FUNCTION: FUEL TANK   SERIAL NUMBER: N/A   DIMENSIONS (in) WEIGHT RES. FREQ. (Hz)   DEPTH WIDTH HEIGHT (lb) F-B S-S V   78.4 50.4 37.4 4,913 31.9 >33 >33   CODE & CRITERIA: 2022 CBC, ICC-ES AC156 Importance Import	MANUFAC	TURER:	FUEL OIL	SYSTEMS			
SERIAL NUMBER: N/A   DIMENSIONS (in) WEIGHT RES. FREQ. (Hz)   DEPTH WIDTH HEIGHT (lb) F-B S-S V   78.4 50.4 37.4 4,913 31.9 >33 >33   CODE & CRITERIA: 2022 CBC, ICC-ES AC156 Image: Composition of the state of the st	MODEL NU	MBER:	250-Gal UL 2085 TANK				
DIMENSIONS (in)WEIGHTRES. FREQ. (Hz)DEPTHWIDTHHEIGHT(lb)F-BS-SV78.450.437.44,91331.9>33>33CODE & CRITERIA:2022 CBC, ICC-ES AC156TEST LABORATORY:ENVIRONMENTAL TESTING LABORATORYREPORT:22095TR1.0 (dated 5/22/23), tested on 05/18/2023Sps (g)Z/hAFLX-H (g)ARIG-H (g)AFLX-V (g)2.0013.202.401.680.68IMPORTANCE FACTOR, IP = 1.5Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.None.MOUNTING:Rigid floor mounted to fixture using (4) 5/8" Grade 8 bolts with heavy pCONSTRUCTION:Welded carbon steel inner and outer tanks.SUBCOMPONENTS:None.	UNIT FUNC	TION:	FUEL TANK DATE: 05/24/				
DEPTHWIDTHHEIGHT(lb)F-BS-SV78.450.437.44,91331.9>33>33CODE & CRITERIA:2022 CBC, ICC-ES AC156TEST LABORATORY:ENVIRONMENTAL TESTING LABORATORYREPORT:22095TR1.0 (dated 5/22/23), tested on 05/18/2023Sps (g) $Z/h$ AFLX-H (g)ARIG-H (g)AFLX-U (g)1.680.68IMPORTANCE FACTOR, IP = 1.5Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.MOUNTING:Rigid floor mounted to fixture using (4) 5/8" Grade 8 bolts with heavy pCONSTRUCTION:Welded carbon steel inner and outer tanks.SUBCOMPONENTS:None.	SERIAL NU	IMBER:	N/A				
78.450.437.44,91331.9>33>33CODE & CRITERIA:2022 CBC, ICC-ES AC156TEST LABORATORY:ENVIRONMENTAL TESTING LABORATORYREPORT:22095TR1.0 (dated 5/22/23), tested on 05/18/2023 $S_{DS}$ (g)Z/hAFLX-H (g)ARIG-H (g)ARIG-V (g)2.0013.202.401.680.68IMPORTANCE FACTOR, Ip = 1.5Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.MOUNTING:Rigid floor mounted to fixture using (4) 5/8" Grade 8 bolts with heavy plaCONSTRUCTION:Welded carbon steel inner and outer tanks.SUBCOMPONENTS:None.	DIN	IENSIONS	(in)	WEIGHT	RES.	. FREQ	. (Hz)
CODE & CRITERIA:2022 CBC, ICC-ES AC156TEST LABORATORY:ENVIRONMENTAL TESTING LABORATORYREPORT:22095TR1.0 (dated 5/22/23), tested on 05/18/2023Arise of the state of the s	DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V
TEST LABORATORY: ENVIRONMENTAL TESTING LABORATORY   REPORT: 22095TR1.0 (dated 5/22/23), tested on 05/18/2023   S <sub>DS</sub> (g) Z/h A <sub>FLX-H</sub> (g) A <sub>RIG-H</sub> (g) A <sub>FLX-V</sub> (g) A <sub>RIG-V</sub> (g)   2.00 1 3.20 2.40 1.68 0.68   IMPORTANCE FACTOR, I <sub>P</sub> = 1.5 Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Rigid floor mounted to fixture using (4) 5/8" Grade 8 bolts with heavy plate CONSTRUCTION:   Welded carbon steel inner and outer tanks. SUBCOMPONENTS: None.	78.4	50.4	37.4	4,913	31.9	>33	>33
REPORT: 22095TR1.0 (dated 5/22/23), tested on 05/18/2023   S <sub>DS</sub> (g) Z/h A <sub>FLX-H</sub> (g) A <sub>RIG-H</sub> (g) A <sub>FLX-V</sub> (g) A <sub>RIG-V</sub> (g)   2.00 1 3.20 2.40 1.68 0.68   IMPORTANCE FACTOR, I <sub>P</sub> = 1.5   Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.   MOUNTING: Rigid floor mounted to fixture using (4) 5/8" Grade 8 bolts with heavy plate   CONSTRUCTION: Welded carbon steel inner and outer tanks.   SUBCOMPONENTS: None.	CODE & CI	RITERIA:	2022 CBC	, ICC-ES AC	156		MIMP
Sps (g) z/h A <sub>FLX-H</sub> (g) A <sub>RIG-H</sub> (g) A <sub>FLX-V</sub> (g) A <sub>RIG-V</sub> (g)   2.00 1 3.20 2.40 1.68 0.68   IMPORTANCE FACTOR, I <sub>P</sub> = 1.5 Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Weight floor mounted to fixture using (4) 5/8" Grade 8 bolts with heavy plate view of the shake table table test.   MOUNTING: Rigid floor mounted to fixture using (4) 5/8" Grade 8 bolts with heavy plate view of the shake table table.   SUBCOMPONENTS: None.	-		-				ORY
2.00 1 3.20 2.40 1.68 0.68   IMPORTANCE FACTOR, I <sub>P</sub> = 1.5   Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Importance of the shake table test. Importance of the shake table test.   MOUNTING: Rigid floor mounted to fixture using (4) 5/8" Grade 8 bolts with heavy plate we construction: Welded carbon steel inner and outer tanks.   SUBCOMPONENTS: None.	REPORT: 2	2095TR1.0 (0	dated 5/22/23	), tested on 0	5/18/2023		-DI
2.50 0 3.20 2.40 1.68 0.68   IMPORTANCE FACTOR, I <sub>P</sub> = 1.5   Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.   MOUNTING: Rigid floor mounted to fixture using (4) 5/8" Grade 8 bolts with heavy plate w   CONSTRUCTION: Welded carbon steel inner and outer tanks.   SUBCOMPONENTS: None.	S <sub>DS</sub> (g)	z/h	A <sub>FLX-H</sub> (g)	А <sub>гід-н</sub> (g)	A <sub>FLX-V</sub>	(g) A	<sub>RIG-V</sub> (g)
2.50 0   IMPORTANCE FACTOR, I <sub>P</sub> = 1.5   Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.   MOUNTING: Rigid floor mounted to fixture using (4) 5/8" Grade 8 bolts with heavy plate we construction:   Welded carbon steel inner and outer tanks.   SUBCOMPONENTS: None.		1	3 20	2 40	1 68	1.68 0.68	
Unit was full of operating content during the shake table test. Unit   maintained structural integrity and remained functional per manufacturer   requirement after shake table test.   MOUNTING: Rigid floor mounted to fixture using (4) 5/8" Grade 8 bolts with heavy plate was   CONSTRUCTION: Welded carbon steel inner and outer tanks.   SUBCOMPONENTS: None.	2.50	0	5.20	2.40	1.00		0.00
CONSTRUCTION:   Welded carbon steel inner and outer tanks.     SUBCOMPONENTS:   None.	Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer						turer
SUBCOMPONENTS: None.	MOUNTING	):	Rigid floor	mounted to f	ixture usii	ng (4) 5/	8" Grade
	CONSTRUC	CTION:	Welded ca	arbon steel inr	ner and o	uter tanl	KS.
	SUBCOMP	ONENTS:	None.				
	TESTING N	IOTES:	N/A				