



APPLICATION FOR PREAPPROVAL SPECIAL SEISMIC CERTIFICATION OF EQUIPMENT AND COMPONENTS

For Office Use Only

APPLICATION NO.
OSP – 0284-10

Check whether application is: NEW RENEWAL

1.0 Enthermics Medical Systems Adam Van Essen
Manufacturer *Manufacturer's Technical Representative*
W164 N9221 Water Street; PO Box 443; Menomonee Falls, WI 53052
Mailing Address

(262) 509-6457

adame@enthermics.com

Telephone

E-mail Address

2.0 ivNow IV Fluid Warmers
Product Name *Product Type*
Various Products, See Table 1.
Product model No (List all unique product identification numbers and/or serial numbers)

General Description: An innovative fluid warmer for bags with 120 Volts power source, rigid wall mounted with Enthermics Horizontal wall Mount Brackets.

3.0 Enthermics Medical Systems Adam Van Essen
Applicant Company Name *Contact Person*
W164 N9221 Water Street; PO Box 443; Menomonee Falls, WI 53052
Mailing Address

(262) 509-6457

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E-mail Address

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

7/10/2012

Signature of Applicant

Date

Design Engineer
Title

Enthermics Medical Systems
Company Name



Registered Design Professional Preparing the Report

4.0 RICE Engineering Inc.
Company Name

Bradley J. Kuehl
Contact Name

C66394
California License Number

105 School Creek Trail, Luxemburg, WI 54217
Mailing Address

(920) 845-1042
Telephone

bradkuehl@rice-inc.com
E-mail Address

California Licensed Structural Engineer Review and Acceptance of the Report

5.0 Arches Engineering, LLC
Company Name

Ruth Miller
Contact Name

S4657
California License Number

P.O. Box 3852, Grand Junction, CO 81502
Mailing Address

(970) 255-6788
Telephone

ruth@archesengineering.com
E-mail Address

Anchorage Pre-Approval

6.0 Anchorage is pre-approved under OPA- 0698-10
 (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 Environ Laboratories
Company Name

Kent L. Erickson
Contact Name

9725 Girard Avenue South; Minneapolis, MN 55431
Mailing Address

(952) 888-7795
Telephone

lkle@environlab.com
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) = 1.80

S_{DS} (Spectral response acceleration at short period) = 2.5g

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

R_p (Equipment or component response modification factor) = 1.5

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component fundamental period(s) = See UUT Summary Sheets

Building period limits (if any) = None

Overall dimensions and weight (or range thereof) = See Table 1

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): Certified and Tested Unit Descriptions

11.0 OSHPD Approval (For Office Use Only)

11/19/12

December 31, 2016

Signature & Date

M. R. Karim, SHFR

Approval Expiration Date

S_{DS} (g) = **2.5** z/h = **1.0**

Name & Title

Special Seismic Certification Valid Up to

Condition of Approval (if any):

Table 1: Special Seismic Certification Product Matrix

PRODUCT LINE	MODEL	MOUNTING	EMPTY WEIGHT (LB)	DEPTH (IN)	WIDTH (IN)	HEIGHT (IN)	BASIS
ivNow	ivNow-1*	Rigid Wall Mounted with Enthermics Horizontal Wall Mount Brackets	8	6.74	14.5	8	UUT1
ivNow	ivNow-2*	Rigid Wall Mounted with Enthermics Horizontal Wall Mount Brackets	14	6.74	14.5	13.4	Interpolated
ivNow	ivNow-3*	Rigid Wall Mounted with Enthermics Horizontal Wall Mount Brackets	20	6.74	14.5	18.1	Interpolated
ivNow	ivNow-4*	Rigid Wall Mounted with Enthermics Horizontal Wall Mount Brackets	25	6.74	14.5	24.2	Interpolated
ivNow	ivNow-5*	Rigid Wall Mounted with Enthermics Horizontal Wall Mount Brackets	31	6.74	14.5	29.6	Interpolated
ivNow	ivNow-6*	Rigid Wall Mounted with Enthermics Horizontal Wall Mount Brackets	37	6.74	14.5	35	UUT2

*120 Volt Power Source

Table 2: UUT Specifications

UUT	MODEL	SERIAL NUMBER	MOUNTING	WEIGHT (LB)	DEPTH (IN)	WIDTH (IN)	HEIGHT (IN)
1	ivNow-1	735074 - 895 - 1010	Wall	8	6.74	14.5	8
2	ivNow-6	990456 - 000	Wall	37	6.74	14.5	35

Table 3: Certified Sub-Component Matrix

MODEL	DESCRIPTION	COMPOSITION	MANUFACTURER	BASIS
BV 030-7155.0	Transformer, Control Board	Fiberglass; Copper	Pulse Gmbh	UUT1, UUT2
BV301D06015	Transformer, Control Board Alternate	Fiberglass; Copper	Zettler Magnetics	UUT1, UUT2
BV 030-7717.0	Transformer, Control Board Alternate	Fiberglass; Copper	Pulse	UUT1, UUT2
Various	Connectors and Receptacles	Various	Various	UUT1, UUT2
Various	Crimp Connectors	Various	Various	UUT1, UUT2
576-0312010.HXP	Fuses	Various	Littelfuse	UUT1, UUT2
504-S8202	Fuseholders	Thermoplastic; spring-bronze	Copper Bussman	UUT1, UUT2
AL0510SA-08XA	Heater Pad	Polymer	Thermo Heating Elements LLC	UUT1, UUT2
OM-140-QC	Manual Reset Thermostat (T-STAT#2)		Selco Products Co.	UUT1, UUT2
OA-140-QC	Auto Reset Thermostat (T-STAT#1)		Selco Products Co.	UUT1, UUT2
317-1082-ND	Thermal Switch	Aluminum-plated Steel	Microtherm	UUT1, UUT2
-	Wire Positioning Devices		-	UUT1, UUT2
Mylar	Backlight Board		-	UUT1, UUT2
-	Insulation Barrier	0.007in. Thick Mylar	-	UUT1, UUT2

**Unit Under Test (UUT)
Summary Sheet**

REI No: R12-05-174

Manufacturer: *Enthermics Medical Systems*

Model Line: *ivNow*

Model Number: *ivNow-1*

Product Construction Summary:

Lightweight, medical grade plastic housing surrounds an anodized aluminum heat plate with one cavity.

Options/Subcomponent Summary:

120 Volt Power Source.

UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
8	6.74	14.5	8	N/A	N/A	N/A

UUT Highest Passed Seismic Test Information

Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2010	ICC-ES AC 156	2.49	1	1.5	3.98	2.99	2.66	1.99

Test Mounting Details:



The modular fluid warmer is mounted to a GCX, 19" surface mounting channel with (2) No. 10 x 5/8" screws (Fy = 30 ksi).

Test Results:

Units were tested with content and were functional after the test.

**Unit Under Test (UUT)
Summary Sheet**

REI No: R12-05-174

Manufacturer: *Enthermics Medical Systems*

Model Line: *ivNow*

Model Number: *ivNow-6*

Product Construction Summary:

Lightweight, medical grade plastic housing surrounds an anodized aluminum heat plate with two cavities.

Options/Subcomponent Summary:

120 Volt Power Source.

UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
37	6.74	14.5	35	N/A	N/A	N/A

UUT Highest Passed Seismic Test Information

Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2010	ICC-ES AC 156	2.49	1	1.5	3.98	2.99	2.66	1.99

Test Mounting Details:



The modular fluid warmer is mounted to two GCX, 19" surface mounting channels with (2) No. 10 x 5/8" screws per horizontal rail (F_y = 30 ksi).

Test Results:

Units were tested with content and were functional after the test.