



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP – 0398 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type:  New  Renewal

Manufacturer Information

Manufacturer: KKT chillers – a brand of ait-deutschland GmbH

Manufacturer's Technical Representative: Oscar Tobar, Markus Zobler

Mailing Address: Industriestraße 3 - 95359 Kasendorf - Germany

Telephone: 847 734 1600 Email: On File

Product Information

Product Name: medixX50, medixX60 & medixX70 Chillers and TSN

Product Type: Water Chiller

Product Model Number: See Attachment 1

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

General Description: Air cooled compression refrigerant system used to cool liquids & remote transfer station control panel. Devices are cataloged units. Seismic enhancements made to the test units and modifications required to address the anomalies observed during testing shall be incorporated into the production units.

Mounting Description: Flexible base mounted Chillers. Rigid wall mounted Transfer Station

Applicant Information

Applicant Company Name: EASE LLC

Contact Person: JONATHAN ROBERSON, S.E.

Mailing Address: 5877 Pine Ave. Suite 210, Chino Hills, CA 91709

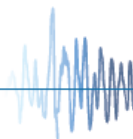
Telephone: (406) 541-EASE (3273) Email: j.roberson@easeco.com

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: 5/22/14

Title: Principal Engineer Company Name: EASE LLC

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





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

Company Name: EASE LLC

Name: Jonathan Roberson, S.E. California License Number: S4197

Mailing Address: 5877 Pine Ave. Suite 210, Chino Hills, CA 91709

Telephone: (909) 606-7622 Email: j.roberson@easeco.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): \_\_\_\_\_

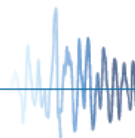
**Testing Laboratory**

Company Name: Environmental Testing Laboratory, Inc.

Contact Name: Brady Richard

Mailing Address: 11034 Indian Trail, Dallas, TX 75229-3513

Telephone: (972) 247-9657 Email: brady@etldallas.com





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**Seismic Parameters**

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

Design Basis of Equipment or Components ( $F_p/W_p$ ) = See Attachment 1

$S_{DS}$  (Design spectral response acceleration at short period, g) = 2.0 @ z/h=1 & 2.6 @ z/h=0

$a_p$  (In-structure equipment or component amplification factor) = 2 1/2 Chillers / 1 TSN

$R_p$  (Equipment or component response modification factor) = 2 1/2

$\Omega_0$  (System overstrength factor) = 2 1/2

$I_p$  (Importance factor) = 1.5

z/h (Height factor ratio) = 1 & 0

Equipment or Component Natural Frequencies (Hz) = See Attachment 2

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

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) = \_\_\_\_\_

$\Omega_0$  (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): Attachments 1 & 2

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

Signature:  Date: September 24, 2014

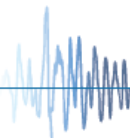
Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to :  $S_{DS}$  (g) = See Above z/h = See Above

Condition of Approval (if applicable): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS**


**TABLE 1: SEISMIC CERTIFIED COMPONENTS**


Manufacturer	KKT chillers – a brand of ait-deutschland GmbH						
Product Line	medixX Chillers						
COMPONENT	PART NO.	APPROX. DIMENSIONS (IN.)			MAX. WT. (LB.)	MOUNT	BASIS <sup>[1]</sup>
		W	D	H			
<b>CHILLERS</b>							
medixX50 Chiller	927149	84.5	43.3	80.7	1778	Flexible Base	UUT1
medixX60 Chiller	927144	84.5	43.3	80.7	1804	Flexible Base	INT
medixX70 Chiller	927131	84.5	43.3	80.7	1805	Flexible Base	UUT2
<b>TRANSFER STATION</b>							
TSN Transfer Station	920100	22.6	10.4	39.2	87	Wall	UUT3
Mount	<p><b>FLEXIBLE BASE (FLOOR):</b> free-standing, base-mounted condition with the component attached to manufacturer-provided elastomeric bearings anchored to a supporting structure and with no lateral support above the base.</p> <p><b>WALL MOUNTED:</b> component is fully supported by a building wall or partition.</p>						
Notes	<p>1. BASIS:</p> <ul style="list-style-type: none"> <li>• UUT#: Indicates that a test specimen matching these characteristics was tested as part of this testing program.</li> <li>• INT (Interpolated or Extrapolated): indicates a model that was not specifically tested, and by which seismic certification is established through evaluation of testing of other, similar models in the product line.</li> </ul> <p>2. Weights shown are service loads with units filled with water.</p> <p>3. Seismic enhancements present in the test specimens are a necessary condition of Seismic Certification for all chiller models.</p>						

**TABLE 2: ASCE 7-10 DESIGN BASIS FOR EQUIPMENT**


COMPONENT	MODEL No.	F <sub>p</sub> /W <sub>p</sub>	S <sub>DS</sub> (g)	z/h	a <sub>p</sub>	R <sub>p</sub>	Ω <sub>0</sub>
medixX50 Chiller	927149	3.6	2.0	1.0	2½	2½	2½
medixX60 Chiller	927144						
medixX70 Chiller	927131	1.56	2.6	0			
TSN Transfer Station	920100	1.44	2.0	1.0	1	2½	2½
		1.17	2.6	0			

**ATTACHMENT 2: TEST SPECIMEN SUMMARY**

<b>UUT- 1      medixX50 Chiller</b>								
<b>MANUFACTURER:</b>	KKT chillers – a brand of ait-deutschland GmbH							
<b>IDENTIFICATION:</b>	Model No.: medixX50 Chiller							
<b>DESCRIPTION:</b>	Included modified support assembly for expansion tank which is available as an "Enhanced Fixing Assembly" option kit. Chiller was tested with fluid at full operating levels.							
<b>MOUNTING:</b>	Flexible base mount with elastomeric bearing at each corner with (2) – 1/2" dia. hex head bolts (torqued to 40 lb-ft) at each bearing							
								
<b>PROPERTIES:</b>								
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)				
Width	Depth	Height		X-Axis	Y-Axis	Z-Axis		
84.5	43.3	80.7	1711 (dry) / 1778 (wet)	3.4	5.1	7.6		
<b>SHAKE TABLE TEST PARAMETERS</b>								
CODE	TEST CRITERIA	S <sub>DS</sub> (g)	z/h	I <sub>P</sub>	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2013	ICC-ES AC156-12	2.0 2.6	1.0 0.0	1.5	3.2 2.6	2.4 1.04	1.34 1.74	0.54 0.70
Unit maintained structural integrity and functionality after the ICC-ES AC 156 test								

<b>UUT- 2      medixX70 Chiller</b>								
<b>MANUFACTURER:</b>	KKT chillers – a brand of ait-deutschland GmbH							
<b>IDENTIFICATION:</b>	Model No.: medixX70 Chiller							
<b>DESCRIPTION:</b>	Included modified support assembly for expansion tank which is available as an "Enhanced Fixing Assembly" option kit. Chiller was tested with fluid at full operating levels.							
<b>MOUNTING:</b>	Flexible base mount with elastomeric bearing at each corner with (2) – 1/2" dia. hex head bolts (torqued to 40 lb-ft) at each bearing							
								
<b>PROPERTIES:</b>								
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)				
Width	Depth	Height		X-Axis	Y-Axis	Z-Axis		
84.5	43.3	80.7	1744 (dry) /1805 (wet)	3.9	4.7	7.2		
<b>SHAKE TABLE TEST PARAMETERS</b>								
CODE	TEST CRITERIA	S <sub>DS</sub> (g)	z/h	I <sub>P</sub>	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2013	ICC-ES AC156-12	2.0 2.6	1.0 0.0	1.5	3.2 2.6	2.4 1.04	1.34 1.74	0.54 0.70
Unit maintained structural integrity and functionality after the ICC-ES AC 156 test								

**ATTACHMENT 2: TEST SPECIMEN SUMMARY**

<b>UUT- 3      TSN Transfer Station</b>								
<b>MANUFACTURER:</b> KKT chillers – a brand of ait-deutschland GmbH								
<b>IDENTIFICATION:</b> Model No.: TSN Transfer Station								
<b>DESCRIPTION:</b> Remote transfer station control panel. Specimen was tested full with fluid.								
<b>MOUNTING:</b> Wall mounted using (10) – ¼" dia sheet metal screws								
<b>PROPERTIES:</b>								
<b>DIMENSIONS (in.)</b>				<b>Weight (lb.)</b>	<b>LOWEST RESONANT FREQUENCY (Hz.)</b>			
Width	Depth	Height			X-Axis	Y-Axis	Z-Axis	
22.6	10.4	39.2		80 (dry) 87 (wet)	N/A	N/A	N/A	
<b>SHAKE TABLE TEST PARAMETERS</b>								
<b>CODE</b>	<b>TEST CRITERIA</b>	<b>S<sub>Ds</sub> (g)</b>	<b>z/h</b>	<b>I<sub>p</sub></b>	<b>A<sub>FLX-H</sub></b>	<b>A<sub>RIG-H</sub></b>	<b>A<sub>FLX-V</sub></b>	<b>A<sub>RIG-V</sub></b>
CBC 2013	ICC-ES AC156-12	2.0 2.6	1.0 0.0	1.5	3.2 2.6	2.4 1.04	1.34 1.74	0.54 0.70
Unit maintained structural integrity and functionality after the ICC-ES AC 156 test								