



APPLICATION FOR PREAPPROVAL

SPECIAL SEISMIC CERTIFICATION OF EQUIPMENT AND COMPONENTS

For Office Use Only

APPLICATION NO.
OSP – 0279 – 10

Check whether application is: NEW RENEWAL

1.0 **HASKRIS COMPANY** Christopher Waas
Manufacturer *Manufacturer's Technical Representative*

100 Kelly Street, Elk Grove, IL 60007
Mailing Address

224-265-8384
Telephone *E-mail Address*

2.0 **R1200; OPC-SERIES & WW-SERIES** **OUTDOOR CHILLERS & HEAT EXCHANGERS**
Product Name *Product Type*

SEE ATTACHMENT 1

Product model No (List all unique product identification numbers and/or serial numbers)

General Description: Rigid floor mounted self-contained air-cooled process fluid chiller systems, and fluid-to-fluid heat exchangers. All enclosures are powder-coated carbon steel. Seismic enhancements incorporated into the test units shall be incorporated into the certified units.

3.0 **EQUIPMENTANCHORAGE.COM** JONATHAN ROBERSON, S.E.
Applicant Company Name *Contact Person*

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

(406) 541-EASE (3273) jon@easeco.com
Telephone *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.

May 16, 2012
Signature of Applicant *Date*

Principal Engineer **EQUIPMENTANCHORAGE.COM**
Title *Company Name*



Registered Design Professional Preparing the Report

4.0 EQUIPMENTANCHORAGE.COM

Company Name

Jonathan Roberson, S.E.

Contact Name

S4197

California License Number

5877 Pine Ave, Suite 210, Chino Hills, CA. 91709

Mailing Address

909-606-7622

Telephone

jon@easeco.com

E-mail Address

California Licensed Structural Engineer Review and Acceptance of the Report

5.0 EQUIPMENTANCHORAGE.COM

Company Name

Jonathan Roberson, S.E.

Contact Name

S4197

California License Number

5877 Pine Ave, Suite 210, Chino Hills, CA. 91709

Mailing Address

909-606-7622

Telephone

jon@easeco.com

E-mail Address

Anchorage Pre-Approval

6.0

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

[x] Anchorage is not Pre-approved

Certification Method

70. [x] Testing in accordance with: [x] 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

Environmental Testing Laboratory, Inc.

Company Name

Brady Richard

Contact Name

11034 Indian Trail, Dallas, TX 75229-3513

Mailing Address

972-247-9657

Telephone

brady@etldallas.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) = **1.87**

S_{DS} (Spectral response acceleration at short period) = **2.6g**

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

R_p (Equipment or component response modification factor) = **2.5**

I_p (Importance factor) = **1.5**

z/h (Height factor ratio) = **1.0**

Equipment or Component fundamental period(s) = **See Attachment 2**

Building period limits (if any) = **NONE**

Overall dimensions and weight (or range thereof) = **See Attachment 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): **Attachments 1 & 2**

11.0 OSHPD Approval (For Office Use Only)

8/13/2012

December 31, 2016

Signature & Date

Approval Expiration Date

M. R. Karim, SHFR

S_{DS} (g) = **2.6** z/h = **1.0**

Name & Title

Special Seismic Certification Valid Up to

Condition of Approval (if any):

HASKRIS

SPECIAL SEISMIC CERTIFICATION OF CHILLER SYSTEMS

ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

TABLE 1: SEISMIC CERTIFIED COMPONENTS:

MANUFACTURER	Haskris Company						
PRODUCT LINE	Outdoor Chillers and Recirculating Water Systems						
SYSTEM COMPONENT	MODEL NO.	DIMENSIONS (IN.)			MAX. WT. (LB.)	MOUNTING	BASIS
		W	D	H			
R1200 Outdoor Chiller	R1200- SEISMIC -006	49	36	75	1460	Rigid Base	UUT1
OPC10 Outdoor Process Chiller	OPC 10-460V-3- SEISMIC	49	36	75	1460	Rigid Base	INT
OPC8 Outdoor Process Chiller	OPC 8-460V-3- SEISMIC	49	36	75	1430	Rigid Base	UUT2
WW3 Platform Non-Refrigerated Water Recirculating Systems (water-to-water)	WW3- SEISMIC -001	30	25	34	300	Rigid Base	UUT3
WW4 Platform Non-Refrigerated Water Recirculating Systems (water-to-water)	WW4- SEISMIC -001	30	25	34	315	Rigid Base	UUT4
MOUNTING	Rigid Base: a free-standing, base mounted condition with the component rigidly attached to a supporting structure and no lateral support above the base (i.e. Floor Mounted).						
NOTES	<ol style="list-style-type: none"> BASIS: <ul style="list-style-type: none"> UUT#: Indicates that a test specimen matching these characteristics was tested. INT (Interpolate): indicates a model that was not specifically tested, and by which seismic qualification was established through evaluation of testing of other, similar models in the product line. Seismic Certification is limited to units which include the major subassemblies identified in Table 2: Seismic Qualified Internal Subassemblies. Tabulated Weights are dry weights 						

HASKRIS

SPECIAL SEISMIC CERTIFICATION OF CHILLER SYSTEMS

ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

TABLE 2: SEISMIC CERTIFIED INTERNAL SUBASSEMBLIES:

MANUFACTURER	PRODUCT SERIES	MODEL	NOTES
Compressors			
Copeland	Scroll™ ZR compressors	ZR108KCE-TFD-265	UUT 1
Copeland	Scroll™ ZR compressors	ZR125KCE-TFD-265	
Copeland	Scroll™ ZR compressors	ZR144KCE-TFD-265	UUT 2
Pump			
MTH	Regenerative Turbine	T41M-AB, 2HP	UUT 1
MTH	Regenerative Turbine	T51M-AB, 5HP	UUT 2
MTH	Regenerative Turbine	T41P-AB, 2HP	UUT 3
MTH	Regenerative Turbine	T51P-AB, 5HP	UUT 4
Fan Motor/Blade			
Continental Fan Manufacturing	Direct Drive	AFK180	UUT 1, UUT 2
Evaporator			
GEA PHE SYSTEMS North America, Inc.	Brazed Plate Heat Exchanger	WP5-30	UUT 1, UUT 2
Variable Frequency Drive (VFD)			
Yaskawa	AC Drive	CIMR-VU4A0005GAAA	UUT 1, UUT 2
Heat Exchanger			
GEA PHE SYSTEMS North America, Inc.	Brazed Plate Heat Exchanger	WP4-40	UUT 3
GEA PHE SYSTEMS North America, Inc.	Brazed Plate Heat Exchanger	(2) WP4-40	UUT 4
Expansion Valve			
Sporlan	Balanced Port TXV	EBSVE-11-CP100	UUT 1, UUT 2
Condenser			
LUVATA	Copper tube aluminum fin	T071025B	UUT 1, UUT 2
Flow Switch			
JOHNSON CONTROLS	Paddle Flow Switch	F61LB-1C	UUT 1, UUT 2
Liquid Filter Drier			
Emerson Climate Technologies	EK Liquid Line Filter Drier	EK-415S	UUT 1, UUT 2
Low Fluid Tank Level Indicator			
Gems Sensors	LS-7	605147	UUT1
Madison Company	Side-Mounted Switches with Slosh Shield	M8705	UUT2

HASKRIS

SPECIAL SEISMIC CERTIFICATION OF CHILLER SYSTEMS

ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

MANUFACTURER	PRODUCT SERIES	MODEL	NOTES
Gems Sensors	LS-7	602969	UUT3, UUT4
Pressure Relief Bypass Valve			
Fulflo Speciality Valves	SVB	SFVB-5105R-SS-WS	UUT 1, UUT 2, UUT 3, UUT 4
Controller			
Future Design Controls	4300	51301100	UUT 1, UUT 2
Future Design Controls	9300	513810	UUT 1, UUT 2
Future Design Controls	4300	5150000	UUT 3, UUT 4
Reservoir (closed system)			
Haskris	30 gal non-sealed stainless steel tank	4589	UUT 1
Haskris	25 gal sealed stainless steel tank	5110	UUT 2
Haskris	14 gal. non-sealed stainless steel tank	4924	UUT 3; UUT 4

ATTACHMENT 2: TEST SPECIMEN

UUT-1

MANUFACTURER: Haskris Company
 MODEL: R1200
 IDENTIFICATION: Serial No.: HB22170
 FUNCTION: Outdoor Process fluid Chiller with air cooled condenser
 DESCRIPTION: Powder-coated carbon steel enclosure with the major internal subassemblies identified in Attachment 1/Table 2 and other elements necessary to form a complete chiller system. UUT was tested with reservoir full of fluid.
 MOUNTING: Rigid Base



UUT PROPERTIES:

DIMENSIONS (in.)			DRY WEIGHT (lb.)	LOWEST RESONANT FREQUENCY (Hz.)		
WIDTH	DEPTH	HEIGHT		X-Axis	Y-Axis	Z-Axis
48.875	36	75.75	1452	12.39	13.29	11.61

UUT-2

MANUFACTURER: Haskris Company
 MODEL: OPC 8
 IDENTIFICATION: Serial No.: HB22635
 FUNCTION: Outdoor Process fluid Chiller with air cooled condenser
 DESCRIPTION: Powder-coated carbon steel enclosure with the major internal subassemblies identified in Attachment 1/Table 2 and other elements necessary to form a complete chiller system. UUT was tested with reservoir full of fluid.
 MOUNTING: Rigid Base



UUT PROPERTIES:

DIMENSIONS (in.)			DRY WEIGHT (lb.)	LOWEST RESONANT FREQUENCY (Hz.)		
WIDTH	DEPTH	HEIGHT		X-Axis	Y-Axis	Z-Axis
48.875	36	75.75	1424	12.71	13.77	12.03

ATTACHMENT 2: TEST SPECIMEN

UUT-3

MANUFACTURER: Haskris Company
 MODEL: WW3
 IDENTIFICATION: Serial No.: HB24458
 FUNCTION: The Haskris WW-series dual circuit fluid-to-fluid heat exchanger uses chilled water from the customer site to cool the process fluid in the Haskris reservoir that ultimately flows through your equipment.
 DESCRIPTION: Powder-coated carbon steel enclosure with the major internal subassemblies identified in Attachment 1/Table 2 and other elements necessary to form a complete fluid-fluid heat exchange system. UUT was tested with reservoir full of fluid.
 Test specimen included structural enhancements corresponding to Model No. WW3-SEISMIC-001.
 MOUNTING: Rigid Base
 UUT PROPERTIES:



DIMENSIONS (in.)			DRY WEIGHT (lb.)	LOWEST RESONANT FREQUENCY (Hz.)		
WIDTH	DEPTH	HEIGHT		X-Axis	Y-Axis	Z-Axis
29.5	24.5	32	292	25.86	27.91	25.75

UUT-4

MANUFACTURER: Haskris Company
 MODEL: WW4
 IDENTIFICATION: Serial No.: HB24430
 FUNCTION: The Haskris WW-series dual circuit fluid-to-fluid heat exchanger uses chilled water from the customer site to cool the process fluid in the Haskris reservoir that ultimately flows through your equipment.
 DESCRIPTION: Powder-coated carbon steel enclosure with the major internal subassemblies identified in Attachment 1/Table 2 and other elements necessary to form a complete fluid-fluid heat exchange system. UUT was tested with reservoir full of fluid.
 Test specimen included structural enhancements corresponding to Model No. WW4-SEISMIC-001.
 MOUNTING: Rigid Base
 UUT PROPERTIES:



DIMENSIONS (in.)			DRY WEIGHT (lb.)	LOWEST RESONANT FREQUENCY (Hz.)		
WIDTH	DEPTH	HEIGHT		X-Axis	Y-Axis	Z-Axis
29.5	24.5	32	315	19.09	27.47	>50