APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0581

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Trane

Manufacturer's Technical Representative: Ryan Doud

Mailing Address: 3600 Pammel Creek Road, La Crosse, WI 54601

Telephone: (608) 787-4200 Email: rdoud@trane.com

Product Information

Product Name: Trane Agility

Product Model Number(s): HDWA 200 – HDWA 400

Product Category: Chillers

Product Sub-Category: Chillers - Water Cooled

General Description: Catalogued Shell and Tube Water Cooled Chillers with 2-Stage Compressor

Mounting Description: Base Mounted Rigid and Neoprene Vibration Isolated

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: The VMC Group

Contact Person: John Giuliano

Mailing Address: 113 Main Street, Bloomingdale, NJ 07403

Telephone: (973) 838-1780 Email: john.giuliano@thevmcgroup.com

Title: President

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

Company Name: THE VMC GROUP

Name: Kenneth Tarlow California License Number: S2851

Mailing Address: 980 9th Street, 16th Floor, Sacramento, CA 95814

Telephone: (832) 627-2214 Email: ken.tarlow@thevmcgroup.com

Certification Method

☐ GR-63-Core ☒ ICC-ES AC156 ☐ IEEE 344 ☐ IEEE 693 ☐ NEBS 3

☐ Other (Please Specify):

Testing Laboratory

Company Name: U.S. ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER, CONSTRUCTION ENGINEERING RESEARCH LABORATORY (CERL)

Contact Person: James Wilcoski

Mailing Address: 2902 Newmark Dr., Champaign IL 61822-1076

Telephone: (217) 373-4565 Email: james.wilcoski@usace.army.mi

Seismic Parameters

Certified Response Spectral Acceleration Factors:(F_p/W_p)

Horizontal	(A Flx-H), g=	3.20	(A Rig-H), g=	2.15
Vertical	(A Flx-V), g=	1.51	(A Rig-V), g=	0.61

S_{DS} (Design spectral response acceleration at short period, g) = 2.00 (z/h = 1); 2.27 (z/h = 0)

Hf (Force amplification height factor) = 3.5 (@ z/h = 1); 1.0 (@ z/h = 0)

Ru (Structure ductility redution factor) = 1.3 (@ z/h = 1); 1.0 (@ z/h = 0)

I_p (Importance factor) = 1.5

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

HCAI Approval (For Office Use Only) - **Approval Expires on** 04/27/2032

Date: 4/27/2026

Name: Mohammad Karim Title: Supervisor, Health Facilities

Condition of Approval (if applicable):

Table 1 - Certified Chiller Matrix

Model	Rating [Tons]	Shells		Max Dimensions [in]			Max Weight [lbs]	Installation Method[1]	UUT
		Size	Configuration	Length	Width	Height			
HDWA	200	020/020	Transformer option, Marine Water Box Option, Analog Output Sine Filter	129.9	67.4	72.2	10,900	**Rigid**/Pad	UUT-1
HDWA	300	020/020	Transformer option, Marine Water Box Option, Analog Output Sine Filter	129.9	67.4	72.2	15,032	Rigid/Pad	Interpolated
HDWA	300	040/040	Transformer option, Marine Water Box Option, Analog Output Sine Filter	129.9	70.7	78	16,775	Rigid/Pad	Interpolated
HDWA	400	040/040	Transformer option, Marine Water Box Option, Analog Output Sine Filter	129.9	70.7	78	19,100	Rigid/**Pad**	UUT-2

1) **Bolded Text** Indicates Tested Configuration

Table 2 - Certified Shells

Shell Size	Dimensions						Construction	UUT
	Evaporator (1)			Condenser (1)				
	OD [in]	L [in]	Max Weight [lbs]	OD [in]	L [in]	Max Weight [lbs]		
020/020	21	113.4	1960	21	129.9	2235	Carbon Steel	UUT-1
040/040	27.9	113.4	2917	26.2	129.9	3582	Carbon Steel	UUT-2

1) Standard tube material is Carbon Steel

Table 3 - Certified Variable Speed Drives and Control Panels

Model Number	Input Voltage / Output Current	Weight [lbs]	Manufacturer	UUT
TR-200H132T	208 to 600V / 243A	3352	Trane	UUT-1
TR-200H200T	208 to 600V / 362A	3352	Trane	Interpolated
TR-200H250T	208 to 600V / 440A	3355	Trane	Interpolated
TR-200H315T	208 to 600V / 533A	3355	Trane	Interpolated
TR-200H400T	208 to 600V / 676A	3861	Trane	UUT-2

Table 4 - Certified Compressors

Model Number	Type / Configuration	Size [Tons]	Weight [lbs]	Manufacturer	UUT
200T	Centrifugal / 2-Stage	200T	2353	Trane	UUT-1
300T	Centrifugal / 2-Stage	300T	2741	Trane	Interpolated
400T	Centrifugal / 2-Stage	400T	2741	Trane	UUT-2

Table 5 - Certified Options & Accessories

Description	Type / Configuration	Weight [lbs]	Manufacturer	UUT
Transformer	Voltage Transformer	1847	Basler Electric	UUT-1, UUT-2
Harmonic Filter	Analog Harmonic Filter	1247	CTM MAGNETICS	UUT-1, UUT-2
Output Filter	Analog Output Sine Filter	340	CTM MAGNETICS	UUT-1, UUT-2
Marine Water Boxes	Marine Water Boxes	990	Trane	UUT-1, UUT-2

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UNIT UNDER TEST (UUT)
Summary Sheet

UUT-1

Test Report (TR): 30899-1901; Test Lab: DCL; Reporting: DCL; Test Dates: Feb 19 - 28, 2019

Model Line	Model Number	Manufacturer
Agility	HDWA 200	Trane

Product Construction Summary

Carbon Steel Shell & Tube Water Cooled Chiller

Options / Subcomponent Summary

Shells: 020/020, Trane, Carbon Steel; Variable Speed Drive & Control Panel: TR-200H132T, Trane; Compressor: 200T, Trane; Transformer: Voltage Transformer, Basler Electric; Harmonic Filter: Analog Harmonic Filter, CTM Magnetics; Outlet Filter: Analog Output Sine Filter, CTM Magnetics; Marine Water Boxes: Marine Water Boxes, Trane

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
10,900	130.0	67.0	72.0	14.0	10.0	23.0

Building Code	Test Criteria	UUT Highest Passed Seismic Run Information								
		S_{DS}	z/h	H_f	R_μ	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2025	ICC-ES AC156-24	2.00	1.0	3.5	1.3	1.5	3.20	2.40	-	-
		2.27	0.0	1.0	1.0	1.5	-	-	1.51	0.61

Test Mounting Details

Chiller is rigidly based mounted to table interface fixture using (8) 7/8" diameter, grade 8 bolts.

All units were filled with contents and maintained structural integrity and functionality after AC-156 test.

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CONTROLLED ENVIRONMENT SOLUTIONS

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-2

Test Report (TR): 30899-1901; Test Lab: DCL; Reporting: DCL; Test Dates: Feb 19 - 28, 2019

Model Line	Model Number	Manufacturer
Agility	HDWA 400	Trane

Product Construction Summary

Carbon Steel Shell & Tube Water Cooled Chiller

Options / Subcomponent Summary

Shells: 040/040, Trane, Carbon Steel; Variable Speed Drive & Control Panel: TR-200H400T, Trane; Compressor: 400T, Trane; Transformer: Voltage Transformer, Basler Electric; Harmonic Filter: Analog Harmonic Filter, CTM Magnetics; Outlet Filter: Analog Output Sine Filter, CTM Magnetics; Marine Water Boxes: Marine Water Boxes, Trane

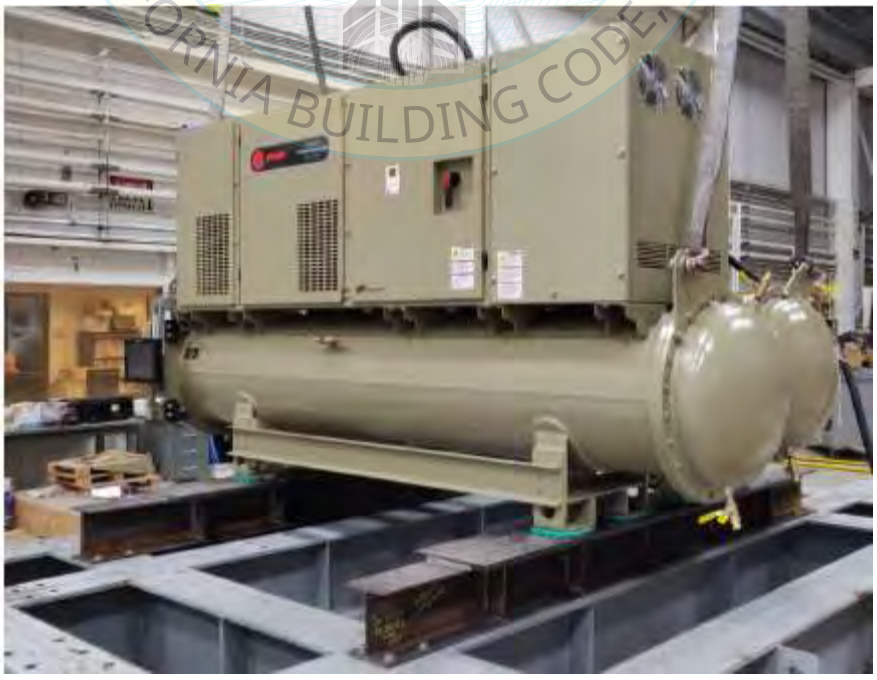
UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
19,100	130.0	71.0	78.0	9.0	7.0	16.0

Building Code	Test Criteria	UUT Highest Passed Seismic Run Information								
		S_{DS}	z/h	H_f	R_μ	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2025	ICC-ES AC156-24	2.00	1.0	3.5	1.3	1.5	3.20	2.40	-	-
		2.27	0.0	1.0	1.0	1.5	-	-	1.51	0.61

Test Mounting Details

Chiller is partially rigid base mounted on (8) 6"x8"x3/4" VMC Maxi-Flex Green Elastomeric Pads to table interface fixture using (8) 7/8" diameter, grade 8 bolts.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.