



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0580

OSHPD Special Seismic Certification Preapproval (OSP)

Type: [] New [X] Renewal

Manufacturer Information

Manufacturer: Advanced Cooling Technologies, Inc.

Manufacturer's Technical Representative: Chris Wong

Mailing Address: 3151 Independence Drive, Livermore, CA 94551

Telephone: (925) 667-1653

Email: chris.wong@advancedcoolingtech.com

Product Information

Product Name: Chillers

Product Type: Chillers - Air Cooled

Product Model Number: See Attachment 1

General Description: Carbon steel air-cooled chillers.

Mounting Description: Rigid floor mounted and isolated floor mounted on neoprene pads.

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

Applicant Information

Applicant Company Name: Manwill Engineering LLC

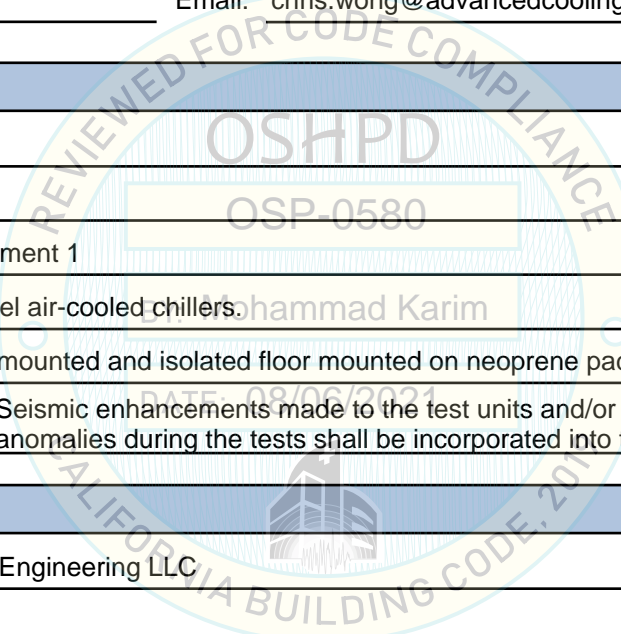
Contact Person: Derek Manwill

Mailing Address: PO Box 1194, Bend, OR 97709

Telephone: (541) 241-2102

Email: derek@manwillSE.com

Title: President





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

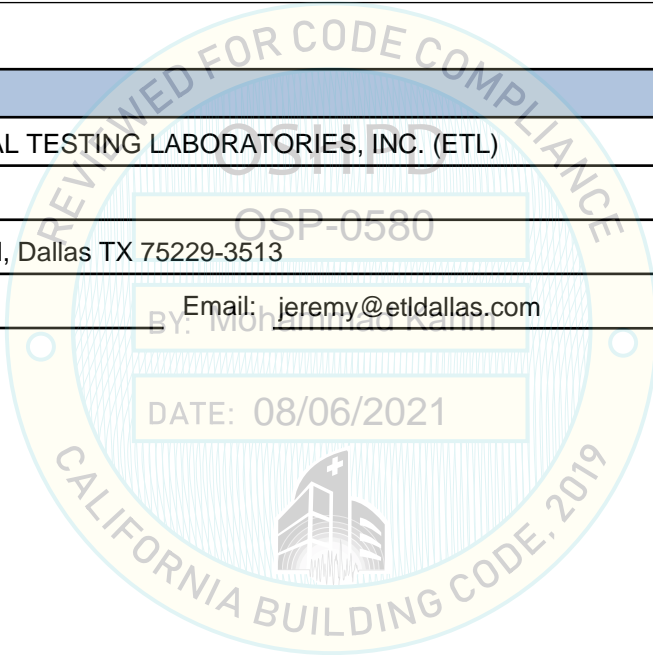
Company Name: MANWILL ENGINEERING LLC
Name: Derek Manwill California License Number: S6266
Mailing Address: PO Box 1194, Bend, OR 97709
Telephone: (541) 241-2102 Email: derek@manwillse.com

Certification Method

GR-63-Core ICC-ES AC156 IEEE 344 IEEE 693 NEBS 3
 Other (Please Specify): _____

Testing Laboratory

Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)
Contact Person: Jeremy Lange
Mailing Address: 11034 Indian Trail, Dallas TX 75229-3513
Telephone: (972) 247-9657 Email: jeremy@etldallas.com





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = Rigid:1.5, Iso.:3.6 (SDS = 2.0g); Rigid:1.13, Iso.:1.5 (SDS = 2.5g)

SDS (Design spectral response acceleration at short period, g) = 2.00 (z/h=1), 2.50 (z/h=0)

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 6.0 (rigid); 2.5 (neoprene isolated)

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

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

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

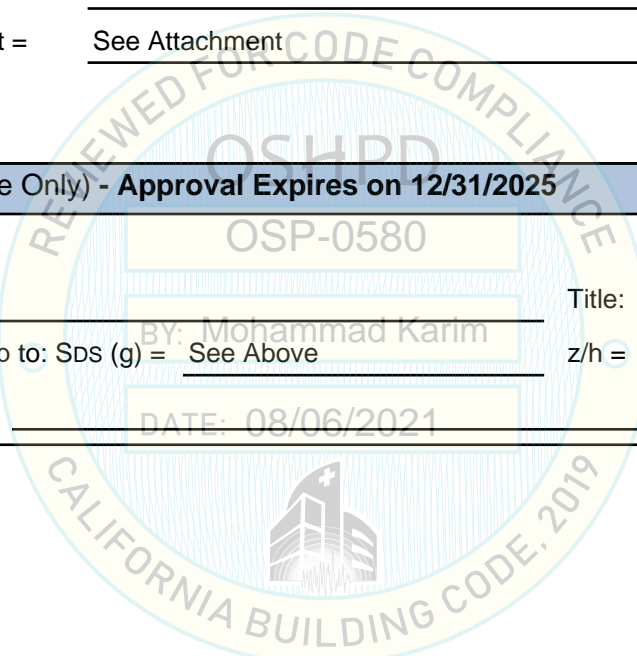
OSHPD Approval (For Office Use Only) - Approval Expires on 12/31/2025

Date: 8/6/2021

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = See Above z/h = See Above

Condition of Approval (if applicable): DATE: 08/06/2021



ATTACHMENT 1: CERTIFIED COMPONENTS

SPECIAL SEISMIC CERTIFICATION

TABLE 1 - RIGID

DOCUMENT NO.: 18042CR1.1

MANUFACTURER: ADVANCED COOLING TECHNOLOGIES, INC.						
PRODUCT FAMILY: AIRSYS MEDICOOL CHILLERS						
MODEL NUMBER	DIMENSIONS (in)			MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS
	DEPTH	WIDTH	HEIGHT			
Airsys Medicool Air-Cooled Chillers						
MEDICOOL/CH10E1P4R407.M.GEH	55.5	25.2	65	640	10kW	UUT 1
MOUNTING:	Rigid floor mounted.			SEISMIC LEVELS:	S _{DS} = 2.0g for z/h = 1 S _{DS} = 2.5g for z/h = 0	I _p = 1.5
NOTES:	Product Construction: Carbon steel construction. 480V, 3ph, 60Hz. Options/Subcomponents: Model number uniquely identifies subcomponents, materials, construction, and configuration. There are no options or variations.					

TABLE 2 - ISOLATED

MANUFACTURER: ADVANCED COOLING TECHNOLOGIES, INC.						
PRODUCT FAMILY: AIRSYS MEDICOOL CHILLERS						
MODEL NUMBER	DIMENSIONS (in)			MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS
	DEPTH	WIDTH	HEIGHT			
Airsys Medicool Air-Cooled Chillers						
MEDICOOL/CH55E4P4R410A.M	79.9	55.1	78.3	2130	55kW	UUT 2
MEDICOOL/CH70E4P4R410.M	111.4	40.9	75.2	2920	70kW	UUT 3
MOUNTING:	Isolated floor mounted on neoprene pads.			SEISMIC LEVELS:	S _{DS} = 2.0g for z/h = 1 S _{DS} = 2.5g for z/h = 0	I _p = 1.5
NOTES:	Product Construction: Carbon steel construction. 480V, 3ph, 60Hz. Options/Subcomponents: Model number uniquely identifies subcomponents, materials, construction, and configuration. There are no options or variations.					

ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 1 - 10kW

DOCUMENT NO.: 18042CR1.1

MANUFACTURER:	ADVANCED COOLING TECHNOLOGIES, INC.					
MODEL NUMBER:	MEDICOOL/CH10E1P4R407.M.GEH					
UNIT FUNCTION:	CHILLER					
SERIAL NUMBER:	F30218040069					
DIMENSIONS (in)			WEIGHT (lb)	RES. FREQ. (Hz)		
DEPTH	WIDTH	HEIGHT		F-B	S-S	V
55.5	25.2	65.0	640	10.0	8.9	>33
CODE & CRITERIA:	2019 CBC		ICC-ES AC156			
TEST LABORATORY:	ENVIRONMENTAL TESTING LABORATORY					
REPORT & DATE:	18042TR1.0		October 2, 2018			
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)	
2.0	1	3.20	2.40	1.68	0.68	
2.5	0					
IMPORTANCE FACTOR, I_p = 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 using (6) 5/16" Grade 8 bolts with clipped washers.					
CONSTRUCTION:	Carbon steel construction.					
SUBCOMPONENTS:	Subcomponents are uniquely identified by the model number.					



UUT 2 - 55kW

MANUFACTURER:	ADVANCED COOLING TECHNOLOGIES, INC.					
MODEL NUMBER:	MEDICOOL/CH55E4P4R410A.M					
UNIT FUNCTION:	CHILLER					
SERIAL NUMBER:	F30217050116					
DIMENSIONS (in)			WEIGHT (lb)	RES. FREQ. (Hz)		
DEPTH	WIDTH	HEIGHT		F-B	S-S	V
79.9	55.1	78.3	2130	6.2	8.5	16.9
CODE & CRITERIA:	2019 CBC		ICC-ES AC156			
TEST LABORATORY:	ENVIRONMENTAL TESTING LABORATORY					
REPORT & DATE:	18042TR1.0		October 3, 2018			
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)	
2.0	1	3.20	2.40	1.68	0.68	
2.5	0					
IMPORTANCE FACTOR, I_p = 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:	Isolated floor mounted on (6) 4"x4"x0.75" neoprene pads using (6) 5/8" Grade 8 bolts.					
CONSTRUCTION:	Carbon steel construction.					
SUBCOMPONENTS:	Subcomponents are uniquely identified by the model number.					
TESTING NOTES:	#14x1.5" Buildex Teks screws were added to secure the panels. Nothing was done to the back mesh panels. The two full height front panels each received (7) screws: (3) along each side (1in from top, middle, 3in from bottom; all 0.75in from the side) and (1) in the middle top (1in from top). The two side panels each received (10) screws: (3) along each side (1in from top, middle, 3in from bottom; all 0.75in from the side) and (2) in the top and bottom (1in from top/bottom at third points). The electrical enclosure door received (2) screws: top right and bottom right corners (1in from top/bottom, 0.75in from side). The panel below the electrical enclosure door received (4) screws: each corner (1in from top/bottom, 0.75in from side).					



ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 3 - 70kW

DOCUMENT NO.: 18042CR1.1

MANUFACTURER:	ADVANCED COOLING TECHNOLOGIES, INC.
MODEL NUMBER:	MEDICOOL/CH70E4P4R410.M
UNIT FUNCTION:	CHILLER
SERIAL NUMBER:	F30218040098



DIMENSIONS (in)			WEIGHT (lb)	RES. FREQ. (Hz)		
DEPTH	WIDTH	HEIGHT		F-B	S-S	V
111.4	40.9	75.2	2920	7.4	8.9	22.9

CODE & CRITERIA:	2019 CBC	ICC-ES AC156
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TEST LABORATORY:	ENVIRONMENTAL TESTING LABORATORY
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REPORT & DATE:	18042TR1.0	October 2, 2018
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S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.0	1	3.20	2.40	1.68	0.68
2.5	0				

IMPORTANCE FACTOR, I_p = 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:	Isolated floor mounted on (6) 4"x4"x0.75" neoprene pads using (6) 5/8" Grade 8 bolts.
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CONSTRUCTION:	Carbon steel construction.
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SUBCOMPONENTS:	Subcomponents are uniquely identified by the model number.
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TESTING NOTES:	#14x1.5" Buildex Teks screws were added to secure the panels. Nothing was done to the back mesh panels. The two side panels and the three full height front panels each received (7) screws: (3) along each side (1in from top, middle, 3in from bottom; all 0.75in from the side) and (1) in the middle top (1in from top). The electrical enclosure door received (2) screws: top right and bottom right corners (1in from top/bottom, 0.75in from side). The panel below the electrical enclosure door received (4) screws: each corner (1in from top/bottom, 0.75in from side).
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