# BALA

#### SHOP DRAWING REVIEW

DATE RECEIVED	3/5/20	DATE RETURNED	<b>):</b> 3/9/20
PROJECT NAME:	Prudential- Temporary C	ooling Towers	
PROJECT NUMBER:	60-18-710	<b>REVIEWED BY:</b>	S. O'Neill
			Bala Consulting Engineers
SUBMITTAL #:	230000-002-1 (TL) -Rev	1 Temporary Coolin	ng Towers & Control Panels
SPEC. SECTION:	230000		
ACTION:			
No Exception Taken	Submit Specified I	em 🗌 Resubmi	it Resubmit For Record Only
Make Corrections No	oted 🗌 No Further	<sup>-</sup> Submission Requi	red Rejected

REVIEWED FOR GENERAL ARRANGEMENT ONLY AND SUBJECT TO ANY REVISIONS SHOWN. MATERIAL, WORKMANSHIP, DIMENSIONS, FIELD CLEARANCES AND DESIGN SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF CONTRACT DOCUMENTS.

#### COMMENTS:

- 1. 12kw basin heaters were carried as an Add Alternate. Confirm with owner if basin heaters are required.
- 2. Confirm quantity of electrical connections required for temporary cooling towers with and without basin heater add alt. It has been confirmed Basin heaters to be included.
- 3. The height of the ladder extension is required to be coordinated with final dunnage and cooling tower height above roof.
- 4. Confirm cooling tower control panel shall be compatible with the Pru EMS protocol.
- 5. Coordinate placement of towers with dunnage and the lower dunnage rack to support the piping to the tower. Piping connection to the tower to be plan west, contractor to confirm.

All comments shall be specifically acknowledged in a re-submittal. Any exceptions to comments shall be addressed by the Contractor in writing.

Reviewed and Approved By: Bobby Becker Reviewed and Approved On: 3/11/2020 9:24:44 AM H:60-19-911/SHOPS/REVIEW COMMENTS/230000-002-0 (TL) - Temporary Cooling Towers- Evapco.docx

> BALA CONSULTING ENGINEERS 52 TEMPLE PLACE BOSTON, MA 02111

617 357 6060 617 357 5188 FAX WWW.BALA.COM



March 5, 2020

**Turner Logistics** 2 Seaport Lane Boston, MA, 02110

In response to returned submittal TEMP COOLING TOWER & VFD (2/6/20)

- 1.) 12kw basin heaters have been included per correspondence with project team & BP
- 2.) MOCP & MCA by others
- 3.) Confirmed, Ladder will be coordinated w/ dunnage
- 4.) Confirmed, BCM to provide tie-in w/ Base-building BMS
- 5.) Confirmed, coordination with dunnage steel & piping connections per latest dunnage sketches

Thank you,



### Fluid Equipment Solutions of New England,LLC

www.fesone.com PO Box 87, Amesbury, MA 01913 Office 1-855-FESONE3; Fax 1-855-FESONE4

### Letter of Transmittal

TO: Justin Kollmann Turner Logistics

### **RE:** Prudential Center Temp Cooling Towers

⊠ attached

- CC: FILE
- We are sending you

] under separate cover:

COPIES	DATE	DESCRIPTION
1	3/3/20	<b>Revised Evapco Cooling Tower Submittals</b>

These Are Transmitted:

- For Approval
- As Requested

### **REMARKS:**

- 1. Product is on Hold Pending Approval and Hard Copy PO.
- 2. Revised to include Super Low Sound Fan option and Water Silencer option.

SIGNED: Ben McLaughlin 781-941-0030



February 28, 2020

Turner Logistics, LLC 4 Skyline Drive Hawthorne , New York 10532 USA

Project : Prudential Temporary Cooling Towers (AT Counterflow Quad)
Purchase Order(s): 8675309
Unit (Serial No): (1) UT 424-3M24 (20p100463 (HFA))

Enclosed is the certified submittal data for the order referenced above.

This submittal is for your approval. After drawing approval is received, a shipping schedule will be established. We look forward to receiving submittal approval and release for production in the near future

If we may be of any further assistance, please contact your local EVAPCO representative, Fluid Equipment Solutions of New England, LLC, as soon as possible.

Thank you for selecting EVAPCO as your supplier. We appreciate your business and look forward to working with you in the future.

Sincerely,

EVAPCO, Inc.

Bobby Becker

Bobby Becker Global Product Manager – Cooling Towers

ENCLOSURE(S)

Cc: Fluid Equipment Solutions of New England, LLC - Ben McLaughlin



Customer: Turner Logistics, LLC

Project : Prudential Temporary Cooling Towers (AT Counterflow Quad)

Engineer: Bala Engineering

Unit (Serial No): (1) UT 424-3M24 (20p100463 (HFA))

Revision	Date	Description
Original	January 27, 2020	Original Submittal
1	February 06, 2020	<ul> <li>Modify Accessory El. Heaters (OF / -18C ambient)</li> <li>Modify Accessory Contactor w/Transformer and Disconnect for Heater Package</li> <li>Modify Accessory Ladder</li> <li>Modify Accessory Vibration Switch</li> <li>Add Accessory High and Low Alarm Switches</li> <li>Modify Specifications</li> <li>Added High and Low Alarm Switches ()</li> </ul>
2	February 28, 2020	<ul> <li>Modify Accessory El. Heaters (0F / -18C ambient)</li> <li>Modify Accessory Contactor w/Transformer and Disconnect for Heater Package</li> <li>Modify Accessory Ladder</li> <li>Modify Accessory Vibration Switch</li> <li>Modify Accessory High and Low Alarm Switches</li> <li>Add Accessory Super Low Sound Fan</li> <li>Add Accessory Water Silencers</li> <li>Modify Unit Product Model</li> <li>Modify Specifications</li> </ul>

### **Submittal Approval Required for Equipment Release**

	INITIALS	DATE
Approved		
Approved as Noted		
Revise and Resubmit		





**Customer:** Turner Logistics, LLC

**Project :** Prudential Temporary Cooling Towers (AT Counterflow Quad)

Engineer: Bala Engineering

Unit (Serial No): (1) UT 424-3M24 (20p100463 (HFA))

Submittal Information									
Document	Drawing No.	Page No.							
1) UT 424-3M24 [Cooling Tower] (20p100463 (HFA))									
Equipment Summary		3							
Technical Data Sheet		4							
Mechanical Specifications		5 - 8							
Unit Certified Drawing	T3242436-DRH-SLF	9							
Steel Support Configuration	SLIX2424-DE	10							
Fan Motor Space Heaters	MHAU0000-DB	11							
Vibration Switch (Single Speed)	V1AU0000-EE	12							
Ladder (Placeholder)	LDT2MS24DB	13							
Heater Wiring Diagram	HEATER WIRING DIAGRAM	14							
Heater Location	HEATER LOCATION	15							
Heater Wiring Diagram	B4AU0000-DC	16							
High and Low Alarm Switches ()	ALT22424EAST Layout1 (1)	17							
Additional Documents									
Cooling Tower Express Warranty		18							
Certificate of Compliance		19							
Performance Guarantee		20							



Customer: Turner Logistics, LLC Project : Prudential Temporary Cooling Towers (AT Counterflow Quad) Engineer: Bala Engineering Unit (Serial No): (1) UT 424-3M24 (20p100463 (HFA))

Equipment Summary
CTI Certified Thermal Performance. ASHRAE 90.1 Energy Compliant
G-235 Hot-Dip Galvanized Steel Construction
Galvanized Steel Fan Guard
High Efficiency PVC Drift Eliminators
Non-Corrosive PVC Water Distribution System EvapJet™ Nozzles
Bottom Supported EVAPAK® Fill
PVC Air Inlet Louver Screens
Mechanical Float Valve Assembly
304 Stainless Steel Strainer(s)
Premium Efficient, Inverter Capable Fan Motor(s)
Multigroove, Solid Back V-Belt Type Fan Drive
Extended Bearing Lubrication Lines
Internal Working Platform
Fan Motor Space Heaters
Mechanical Vibration Cutout Switch
Aluminum Ladder
EI. Heaters Sized to Maintain +40° F Water at 0° F Ambient (4) 12 kW, 460/3/60 copper Heater Elements
NEMA 4x Heater Control Package with Contactor, Transformer, and Disconnect
Water Silencers
Super Low Sound Fan
Hinged Louver Access Door
IBC Standard Structural Design
1.0 Importance Factor Specified
High and Low Alarm Switches

### **Cooling Tower Technical Data Sheet**



20p100463 (HFA)

### **Product Description**

The original Advanced Technology cooling tower provides an induced-draft, axial fan solution for a wide array of outdoor cooling capacities.

Selection Criteria	Total	Each Unit	Required Capacity
Flow: Fluid: Entering Fluid Temp: Leaving Fluid Temp: Entering Wet Bulb:	6,000.0 GPM Water 95.0°F 85.0°F 76.0°F	6,000.0 GPM Water 95.0°F 85.0°F 76.0°F	30,000.00 MBH 2,000.00 Tons



### **Unit Selected**

### One(1) EVAPCO UT 424-3M24 at 104.4% capacity (31,320.00 MBH)

Product Line is CTI/ECC Certified. Selection is rated in accordance with CTI Standard 201 RS.

4

#### **Physical Data Per Unit**

Overall Dimensions (WxLxH):	24'-1 1/8" x 24'-1 3/4" x 19'-3 3/4"							
Operating Weight:	61,660 lbs							
Shipping Weight:	37,340 lbs							
Heaviest Section:	6,490 lbs							
*weights and dimensions could vary depending on options selected								

IBC Design Capability

IBC Standard Structural Design 1.0 Importance Factor Specified Seismic(Sps): up to 1.34 g, z/h = 0 Wind Load(P): up to 119 psf

### Fan Motor Data per Unit

Number of Fans: # of Fan Motors: Nameplate Power (460/3/60): Total Connected Nameplate Power: Typical Nameplate FLA: \*Nameplate FLA could vary

4 30.00 HP Per Motor 120.00 HP 36 Amps Per Motor

### **Additional Details Per Unit**

Air Flow: 394,400 CFM Ir E

 IBC Standard Structural Design

 Vibration Switch
 El. Heaters (OF / -18C ambient) (4) 12 kW;
 460/3/60
 Fan Motor: Inverter Capable, Premium Efficient
 High and Low Alarm Switches

### Hydraulic Data

 

 00 CFM
 Inlet Pressure Drop: Evaporated Water Rate:
 3.5 psi 48.00 GPM

 (1) 1.0 Importance Factor Specified (1) Louver Access Door
 (1) EVAPAK Fill (1) Ladder

 kW;
 (1) Contactor w/Transformer and Disconnect for Heater Package
 (1) Water Silencers

(1) Super Low Sound Fan

(4) Fan Motor: Space Heaters

### 50% Speed Complete Sound Data

evapco for LIFE

Ben McLaughlin P.O. Box 87

Amesbury, Massachusetts 01913 781-941-0030 en@fesone.com

Sound Pressure Levels (SPL) in dB RE 0.0002 Microbar Sound Power Levels (PWL) in dB RE 10-12 Watt

Model	UT 424-3M24
Motor	30.00 HP
# Motors	4
Speed	50% Speed

4 Cell Data

	Sound Pressure Level (dB)										
	Er	nd	Moto	r Side	Орр	End	Орр М	tr. Side	Тс	ор	Sound
	5.0 ft	50.0 ft	5.0 ft	50.0 ft	5.0 ft	50.0 ft	5.0 ft	50.0 ft	5.0 ft	50.0 ft	Power
Band	(1.5m)	(15.2m)	(1.5m)	(15.2m)	(1.5m)	(15.2m)	(1.5m)	(15.2m)	(1.5m)	(15.2m)	Level (db)
63 HZ	61	56	62	57	61	56	62	57	63	52	88
125 HZ	59	55	60	54	59	55	60	54	66	54	86
250 HZ	61	56	63	54	61	56	63	54	64	54	87
500 HZ	65	55	68	53	65	55	68	53	65	55	86
1 KHZ	65	52	65	54	65	52	65	54	66	56	86
2 KHZ	64	50	65	52	64	50	65	52	65	55	84
4 KHZ	66	49	65	49	66	49	65	49	67	55	83
8 KHZ	68	48	69	49	68	48	69	49	68	57	84
Calc dBA	72	58	73	59	72	58	73	59	73	63	92

Sound option(s) selected:

Super Low Sound Fan, Water Silencers

Remarks:

1. Sound Pressure Levels are according to CTI Standard ATC-128 and verified by an independent CTI-licensed sound test agency

2. Sound Power Levels are calculated according to the Small Units Section 8

3. Sound from free-field conditions over a reflecting plane with +/-2 db(A) tolerance

4. Noise levels can increase with variable frequency drives depending on the drive manufacturer and the drive configuration

5. Complete unit sound data with all fans operating

### 66% Speed Complete Sound Data

evapco for LIFE

Ben McLaughlin P.O. Box 87

Amesbury, Massachusetts 01913 781-941-0030 en@fesone.com

Sound Pressure Levels (SPL) in dB RE 0.0002 Microbar Sound Power Levels (PWL) in dB RE 10-12 Watt

Model	UT 424-3M24
Motor	30.00 HP
# Motors	4
Speed	2/3 Speed

4 Cell Data

	Sound Pressure Level (dB)											
	Er	nd	Moto	r Side	Орр	End	Орр М	tr. Side	Тс	Тор		Sound
	5.0 ft	50.0 ft	5.0 ft	50.0 ft	5.0 ft	50.0 ft	5.0 ft	50.0 ft	5.0 ft	50.0 ft		Power
Band	(1.5m)	(15.2m)	(1.5m)	(15.2m)	(1.5m)	(15.2m)	(1.5m)	(15.2m)	(1.5m)	(15.2m)		Level (db)
63 HZ	66	61	67	61	66	61	67	61	69	55		93
125 HZ	63	58	64	57	63	58	64	57	70	58		90
250 HZ	62	56	64	54	62	56	64	54	66	57		88
500 HZ	65	55	68	53	65	55	68	53	66	56		87
1 KHZ	65	52	65	54	65	52	65	54	67	56		86
2 KHZ	64	51	65	52	64	51	65	52	65	55		85
4 KHZ	66	49	65	49	66	49	65	49	67	55		83
8 KHZ	68	48	69	49	68	48	69	49	68	57		84
Calc dBA	73	58	73	59	73	58	73	59	74	63		92

Sound option(s) selected:

Super Low Sound Fan, Water Silencers

Remarks:

1. Sound Pressure Levels are according to CTI Standard ATC-128 and verified by an independent CTI-licensed sound test agency

2. Sound Power Levels are calculated according to the Small Units Section 8

3. Sound from free-field conditions over a reflecting plane with +/-2 db(A) tolerance

4. Noise levels can increase with variable frequency drives depending on the drive manufacturer and the drive configuration

5. Complete unit sound data with all fans operating

### **Full Speed Complete Sound Data**

evapco for LIFE

Ben McLaughlin P.O. Box 87

Amesbury, Massachusetts 01913 781-941-0030 en@fesone.com

Sound Pressure Levels (SPL) in dB RE 0.0002 Microbar Sound Power Levels (PWL) in dB RE 10-12 Watt

Model	UT 424-3M24
Motor	30.00 HP
# Motors	4
Speed	Full Speed

4 Cell Data

	Sound Pressure Level (dB)										
	End		Motor Side		Opp End		Opp Mtr. Side		Тор		Sound
	30.0 ft	50.0 ft	30.0 ft	50.0 ft	30.0 ft	50.0 ft	30.0 ft	50.0 ft	30.0 ft	50.0 ft	Power
Band	(9.1m)	(15.2m)	(9.1m)	(15.2m)	(9.1m)	(15.2m)	(9.1m)	(15.2m)	(9.1m)	(15.2m)	Level (db)
63 HZ	71	70	71	70	71	70	71	70	66	62	101
125 HZ	67	65	67	65	67	65	67	65	69	66	97
250 HZ	60	58	60	57	60	58	60	57	65	63	92
500 HZ	59	56	58	55	59	56	58	55	61	59	88
1 KHZ	56	53	57	54	56	53	57	54	60	58	87
2 KHZ	54	51	56	53	54	51	56	53	59	56	85
4 KHZ	54	49	53	50	54	49	53	50	59	56	84
8 KHZ	53	48	54	49	53	48	54	49	60	57	84
Calc dBA	63	60	63	60	63	60	63	60	67	64	93

Sound option(s) selected:

Super Low Sound Fan, Water Silencers

Remarks:

1. Sound Pressure Levels are according to CTI Standard ATC-128 and verified by an independent CTI-licensed sound test agency

2. Sound Power Levels are calculated according to the Small Units Section 8

3. Sound from free-field conditions over a reflecting plane with +/-2 db(A) tolerance

4. Noise levels can increase with variable frequency drives depending on the drive manufacturer and the drive configuration

5. Complete unit sound data with all fans operating

### **Full Speed Complete Sound Data**



Ben McLaughlin P.O. Box 87

Amesbury, Massachusetts 01913 **C** 781-941-0030 ben@fesone.com

Sound Pressure Levels (SPL) in dB RE 0.0002 Microbar Sound Power Levels (PWL) in dB RE 10-12 Watt

Model UT 424-3M24 30.00 HP Motor 4

# Motors

Speed Full Speed

4 Cell Data

	Sound Pressure Level (dB)										
	End		Motor Side		Opp End		Opp Mtr. Side		Тор		Sound
	5.0 ft	50.0 ft	5.0 ft	50.0 ft	5.0 ft	50.0 ft	5.0 ft	50.0 ft	5.0 ft	50.0 ft	Power
Band	(1.5m)	(15.2m)	(1.5m)	(15.2m)	(1.5m)	(15.2m)	(1.5m)	(15.2m)	(1.5m)	(15.2m)	Level (db)
63 HZ	75	70	75	70	75	70	75	70	77	62	101
125 HZ	71	65	72	65	71	65	72	65	78	66	97
250 HZ	67	58	67	57	67	58	67	57	71	63	92
500 HZ	67	56	69	55	67	56	69	55	69	59	88
1 KHZ	66	53	66	54	66	53	66	54	68	58	87
2 KHZ	65	51	65	53	65	51	65	53	66	56	85
4 KHZ	66	49	66	50	66	49	66	50	67	56	84
8 KHZ	68	48	69	49	68	48	69	49	68	57	84
Calc dBA	73	60	74	60	73	60	74	60	75	64	93

Sound option(s) selected:

Super Low Sound Fan, Water Silencers

Remarks:

Sound Pressure Levels are according to CTI Standard ATC-128 and verified by an independent CTI-licensed sound test 1. agency

- 2. Sound Power Levels are calculated according to the Small Units Section 8
- Sound from free-field conditions over a reflecting plane with +/-2 db(A) tolerance 3.
- Noise levels can increase with variable frequency drives depending on the drive manufacturer and the drive 4. configuration
- Complete unit sound data with all fans operating 5.





oval

**Customer:** Turner Logistics, LLC

**Project :** Prudential Temporary Cooling Towers (AT Counterflow Quad)

**Engineer:** Bala Engineering

**Unit (Serial No):** (1) UT 424-3M24 (20p100463 (HFA))

### EVAPCO Model UT 424-3M24

COOLING TOWERS

### PART 1 - GENERAL

**1.1 QUALITY ASSURANCE** 

A. Unit meets or exceeds energy efficiency per ASHRAE 90.1

### PART 2 - PRODUCTS

### 2.1 IBC COMPLIANCE

A. The unit structure is designed, analyzed, and constructed in accordance with the latest edition of International Building Code (IBC) for:  $I_P = 1.0$ ,  $S_{DS} = 1.34$ ; z/h = 0, P = 119 psf.

### 2.2 COMPONENTS

- A. Materials of Construction
  - 1. All cold water basin components including vertical supports, air inlet louver frames and panels up to rigging seam are constructed of heavy gauge mill hot-dip galvanized steel.
  - 2. Upper Casing, channels and angle supports are constructed of heavy gauge mill hot-dip galvanized steel. Fan cowl and guard is constructed of galvanized steel. All galvanized steel is coated with a minimum of 2.35 ounces of zinc per square foot of area (G-235 Hot-Dip Galvanized Steel designation). During fabrication, all galvanized steel panel edges are coated with a 95% pure zinc-rich compound.

### B. Fan(s):

- Unit is provided with Super Low Sound Fan(s). Fan(s) are high efficiency axial propeller type with non-corrosive Fiber Reinforced Polyester (FRP) blade construction. Fan(s) are heavy duty and utilize a forward swept blade design for superior sound reduction. Each fan is dynamically balanced and installed in a closely fitted fan cowl with venturi air inlet for maximum fan efficiency.
- C. Drift Eliminators

- Drift eliminators are constructed entirely of Polyvinyl Chloride (PVC) in easily handled sections. Design incorporates three changes in air direction and limit the water carryover to a maximum of 0.001% of the recirculating water rate. Drift eliminators are self-extinguishing, have a flame spread of less than 25 under ASTM E84, and are resistant to rot, decay and biological attack.
- D. Water Distribution System
  - Spray nozzles are precision molded ABS, large orifice nozzles utilizing fluidic technology for superior water distribution over the fill media. Nozzles are designed to minimize water distribution system maintenance. Spray header and branches are Schedule 40 Polyvinyl Chloride (PVC) for corrosion resistance with steel connection to attach external piping.
- E. Heat Transfer Media
  - Fill media is constructed of Polyvinyl Chloride (PVC) of cross-fluted design and suitable for inlet water temperatures up to 130° F. The bonded block fill is bottom supported and suitable as an internal working platform. Fill is self-extinguishing, has a flame spread of less than 25 under ASTM E84, and is resistant to rot, decay and biological attack.
- F. Air Inlet Louvers
  - 1. The air inlet louver screens are constructed from UV inhibited Polyvinyl Chloride (PVC) and incorporate a framed interlocking design that allows for easy removal of louver screens for access to the entire basin area for maintenance. The louver screens have a minimum of two changes in air direction and are of a non-planar design to prevent splash-out and block direct sunlight & debris from entering the basin. Air inlet louvers are selfextinguishing, have a flame spread of less than 25 under ASTM E84, and are resistant to rot, decay and biological attack.
- G. Make up Float Valve Assembly
  - 1. Make up float assembly is a mechanical brass valve with an adjustable plastic float.
- H. Pan Strainer
  - 1. Pan Strainer(s) are all Type 304 Stainless Steel construction with large area removable perforated screens.
- 2.3 MOTORS AND DRIVES
  - A. Fan Motor
    - Fan motor(s) are totally enclosed, ball bearing type electric motor(s) suitable for moist air service. Motor(s) are Premium Efficient, Class F insulated, 1.15 service factor design. Inverter rated per NEMA MG1 Part 31.4.4.2 and suitable for variable torque applications and constant torque speed range with properly sized and adjusted variable frequency drives.
    - 2. Fan motor(s) include strip-type space heaters with separate leads brought to the motor conduit box.
  - B. Fan Drive

- The fan drive is multigroove, solid back V-belt type with QD tapered bushings designed for 150% of the motor nameplate power. The belt material is neoprene reinforced with polyester cord and specifically designed for evaporative equipment service. Fan sheave is aluminum alloy construction. Belt adjustment is accomplished from the exterior of the unit.
- C. Fan Shaft
  - 1. Fan shaft is solid, ground and polished steel. Exposed surface is coated with rust preventative.
- D. Fan Shaft Bearings
  - 1. Fan Shaft Bearings are heavy-duty, self-aligning ball type bearings with extended lubrication lines to grease fittings located on access door frame. Bearings are designed for a minimum L-10 life of 100,000 hours.
- E. Vibration Switch
  - 1. Unit is provided with a Vibration Cutout Switch, operating on 120 VAC feed, to protect the fan and drive assembly from damage in the event of excess vibration. Vibration switch is DPDT.

### 2.4 MAINTENANCE ACCESS

- A. Fan Section
  - 1. Access door is hinged and located in the fan section for fan drive and water distribution system access.
- **B.** Basin Section
  - 1. Framed removable louver panels are on all four (4) sides of the unit for pan and sump access.
- C. Internal Working Platform
  - 1. Internal working platform is provided for easy access to the fans, belts, motor, sheaves, bearings, all mechanical equipment and complete water distribution system. The fill is an acceptable means of accessing these components.
- D. Ladder
  - 1. An aluminum sloped ladder will be provided for access to the motor access door.
- E. Louver Access Door
  - 1. Hinged access door in louver is provided.

### **2.5 ACCESSORIES**

- A. Basin Heater Package
  - Cold water basin is fitted with copper element, electric immersion heater(s) with a separate thermostat and low water protection device. Heaters maintain +40° F pan water at 0° F ambient temperature.
  - 2. Electric immersion heater package includes a factory-supplied NEMA 4x enclosure containing a magnetic contactor with 120 VAC control circuit, transformer, and main power disconnect. Control package wired by others.

### B. Sound Attenuation

 The unit is provided with water silencers located in the falling water area of the cold water basin. The water silencers are constructed of lightweight PVC in easily handled sections for ease of removal and access to the basin area. The water silencers have no impact on the unit's thermal performance.

Hold For Approval

Page 8 of 20

Submittal Revision: 4

Submittal Revision: 2

20p100463 (HFA)









ADJUST THE SWITCH SO THAT DURING FULL SPEED START-UP AND UNDER NORMAL CONDITIONS, THE CONTACTS DO NOT TRIP. FIRST, WITH THE MOTOR OFF, TURN THE ADJUSTMENT SCREW COUNTER-CLOCKWISE (MORE SENSITIVE DIRECTION) UNTIL THE SWITCH TRIPS. NEXT, TURN THE ADJUSTMENT SCREW CLOCKWISE 1/8 TURN (LESS SENSITIVE DIRECTION). RESET THE SWITCH BY DEPRESSING THE PUSH-BUTTON RESET LOCATED ON TOP OF THE SWITCH. START THE MOTOR ON FULL SPEED. IF THE MOTOR TRIPS THE SWITCH, THEN TURN THE ADJUSTMENT SCREW CLOCKWISE AN ADDITIONAL 1/8 TURN. RESET THE SWITCH AND START THE MOTOR AGAIN. REPEAT THE ABOVE PROCEDURE UNTIL THE MOTOR CONTINUES TO RUN.





20p100463 (HFA)

Submittal Date: Feb 28, 2020





20p100463 (HFA)

Submittal Date: Feb 28, 2020





20p100463 (HFA)



Submittal Revision: 4 Submittal Revision: 2

20p100463 (HFA)





Customer: Turner Logistics, LLC Project: Prudential Temporary Cooling Towers (AT Counterflow Quad) Engineer: Bala Engineering Unit (Serial No): (1) UT 424-3M24 (20p100463 (HFA))

#### **COOLING TOWER EXPRESS WARRANTY**

#### MANUFACTURER'S EXPRESS WARRANTY

EVAPCO warrants the mechanical equipment components consisting of the fan(s), bearings, pulleys, shafts, belts, gear reducer(s), drive shaft(s), drive couplings, electric fan motor(s) and mechanical equipment supports to be free from defects in materials and workmanship for a period of **five (5) years** from the date of shipment by EVAPCO. Any component not listed above is warranted against defects in materials and workmanship for a period of **five (1) year** from the date installation is completed in accordance with good manufacturing practices, but not to exceed **eighteen (18) months** from the date of shipment from EVAPCO. This one (1) year product warranty includes all structural components, fill and fill supports, drift eliminators and their supports, air inlet louvers or screens and their supports, and electrical components. **Labor costs associated with any repair work performed under the terms of the warranty are NOT included within the warranty**. This warranty is predicated on unit operation and maintenance in accordance with EVAPCO's recommended operation and maintenance procedures.

In addition to the unit warranty above, EVAPCO warrants the thermal performance of the unit as shown on the certified drawings delivered to the customer for a period of one (1) year from the date installation is completed in accordance with good engineering practices, but in no event shall such thermal performance warranty period exceed eighteen (18) months from the date the unit is shipped by EVAPCO. If after installation and start-up there is any question regarding thermal performance of the equipment, and the warranty period has not lapsed, at the owner's request EVAPCO will send its engineers to the jobsite to conduct a performance test. This test may be observed by the owner and the consulting engineer or by their authorized representatives. If the results of the evaluation show the equipment to be deficient, EVAPCO will make the necessary repairs or alterations to correct the deficiency subject to the limitations set forth below. If the equipment is found to be performing in accordance with its certified capacity, the owner will reimburse EVAPCO for all direct expenses incurred in connection with such performance test.

#### LIMITATION OF LIABILITY

THE SOLE REMEDY FOR BREACH OF THE EXPRESS WARRANTIES DESCRIBED HEREIN SHALL BE REPAIR OR REPLACEMENT OF THE EQUIPMENT BY EVAPCO, OR REFUNDING THE PURCHASE PRICE SET FORTH ON THE PURCHASE ORDER OR ORDER ACKNOWLEDGEMENT. IT SHALL BE IN EVAPCO'S SOLE DISCRETION AS TO WHETHER REPAIR, REPLACEMENT OR REFUND IS THE OFFERED REMEDY. IF EVAPCO DECIDES TO MAKE REPAIRS, EVAPCO HAS THE OPTION OF COMPLETING ALL NECESSARY REPAIRS ITSELF, OR AUTHORIZING A THIRD PARTY TO PERFORM SUCH REPAIRS AT EVAPCO'S EXPENSE. EVAPCO IS NOT RESPONSIBLE FOR ANY REPAIR WORK PERFORMED BY A THIRD PARTY THAT EVAPCO DID NOT PREAPPROVE IN WRITING. EVAPCO IS ONLY RESPONSIBLE FOR COSTS THAT PERTAIN TO REPAIR OF REPLACEMENT OF EQUIPMENT SUPPLIED BY EVAPCO (i.e., EVAPCO IS NOT RESPONSIBLE FOR REPLACEMENT OR MODIFICATION OF PIPING, SUPPORTING STEEL, ONSITE ELECTRICAL WIRING, MOTOR STARTERS OR "IN AND OUT" COSTS SUCH AS THIRD PARTY LABOR, CRANE OR OTHER EQUIPMENT FEES).

NOTWITHSTANDING ANYTHING ELSE IN THIS DOCUMENT, EVAPCOS LIABILITY OF ANY KIND WHATSOEVER SHALL NOT EXCEED THE PURCHASE PRICE SET FORTH ON THE PURCHASE ORDER OR ORDER ACKNOWLEDGEMENT. UNDER NO CIRCUMSTANCES SHALL EVAPCO BE LIABLE FOR LOST PROFITS, LOST SAVINGS, PERSONAI INJURIES, INCIDENTAL DAMAGES, ECONOMIC LOSS, PROPERTY DAMAGE, OR ANY OTHER CONSEQUENTIAL, INDIRECT, INCIDENTAL, OR PUNITIVE DAMAGES, EVEN IF EVAPCO HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. In addition, EVAPCO shall not be responsible for any injuries or damages of any kind whatsoever under any theory of tort to the extent the injuries or damage are caused by misuse of the product by buyer or any third party.

#### DISCLAIMER OF IMPLIED WARRANTIES

OTHER THAN THE EXPRESS MANUFACTURER'S WARRANTY DESCRIBED HEREIN, THE UNIT IS SOLD "AS IS" AND THERE ARE NO OTHER WARRANTIES. EVAPCO HEREBY DISCLAIMS AND EXCLUDES ALL IMPLIED WARRANTIES OF ANY KIND WHATSOEVER, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY, THAT THE UNIT IS FIT FOR A PARTICULAR USE OR PURPOSE, THAT THE UNIT IS FIT FOR A PARTICULAR APPLICATION OR ENVIRONMENT, AND ANY WARRANTIES THAT MIGHT OTHERWISE ARISE OUT OF A COURSE OF DEALING BETWEEN THE PARTIES OR USAGE OF TRADE.



# CERTIFICATE OF COMPLIANCE

AT Cooling Towers are certified to meet or exceed the Seismic and Wind Load Provisions set forth in the applicable building codes for this project.

These products has been manufactured following all applicable quality assurance programs.

Applicable Codes: IBC 2015 ASCE-7 NFPA 5000 Importance Factor: 1.0







## Guarantee of Thermal Performance

EVAPCO unequivocally guarantees the thermal performance of its equipment as shown on the certified drawings, when the equipment is installed in accordance with good engineering practice. If after installation and start-up there is any question regarding thermal performance of the equipment, at the owner's request EVAPCO will send its engineers to the jobsite to conduct a performance test. This test may be observed by the owner and the consulting engineer or by their authorized representatives. If the results of the evaluation show the equipment to be deficient, EVAPCO will make the necessary repairs or alterations to correct the deficiency at no cost to the owner. If the equipment is found to be performing in accordance with it certified drawing, the owner is expected to reimburse the company for its costs associated with this performance test. This guarantee is subject to all conditions and limitations set forth in the express warranty that applies to the equipment.



EVAPCO...Specialist in Heat Transfer Products and Services

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