



Pre-Functional Checklist

AIR HANDLING UNIT: AHU-_____

PROJECT: _____

PROJECT NUMBER: _____

REPORT ID: _____

EQUIPMENT DESCRIPTION: Air Handling Unit

TAG NO: AHU-_____

LOCATION: _____

This Pre-Functional Checklist is used during the Performance Assurance Process to insure the correct equipment is delivered, installed and properly started in preparation for Functional Testing of related building systems. This checklist does not take the place of the Manufacturer's recommended checkout and startup procedures.

This Checklist is divided into 4 Sections and is to be completed by the Contractor in 4 separate steps. When completing each Section, be sure to check and initial EACH line item as being completed. Each Section's items must ALL be checked complete and initialed before the form is submitted to the PAC. Any item which does not apply can be marked as "N/A" in the initial section. If this form is not used for documenting, one of similar rigor shall be used.

This filled-out checklist has been reviewed with the exceptions noted below.

COMMENTS:



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SECTION 1 – EQUIPMENT DELIVERY:

The Contractor shall complete Section 1 of this form when the equipment is delivered to the site. The purpose is to record the actual design parameters listed below along with the checklist items as indicated. Should there be any discrepancy between the Actual and the Submitted information, or any item be checked incomplete, the Contractor shall immediately notify the PAC and RFM.

DESIGN PARAMETERS:

Parameter	Designed	Submitted	Actual
Make	_____	_____	_____
Model	_____	_____	_____
Serial #	_____	_____	_____
<u>Supply Fan</u>			
Air Flow	_____ CFM		
OSA Min	_____ CFM		
ESP	_____ in w.g.		
Fan RPM	_____ RPM		
Motor HP	_____ HP		
Voltage	_____ V / _____ Φ / _____ hz		
<u>Return Fan</u>			
Air Flow	_____ CFM		
ESP	_____ in w.g.		
Motor HP	_____ HP		
Voltage	_____ V / _____ Φ / _____ hz		
<u>Cooling Coil</u>			
Capacity (Total)	_____ MBH		
Capacity (Sensible)	_____ MBH		
Entering DBT/WBT	____ / ____ °F		
Leaving DBT/WBT	____ / ____ °F		
Entering Water	_____ °F		
Leaving Water	_____ °F		
<u>Heating Coil</u>			
Capacity (Total)	_____ MBH		
Capacity (Sensible)	_____ MBH		
Entering DBT/WBT	____ / ____ °F		
Leaving DBT/WBT	____ / ____ °F		
Entering Water	_____ °F		
Leaving Water	_____ °F		



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Filters

Pre-Filters Merv _____
 Final Filters Merv _____

CHECKLIST ITEMS:

Initial	Complete Yes / No	Description
_____	_____	All related submittals approved by A/E
_____	_____	O&M data provided to PAC agent
_____	_____	Equipment thoroughly inspected for physical damage
_____	_____	The air openings are sealed with durable plastic
_____	_____	The water openings are sealed with plastic plugs
_____	_____	Roof curb installed and dimensions verified
_____	_____	Power supply voltage and phase correct
_____	_____	Electrical Verified: Source Panel, Panel Location, Circuit (List in Comments below)

COMMENTS:

The checklist items of SECTION 1 are all successfully completed..... YES ___ NO



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SECTION 2 – EQUIPMENT INSTALLATION:

The Contractor shall complete Section 2 of this form when the installation of the equipment is being performed. The purpose of this Section is to insure the equipment is installed to the Project Design and the Manufacturer’s recommendations. Immediately notify the PAC and RFM should any item be checked incomplete.

CHECKLIST ITEMS:

Initial	Complete Yes / No	Description
General Installation Check		
_____	_____	All access door latches are operational
_____	_____	All components are present and in the proper sequence
_____	_____	Installation and startup manual in checklist envelope
_____	_____	Unit identification tags are affixed
_____	_____	The heating coil surface area is free of damage
_____	_____	The cooling coil surface area is free of damage
_____	_____	Location and dimensions of pad or curb verified
_____	_____	Proper clearances around pad/curb verified
_____	_____	All shipping and installation materials removed
_____	_____	Maintenance access acceptable for unit and components
_____	_____	Casing condition good: no dents or leaks
_____	_____	Door and door frame gaskets installed access doors close tightly
_____	_____	Vibration isolation equipment installed & released from shipping locks
_____	_____	Seismic restraints installed at fan(s) and not short circuiting
_____	_____	Filters installed and filter frames are gasketed
_____	_____	VFDs installed in NEMA 3R enclosures
Valves, Piping and Coils Check (Immediately around unit. See full piping checklist)		
_____	_____	Pipe fittings complete and pipes properly supported
_____	_____	Piping properly labeled
_____	_____	Piping properly insulated
_____	_____	Strainers in place and clean
_____	_____	Piping system properly flushed
_____	_____	No leaking apparent around fittings
_____	_____	All coils are clean and fins are in good condition
_____	_____	All cond. drain pans clean and slope to drain, per spec



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Initial	Complete Yes / No	Description
_____	_____	Dedicated roof receptor for condensate
_____	_____	Valves properly labeled
_____	_____	Valves installed in proper direction
_____	_____	Flanges or unions installed for coil removal
_____	_____	Air vents for each coil installed
_____	_____	Coil drain valves for each coil installed
_____	_____	P/T plugs installed per drawings
_____	_____	Instrumentation installed according to drawings and details
Fans and Dampers Check		
_____	_____	Supply fan and motor alignment correct
_____	_____	Supply fan belt tension and condition good
_____	_____	Supply fan protective shrouds for belts in place and secure
_____	_____	Supply fan area clean
_____	_____	Supply fan and motor properly lubricated
_____	_____	Return fan and motor aligned
_____	_____	Return fan belt tension and condition good
_____	_____	Return fan protective shrouds for belts in place and secure
_____	_____	Return fan area clean
_____	_____	Return fan and motor lube lines installed and lubed
_____	_____	All dampers close tightly
_____	_____	All damper linkages have minimum play
_____	_____	Smoke and fire dampers installed properly per contract documents (proper location, access doors, appropriate ratings verified)
_____	_____	Smoke and fire dampers are open
Ductwork Check (Immediately around unit. See full air distribution checklist)		
_____	_____	Sound attenuators installed
_____	_____	Flex between duct and unit installed and in good condition
_____	_____	Insulation installed per specifications
_____	_____	Duct joint sealant properly installed
_____	_____	No apparent severe duct restrictions
_____	_____	OSA intake located away from pollutant sources and exhaust outlets



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Initial	Complete Yes / No	Description
		Electrical Check
_____	_____	Permanent power verified
_____	_____	Premium efficiency motors verified
_____	_____	Power disconnects in place and labeled
_____	_____	All electric connections tight
_____	_____	Proper grounding installed for components and unit
_____	_____	Power outlet provided at unit
_____	_____	Starter overload breakers installed and correct size
_____	_____	VFD powered (wired to controlled equipment)
_____	_____	VFD interlocked to control system
_____	_____	Drive location not subject to excessive temperatures
_____	_____	Drive location not subject to excessive moisture or dirt
_____	_____	Drive size matches motor size
_____	_____	Internal setting designating the model is correct
_____	_____	Input of motor FLA represents 100% to 105% of motor FLA rating
_____	_____	Appropriate Volts vs Hz curve is being used
_____	_____	Upper frequency limit set at 100%, unless explained otherwise
		Controls Check
_____	_____	Control panel accessible and properly labeled
_____	_____	Temperature sensors properly located, secure and calibrated
_____	_____	Humidity sensors properly located, secure and calibrated
_____	_____	Filter PD measuring device installed and calibrated across filters
_____	_____	CO2 sensors properly located, secure and calibrated
_____	_____	Duct static pressure sensor properly located, secure and calibrated
_____	_____	Airflow monitoring stations properly located, secure and calibrated
_____	_____	Smoke detectors installed in proper location and functioning
_____	_____	Damper actuators installed and calibrated
_____	_____	Safety items installed (high static pressure, etc)
_____	_____	All control devices and wiring complete
_____	_____	Pilot lights are functioning
_____	_____	Control system interlocks connected and functional



New Mexico Public School Facilities Authority
1312 Basehart Rd. SE, Suite 200
Albuquerque, NM 87106-4368

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COMMENTS:

The checklist items of SECTION 2 are all successfully completed..... YES NO



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SECTION 3 – EQUIPMENT START-UP:

The Contractor shall complete Section 3 of this form during the Start-up procedures for the equipment. The purpose of this Section is to document that proper start-up and check-out procedures were completed and documented.

CHECKLIST ITEMS:

Initial	Complete Yes / No	Description
_____	_____	PAC and RFM has been notified of start-up
_____	_____	Manufacturers Rep on site for start-up
_____	_____	Air flows and temperatures measured and recorded
_____	_____	Water flows and temperatures measured and recorded
_____	_____	Motors supply voltage balanced and within normal limits
_____	_____	Belts properly aligned and correct tension
_____	_____	Control system operational
_____	_____	All proper operational sequences confirmed
_____	_____	Final filters installed prior to balancing
_____	_____	Extra materials turned over to owner - belts, filters, access door gaskets
_____	_____	Startup report completed (attach report)

COMMENTS:

The checklist items of SECTION 3 are all successfully completed.....__YES__NO



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SECTION 4 – NOTIFICATION FOR TESTING:

This piece of equipment is properly installed, has been properly started up and is operational and ready for Functional Performance Testing.

COMMENTS:

ALL FIELDS MUST BE ENTERED. NO BLANKS. IF NOT INVOLVED, N/A.

RESPONSIBLE PARTY	VERIFIED BY (Name)	COMPANY	DATE
Mechanical Contractor			
Plumbing Contractor			
General Contractor			
Controls Contractor			
Electrical Contractor			
PAC Consultant			
NMPSFA RFM			
Manufacturer Rep.			