



Pre-Functional Checklist

AIR HANDLING UNIT: AHU-XXX

PROJECT:

PROJECT NUMBER:

REPORT ID:

EQUIPMENT DESCRIPTION: Air Handling Unit

TAG NO: AHU-XXX

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:



Pre-Functional Checklist

AIR HANDLING UNIT: AHU-XXX

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	X,XXX CFM		
OSA Min	X,XXX CFM		
ESP	X.XX in w.g.		
Fan RPM	XXXX RPM		
Motor HP	XX HP		
Voltage	XXXV / XΦ /XXhz		
<u>Return Fan</u>			
Air Flow	X,XXX CFM		
ESP	X.X in w.g.		
Motor HP	X.X HP		
Voltage	XXXV / XΦ /XXhz		
<u>Cooling Coil</u>			
Capacity (Total)	XXX.X MBH		
Capacity (Sensible)	XXX.X MBH		
Entering DBT/WBT	XX/XX °F		
Leaving DBT/WBT	XX/XX °F		
Entering Water	XX °F		
Leaving Water	XX °F		
<u>Heating Coil</u>			
Capacity (Total)	XXX.X MBH		
Capacity (Sensible)	XXX.X MBH		
Entering DBT/WBT	XX/XX °F		
Leaving DBT/WBT	XX/XX °F		
Entering Water	XX °F		
Leaving Water	XX °F		



Pre-Functional Checklist
AIR HANDLING UNIT: AHU-XXX

Filters

Pre-Filters Merv XX
 Final Filters Merv XX

CHECKLIST ITEMS:

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

COMMENTS:

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



Pre-Functional Checklist

AIR HANDLING UNIT: AHU-XXX

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



Pre-Functional Checklist

AIR HANDLING UNIT: AHU-XXX

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



Pre-Functional Checklist

AIR HANDLING UNIT: AHU-XXX

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



New Mexico Public School Facilities Authority
1312 Basehart Rd. SE, Suite 200
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Pre-Functional Checklist

AIR HANDLING UNIT: AHU-XXX

COMMENTS:

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



Pre-Functional Checklist

AIR HANDLING UNIT: AHU-XXX

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

COMMENTS:

The checklist items of SECTION 3 are all successfully completed..... YES NO



Pre-Functional Checklist
AIR HANDLING UNIT: AHU-XXX

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.			