

AIR HANDLING UNIT SYSTEM CHECKLIST

This checklist should be used and completed throughout the project and its different stages, delivery, storage, installation & pre-commissioning, prior to the functional testing taking place.

Project: [Add]

Date: [Add]

Room ID: [Add]

Equipment ID: [Add]

Engineer: [Add]

Company: [Add]

DELIVERY INSPECTION

Once the Air Handling Unit arrives at site, usually delivered by a transport company, and before being accepted into storage, the following should be checked with the driver.

Any damage that is noted should be reported to the manufacturer/supplier within 3 days in writing supported with photographs.

Ref	Type	Inspection/Task	Yes/No/[n/a]	Notes
1	Delivery	Supplier's consolidated delivery ticket is available, showing all equipment and ancillaries for inspection and being used to check against.	tbc	
2	Delivery	A copy of the order that was sent to the supplier is available for reference and is being used to check against	tbc	
3	Delivery	Equipment is packaged and crated in separate boxes, for maximum protection	tbc	
4	Delivery	The unit nameplate and details match the purchase order	tbc	
5	Delivery	Delivery protection is dry	tbc	
6	Delivery	Unit/s are dry internally	tbc	
7	Delivery	The external casing of the unit/s are undamaged	tbc	
8	Delivery	All frames, if ordered are included	tbc	
9	Delivery	All pipework connections are the correct size	tbc	
10	Delivery	Pipework connections are undamaged	tbc	
11	Delivery	All pipework handing's are correct	tbc	
12	Delivery	All ducting connections are correct size	tbc	
13	Delivery	All ducting connections are correct size	tbc	
14	Delivery	All ancillaries [valves, actuators, dampers, filters] are included in delivery as per the order and delivery note	tbc	
15	Delivery	Spin the fan to ensure not damaged and out of line	tbc	
16	Delivery	Check all coils for damage externally and internally	tbc	

DELIVERY INSPECTION

17 Delivery Replace and protection that has been removed

tbc

STORAGE INSPECTION

If the equipment is to be placed into storage on site prior to installation there will be an inspection completed checking the following.

Ref	Type	Inspection/Task	Yes/No/[n/a]	Notes
1	General	The area is internal and will not be affected by weather. [if the unit is not rated for external use]	tbc	
2	General	The surface where the equipment is to be placed is flat.	tbc	
3	General	The equipment will be raised from the floor to allow airflow and stop risk of water ingress.	tbc	
4	General	The area is well covered and protected.	tbc	
5	General	The area is well ventilated and no risk of high humidity.	tbc	
6	General	The area is clean & dust free.	tbc	
7	Air Handling Unit	Units will not be stacked.	tbc	
8	Air Handling Unit	Units will not have materials stacked on them.	tbc	
9	Air Handling Unit	All ancillaries will be placed in a safe and secure location so items do not go missing or get damaged.	tbc	
10	Air Handling Unit	All original packaging is intact and not removed.	tbc	
11	Air Handling Unit	Pipework caps are not removed.	tbc	

PRE-INSTALLATION INSPECTION

Prior to the units being installed, the following should be checked.

Ref	Type	Inspection/Task	Yes/No/[n/a]	Notes
1	Builder	The plinth/base is ready, flat and level & can bare the weight of the installation.	tbc	
2	Builder	The room/area is dry and watertight.	tbc	
3	Builder	Area being installed is not prone to flooding or ponding of water.	tbc	
4	Builder	The room/area the unit will be installed into is clean and dust free.	tbc	
5	Builder	If there is dust/construction work, then the unit should be protected.	tbc	
6	Air Handling Unit	If the unit is installed externally then ensure it can be fixed to the floor, check for internal mounting requirements with the manufacturer.	tbc	
7	Air Handling Unit	If there is a buildup of snow it will not affect the unit's operation of maintenance requirements.	tbc	
8	Air Handling Unit	The installation of the unit will not impede the installation of the condensate trap/pipework.	tbc	
9	Air Handling Unit	All connections, pipework/ductwork etc., can be independently supported and not supported by the unit.	tbc	
10	Air Handling Unit	Best practice is to install self-supporting brackets prior to the connection of the unit	tbc	
11	Air Handling Unit	Ensure that all access doors are clear and not blocked from brackets or other services.	tbc	
12	Air Handling Unit	Check to ensure that all connections kits containing - gaskets, bolts, cleats, screws are available to allow bolting up of the equipment.	tbc	
13	Air Handling Unit	Remove all transport feet and bolts.	tbc	
14	Air Handling Unit	Check that all required cabling can be run through the unit and on appropriate containment.	tbc	

MAINTENANCE/ACCESS INSPECTION

Prior to the equipment, ancillaries being installed, the following should be checked.

Ref	Type	Inspection/Task	Yes/No/[n/a]	Notes
1	General	There is enough space allowed around and above the unit once installed to perform maintenance and remove components. [check the manufacturers maintenance instructions for requirements]	tbc	
2	General	All doors can be fully opened to gain access to the unit.	tbc	
3	General	Check that there is enough space for coils and fans to be removed and replaced. [Do not forget that if the unit is mounted outside the surface will need to be hard and flat]	tbc	

PRE-FUNCTIONAL TESTING INSPECTION

Once the equipment has been installed and prior to functional testing and commissioning phase taking place the following will be checked.

Ref	Type	Inspection/Task	Yes/No/[n/a]	Notes
1	General	Document the information of the unit from its name plates and cross reference with the specified information to ensure correct.	tbc	
2	General	Ensure unit is level.	tbc	
3	General	Ensure all gaskets are installed and sealed.	tbc	
4	General	Ensure that all cleats are installed as per manufacturer's instructions.	tbc	
5	General	All access doors can be open and closed with no gaps or leakage.	tbc	
6	General	Check that all transport bolts and feet are removed.	tbc	
7	General	Roof canopy, if being used, is installed and fixed.	tbc	
8	General	All vibration mounts installed	tbc	
9	General	Seismic restraints, where required, installed.	tbc	
10	General	Unit and all components including valves and controls are labeled in line with the project naming convention.	tbc	
11	General	Operation and startup manual for the AHU available.	tbc	
12	Electrical	Unit and components are fully earthed in line with the manufacturer's instructions.	tbc	
13	Electrical	Earthing has been tested	tbc	
14	Electrical	Emergency disconnect installed for each component in line with NFPA/local code requirements	tbc	
15	Electrical	Electrical voltage from site matches the unit required voltages.	tbc	
16	Electrical	All cabling is installed and connected on the correct containment/raceways and not damaged.	tbc	
17	Electrical	All cabling has been tested/torque tested.	tbc	

PRE-FUNCTIONAL TESTING INSPECTION

18	Electrical	Local motor control panel [LMCP] has been installed	tbc
19	Electrical	Local motor control panel has been electrically tested	tbc
20	Electrical	All electrical cabling is labelled inline with project naming convention.	tbc
21	Variable Speed Drive	Variable speed drive has been installed.	tbc
22	Variable Speed Drive	Variable Speed Drive [VSD] has been electrically tested	tbc
23	Variable Speed Drive	Variable speed drive has been functionally tested	tbc
24	Controls and Dampers	Motorised dampers installed as per the drawings and open/close freely.	tbc
25	Controls and Dampers	All controls and panels have been installed to operate the motorized dampers	tbc
26	Controls and Dampers	Fire trip has been installed and operating/interlocked with ventilation system.	tbc
27	Controls and Dampers	Freezing safety interlocks installed as per the design.	tbc
28	Controls and Dampers	Pressure differential measuring devices are installed across all filters	tbc
29	Fresh Air Intake	Position of intake louvre is inline with the design requirements and positioned so as will not be affected by any exhaust air.	tbc
30	Fresh Air Intake	Weather louvre/roof cowl installed and weather tight with relevant mesh and is unobstructed.	tbc
31	Fresh Air Intake	Weather louvre installed with correct mesh.	tbc
32	Fresh Air Intake	Weather louvre mesh free area meets the design requirements	tbc
33	Fresh Air Intake	Plenum installed connecting the louvre to the ducting.	tbc
34	Fresh Air Intake	Plenum has drain installed with trap to remove any unwanted ingress of water	tbc
35	Fresh Air Intake	Plenum has access hatch/s installed to allow future maintenance and inspections	tbc

PRE-FUNCTIONAL TESTING INSPECTION

36	Fresh Air Intake	All fresh air ductwork is installed, correct size and connected to the unit with correct fixings	tbc
37	Fresh Air Intake	All attenuators are installed as shown on the drawings.	tbc
38	Fresh Air Intake	All non-return dampers are installed as per construction drawings.	tbc
39	Fresh Air Intake	All volume control dampers are installed as per construction drawings.	tbc
40	Fresh Air Intake	Ductwork insulated and vapor seal in line with specification.	tbc
41	Fresh Air Intake	Test holes available in duct to allow air readings	tbc
42	Fire Dampers	If fire dampers were installed as per the drawings, ensure they have be	tbc
43	Panel Filters	Filter mounting frames are clean and dust free.	tbc
44	Panel Filters	Panel filters installed, clean and are the correct grade.	tbc
45	Panel Filters	Filters have the correct sealing gaskets installed.	tbc
46	Panel Filters	The filters are not jammed in the rails	tbc
47	Panel Filters	All components upstream of the filter are clean and dust free	tbc
48	Panel Filters	Panel filters are locked in place	tbc
49	Panel Filters	Differential pressure sensors are installed and calibrated.	tbc
50	Bag Filters	Filter mounting frames are clean and dust free.	tbc
51	Bag Filters	Bag filters installed, clean and are the correct grade.	tbc
52	Bag Filters	Filters have the correct sealing gaskets installed.	tbc
53	Bag Filters	The filters are not jammed in the rails	tbc

PRE-FUNCTIONAL TESTING INSPECTION

54	Bag Filters	All components upstream of the filter are clean and dust free	tbc
55	Bag Filters	Bag filters are locked in place	tbc
56	Bag Filters	Differential pressure sensors are installed and calibrated.	tbc
57	Supply Air Fan	Electrical connections and cables are complete, fully tested and torqued in line with project/manufacture requirements	tbc
58	Supply Air Fan	Motor protections installed and operating [Overload]	tbc
59	Supply Air Fan	Motor protections calibrated	tbc
60	Supply Air Fan	Voltage from electrical systems is correct for the unit requirements [within +/-10%]	tbc
61	Supply Air Fan	Fan housing clean and dust free	tbc
62	Supply Air Fan	Fan, blades, and motors are clean and dust free.	tbc
63	Supply Air Fan	Fan belt tension is correct	tbc
64	Supply Air Fan	Fan belt condition is good	tbc
65	Supply Air Fan	Ensure the fan wheel is centered on the intake section	tbc
66	Supply Air Fan	Check tightness of fixings [torque]	tbc
67	Supply Air Fan	Check flexible connections between the motor/impeller and unit to ensure are in good condition and leak free.	tbc
68	Supply Air Fan	Impeller is balanced	tbc
69	Supply Air Fan	Fan/motor rotates in correct direction with no obstructions [by hand]	tbc
70	Supply Air Fan	Fan/motor rotates in correct direction with no obstructions [electrically bump unit on]	tbc
71	Cooling Coil	Cooling coil is clean, in good condition and fins undamaged.	tbc

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72	Cooling Coil	Ensure that the pipework is connected and correct size	tbc
73	Cooling Coil	Ensure that the flow and return pipework handing's are correct.	tbc
74	Cooling Coil	[Water Inlet – downstream of the air flow direction	tbc
75	Cooling Coil	Water Outlet – upstream of the air flow direction]	tbc
76	Cooling Coil	The installation of the pipework will not put stress on the equipment connections or create vibrations.	tbc
77	Cooling Coil	The materials used between the equipment and the chilled water system will not cause Electrolysis.	tbc
78	Cooling Coil	Pipework that is to connect to the unit has been weld tested.	tbc
79	Cooling Coil	Pipework that is to connect to the unit has been pressure tested.	tbc
80	Cooling Coil	Pipework that is to connect to the unit has been cleaned and flushed.	tbc
81	Cooling Coil	Equipment has been back flushed.	tbc
82	Cooling Coil	System has been bled and air removed.	tbc
83	Cooling Coil	Chilled water system has been hydraulically balanced.	tbc
84	Cooling Coil	Pipework is insulated and vapor sealed	tbc
85	Cooling Coil	Insulation is labelled	tbc
86	Cooling Coil	All pressure gauges installed, and display scale as per design requirements.	tbc
87	Cooling Coil	All valves/control valves are installed and in correct direction	tbc
88	Cooling Coil	All commissioning devices are installed	tbc
89	Heating Coil	Heating coil is clean, in good condition and fins undamaged	tbc

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90	Heating Coil	Ensure that the pipework is connected and correct size	tbc
91	Heating Coil	Ensure that the flow and return pipework handing's are correct.	tbc
92	Heating Coil	[Water Inlet – downstream of the air flow direction	tbc
93	Heating Coil	Water Outlet – upstream of the air flow direction]	tbc
94	Heating Coil	The installation of the pipework will not put stress on the equipment connections or create vibrations.	tbc
95	Heating Coil	The materials used between the equipment and the heating water system will not cause Electrolysis.	tbc
96	Heating Coil	Pipework that is to connect to the unit has been weld tested.	tbc
97	Heating Coil	Pipework that is to connect to the unit has been pressure tested.	tbc
98	Heating Coil	Pipework that is to connect to the unit has been cleaned and flushed.	tbc
99	Heating Coil	Equipment has been back flushed.	tbc
100	Heating Coil	System has been bled and air removed.	tbc
101	Heating Coil	Heating water system has been hydraulically balanced.	tbc
102	Heating Coil	Pipework is insulated and vapor sealed	tbc
103	Heating Coil	Insulation is labelled	tbc
104	Heating Coil	All pressure gauges installed, and display scale as per design requirements.	tbc
105	Heating Coil	All valves/control valves are installed and in correct direction	tbc
106	Heating Coil	All commissioning devices are installed	tbc
107	Refrigerant Coil	Refrigerant coil is clean, in good condition and fins undamaged	tbc

PRE-FUNCTIONAL TESTING INSPECTION

108	Refrigerant Coil	External condenser installed	tbc
109	Refrigerant Coil	Ensure that the gas and suction pipework is connected and correct size	tbc
110	Refrigerant Coil	Ensure that the gas and suction pipework handing's are correct.	tbc
111	Refrigerant Coil	The installation of the pipework will not put stress on the equipment connections or create vibrations.	tbc
