# **General**

Dehumidification equipment shall be manufactured in Australia by Armcor Air Solutions [www.armcor.com.au](http://www.armcor.com.au/) Ph. 1800 244 556. The units shall be factory assembled and internally wired, and fitted with large access doors allowing for service, cleaning and maintenance. The unit shall comply with the following design and manufacturing requirements and comply with the capacity requirement outlined in the attached performance schedule.

The manufacturer shall undertake a pre–commissioning check to ensure correct operation before the equipment leaves the factory.

Equipment shall be installed in a manner strictly in accordance with the manufacturers’ recommendations.

# **Unit Construction**

The unit shall be completely weatherproof and constructed according to the following requirements:

* The unit shall have a rigid galvanised steel base frame with crane lifting points
* The unit casing shall be constructed from 50mm double skin insulated Colorbond® panel
* The external panel shall have a minimum thermal rating of R1.5
* Units shall have large access doors to allow the internal parts to be accessed easily and removed for cleaning, servicing, maintenance, repair or replacement.
* Access doors shall be hinged and fitted with easy access opening mechanism.
* Access doors shall be fitted with rubber seals to eliminated air leakage
* Powdercoated aluminium profiles shall be used to join the casing panels, including H section, U section, base channel, door stop and angles
* All panels are to be fully sealed with non-perishable, mildew and mould resistant sealant and shall contain a VOC rating designed for extreme weather conditions
* A stainless steel drain tray shall be installed to capture any condensation

# **Heat Exchanger**

The heat exchange module shall be a Sensible plate heat exchanger with the following features:

* Crossflow Design to meet the required specifications
* Incorporate no moving parts
* Have entirely separate air paths for the supply and exhaust air to ensure no cross contamination
* Heat exchanger frame shall be formed from min 0.6mm coated steel or stabilized UPVC

# **Fans**

Fans used in the equipment shall be:

* Direct drive EC Backward Curved Centrifugal Plug Fans with Soft Start
* 0 – 10 Volt control input, to suit Variable Speed Drive (VSD) controller
* Thermal overload motor protection
* Performance to meet the required airflows and static pressures

 **Air-conditioning System**

The equipment shall include compressors, coils, refrigeration pipework and controls to effect the necessary dehumidification and/or cooling specifications.

# **Evaporator coils and condenser coils**

* The velocity through the coils shall be designed at a maximum of 2.3 m/sec for low pressure drop and high efficiency
* Coils shall be pressure tested to 2200kPa (22 bar)
* The coils shall meet the required capacities outlined in the performance schedule
* Where cooling coils are included a stainless steel drain tray shall be installed to capture any condensation

# **Refrigeration pipework**

* Sized to suit the unit capacity and supported to minimize vibration
* Reversing valves, pressure sensors and associated components shall be professionally factory installed
* Complete system to be pressure tested to a min of 2200pa, vacuumed to 15 microns and charged with the correct refrigerant

# **System commission and check**

* System to be factory run for a min of 2 hours and be fully factory commissioned

# **Filters**

Filters shall be incorporated into the unit casing. Filters shall be easily removable through an access door for cleaning and replacement.

Filters shall be: [select option]

* 50mm V form disposable panel filters with F4 media
* 600 deep bag filters
* Dual filters - 600 deep bag filters and 50mm V form disposable panel pre-filters

# **Electrical**

The unit is to be fully factory wired with a control box for site connection. Electrical cables shall be run neatly and in cable ducts. All wiring shall be independently colour coded. Circuit breakers, contactors and overloads shall be fitted for all three phase motors.

The following components shall be incorporated, and factory fitted:

* Master switch/Circuit breakers
* Integrated Variable Speed Drive (VSD) controller

# **Performance Schedule**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Unit Ref | Capacity | Energy Recovery | Model | Comments |
| S/A (I/s) | O/A (I/s) | Ext Strat (Pa) | Heat (Kw) | Cool (Kw) | Reheat Coil (Kw) | Kw Recovered (Heat) | Kw Recovered (Cool) |
| Example | 3000 | 3000 | 250 | 30 | 70 | Plate | 65 | 60 | DP3000 | Hot Water Coil for Heating |