



Sample Specification Total Energy Recovery Wheel

Optional items are shown in RED text. Items in RED should be deleted unless the option is desired.

Energy recovery wheels shall be SEMCO standard '**TE-3**' series with components as follows:

ENTHALPY RECOVERY WHEEL - The rotor media shall be made of aluminum, which is coated to prohibit corrosion. All media surfaces shall be coated with a non-migrating solid adsorbent layer prior to being formed into the honeycomb media structure to ensure that all surfaces are coated and that adequate latent capacity is provided. The media shall have a flame spread of less than 25 and a smoke developed of less than 50 when rated in accordance with ASTM E87. In addition to the desiccant coating that is applied to the surfaces of the aluminum substrate, the two faces of the total energy recovery wheel shall be covered and sealed with a two-part polymer heavy duty coating specifically chosen for chemical resistance.

The desiccant shall be inorganic and specifically developed for the selective adsorption of water vapor. The desiccant shall utilize a 3A molecular sieve certified by the manufacturer to have an internal pore diameter distribution which limits adsorption to materials not larger than the critical diameter of a water molecule (2.8 angstroms).

Submit certification by a qualified independent organization documenting equal sensible and latent recovery efficiencies conducted in accordance with ASHRAE Standard 84 and the results presented in accordance with ARI 1060 standards.

An independent wheel test from a credible test laboratory shall document that the desiccant material utilized does not transfer pollutants typically encountered in the indoor air environment. The cross-contamination and performance certification reports shall be provided upon written request for engineering review.

MEDIA CLEANING - The media shall be cleanable with low-pressure steam (less than 5 PSI), hot water or light detergent, without degrading the latent recovery. Dry particles up to 800 microns shall pass freely through the media.

PURGE SECTOR - The unit shall be provided with a factory set, field adjustable purge sector designed to limit cross contamination to less than .04 percent of that of the exhaust air stream concentration when operated under appropriate conditions.

ROTOR SEALS - The rotor shall be supplied with labyrinth seals only, which at no time shall make contact with any rotating surface of the exchanger rotor face. These multi-pass seals shall utilize four labyrinth stages for optimum performance.

ROTOR SUPPORT SYSTEM - The rotor media shall be provided in segmented fashion to allow for field erection or replacement of one section at a time without requiring side access. The media shall be rigidly held in place by a structural spoke system made of extruded aluminum.

ROTOR HOUSING - The rotor housing shall be a structural framework, which limits the deflection of the rotor due to air pressure loss to less than 1/32". The housing is made of galvanized steel to prevent corrosion. The rotor is supported by two pillow block bearings

which can be maintained or replaced without the removal of the rotor from its casing or the media from its spoke system.

TEMPERATURE CONTROL PANEL - Variable speed control shall be accomplished by the use of an A/C inverter. The inverter shall include all digital programming with a manual speed adjustment on the front of the inverter. The drive system shall allow for a turndown ratio of 80:1 (20 rpm to 1/4 rpm). The control system shall include four linearized thermistor sensors as follows: (1) Proportional temperature controller mounted in the supply air stream. (2) differential summer/winter changeover sensors mounted in the outdoor and return airstreams. (3) Frost prevention sensor located in the exhaust air stream. (4) Digital readout of the temperature readings recorded by these sensors and control set-points is displayed by the control panel.

DIGITAL PERFORMANCE DISPLAY MODULE - Digital read out confirming the effectiveness of the energy wheel via temperature readings recorded by these sensors and control set points shall be displayed by the control panel.

WARRANTY - The unit manufacturer shall warrant to the Buyer that for a period of eighteen months from the date of shipment the goods to be delivered to the Buyer shall in all material respects be free from defects in material and workmanship when used in a proper and normal manner. Should any failure to conform to the above appear within eighteen months after the date of shipment, the unit manufacturer shall upon prompt notification thereof during the Warranty Period and confirmation to the unit manufacturer's satisfaction that the goods have been stored, installed, operated and maintained properly and in accordance with standard industry practice, correct the non-conformity at the unit manufacturer's option either by repairing any defective part or parts or by making available at the unit manufacturer's plant a repaired or replacement part.