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## **Engineering Guide Specifications**

### ***For Energy Wall™ Energy Recovery Products***

#### **Section 15700 – Mechanical HVAC – Ventilation – Energy Recovery (Section 23 72 19 Fixed Plate Air to Air Energy Recovery Equipment)**

##### **I. General**

###### **A. Scope**

1. Mechanical HVAC ventilation equipment shall contain a fixed plate type energy recovery system, preinstalled and tested by the manufacturer. Energy Wall™ is the basis of design.
2. Furnish owner's manuals covering installation, maintenance, and operation.
3. Manufacturer shall warrant the energy recovery system to be free from defects in materials and workmanship for a period of 5 years after installation.

##### **II. Product**

###### **A. Technology**

1. The energy recovery system shall be based on a high efficiency fixed plate type energy recovery core with dynamic heat and moisture transfer.

###### **B. Sustainability**

1. All materials used in the energy recovery cores shall be natural and 100% recyclable. Use of exotic materials, chemicals, or rare earth elements is unacceptable.
2. The energy recovery cores must be constructed in a sustainable way, producing no hazardous effluent or unrecyclable waste.
3. Manufacturer shall offer cleaning and recharging services to refurbish used energy recovery cores.

###### **C. Energy Recovery Cores**

1. The energy recovery cores shall be constructed using an advanced energy transfer membrane capable of transferring both heat and moisture between air streams with at least 80% total efficiency when installed and operated according to the manufacturer's recommendations.
2. The energy transfer membrane shall be made of a specially formulated paper, processed to form a semi-permeable membrane that creates a positive barrier between air streams, while facilitating the transfer of heat and moisture across the membrane.
3. The energy recovery cores shall be made of an energy transfer membrane that is machine folded, with layers separated by a machine folded corrugated net poly-spacer that provides the proper support and separation to the membrane layers, while producing sufficient air turbulence to increase energy transfer efficiency and prevent particulate buildup.
4. The energy recovery core's membrane layers shall be ultrasonically bonded, without the use of chemicals, tapes or adhesives, to form clear air passages.

5. The energy transfer membrane shall be impregnated with Lithium Chloride to actively facilitate the transfer of moisture between air streams.
6. The energy transfer membrane shall act as a natural microbiocide, actively killing up to 95% of microbes on contact and preventing cross-contamination between air streams. The microbiocide action shall be documented by an appropriate third party testing laboratory. Microbial growth prevention treatments are not sufficient.
7. The energy transfer cores shall be capable of operating from 0° to 140°F, and will be frost-proof down to -40°F, and shall survive temperatures from -40°F to +150°F without damage.
8. The energy recovery cores shall be washable and rechargeable.
9. The housing of the energy recovery cores shall be constructed of a suitable material capable of protecting the energy transfer core and preventing corrosion.

#### **D. Energy Recovery System**

1. The energy recovery system shall consist of single or multiple fixed plate energy recovery cores designed for counter-flow operation within each core. Cross-flow cores are less efficient and are therefore unacceptable.
2. The energy recovery cores shall have entrance and exit manifolds that allow for straight or transverse air flow within the air handler as specified.
3. When stacked, the energy recovery cores shall have interlocking connectors to seal the air passages between the cores, and allow easy assembly / disassembly within the air handler.
4. The energy recovery system shall have no moving parts or active seals required for operation, other than bypass dampers.
5. The energy recovery system shall be capable of minimum total efficiencies of 80% when installed and operated in accordance with manufacturer's guidelines and recommendations.
6. Efficiency ratings shall be based on AHRI Certified testing.
7. Exhaust and fresh air streams shall have MERV 1 washable filters to prevent larger particulate contamination from entering the energy recovery cores.

### **III. Execution**

#### **A. General**

1. The energy recovery system shall be installed in accordance with the manufacturer's recommendations and applicable published documents.
2. Commissioning of the system shall be by a qualified, factory trained representative or qualified, licensed contractor, and shall include a training session for owner's maintenance personnel if requested.
3. Energy recovery system shall be Energy Wall™, as manufactured by:

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**NOTE:** Due to Energy Wall's policy of continuous product improvement, these specifications are subject to change without notice.