

## **1 General**

### **1.1 SUMMARY**

- .1 Materials, components and installation for heat reclaim devices.

### **1.2 RELATED SECTIONS**

- .1 Section 23 33 00 - Air Duct Accessories.

### **1.3 REFERENCES**

- .1 American Bearing Manufacturer's Association (ABMA)
  - .1 ANSI/ABMA 9 Load Ratings and Fatigue Life for Ball Bearings.
  - .2 ANSI/ABMA 11 Load Ratings and Fatigue Life for Roller Bearings.
- .2 Air Movement and Control Association (AMCA)
  - .1 AMCA 210, Laboratory Method of Testing Fans for Aerodynamic Performance Rating (ASHRAE).
  - .2 AMCA 300 Reverberant Room Method for Second Testing of Fans.
- .3 American National Standards Institute / Air-Conditioning, Heating and Refrigeration Institute (ANSI/ASHRI).
  - .1 ANSI/AHRI 430, Central Station Air Handling Units.
  - .2 ANSI/AHRI 1060, Performance Rating of Air-to-Air Heat Exchangers Energy Recovery Ventilation Equipment.
- .4 American Society of Heating Refrigeration and Air-Conditioning Engineers (ASHRAE).
  - .1 ASHRAE 68, Laboratory Method of Testing to Determine the Sound Power in a Duct.
  - .2 ASHRAE 84, Method of Testing Air-to-Air Exchangers.
- .5 American Society for Testing and Materials (ASTM).
  - .1 ASTM E84, Standard Test Method for Surface Burning Characteristics of Building Materials.
- .6 Canadian General Standards Board (CGSB).
  - .1 CAN/CGSB 1.181, Ready-Mixed Organic Zinc-Rich Coating.
- .7 Canadian Standards Association (CSA)
  - .1 CSA B52 Mechanical Refrigeration Code.
- .8 National Electrical Manufacturer's Association (NEMA)
  - .1 NEMA MG1 Motors and Generators
  - .2 NEMA ICS 7-1 Safety Standards for Construction and Guide for Selection, Installation and Operation of Adjustable Speed Drive System.
- .9 Provincial Boiler, Pressure Vessel and Compressed Gas Regulations.
- .10 Sheet Metal and Air-Conditioning Contractors' National Association (SMACNA).

### **1.4 SUBMITTALS**

- .1 Product Data:
    - .1 Submit manufacturer's printed product literature, specifications and datasheet in accordance with Section 01 33 00 - Submittal Procedures. Include product characteristics, performance criteria, and limitations.
      - .1 Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Shop Drawings:
    - .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
      - .1 Shop drawings: submit drawings stamped and signed by Contractor as
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- reviewed.
- .2 Indicate following: fan, fan curves showing points of operation, motor drive, bearings fillers, mixing box, dampers, VAV, coil, include performance data.
- .3 Quality assurance submittals: submit following in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
  - .2 Instructions: submit manufacturer's installation instructions.
- .4 Closeout Submittals:
  - .1 Provide operation and maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
- .5 Certificates:
  - .1 Catalogued or published ratings: obtained from tests carried out by manufacturer or those ordered from independent testing agency signifying adherence to codes and standards in force.
  - .2 Provide confirmation of testing.

## 1.5 QUALITY ASSURANCE

- .1 Health and Safety:
  - .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- .1 Packing, shipping, handling and unloading:
  - .1 Deliver, store and handle in accordance with manufacturer's written instructions and Section 01 61 00 - Common Product Requirements.
- .2 Waste Management and Disposal:
  - .1 Construction/Demolition Waste Management and Disposal: separate waste materials for reuse in accordance with Section 01 74 00 - Cleaning and Section 01 74 19 - Waste Management & Disposal.

## 1.7 MAINTENANCE

- .1 Extra Materials:
  - .1 Provide maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.
  - .2 Furnish list of individual manufacturer's recommended spare parts for equipment include:
    - .1 Bearings and seals.
    - .2 Addresses of suppliers.
    - .3 List of specialized tools necessary for adjusting, repairing or replacing.

## 2 Products

### 2.1 ENTHALPY HEAT TYPE AIR TO AIR FIXED PLATE HEAT EXCHANGER

- .1 Casing: 70.8 mm thick, galvanized steel 0.8 mm thick stainless steel, with removable side panels.
  - .2 Motor: direct drive or belt drive ODP.
  - .3 Media: water vapor transport durable polymer membrane that is highly permeable to humidity, freeze tolerant and water washable.
  - .4 Cross contamination not permitted.
  - .5 Performance characteristics: as indicated.
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### **3 Execution**

#### **3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

#### **3.2 INSTALLATION**

- .1 Install in accordance with manufacturers recommendations.
- .2 Support independently of adjacent ductwork with flexible connections.
- .3 Install access doors in accordance with Section 23 33 00 - Air Duct Accessories for access to coils, dampers, and motors.

#### **3.3 CLEANING**

- .1 Proceed in accordance with Section 01 74 00 - Cleaning.
- .2 Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

#### **3.4 COMMISSIONING**

- .1 Commission in Accordance with Section 01 91 13 - General Commissioning Requirements.

**END OF SECTION**

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