

PART 1 - GENERAL

1.1 RELATED SECTIONS

- .1 Section 23 74 00 - Packaged Outdoor HVAC Equipment.

1.2 REFERENCES

- .1 Unless otherwise indicated, all the works must be done in accordance with the in force edition of the "Code de construction du Québec".
- .2 Furthermore, the works will be done in accordance with any other code or standard having jurisdiction, as per the latest edition, notably including, but not limited to:
 - .1 ASTM A525M-90, Specification for General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
 - .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
 - .1 Material Safety Data Sheets (MSDS).

1.3 SUBMITTALS

- .1 Submit required product data sheets and manufacturer's specifications in accordance with prescriptions.
- .2 Data sheets must cover the performance characteristics.

1.4 QUALITY ASSURANCE

- .1 Catalogue or published ratings are those obtained from tests carried out by manufacturer or independent testing agency signifying adherence to Codes and Standards.

PART 2 - PRODUCTS

2.1 MULTI-LEAF DAMPERS

- .1 The damper type is opposite or parallel blade, as indicated.
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- .2 Flanged connection type damper, only if one of the dimensions is less than or equal to 500 mm or if the mechanism is not accessible for maintenance (removal and replacement of linkages).
 - .3 The dampers without thermal insulation for air mixing, and with thermal insulation for the fresh air and exhaust dampers.
 - .4 Materials:
 - .1 Uninsulated damper.
 - .1 Chassis and blades are made of aluminum extrusions, 2.05 mm (0.08 in) thick. "Air-Foil" type blades, with a width of 125 to 155 mm. Chassis made from aluminum channels, with reinforcing mullions and grooves to insert the vinyl lining. Typical dimensions of the frame are 25 x 100 x 25 mm on four (4) sides. The swivel stems are made of hexagonal aluminum extrusion 12 mm, set in the blade. The Celcon double-sealed bearings for the inner part are inserted into the chassis so there is no rotation. The rods are designed to avoid friction, metal on metal or metal on bearings. The shutters are designed for minimum resistance to airflow. Vinyl liners are fitted in the grooves of the chassis for this purpose.
 - .2 Insulated damper.
 - .1 Chassis and blades are made from aluminum extrusion 2.05 mm thick. "Air-Foil" type blades, with a width of 125 to 155 mm and are aluminum extruded with insulated cavities with 22 mm thick polyurethane foam with thermal barrier. The extruded aluminum frames are 100 mm deep with three (3) insulated sides with polystyrene foam with an R-factor 5.0. The Tamco double-sealed bearings with Celcon inner pads attached to the hexagonal shaft, pivot on an outside pad of polycarbonate inserted into the chassis. The parts of the mechanism are installed in a chassis out of the airflow.
 - .5 Dimensions:
 - .1 Blades width: Between 125 mm and 155 mm; length: Maximum 1,200 mm length.
 - .2 Module maximum size of 1,200 mm wide by 2,400 mm high.
 - .3 Registers of multiple blades must be fitted with stiffeners and transverse coupling rods.
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- .4 The dampers must be of sufficient size so it does not restrict the useful area of the duct. The installation of such inserted registers is not acceptable if one dimension is less than or equal to 500 mm or if the mechanism is not accessible for maintenance.

- .6 Performance:
 - .1 Maximum allowable leak: 50 L/s.m² for a static pressure of 1.0 kPa.
 - .2 Temperature range for the insulated registers: From -40 °C to 68 °C.
 - .3 Temperature range for the uninsulated registers: From -40 °C to 100 °C.
 - .4 Maximum speed: 5 m/s at the face.

- .7 Acceptable Products.
 - .1 Damper without thermal insulation: Tamco, model T.A. 1000;
Trolec, model VAP-90-MB;
Harvey, model HARV-40;
Nailor, model 2000 Series;
Alumavent, models 3160 and 3165.

 - .2 Damper with thermal insulation: Tamco, model T.A. 9000;
Trolec, model VAP-I-90-MB;
Harvey, model HARV-50;
Nailor, model 2000-IBF Series;
Alumavent, models 3960 and 3965.

PART 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 dampers with thermal insulation on fresh air intakes and exhausts.
 - .2 Install dampers registers where indicated.
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- .3 Install dampers registers in accordance with recommendations of SMACNA and the manufacturer's instructions.
- .4 Install dampers registers so the blades are horizontal.
- .5 Install dampers registers on tilted or vertical conduits so the blades are horizontal.
- .6 Seal the joints of multiple dampers registers modules using a non-transparent sealant silicone recognized by UL, and respecting NFPA 90A Standards.
- .7 At the start-up of the system, ensure that dampers registers are working properly.
- .8 Install an access door near each dampers register.
- .9 Ensure dampers are visible and easily accessible.

3.3 CLEANING

- .1 Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools, and equipment.

END OF SECTION
