

PART 1 - GENERAL

- 1.1 REFERENCES
- .1 Canada Green Building Council (CaGBC)
 - .1 LEED Canada 2009 for Design and Construction, LEED Canada 2009 for Design and Construction Leadership in Energy and Environmental Design Green Building Rating System Reference Guide.
 - .2 Sheet Metal and Air Conditioning National Association (SMACNA)
 - .1 SMACNA HVAC Duct Construction Standards, Metal and Flexible-2013.
- 1.2 ACTION AND INFORMATIONAL SUBMITTALS
- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for dampers and include product characteristics, performance criteria, physical size, finish and limitations.
 - .3 Sustainable Design Submittals:
 - .1 LEED Canada submittals: in accordance with Section 01 35 21 - LEED Requirements.
 - .2 Construction Waste Management:
 - .1 Submit project Waste Management Plan highlighting recycling and salvage requirements.
 - .2 Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 75% of construction wastes were recycled or salvaged.
 - .3 Recycled Content:
 - .1 Submit listing of recycled content products used, including details of required percentages or recycled content materials and products, showing their costs and percentages of post-consumer and post-industrial content, and total cost of materials for project.
 - .4 Regional Materials: submit evidence that project incorporates required percentage 30 %
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1.4 DELIVERY,
STORAGE AND
HANDLING
(Cont'd)

- .5 Packaging Waste Management: (Cont'd)
in Construction Waste Management Plan in
accordance with Section 01 74 21 -
Construction/Demolition Waste Management and
Disposal and Section 01 35 21 - LEED
Requirements.

PART 2 - PRODUCTS

2.1 GENERAL

- .1 Manufacture to SMACNA standards.

2.2 SINGLE BLADE
DAMPERS

- .1 Fabricate from same material as duct, but one
sheet metal thickness heavier. V-groove
stiffened.
- .2 Size and configuration to recommendations of
SMACNA, except maximum height 100 mm.
- .3 Locking quadrant with shaft extension to
accommodate insulation thickness.
- .4 Inside and outside bronze end bearings.
- .5 Channel frame of same material as adjacent
duct, complete with angle stop.

2.3 MULTI-BLADED
DAMPERS

- .1 Factory manufactured of material compatible
with duct.
- .2 Opposed blade: configuration, metal thickness
and construction to recommendations of SMACNA.
- .3 Maximum blade height: 100 mm.
- .4 Bearings: pin in bronze bushings.
- .5 Linkage: shaft extension with locking
quadrant.
- .6 Channel frame of same material as adjacent
duct, complete with angle stop.

PART 3 - EXECUTION

- 3.1 EXAMINATION .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for damper installation in accordance with manufacturer's written instructions.
- .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.
- 3.2 INSTALLATION .1 Install where indicated.
- .2 Install in accordance with recommendations of SMACNA and in accordance with manufacturer's instructions.
 - .3 Locate balancing dampers in each branch duct, for supply, return and exhaust systems.
 - .4 Runouts to registers and diffusers: install single blade damper located as close as possible to main ducts.
 - .5 Dampers: vibration free.
 - .6 Ensure damper operators are observable and accessible.
- 3.3 CLEANING .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
- .1 Leave Work area clean at end of each day.
 - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and
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3.3 CLEANING
(Cont'd)

- .2 Final Cleaning:(Cont'd)
equipment in accordance with Section 01 74 11
- Cleaning.

- .3 Waste Management: separate waste materials
for reuse and recycling in accordance with
Section 01 74 21 - Construction/Demolition
Waste Management and Disposal and Section
01 35 21 - LEED Requirements.
 - .1 Remove recycling containers and bins
from site and dispose of materials at
appropriate facility.