Part 1   **General**

1.1   **REFERENCES**

 .1   ASTM International

  .1   ASTM A653/A653M-11, Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.

 .2   Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)

  .1   SMACNA HVAC Duct Construction Standards - Metal and Flexible, 2005.
  .2   SMACNA HVAC Air Duct Leakage Test Manual, 2012.

1.2   **DELIVERY, STORAGE AND HANDLING**

 .1   Deliver, store and handle materials in accordance with manufacturer's written instructions.

 .2   Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name.

 .3   Storage and Handling Requirements:

  .1   Store materials in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  .2   Store and protect metal ducts from damage.
  .3   Replace defective or damaged materials with new.

Part 2   **Products**

2.1   **SEAL CLASSIFICATION**

 .1   Classification as follows:

Maximum Pressure Pa	SMACNA Seal Class
500	C
250	C
125	C

 .2   Seal classification:

  .1   Class C: transverse joints and connections made air tight with sealant.

2.2   **SEALANT**

 .1   Sealant: oil resistant, water borne, polymer type flame resistant duct sealant. Temperature range of minus 30 degrees C to plus 93 degrees C.

2.3   **DUCT LEAKAGE**

 .1   In accordance with SMACNA HVAC Air Duct Leakage Test Manual.

2.4   **FITTINGS**

.1   Fabrication: to SMACNA.

.2   Radiused elbows:

.1   Rectangular: standard radius centreline radius: 1.5 times width of duct.

.2   Round: five piece, centreline radius: 1.5 times diameter.

.3   Transitions:

.1   Diverging: 20 degrees maximum included angle.

.2   Converging: 30 degrees maximum included angle.

2.5   **GALVANIZED STEEL**

.1   Lock forming quality: to ASTM A653/A653M, Z90 zinc coating.

.2   Thickness, fabrication and reinforcement: to SMACNA unless specified other wise.

.1   Exterior ducts to be 20ga minimum.

.3   Joints: to SMACNA.

2.6   **FLEXIBLE CONNECTIONS**

.1   Provide where indicated, factory fabricated flexible connectors, not more than 150 mm (6") long between metal parts to be joined and installed with just sufficient slack to prevent vibration transmission. Allow 100 mm (4") movement for high pressure fans and 50 mm (2") movement for low pressure fans.

.2   Conforms to the requirements of ULC and NFPA 90A.

.3   UV and weather resistant fibreglass fabric, of 814 g./m^2 (24 oz./yd^2) minimum density, and temperature range from -40°C to 120 °C (-40°F to 250°F).

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 metal duct 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.

3.2   **GENERAL**

.1   Do work in accordance with SMACNA.

.2   Do not break continuity of insulation vapour barrier with hangers or rods.

.3   Support risers in accordance with SMACNA.

3.3   HANGERS

.1   Strap hangers: install in accordance with SMACNA.

.2   Angle hangers: complete with locking nuts and washers.

.3   Hanger spacing: in accordance with SMACNA and as follows:

Duct Size	Spacing
(mm)	(mm)
to 1500	3000
1501 and over	2500

3.4   SEALING

.1   Apply sealant in accordance with SMACNA.

3.5   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 equipment in accordance with Section 01 74 11 - Cleaning.

.3   Waste Management: separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.1   Remove recycling containers and bins from site and dispose of materials at appropriate facility.

END OF SECTION