

SECTION 5 - INSULATION

5-01 GENERAL

The Contractor shall provide insulation for ducts and Refrigerant piping as per following Insulation Schedule.

Insulation shall be complete with adhesives, insulation tape, duct sealer and/or sealing tape, fastening material, and jacketing for outdoor piping.

5-02 INSULATION AND ACOUSTIC LINER SCHEDULE

5-02.1 Insulation Schedule

Service -----	Thickness (mm) -----	Insulation type -----	Vapour barrier -----	Protection -----
a) Refrigerant piping				
i) Indoor	13 (min.)	Elastomeric extruded Nitrile Rubber tubing to fit standard dia. meters of copper tubing	-	-
ii) Outdoor (exposed)	13 (min.)	- do -		26 gauge GI/ Aluminum sheet jacketing.
b). Condensate drain				
i) Indoor	13	-do-	-	-
ii) Outdoor	13	-do-	-	26 gauge GI/ Aluminum sheet jacketing

5-03.4 Insulation Protection Material and Accessories

a. Jacket

26 gauge (US) galvanized steel sheet or aluminium sheet. 24 gauge (US) for Breeching/stack exposed to atmosphere.

b. Insulation Tape

Insulation tape for joints shall be of aluminium foil type 50 mm wide, of make ABRO, USA or approved equal.

c. Adhesive

Adhesive for thermal insulation shall comply with ASTM Standard C 916-79 or equivalent. Adhesive for acoustic liner shall comply TIMA Standard AHC-101-1975 or equivalent.

5-04 **INSULATION APPLICATION**

5-04.1 **General**

All Thermal and acoustic insulating materials shall be applied as specified hereinafter.

Insulation shall be applied in a smooth, clean, workmanlike manner and joints shall be tight and finished smooth.

All surfaces to be insulated shall be dry and free from loose scale, dirt, oil or water when insulation is applied. Insulation shall be applied in such a manner that there will be no air circulation within the insulation or between the insulation and the surface to which it is applied.

Surface imperfections in the insulation such as clipped edges, small joints or cracks and small voids, or holes not over 25 mm square shall be filled with like insulating material or with insulating cement.

Where a vapor barrier is fixed on site it shall be fixed in such a manner as to obviate the possibility of moisture penetration. It shall be fixed where required by means of an approved type bituminous compound or approved equal for tightness.

5-04.2 **Condensate Drain Piping**

Pre-formed rubber pipe insulation with approved adhesive, and held by Aluminum bands.

5-05 **MEASUREMENT AND PAYMENT**

Measurement:

Measurement will be made for acceptable measured quantity on the basis of actual running length of insulation measured along center line of pipe in feet and acceptably furnished, installed and tested No measurement will be made for holding straps, adhesives, tapes, cladding etc.

Payment:

Payment will be made for acceptable measured quantity of insulation on the basis of unit rate per running feet quoted in the Bill of Quantities. The unit rate shall include cost of insulation for all fittings, valves, associated accessories, holding straps, adhesive tapes, cladding (where required) and shall constitute full compensation for all works related to this item.