

AHU DUCT MODIFICATION WORK AT
POLONNARUWA MILK FACTORY

Tender No: **M/PUR/TEN/2025/10**

Scope of Work / Job Description

Scope of Work

The Scope of this job covers design, engineering, manufacturing, supply, site fabrication erection, testing and balancing of supply and return air ductwork modification at Polonnaruwa Milk Factory at the following site.

Site Address: Milco Polonnaruwa Milk Factory,
Batticaloa Road,
Kaduruwela.

Job Description

- Dismantle the unnecessary existing supply air main duct works of the site.
- Fabricating, supply, installation, balancing and Armaflex insulation of supply air main duct work from AHU unit to relevant spaces using necessary flanges, clips, sealant, hangers, rods, angle iron support, hangers etc.
- Fabricating, supply, installation of fresh air supply ductwork for AHU with weather proof insect screen fresh air intake louver with volume control damper.
- Fabricating, supply, installation, balancing and Armaflex insulation of **GI return air duct work (Option 1)** from relevant spaces to AHU unit using necessary flanges, clips, sealant, hangers, rods, angle iron support, hangers etc.
- Fabricating, supply, installation, balancing of **PI return air duct work (Option 2)** from relevant spaces to AHU unit using necessary flanges, clips, sealant, hangers, rods, angle iron support, hangers etc.
- Connecting of the New AHU unit with the main supply air duct system.
- Supply and installation of required number of VCD's, supply air diffusers, return air intake grilles with volume control dampers and connecting those with the duct lines.
- Supply and Installation of required number of air curtains for specified areas and power termination.

Material Requirement

- Ducting shall be fabricated from Galvanised steel sheet (GSS) as specified. GSS duct shall be of lock forming grade, GI sheet should be hot dipped galvanized 180 GSM or above. Ducts shall be fabricated using lock forming machine.

Larger Side of Duct	Thickness of Galvanised steel sheet (GSS) (mm)
Upto 300 mm	0.5
301 to 600	0.6
601 to 1000 mm	0.7

- Supporting details for low-pressure system shall be as given below.

Larger side of duct (mm)	Supporting angle (mm)	Vertical rod diameter (mm)	Maximum spacing between supports (mm)
Upto 300	25 x 25 x 3	8	3000
301 to 1000	40 x 40 x 3	10	2400

- In Option 1**, the entire supply and return air ducting shall be insulated Closed Cell Rubber Nitrile Class O Armaflex make. The insulation thickness 19 mm, thermal conductivity (K) value shall not be more than 0.033 W/m.k. at 10 deg C.
- In Option 2**, Return air ducting shall be fabricated from Pre-Insulated sheet (PI) as specified PI foam board covered on both sides by an aluminum foil

Thickness of the panel	20 mm
Thickness of the aluminum	80/80 microns
Density of the foam	45 kg/m3
Weight of the panel	1.36kg/m2

- The external side of the aluminum is lacquered with a 3g/m2 of corrosion resistant and ultraviolet rays protection.
- Zinc coated fisher anchor fasteners shall be provided for upper attachments to the building. Anchor fasteners shall be provided by Contractor. Embedded plates shall be provided by Contractor.

- All bends, offsets and branch connections shall be made for smooth and noise less flow of air and minimum pressure drop. In case of full radius elbow optimum ratio of centreline radius of elbow to duct dimension of 1.25 shall be considered. However, due to space constraint shorter radius constraint shorter radius elbow or square elbow with guide vanes may be provided.
- Motor operated VCD should be provided. Actuator for dampers shall develop sufficient torque for easy operation of VCD. VCD shall be fabricated of minimum 18G GSS and shall be of robust construction. VCD shall be opposed blade type for rectangular duct. Fully open and fully closed position shall be marked for easier operation of VCD.
- Whenever VCD is provided with diffusers or grilles it shall be located within the duct collar.
- Insulated flexible ducts shall be provided to connect the supply air ducts to all air delivery devices such as grilles and diffusers. The length of the flexible duct shall not exceed 2 m. The airflow velocity through the flexible duct shall not be more than 3.0 m/s. The flexible duct shall be made of triple lamination of aluminium foil, polyester and Metalized Polyester film permanently bonded to a coated spring steel wire helix.
- All diffusers, grilles and registers shall be of extruded aluminium construction, and epoxy powder coated.

Mode of Measurement

This is clearly **measure and pay basis** job and representatives from the Contractor and Milco shall conduct a joint inspection of the job done. All the discrepancies observed either incomplete works or defective work shall be clearly indicated in the joint inspection report.

Milco shall have notice direct the Contractor add to, or otherwise vary any of the work and the Contractor shall carryout such variation, and be bound by the Contract so far as applicable as though the said variation were stated in the Contract. In any case in which the Contractor has received any such direction from the Milco which either then, the Contractor will later involve any increase or decrease in the Contract Price. The Milco shall thereupon approve such variations which are to be given effect together with the amount of increase or decrease in the Contract Price on that account.

Site Visit

Site visit to the corresponding site is not compulsory for all bidders before submitting the proposals

Contact details of Polonnaruwa milk factory;

Factory Manager: Mr. Ranasinghe 0714470942

Factory Engineer: Mr. Chandima 0714230094

For Further Information

Mechanical Engineer: Mr. Ishan Madhusanka 0760357010

Eligibility of Bidders

To be eligible for pre-qualification and short-listing, an applicant shall fulfil the following conditions of eligibility:

1. Should have the Certificate of Incorporation/ Registration of the Firm.
2. Company/Firm should have experience in supply& installation of similar type of work.

Even though the tenderers meet the above qualifying criteria, they are liable to be disqualified and debarred / suspended / blacklisted if they have

- i. Furnished false / fabricated particulars in the forms, statements and / annexures submitted in proof of the qualification requirements and/or
- ii. Not turned up for entering into agreement, when called upon.
- iii. Record of poor progress such as abandoning the work, not properly completing the contract, inordinate delays in completion, litigation history or financial failures etc. and/or
- iv. Participated in the previous bidding for the same work and had quoted unreasonably high tender percentage.
- v. Even while execution of the work, if found that the work was awarded to the Contractor based on false / fake certificates of experience, the Contractor will be blacklisted and work will be taken over.