Annexure-A

TECHNICAL SPECIFICATIONS OF BOX TYPE PRE FILTER OF 3400CMH CAPACITY FOR HIGH DUST LOADING

1. SCOPE:

The scope of this specification covers manufacture, testing at works, inspection, packing and safe delivery to site of 3400 CMH(2000 cfm), capacity pre filters for high dust loading, as specified below:

2. SPECIFIC RATING & PERFORMANCE:

2.1 Capacity: 3400 CMH (2000cfm)

2.2 Overall Dimension: Face : 610 x 610 mm (+0mm, -3.0mm)(Box Type)

Depth: 50 mm (+1mm, - 0 mm) (excluding gaskets)

Squareness: Face diagonals of both the face will be equal within 2mm.

2.3 Pressure Drop: Initial pressure drop not more than 03mm of WG at rated Capacity of 3400 CMH(2000cfm).

2.4 Dust holding capacity:

High dust loading capacity, dust holding of the filters shall be such that it can hold minimum of 800 grams of dust at three (3) times of its initial pressure drop or 09mm, with test dust of SAE J 726 fine/ ISO 5011 fine.

2.5 Collection Efficiency:

Not less than 90 % for particles size down to 10 micron. When measured at rated air flow (3400CMH), by number count method employing size selective particle counter and hetero-disperse DOP test aerosol or as per EN 779:2012 testing

2.6 Temperature resistance: 80°C and above.

2.7 Humidity resistance: 100% RH

3. MATERIAL OF CONSTRUCTION:

3.1 Filter frame :

GI 20 gauge casing.

3.2 Filter medium:

Filter medium shall be of high **loft progressively dense glass fiber filter media**, stitched together and pleated over rod separators and aluminum metal mesh guards on both sides. Filter media shall be suitable for High dust loading capacity, minimum of 800 grams at (3) times of the IPD. Aluminum expanded metal wire mesh

Folding strength: Medium shall have sufficient handling strength for pleating and shall show no tears, breaks or cracks when pleated.

Uniformity: The medium should have uniform physical & filtration properties all over its length.

3.3 Sealant:

Polyurethane based adhesive for sealing the filter pack to the casing, shall be oil resistant and shall be adequate to meet the temperature and humidity conditions specified, when set. The set sealant shall not show cracks or tendency to peel off from the filter frame. The sealant shall be applied uniformly and same shall be totally dry and set.

3.4 Gasket:

Soft impermeable, closed pore neoprene rubber gaskets with Shore 'A' hardness less than 25 and shall be of 6 mm (1/4 in.) thick and 19 mm (3/4 in.) Wide. The gasket shall be a single piece or with dove- tail joints at four corners. **Gasket shall be provided on DOWN-STREAM SIDE of filter frame only.**

3.5 The sealant and gasket used in the filters should withstand the humidity and temperature conditions specified under section 2.6 & 2.7 above.

4 FILTER ASSEMBLY:

- The filter medium shall not have splices and shall not be spot patched to repair holes or cracks.
- The filter pack shall consist of 10 nos. of pleats in upstream side and 11 nos. of pleats in downstream side. Pleats to be placed at equidistant.
- Separators: - 4mm MS rod, epoxy power coated. Upstream side 11 nos of support rod & downstream side 10 nos of support rod.
- The filters shall have adequate corner strength to avoid racking or skewing during handling, transportation and installation.
- The sealant shall be uniformly applied and the sealant shall be perfectly dry and set.
- The gasket shall be firmly pasted onto faces of the filters with suitable adhesive and dove-tail joints, if an, shall be without any gap.
- The top side of the filter shall be marked with air flow direction.

5. APPROVAL OF BULK PRODUCTION:

The supplier shall manufacture one of filter in this specification and generate the test result and get it approved from indenting officer, along with description of material composition of the dust, detailed filter drawing detailed testing methods, details of instruments used for testing and calibration before bulk production.

6. PERFORMANCE TEST & INSPECTION:

Test rig for determination of capacity, Pressure drop, dust holding capacity & collection

efficiency to be confirmed as per **EN 779:2012/BS 6540**

The following inspection shall be carried out at supplier's works:

6.1 Collection efficiency test, one in 100 filters at random will be tested at pr. drop at the rated flow of 3400 CMH. The test will be carried out by DOP test aerosol or as per EN 779:2012 testing as per approved test procedure. Failure, if any then the whole lot shall be rejected.

6.2 Dust holding capacity test, One out of the entire lot will be tested; failure if any then the whole lot will be rejected. Test to be conducted with test dust grade of SAE J 726 fine/ ISO 5011 fine. While conducting test on above filter, reading shall be taken at increasing value of IPD Vs quantity of dust fed and curve are drawn.

6.3 10% filter from the ordered quantity shall be tested for dimensional & visual inspection

7. PACKING:

The individual filter shall be packed in polyethylene bag and then into a rigid cardboard carton. The filter shall be placed in the carton in such a way that filter pleats are vertical when the carton is in the normal shipping orientation with appropriate markings onto the carton.

8. DELIVERY:

The supplier shall be committed to the delivery schedule indicated in the purchase order and shall be fully responsible for the delivery of the filters in our stores with no physical damage either to the carton or to the filter. Any damage of material during handling and transportation will be suppliers responsibility and they shall be replaced at free of cost within one month.

9. Pre- eligibility criteria:

a. Bidder shall be manufacturer of air filters for industrial use.

b. Bidders shall be ISO-9001 certified company.

c. Bidder shall have testing rig conforming to EN 779: 2012/ BS 6540 testing at manufacturer site.

d. The bidder should have supplied similar filters to any PSU or DAE units. PO copies shall be attached.

e. The details of filter testing facilities & a sample of filter medium in 300mm x 300mm size shall be enclosed with the offer.

- **Supporting documents for above to be attached along with offer.**

Failing to meet above criteria, offer will not be considered.