



Title: Cleaning of Pre, Fine and Riser Filters of AHU/EXU/AWU and Dynamic Pass Box Unit

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1.0 OBJECTIVE:

To lay down a Procedure for Cleaning of Pre, Fine and Riser Filters of AHU/EXU/AWU and Dynamic Pass Box /LAF & RLAF.

2.0 SCOPE:

This SOP is applicable for Cleaning of Pre, Fine, Fresh and Riser Filters of AHU/EXU/AWU/Dynamic Pass Box /LAF/RLAF.

3.0 RESPONSIBILITY:

Operator/Operating Person – Engineering & Concern Department

4.0 ACCOUNTABILITY:

Head – Engineering

5.0 ABBREVIATIONS:

AHU	Air Handling Unit
ER	Engineering
EXU	Exhaust Unit
AWU	Air washer unit
LAF	Laminar Air Flow
RLAF	Reverse Laminar Air flow
QA	Quality Assurance
MCCB	Moulded case circuit breaker
Kg/cm ²	kilogram per centimeter square

6.0 PROCEDURE:

6.1 All washable filter of AHU (i.e. Pre, Fine, fresh & riser filters)/EXU/AWU/Dynamic Pass Box /LAF/RLAF shall be cleaned in designated filter cleaning area.

6.2 Filter cleaning schedule shall be prepared as per annexure no. III for filter cleaning activity of AHU/EXU/AWU/Dynamic Pass Box.



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- 6.3** HVAC person shall stop the respective AHU/EXU/AWU/Dynamic Pass Box /LAF/RLAF for the replacement of filters by cleaned filter as per procedure defined in SOP and record the observation in respective operation log.
- 6.4** Remove the filters Pre, Fine & Riser Filter from the filter plenum with required tools from AHU/EXU unit or Dynamic pass box or LAF/RLAF by engineering person. Keep the dirty filter in polybag and close the bag with cable tie/ tape.
- 6.5** Affix the un-cleaned status label on polybags as per **Annexure-II**.
- 6.6** Un-cleaned or cleaned riser filters shall be transfer through lift/stairs via warehouse hatch window to filter cleaning room.
- 6.7** After cleaning & drying store the filter in double polybag which is properly closed by cable tie/tape and having cleaned label status (as per **Annexure - II**).
- 6.8** After reaching in respective change room/pass box one polybag shall be removed and filter shall be in single polybag to be transfer to respective area.
- 6.9** There are two methods of filters cleaning manual & automatic.
- 6.10 Manual Filter cleaning activity shall be performed as per below mention procedure :**
- 6.10.1** Prior to start up filter cleaning activity, use all the appropriate PPE which includes nose mask & hand gloves.
- 6.10.2** Check and ensure that all utility requirements are available i.e. compressed air, soft water & purified water.
- 6.10.3** Check & ensure all the equipped instrument (i.e. pressure gauge, valve etc.) related to filter cleaning activity are working properly and are in calibration stage.
- 6.10.4** Take out the filter from polybag in filter cleaning area and put the removed polybag.
- 6.10.5** Inspect the filters initially before performing filter cleaning activity for any physical damage and proper sealing if found any damage then affix the rejected label status and discard the filter and record the same in remark column of respective column.
- 6.10.6** Place the Un-cleaned filter in reverse position and clean with compressed air at a pressure of **0.5 to 2.5 kg/cm²**.
- 6.10.7** After compressed air cleaning, filter shall be cleaned by soft water at a pressure **0.5 to 2.5 kg/cm²**.
- 6.10.8** After soft water cleaning again flush the filter with compressed air to rinse off excess water.
- 6.10.9** Finally rinse the filter with purified water.



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6.10.10 Semi Dry the filter with compressed air at a pressure **0.5 – 2.5 kg/cm²**.

6.10.11 Hang the semi dry filter on hanger till completely dry at ambient temperature.

6.11 Automatic Filter Cleaning activity shall be performed as below mention procedure:

6.11.1 Switch on the main MCCB of Automatic filter cleaning booth from main panel.

6.11.2 Switch on the machine as below sequence.

Conveyor on > Air spray blower > Water spray pump > Air spray.

6.11.3 Ensure all blower and motors must be on.

6.11.4 Place the filter in reverse position on filter cleaning station.

6.11.5 There are 3 steps of cleaning & drying of filters the sequences as below.

S.No.	Cleaning & drying step	Duration	Remark
1	Air spray	3min	Cleaning stage
2	Soft Water spray	3min	
3	Air spray	4min	Drying stage

6.11.6 After completion of filter cleaning & drying through machine filter shall be check for drying if found wet then manually drying at ambient temperature till completely dry.

6.12 Details of Pre, fine & fresh air filter cleaning & drying record shall be recorded in **Annexure – II** titled as “**Filter Cleaning Record**”.

6.13 Inspect the filters after cleaning for any physical damage and proper sealing if found any damage then affix the rejected label status and discard the filter and record the same in remark column of respective **Annexure-I & II**.

6.14 Frequency of Filter Cleaning: Pre, fine, fresh air filter of AHU, RLAF shall be cleaned with a frequency of **monthly ± 7 days** or whenever D.P Limit exceeds after discussion along with concern department.

6.15 Riser filter shall be cleaned with a frequency of **monthly±7days** or as per user requirement (Annexure-IV).

6.16 If in any case filter cleaning machine are not operated due to any failure then filter shall be cleaning through manual filter cleaning procedure.

6.17 Dynamic pass box filters shall be cleaned as per schedule (Annexure-III) with a frequency of **monthly ± 7 days** or as per user requirement (Annexure no. IV).

6.18 RLAF & LAF filter shall be cleaned as per user requirement. User department shall raise the intimation for filter cleaning activity of RLAF & LAF.



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7.0 ANNEXURES:

ANNEXURE No.	TITLE OF ANNEXURE	FORMAT No.
Annexure-I	Filter Cleaning Record	
Annexure-II	Status Label	
Annexure-III	Filter Cleaning Schedule	
Annexure-IV	Intimation Slip For Filter Cleaning /Replacement	

ENCLOSURES: SOP Training Record

8.0 DISTRIBUTION:

- Controlled Copy No. 01 Quality Assurance
- Controlled Copy No. 02 Engineering
- Master Copy Quality Assurance

9.0 REFERENCES:

Not Applicable.

10.0 REVISION HISTORY:

CHANGE HISTORY LOG

Revision No.	Change Control No.	Details of Changes	Reason for Change	Effective Date	Updated By



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ANNEXURE – II

STATUS LABEL	
SECTION :	
AREA :	
STATUS OF FILTER:	
REMARKS:	
CHECKED BY : (SIGN & DATE)	



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**ANNEXURE –III
FILTER CLEANING SCHEDULE**

YEAR:

EFFECTIVE DATE :

Sr. No.	Equipment ID	Serving Area	Planning & Execution	January	February	March	April	May	June	July	August	September	October	November	December
			P												
			A												

Note: P – Planned Date & A – Actual Done Date

**Prepared By (Engg.)
Sign & Date**

**Checked By (Engg.)
Sign & Date**

**Reviewed By (QA)
Sign & Date**



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**ANNEXURE –IV
INTIMATION SLIP FOR FILTER CLEANING /REPLACEMENT**

Activity Start Up Date & time		Intimation Raised By :	
Job description	Return riser filter cleaning	AHU ID / Area:	Qty. of Filter :
Filter removed by (User Dept.)	Sign:	Date :	
Un-cleaned Filter Received By (Engg.)	Sign:	Date :	
Cleaned Filter Handover By (Engg.)	Sign:	Date :	
Clean filter fitted by (User Dept.)	Sign	Date	
Activity Completion Date & Time:		Status (Ok/Not ok) :	
Activity Review By User Department (Sign & Date)			