

Post Clean Verification Report No: CRM Number

On behalf of

Client

At

Building Name

System Name









Hydro-X Air

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Section 1: Preface

Customer:	Customer		
Site Address:	Site Address		
Hydro-X Account Manager:	Account Manager		
Account Manager Telephone Number:	00001111		
Account Manager Email Address:	Account Manager Email		
Hydro-X Address:	Hydro-X Air Ltd, The Maylands Building Maylands Avenue Hemel Hempstead HP2 7TG		
Hydro-X Telephone Number:	01909 565133		
Hydro-X Email Address:	info@hydro-x.co.uk		
Hydro-X Operatives Carrying Out Works:	Site personnel name		
Date of Assessment:	Date		

Any further information concerning this assessment should be requested by contacting the above-named Hydro-X Account Manager.



Section 2: Introduction

Legislation - Health and Safety Law

The Management of Health & Safety at Work Regulations 1999 impose a duty on every employer to make a suitable and sufficient assessment of:

- a) the risks to the health and safety of his employees to which they are exposed whilst they are at work, and
- b) the risks to the health and safety of persons not in his employment arising out of or in connection with the conduct by him of his undertaking.

Regulation 5 of the Workplace (Health, Safety and Welfare) Regulations 1992 imposes a duty to clean mechanical ventilation systems "as appropriate". Regulation 6 states, "effective and suitable provision shall be made to ensure that every enclosed workplace is ventilated by a sufficient quantity of fresh or purified air".

ACOP6 (52) relating to Regulation 6 of the Workplace (Health, Safety and Welfare) Regulations, 1992 states that "mechanical ventilation systems (including air conditioning systems) should be regularly and properly cleaned, tested and maintained to ensure that they are kept clean and free from anything which may contaminate the air".

British Standard BS EN 15780 provides benchmarks to define cleanliness and dirtiness.

	Inspection and Testing Intervals (Months)				
SQC	AHU	Filters ⁽²⁾	Wet Areas ⁽¹⁾	Ducts	Terminals
Low	24	12	12	48	48
Medium	12	12	6	24 ⁽³⁾	24 ⁽³⁾
High	12	6	6	12 ⁽⁴⁾	12 ⁽⁴⁾

Table 6 Recommended minimum regular inspection/monitoring intervals (in months) according to system (cleanliness) quality class ('SQC')

Notes to Table 6

- 1. Wet areas of the ventilation systems comprise humidification, cooling coils, condensate trays and other ancillary or associated items of plant containing these elements.
- 2. Filters should be inspected and maintained according to the manufacturer's recommendations, with these intervals as the minimum.
- 3. For compliance with HTM03, this frequency should be increased to 12-monthly.
- 4. For compliance with HTM03, this frequency should be increased to 3-monthly.



BS EN 15780 has a requirement to categorise each system type as low, medium, or high class depending on the areas being served. These levels of cleanliness quality class (for ventilation systems) should be generally applied as follows:

Table 1 Typical applications of cleanliness quality classes (for ventilation systems)

SQC	Typical Examples
Low	Rooms with only intermittent occupancy, e.g. storage rooms
Medium	Offices, hotels, restaurants, schools, theatres, residential homes, shopping areas, exhibition buildings, sport buildings, general areas in hospitals, general working areas in industries
High	Laboratories, treatment areas in hospitals, high quality offices

Table 7 below sets out what would be considered as acceptable contamination levels in existing 'in service' ductwork. Above these levels cleaning would be necessary. These contamination levels should not be confused with:

- a) post-clean level set for verification of cleanliness 'following a system clean', this is far more stringent, and these levels are detailed in section 8, or
- b) cleanliness levels for 'newly installed ductwork'. These levels are detailed in section 2- Table 2.

System Quality Class	Acceptable Contamination Levels – Supply Ductwork		Acceptable Contamination Levels – Re- Circulation or Secondary Air Ductwork		Acceptable Contamination Levels – Extract Ductwork	
Type of Measurement	D.T.T.	P.V.T.	D.T.T.	P.V.T.	D.T.T.	P.V.T.
Low	90µm	<4.5g/m ³	120µm	<6.0g/m ³	180µm	<9.0g/m ³
Medium	60µm	<3.0g/m ³	90µm	<4.5g/m ³	180µm	<9.0g/m ³
High	12µm	<0.6g/m ³	60µm	<3.0g/m ³	180µm	<9.0g/m ³

Notes to table 7

- a) Prior to using this table, a definition of the relevant ventilation system(s) cleanliness quality class(es) should be decided.
- b) The table should be used to define when it is considered appropriate to clean the system(s) using either the preferred vacuum testing (PVT) or deposit thickness testing (DTT) measurement methods.
- c) in the case of any extract system direct to atmosphere a reduction of airflow by 15% or more would equally define the need to clean the system.



Cleaning Methods

This guide is not intended to be prescriptive in relation to the method of cleaning, as there are many existing and emerging technologies available depending upon the type of deposit to be removed. To conform to this guide, the actual application of the methods listed in Table 8 must be capable of achieving the required result.

Ductwork cleaning should ideally be undertaken in the direction of the air flow to prevent the risk of cross contamination between cleaning shifts. on buildings with multiple zones (e.g. floors) these works can be planned to take advantage of the natural cut off points at the risers. Careful planning at the pre-contract stage is essential in ensuring a successful cleaning regime.

	Generic Name	Energy Source	Method of Removing Deposit	Typical Application
Mechanical	Rotary Brushing	Compressed Air and / or Electricity	Brushing the surface of the ductwork using mechanical action	Dry deposits that in some places could require agitation to remove from the ductwork surfaces
	Air Whip / Nozzle	Compressed Air	Directional jet nozzle on the end of a flexible hose	Dry, loose deposits. Not to be used where cross-contamination could be an issue
	Air Lance	Compressed Air	Air gun with a trigger / lance that can be used to direct compressed air locally	Internal coils / linear diffusers
Manual	Hand Wipe	Manual	Wiping of the surface using a medium appropriate to the purpose	Ultra-clean environments
	Hand Scrape	Manual	Removing heavy deposits by hand scraping	Strongly adhered deposits in areas where arm or man access is possible
	Hand Brushing	Manual	Sweeping the surface using an appropriate brush and collection device	Strongly adhered deposits in areas where arm or man access is not possible
	Hand Vacuum	Electricity / Manual	Removal of deposits by means of vacuum	Loose deposits in areas where arm or man access is possible



	Generic Name	Energy Source	Method of Removing Deposit	Typical Application
Wet	Wet Vacuum	Electricity / Manual	Removing liquid by means of wet vacuum	AHU's / Humidification Chambers
	Chemical Clean	Electricity / Manual	Application of suitable chemicals to soften or dissolve deposits	Gross Soiling
	Hand Wash / Wipe	Manual	Washing of surfaces using an appropriate cleaning agent	Large AHU's, air intake plenums etc. and grease laden surfaces
	Steam / High Pressure Water Wash	Electricity	High pressure system used to dislodge / dissolve deposits	Concrete intake plenums and grease laden surfaces



Section 3: Executive Summary

Hydro-X Air Ltd were instructed to undertake the clean and disinfection of (System Details) at (Site). The works were completed on (Date).

Hydro-X Air Ltd can certify that the above areas have been cleaned in accordance with the BESA TR19 Guideline – Internal Cleanliness of Ventilation Systems.

(Description of works)



Section 4: Photographic Evidence



1st floor male changing room extract Pre-Clean:

1st floor male changing room extract Post-Clean:







1st floor male changing room extract Pre-Clean:

1st floor male changing room extract Post-Clean:







1st floor Male changing room extract grill Pre-Clean:

1st floor Male changing room extract grill Post-Clean:







1st floor male changing room extract plenum box Pre-Clean:

1st floor male changing room extract plenum box Post-Clean:







Female changing room grill Pre-Clean:

Female changing room grill Post-Clean:







Female changing room plenum box Pre-Clean:

Female changing room plenum box Post-Clean:







Library unisex toilet grill Pre-Clean:

Library unisex toilet grill Post-Clean:







Library unisex toilet plenum box Pre-Clean:

Library unisex toilet plenum box Post-Clean:







Library unisex toilet duct Pre-Clean:

Library unisex toilet duct Post-Clean:







Library disabled toilet grill Pre-Clean:

Library disabled toilet grill Post-Clean:







Library disabled toilet plenum box Pre-Clean:

Library disabled toilet plenum box Post-Clean:







Library disabled toilet duct Pre-Clean:

Library disabled toilet duct Post-Clean:







Library children's toilet duct Pre-Clean:

Library children's toilet duct Post-Clean:







Library children's toilet grill Pre-Clean:

Library children's toilet grill Post-Clean:







ground floor disabled toilet grill Pre-Clean:

ground floor disabled toilet grill Post-Clean:







ground floor disabled toilet plenum box Pre-Clean:

ground floor disabled toilet plenum box Post-Clean:







ground floor female toilet grill Pre-Clean:

ground floor female toilet grill Post-Clean:







ground floor female toilet plenum box Pre-Clean:

ground floor female toilet plenum box Post-Clean:







Ground floor male toilet grill Pre-Clean:

Ground floor male toilet grill Post-Clean:







Ground floor male toilet plenum box Pre-Clean:

Ground floor male toilet plenum box Post-Clean:





CERTIFICATE OF CLEANING

This is to certify the <System Details> at the site named below has been cleaned in accordance with BESA TR19 Guideline – Internal Cleanliness of Ventilation Systems.

Report Reference Number: CRM Number Customer: Customer Site Name Site: Site Address System: System Details Date: Date The internal surfaces of the ventilation system were decontaminated using approved methodologies as stated BESA TR19 Guideline – Internal Cleanliness of Ventilation Systems. Hydro-X Air: Signature **Print Name:** Site Operative

Hydro-X Air Ltd, The Maylands Building, Maylands Avenue, Hemel Hempstead, HP2 7TG











