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EXAMINATION AND TESTING OF LOCAL  
EXHAUST VENTILATION SYSTEMS AT

**HEMSEC MANUFACTURING LIMITED  
HUYTON BUSINESS PARK  
STRETTON WAY  
HUYTON  
L36 6JF**

**Report Reference:**

**EPN 7842-LEV**

**Prepared By:**

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Environmental Operations Manager

*Neil Chisnall*

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**Reviewed By:**

**Mark Drinkhill**  
Director

*Mark Drinkhill*

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**29<sup>th</sup> April 2025**

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This project was completed by Total Environmental Compliance Limited on the basis of a defined programme of work and terms and conditions agreed with the Client. This report was compiled with all reasonable care and attention, bearing in mind the project objectives, the agreed scope of works, prevailing site conditions and the degree of manpower and resources allocated to the project, as agreed.

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Any further information regarding this report should be requested from the Project Consultant,

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## DOCUMENT CONTROL SHEET

### CLIENT

Hemsec Manufacturing Limited

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### CONSULTANT

Total Environmental Compliance Limited

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### REPORT STATUS

<b>Issue</b>	<b>Status</b>	<b>Description</b>	<b>Prepared by</b>	<b>Date</b>
1	Final Report	Issued to Client	N Chisnall	28/05/2025

Issue 1 of 2 - Client  
Issue 2 of 2 - Total Environmental Compliance

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1. Introduction

2. Survey Details

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Appendix A List of LEV Systems Tested

1. **INTRODUCTION**

Regulation 9 of the Control of Substances Hazardous to Health 2004 (COSHH) states that all engineering control measures provided by an employer should be maintained in an efficient state, be in efficient working order and in good repair. It further states that employers must ensure that thorough examination and tests of these control systems are carried out at regular intervals and suitable records are kept.

In order to comply with these requirements, Total Environmental Compliance Limited have undertaken testing of the local exhaust ventilation systems at Hemsec Manufacturing Limited, Huyton.

Site work was carried out by Neil Chisnall of Total Environmental Compliance Limited on 29th April 2025.

## 2. SURVEY DETAILS

Using a NPL 'L' type pitot tube, Airflow PVM100 micromanometer, Airflow LCA6000 vane anemometer and Draeger air detector tubes, each system has been tested where applicable and suitable access permitted for the following parameters:-

1. Smoke capture
2. Face velocity
3. Total air flow through system
4. Duct dimensions
5. Pressure drop across filter
6. Pressure drop across fan.

In addition to the above parameters, observations of system condition and performance were made. Where appropriate, recommendations on how to improve system performance have been made.

The results of examination and testing of the local exhaust ventilation systems (LEV) are given in Appendix 1. The results obtained are compared with recommended limits for capture velocities and duct velocities stated in HS(G)258 - Controlling Airborne Contaminants at Work - A Guide to Local Exhaust Ventilation, listed below:

<b><u>Contaminant Present</u></b>	<b><u>Duct Velocity</u></b>
Gases, non-condensing	no minimum limit
Vapours, Smoke, Fume	10 ms <sup>-1</sup>
Medium Density Dusts	15 ms <sup>-1</sup>
Average Industrial Dusts	20 ms <sup>-1</sup>
Heavy Dusts	25 ms <sup>-1</sup>

<b><u>Condition of Dispersion of Contaminant</u></b>	<b><u>Capture / Face Velocity</u></b>
Released with practically no velocity into quiet air	0.25 - 0.50 ms <sup>-1</sup>
Released at low velocity into moderately still air	0.50 - 1.00 ms <sup>-1</sup>
Active generation into zone of rapid air motion	1.00 - 2.50 ms <sup>-1</sup>
Released at high initial velocity into zone of very rapid air motion	2.50 - 10.00 ms <sup>-1</sup>

The conclusions and recommendations should be noted and appropriate action taken as necessary.

### 3. **TESTING FREQUENCY**

Regulation 9 of COSHH states that all control systems should be:

(i) checked visually on a weekly basis and records kept of these checks. If during the weekly visual checks any problems are found concerning a control system then it must be reported and remedied forthwith. When remedial work has been carried out then the system must be re-tested. These visual inspections should include examination of items of plant such as:

- (a) damage or wear to ducting etc.
- (b) damper positions/setting
- (c) assessment of degree/level of control
- (d) testing of programme devices
- (e) testing of warning devices
- (f) check on process conditions

and (ii) tested at least once every fourteen (14) months, the exception being control systems for grinding and shot blasting applications. Grinding systems require testing every six months and shot blasting every one (1) month. This testing should include the following:

- (a) all weekly checks
- (b) calibrate any primary control devices
- (c) check static pressure/inlet velocities against reference standards.

In accordance with the above, the LEV systems which have been examined as part of this exercise are listed in Appendix A and are followed by the detailed assessment reports.

**APPENDIX A**

**EXAMINATION AND TEST OF LOCAL EXHAUST VENTILATION**

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<b>Reference No.</b>	<b>Description</b>	<b>Location</b>
1-01	Oyster Press Extraction	Main Factory
1-02	Oyster Press Component Cleaning	Main Factory
1-03	Panel Saw and Router	Main Factory
1-04	Vertical Saw Extraction	Main Factory

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## EXAMINATION AND TEST OF LOCAL EXHAUST VENTILATION

**REFERENCE NO: 1-01**

**SHEET 1 OF 4**

1. **CLIENT:** Hemsec Manufacturing Limited.
2. **SITE:** Huyton Business Park, Stretton Way, Huyton, Merseyside.
3. **LOCATION OF SYSTEM:** Main Factory
4. **DESCRIPTION OF SYSTEM:** Oyster Press
5. **SUBSTANCES CONTROLLED:** Isocyanate Vapour
6. **OPERATING CONDITIONS DURING TEST:** Normal

**7. DETAILS OF AIR MOVER/FAN**

**Identity No:** S71071

**Type:** Centrifugal

**Make:** Thelcastle

**Model:** No details available

**Fan Size/Speed:** 1430rpm

**Condition:** Visually satisfactory. All connections and wiring intact.

**Notes/Comments:** Fan positioned at ground level next to press.

**8. DETAILS OF FILTER/COLLECTOR**

**Identity No:** -

**Type:** -

**Make:** -

**Model:** -

**Monitoring Equipment:** -

**Condition:** -

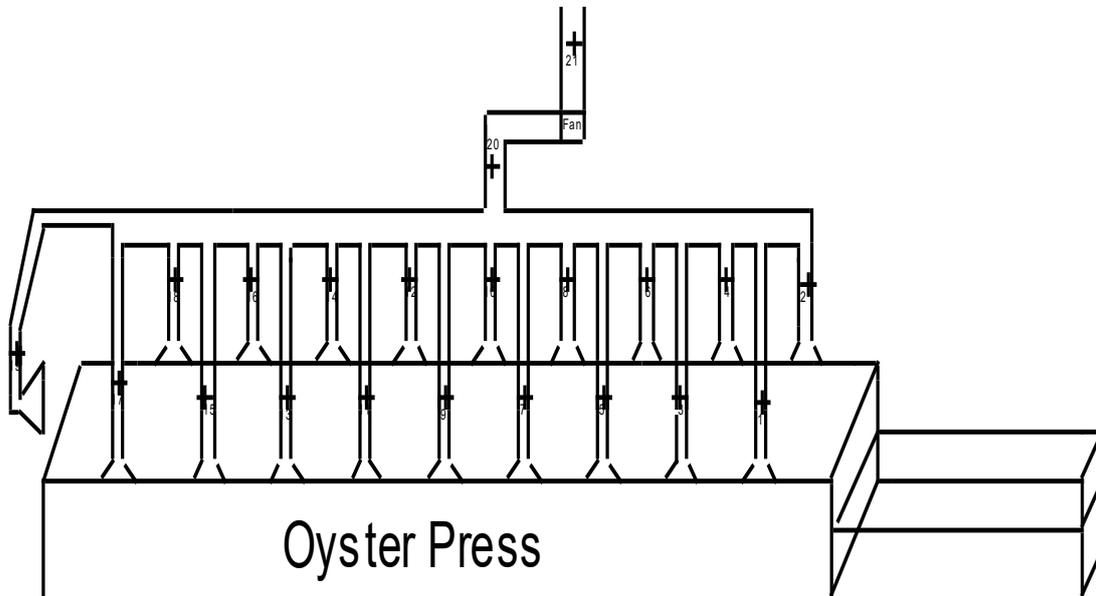
**Notes/Comments:** No filter on system.

## EXAMINATION AND TEST OF LOCAL EXHAUST VENTILATION

REFERENCE NO: 1-01

SHEET 2 OF 4

### 9. SCHEMATIC ARRANGEMENT OF LOCAL EXHAUST VENTILATION DETAILING TEST POINTS:



Duct Diameters:

TPs 1-18 = 0.12m

TP 19 and 20 = 0.5m

(Not to scale)

**EXAMINATION AND TEST OF LOCAL EXHAUST VENTILATION**

REFERENCE NO: 1-01

SHEET 3 OF 4

**10. TEST DATA**

Test Point	Face Velocity (ms <sup>-1</sup> )	Test Point	Static Pressure (Pa)	Duct Velocity (ms <sup>-1</sup> )	Gas Temp (°C)	Volume Flow (m <sup>3</sup> s <sup>-1</sup> )	
At Hoods	Assessed by smoke visualisation	1	-60	-	21	-	
		2	-278	-	21	-	
		3	-423	-	21	-	
		4	-113	-	21	-	
		5	-210	-	21	-	
		6	-170	-	21	-	
		7	-284	-	21	-	
		8	-21	-	21	-	
		9	-125	-	21	-	
		10	-14	-	21	-	
		11	-33	-	21	-	
		12	-147	-	21	-	
		13	-132	-	21	-	
		14	-15	-	21	-	
		15	-310	-	21	-	
		16	-304	-	21	-	
		17	-665	-	21	-	
		18	+90	-	21	-	
		19	-	-	11.8	21	2.32
		20	-	-	11.1	21	2.11

## EXAMINATION AND TEST OF LOCAL EXHAUST VENTILATION

**REFERENCE NO: 1-01**

**SHEET 4 OF 4**

### **11. EXAMINATION DETAILS:**

**Date of Last Examination and Test:** May 2023

**Condition of Ductwork/Hoods Etc:** Satisfactory. All seals and connections intact. No evidence of leakage or ingress of air.

**Is Test Smoke Effectively Captured:** Satisfactory capture at hoods.

**Is Exhaust Air Recirculated:** No

**Quality of Recirculated Air:** N/A

#### **Notes/Comments:**

Tested with dampers in position found.  
Air monitoring carried out April 2025.

### **12. CONCLUSION:**

System performance similar to last testing indicating no deterioration in system performance. Adequate control is maintained.

### **13. RECOMMENDATIONS:**

None.

**14. DATE OF EXAMINATION AND TEST:** 29th April 2025

**Signature:** N Chisnall

**Designation:** Consultant

**For: Total Environmental Compliance Limited, Tan House Lane, Widnes, Cheshire**

**Re-test Due:** April 2026

## EXAMINATION AND TEST OF LOCAL EXHAUST VENTILATION

**REFERENCE NO: 1-02**

**SHEET 1 OF 3**

1. **CLIENT:** Hemsec Manufacturing Limited.
2. **SITE:** Huyton Business Park, Stretton Way, Huyton, Merseyside.
3. **LOCATION OF SYSTEM:** Main Factory.
4. **DESCRIPTION OF SYSTEM:** Oyster Press Head Lance Cleaning.
5. **SUBSTANCES CONTROLLED:** Solvent vapours.
6. **OPERATING CONDITIONS DURING TEST:** Normal.

**7. DETAILS OF AIR MOVER/FAN**

**Identity No:** -

**Type:** Centrifugal

**Make:** -

**Model:** -

**Fan Size/Speed:** -

**Condition:** Visually satisfactory.

**Notes/Comments:** No access to high level fan for close inspection. No fan details available. Airflow monitor present on system.

**8. DETAILS OF FILTER/COLLECTOR**

**Identity No:** -

**Type:** -

**Make:** -

**Model:** -

**Monitoring Equipment:** -

**Condition:** -

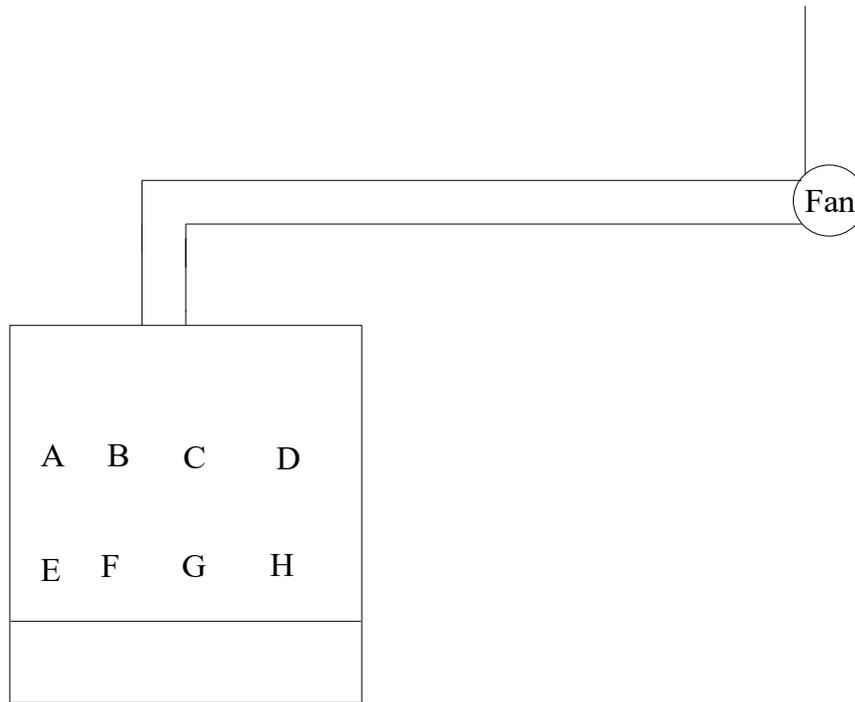
**Notes/Comments:** No filter on system.

**EXAMINATION AND TEST OF LOCAL EXHAUST VENTILATION**

REFERENCE NO: 1-02

SHEET 2 OF 3

**9. SCHEMATIC ARRANGEMENT OF LOCAL EXHAUST VENTILATION  
DETAILING TEST POINTS:**



(Not to scale)

**10. TEST DATA**

Test Point	Face Velocity (ms <sup>-1</sup> )	Test Point	Static Pressure (Pa)	Duct Velocity (ms <sup>-1</sup> )	Gas Temp (°C)	Volume Flow (m <sup>3</sup> s <sup>-1</sup> )
A	0.35	-	-	-	-	-
B	0.36					
C	0.32					
D	0.30					
E	0.37					
F	0.38					
G	0.37					
H	0.35					

## EXAMINATION AND TEST OF LOCAL EXHAUST VENTILATION

REFERENCE NO: 1-02

SHEET 3 OF 3

### **11. EXAMINATION DETAILS:**

**Date of Last Examination and Test:** April 2023.

**Condition of Ductwork/Hoods Etc:** Satisfactory. All seals and connections intact. No evidence of leakage or ingress of air. No access to high level ducting.

**Is Test Smoke Effectively Captured:** Good capture at hood.

**Is Exhaust Air Recirculated:** No.

**Quality of Recirculated Air:** N/A.

#### **Notes/Comments:**

Tested with dampers in position found.

Air monitoring carried out April 2025.

### **12. CONCLUSION:**

Satisfactory visual assessment allied to satisfactory face velocities indicate adequate control of contaminants and overall satisfactory system performance.

### **13. RECOMMENDATIONS:**

None.

**14. DATE OF EXAMINATION AND TEST:** 29th April 2025

**Signature:** N Chisnall

**Designation:** Consultant

**For: Total Environmental Compliance Limited, Tan House Lane, Widnes, Cheshire**

**Re-test Due:** April 2026

**EXAMINATION AND TEST OF LOCAL EXHAUST VENTILATION**

**REFERENCE NO: 1-03**

**SHEET 1 OF 3**

1. **CLIENT:** Hemsec Manufacturing Limited.
  
2. **SITE:** Huyton Business Park, Stretton Way, Huyton, Merseyside.
  
3. **LOCATION OF SYSTEM:** Main factory.
  
4. **DESCRIPTION OF SYSTEM:** Panel Saw and Router.
  
5. **SUBSTANCES CONTROLLED:** Dust.
  
6. **OPERATING CONDITIONS DURING TEST:** Normal.

**7. DETAILS OF AIR MOVER/FAN**

**Identity No:** D1325BD

**Type:** Axial

**Make:** Brook Crompton

**Model:** -

**Fan Size/Speed:** 7.5kW, 2800rpm

**Condition:** Good condition. No evidence of leakage at seals and connections. All connections and wiring intact.

**Notes/Comments:**

**8. DETAILS OF FILTER/COLLECTOR**

**Identity No:** -

**Type:** Fabric sock filters

**Make:** Air Plant Dust Extraction and Control

**Model:** D300

**Monitoring Equipment:** None present

**Condition:** Good condition. All seals intact with no evidence of leakage of air.

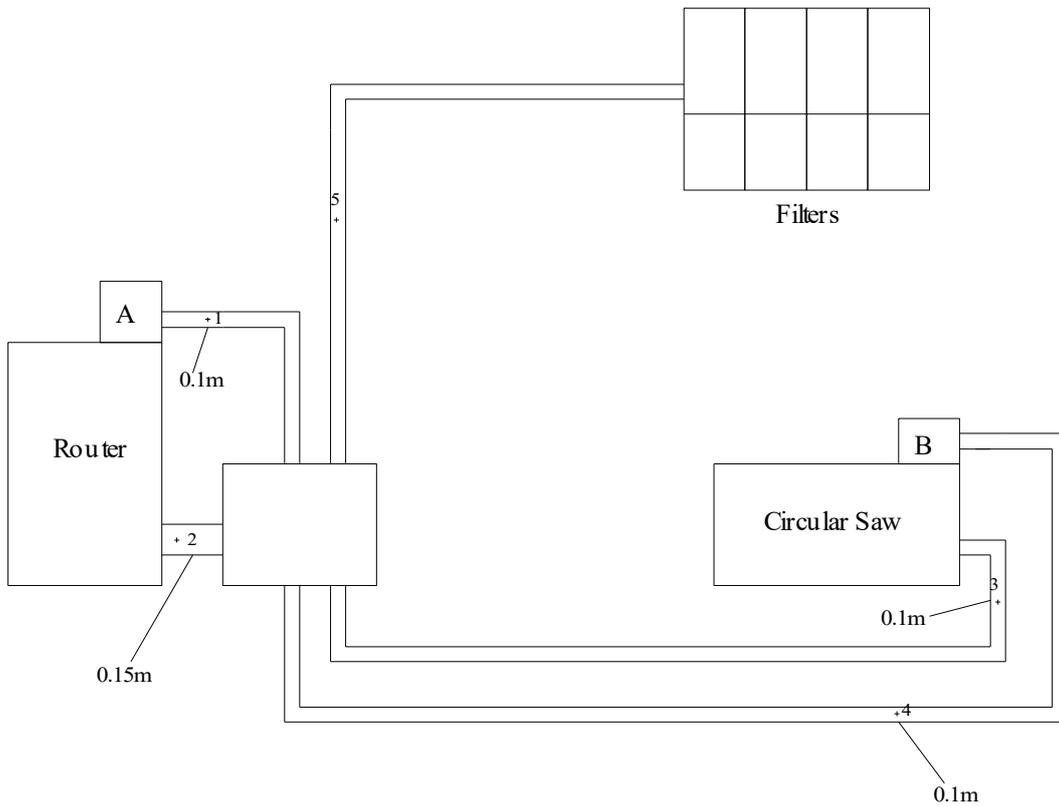
**Notes/Comments:**

**EXAMINATION AND TEST OF LOCAL EXHAUST VENTILATION**

REFERENCE NO: 1-03

SHEET 2 OF 3

**9. SCHEMATIC ARRANGEMENT OF LOCAL EXHAUST VENTILATION  
DETAILING TEST POINTS:**



(Not to scale)

**10. TEST DATA**

Test Point	Face Velocity (ms <sup>-1</sup> )	Test Point	Static Pressure (Pa)	Duct Velocity (ms <sup>-1</sup> )	Gas Temp (°C)	Volume Flow (m <sup>3</sup> s <sup>-1</sup> )
A	Assessed by smoke visualisation	1	-360	15.3	21	0.12
B		2	-1000	19.1	21	0.34
		3	-1556	15.4	21	0.12
		4	-1750	16.0	21	0.13
		5	-1590	24.2	21	3.04

## EXAMINATION AND TEST OF LOCAL EXHAUST VENTILATION

REFERENCE NO: 1-03

SHEET 3 OF 3

### **11. EXAMINATION DETAILS:**

**Date of Last Examination and Test:** Unknown.

**Condition of Ductwork/Hoods Etc:** Satisfactory. All seals and connections intact. No evidence of leakage or ingress of air.

**Is Test Smoke Effectively Captured:** Satisfactory capture at hoods.

**Is Exhaust Air Recirculated:** Yes.

**Quality of Recirculated Air:** Any recirculated air will require an assessment.

#### **Notes/Comments:**

Air monitoring carried out April 2025.

### **12. CONCLUSION:**

**Good duct faces etc**

### **13. RECOMMENDATIONS:**

None.

**14. DATE OF EXAMINATION AND TEST:** 29th April 2025

**Signature:** N Chisnall

**Designation:** Consultant

**For: Total Environmental Compliance Limited, Tan House Lane, Widnes, Cheshire**

**Re-test Due:** April 2026

## EXAMINATION AND TEST OF LOCAL EXHAUST VENTILATION

**REFERENCE NO: 1-04**

**SHEET 1 OF 3**

1. **CLIENT:** Hemsec Manufacturing Limited.
2. **SITE:** Huyton Business Park, Stretton Way, Huyton, Merseyside.
3. **LOCATION OF SYSTEM:** Main factory.
4. **DESCRIPTION OF SYSTEM:** Vertical Saw Extraction.
5. **SUBSTANCES CONTROLLED:** Wood Dust.
6. **OPERATING CONDITIONS DURING TEST:** Normal.

### **7. DETAILS OF AIR MOVER/FAN**

**Identity No:** -

**Type:** -

**Make:** -

**Model:** 19249101

**Fan Size/Speed:** 3.0kW, 12.26m<sup>3</sup>/hr.

**Condition:** -

**Notes/Comments:** No access to fan held within filter housing.

### **8. DETAILS OF FILTER/COLLECTOR**

**Identity No:** 2433389924

**Type:** Fabric filter

**Make:** AL-KO

**Model:** Power Unit 200

**Monitoring Equipment:** None present

**Condition:** Good condition. No evidence of leakage or ingress of air.

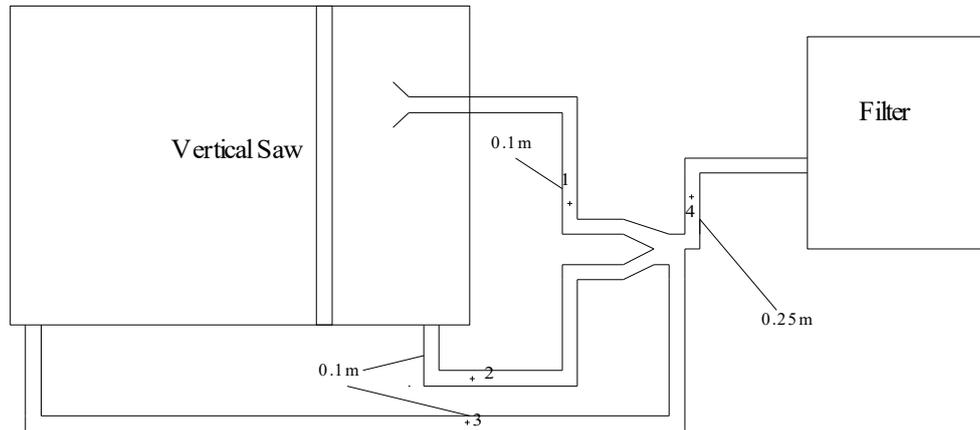
**Notes/Comments:** Reverse jet cleaning system noted to operate at the end of the cutting cycle.

**EXAMINATION AND TEST OF LOCAL EXHAUST VENTILATION**

REFERENCE NO: 1-04

SHEET 2 OF 3

**9. SCHEMATIC ARRANGEMENT OF LOCAL EXHAUST VENTILATION  
DETAILING TEST POINTS:**



(Not to scale)

**10. TEST DATA**

Test Point	Face Velocity (ms <sup>-1</sup> )	Test Point	Static Pressure (Pa)	Duct Velocity (ms <sup>-1</sup> )	Gas Temp (°C)	Volume Flow (m <sup>3</sup> s <sup>-1</sup> )
		1	-2150	18.1	21	0.14
		2	-1840	29.7	21	0.23
		3	-1250	19.5	21	0.15

**EXAMINATION AND TEST OF LOCAL EXHAUST VENTILATION**

**REFERENCE NO: 1-04**

**SHEET 3 OF 3**

**11. EXAMINATION DETAILS:**

**Date of Last Examination and Test:** March 2022.

**Condition of Ductwork/Hoods Etc:** Good condition. All seals and connections intact. No evidence of leakage or ingress of air.

**Is Test Smoke Effectively Captured:** Good capture at hoods.

**Is Exhaust Air Recirculated:** Yes.

**Quality of Recirculated Air:** Any recirculated air will require an assessment.

**Notes/Comments:**

Air monitoring carried out April 2025.

**12. CONCLUSION:**

System performance similar to last testing indicating no deterioration in system performance. Adequate control is maintained.

**13. RECOMMENDATIONS:**

None.

**14. DATE OF EXAMINATION AND TEST:** 29th April 2025

**Signature:** N Chisnall

**Designation:** Consultant

**For: Total Environmental Compliance Limited, Tan House Lane, Widnes, Cheshire**

**Re-test Due:** April 2026