

04 March 2019

WZ Packaging Ltd  
Halesfield 18  
Telford  
TF7 4JS



**S.I. ENVIRONMENTAL**

**"Helping To Make Your Workplace Safer"**

*Air Monitoring*  
*H&S Consultancy*

*Workplace Noise Monitoring*  
*Local Exhaust Ventilation Tests*

For the attention of Mr. P. Benton (Quality & Technical Services Manager)

Dear Mr. Benton,

We now have pleasure in enclosing the results of the Local Exhaust Ventilation (LEV) thorough examination & tests recently carried out on your various extract ventilation systems.

We trust that the comments made on the individual LEV reports are self-explanatory, but we would be pleased to discuss any queries you may have.

The results should be compared with those of previous surveys and the reports should be retained for a minimum of 5 years.

#### Notes

These reports are designed to comply with the requirements of the Control of Substances Hazardous to Health (CoSHH) Regulations as explained in the Approved Code of Practice. A separate record is provided for each system.

#### The Record

These records include the LEV identification and location, details of the fan, filters, and conditions at the time of the tests and details of the routine measurements taken of airflow performance. The measurements are taken at intervals determined by the regulations, but in any event not exceeding fourteen months.

#### Scientific Units Used

The ventilation results are measured in SI (Systeme international) units, ie, pressure in Pascals (Pa), velocity in metres per second ( $\text{m}/\text{sec}^{-1}$ ) and volume flow in cubic metres per second ( $\text{m}^3/\text{sec}^{-1}$ ), (except where otherwise requested). The units of measurement are indicated among the column headings. All dimensions are in metres or millimetres.

#### CoSHH Regulations

The CoSHH Regulations state (ACOP Regulation 9, Paragraph 164) that *"all control measures in use should be visually checked, where possible, at appropriate intervals and without undue risk to maintenance staff. In the case of LEV and work enclosures, such checks should be carried out at least once a week"*

Mr Smedley has the British Occupational Hygiene Society (BOHS) P604 "Performance Evaluation and Management of Local Exhaust Ventilation Systems", W201 "Basic Principles in Occupational Hygiene", W506 "Ergonomic Essentials (including Manual Handling and Display Screen Equipment)", W501 "Measurements of Hazardous Substances (including Risk Assessment)", W507 "Health Effects of Hazardous Substances" and W505 "Control of Hazardous Substances".

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VAT Number: 763 7786 76

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**LEV Thorough Examination & Test – February 2019**

**WZ Packaging Ltd**

**Summary of Results**

	<b>LEV System Identification</b>	<b>Comments</b>
LEV 1	<b><u>Engineering Workshop:</u></b> DCE Unimaster dust extractor connected to a DoimakRUA-3 2000 Core Cutter	Satisfactory, Adequate transport and face air velocities measured. <b>Dust accumulation directly adjacent to hood requires clearing.</b>
LEV 2	<b><u>Engineering Workshop:</u></b> Centrifugal fan connected to arm and captor hood.	Satisfactory, Adequate transport and face air velocities measured. <b>Adjustable arm requires tightening to enable hood to hold its position.</b>
LEV 3	<b><u>Finishing Area:</u></b> Bifurcated axial flow fan connected to 2 x slitting machines.	Satisfactory, Adequate transport and face air velocities measured. No commissioning data provided for performance comparison. Exposure monitoring should be carried out during normal slitting machine production to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control.
LEV 4	<b><u>Ink Room:</u></b> Multiple arm system with 4 x receptor hoods	Satisfactory, Adequate face air velocities measured.
LEV 5	<b><u>Ink Room:</u></b> Partial enclosure with extraction above open barrel.	Satisfactory, Adequate face air velocities measured.
LEV 6	<b><u>Ink Room:</u></b> General ventilation for solvent storage.	Satisfactory, Adequate face air velocities measured. <b>System provides general ventilation, not LEV.</b> No commissioning data provided for performance comparison. Personal exposure monitoring was carried out to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control.

LEV 7	<b><u>Printing Press Area:</u></b>  Rotomec Printing Machine 334	Satisfactory, Adequate transport and face air velocities measured. No commissioning data provided for performance comparison. Personal exposure monitoring was carried out to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control.
LEV 8	<b><u>Printing Press Area:</u></b>  Cerutti Printing Machine 337	Satisfactory, Adequate transport and face air velocities measured. No commissioning data provided for performance comparison. Exposure monitoring should be carried out during normal printing machine production to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control.
LEV 9	<b><u>Printing Press Area:</u></b>  Tecmo 3 Stage Printing Machine 364	Satisfactory, Adequate transport and face air velocities measured. No commissioning data provided for performance comparison. Exposure monitoring should be carried out during normal printing machine production to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control. <b>Poor hood positioning observed, it is recommended the hoods are moved closer to the source of the volatile organic compound (VOC) vapour.</b>
LEV 10	<b><u>Printing Press Area:</u></b>  Kroenert Reco 600 Printing Machine 365	Satisfactory, Adequate transport and face air velocities measured. No commissioning data provided for performance comparison. Exposure monitoring should be carried out during normal printing machine production to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control.
LEV 11	<b><u>Printing Press Area:</u></b>  Halley Printing Machine 338	Satisfactory, Low transport and face air velocities measured. No commissioning data provided for performance comparison. Exposure monitoring should be carried out during normal printing machine production to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control. Airflow dampers restrict the system performance to prevent the foil product from being drawn into the extraction.

LEV 12	<p><b><u>Printing Press Area:</u></b></p> <p>Kroenert Laminator Printing Machine 339</p>	<p>Satisfactory, Adequate face air velocities measured. No commissioning data provided for performance comparison. Personal exposure monitoring was carried out to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control.</p>
LEV 13 LEV 14	<p><b><u>Printing Press Area:</u></b></p> <p>Wax Printing Machine 341</p>	<p>Satisfactory, Adequate transport air velocities measured at LEV 13, TP1. <b>Unsatisfactory (LEV 14). Fan not operational and no discharge duct installed! Install discharge duct and ensure that the fan is operational and has sufficient performance to control the VOCs.</b></p> <p>No commissioning data provided for performance comparison. Exposure monitoring should be carried out during normal printing machine production to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control. <b>Qualitative smoke test demonstrated poor capture and control.</b></p>
LEV 15	<p><b><u>Printing Press Area:</u></b></p> <p>Foil Lamination (LHS) canopy extraction.</p>	<p>Satisfactory, Adequate transport and face air velocities measured. No commissioning data provided for performance comparison. Exposure monitoring should be carried out during normal printing machine production to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control.</p>
LEV 16	<p><b><u>Printing Press Area:</u></b></p> <p>Foil Lamination (RHS) canopy extraction.</p>	<p><b>System was not in operation and unable to be tested.</b></p> <p>No commissioning data provided for performance comparison. Exposure monitoring should be carried out during normal printing machine production to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control.</p>

LEV 17	<p><b><u>Laboratory:</u></b></p> <p>Astec Monair Plus Fume Cupboard (500 x 300mm)</p>	<p><b>Unsatisfactory,</b> <b>The filter requires changing.</b></p> <p>No saturation test has been carried out on the main carbon filter. It is recommended that the filters are changed at regular intervals: The pre-filter every 3 months and the main carbon filter every 3 years (or to manufacturer's specific guidelines). Records should be made of all changes.</p> <p>Filters last changed: <b>Unknown (&gt;3 Years)</b></p>
LEV 18	<p><b><u>Laboratory:</u></b></p> <p>Astec Monair Plus Fume Cupboard (900 x 340mm)</p>	<p><b>Unsatisfactory,</b> <b>The filter requires changing.</b></p> <p>No saturation test has been carried out on the main carbon filter. It is recommended that the filters are changed at regular intervals: The pre-filter every 3 months and the main carbon filter every 3 years (or to manufacturer's specific guidelines). Records should be made of all changes.</p> <p>Filters last changed: <b>Unknown (&gt;3 Years)</b></p>

**REGISTER OF THOROUGH EXAMINATION AND  
TEST OF LOCAL EXHAUST VENTILATION PLANT**

**Regulation 9: Control of Substances Hazardous to Health (COSHH) 2002.**

**Company Name:** WZ Packaging Ltd

**Company Address:** WZ Packaging Ltd  
Halesfield 18  
Telford  
TF7 4JS


**Copies to:** Mr. P. Benton

**Date tested:** 11<sup>th</sup> – 12<sup>th</sup> February 2019


**Date of next test:** February 2020

**Test Equipment:** TSI VelociCalc model TA465-P. Serial No. TA4651530009 (Calibrated July 2018), Electric Manometer, Hot Wire Anemometer, Pitot Tube, Smoke tubes and Dust Lamp

**Name of competent person carrying out test:** Mr Alex Smedley, LEV test engineer.  
S.I. Environmental Ltd

**Signature:** 

**Approved by:** Mr Carl Renshaw, Director  
S.I. Environmental Ltd

**Signature:** 

**THIS REPORT IS TO BE RETAINED FOR AT LEAST 5 YEARS**

**CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH**  
**(COSHH) REGULATIONS 2002**

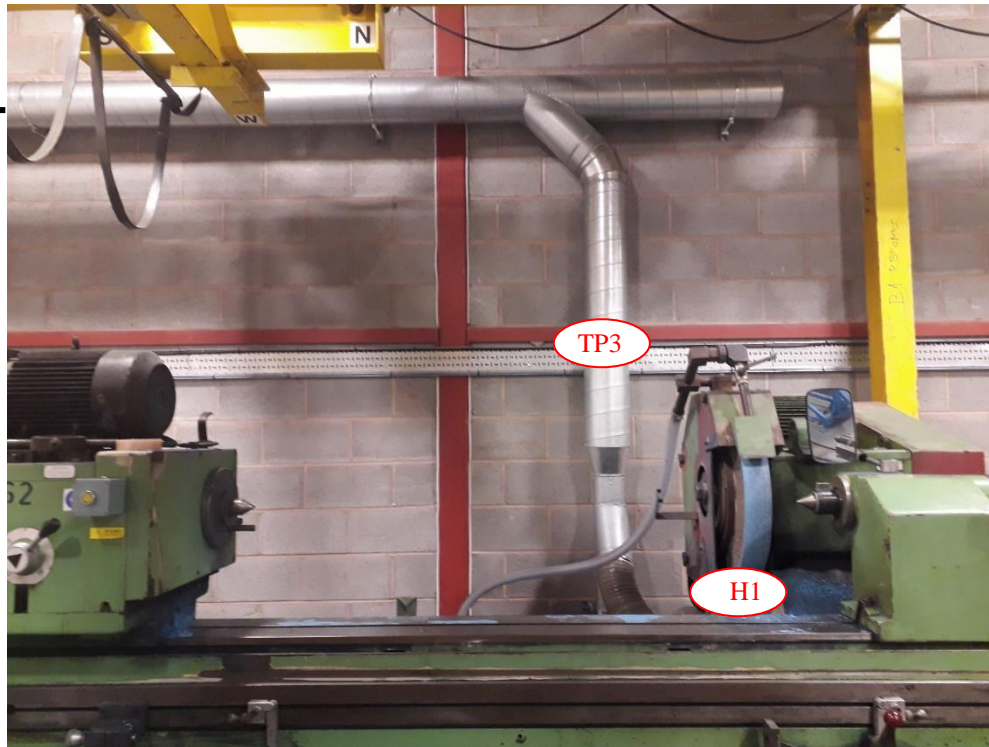
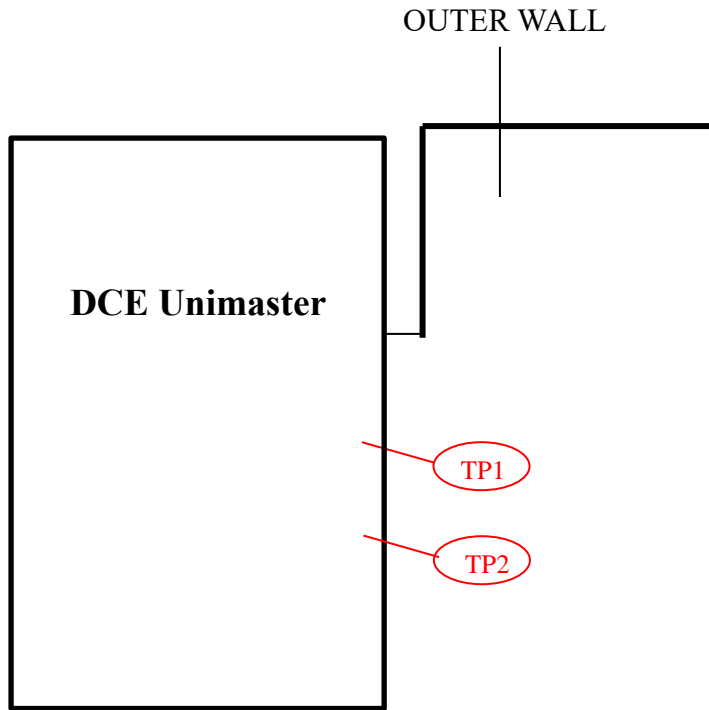
**REPORT OF THOROUGH EXAMINATION AND TEST BY A COMPETENT**  
**PERSON OF EXHAUST VENTILATION EQUIPMENT TO MEET THE**  
**REQUIREMENTS OF REGULATION 9.(2)**

- |   |  |
|---|--|
| 1. <i>Name of employer responsible for the plant:</i>               | WZ Packaging Ltd   |
| 2. <i>Address of Employer:</i>                                      | WZ Packaging Ltd<br>Halesfield 18<br>Telford<br>TF7 4JS                        |
| 3. <i>Period covered by test:</i>                                   | 11.02.2019 – 11.04.2020  |
| 4. <i>Date of last thorough Examination and test:</i>               | Not Known  |
| 5. <i>Location of local exhaust ventilation (LEV) plant:</i>        | Engineering Workshop   |
| 6. <i>Process and hazardous substances concerned:</i>               | Grinding of rubber giving of dust  |
| 7. <i>Identification of LEV plant:</i>                              | DCE Unimaster dust extractor<br>connected to a DoimakRUA-3 2000<br>Core Cutter |
| 8. <i>Manufacturer:</i>   | DCE  |
| 9. <i>Description of plant (see Schematic):</i>                     | See Schematic 1 (LEV 1)  |
| 10. <i>Has there been any change to the system since last test?</i> | N/A  |
| 10.1 <i>If yes, give details:</i>                                   | N/A  |



- |  |   |
|--|---|
| <b>11. Condition of LEV plant at time of test - normal production or special conditions?</b>                           | Normal production   |
| <b>12. Is the LEV plant continuing to operate at its designed performance?</b>   | Yes - Satisfactory, Adequate transport and face air velocities measured                             |
| <b>12.1. If no, give reasons:</b>  | N/A   |
| <b>12.2. Any repairs required to maintain the intended operating performance?</b>                                      | None  |
| <b>13. Is the LEV plant, when working at its designed performance, sufficient to control the hazardous substances?</b> | Yes<br>Good capture and containment demonstrated using smoke and observed with Tyndall Illumination |
| <b>14. Does this system return exhaust air to the workplace?</b>   | No  |
| <b>15. Any other observations:</b>   | Dust accumulation directly adjacent to hood requires clearing.                                      |

LOCAL EXHAUST VENTILATION EXAMINATION & TEST (SCHEMATIC 1)  
WZ Packaging – Engineering Workshop



**WZ Packaging 2019**

LOCAL EXHAUST VENTILATION PERFORMANCE VALUES								LEV 1	Table 1
Test Point (TP)	Duct Dia (mm)	Static Pressure (-Pa)	Velocity Pressure (Pa)	Machine Ref	Duct Area (m <sup>2</sup> )	Duct Velocity (m/s)	Volume Flow (m <sup>3</sup> /hr)	Face Velocity (m/s)	Comments
		2460		DCE Unimaster					Filter Chamber
		2360		DCE Unimaster					Filter Chamber
1	225	3290	225	Core Cutter	0.0398	19.36	2772	38.5	

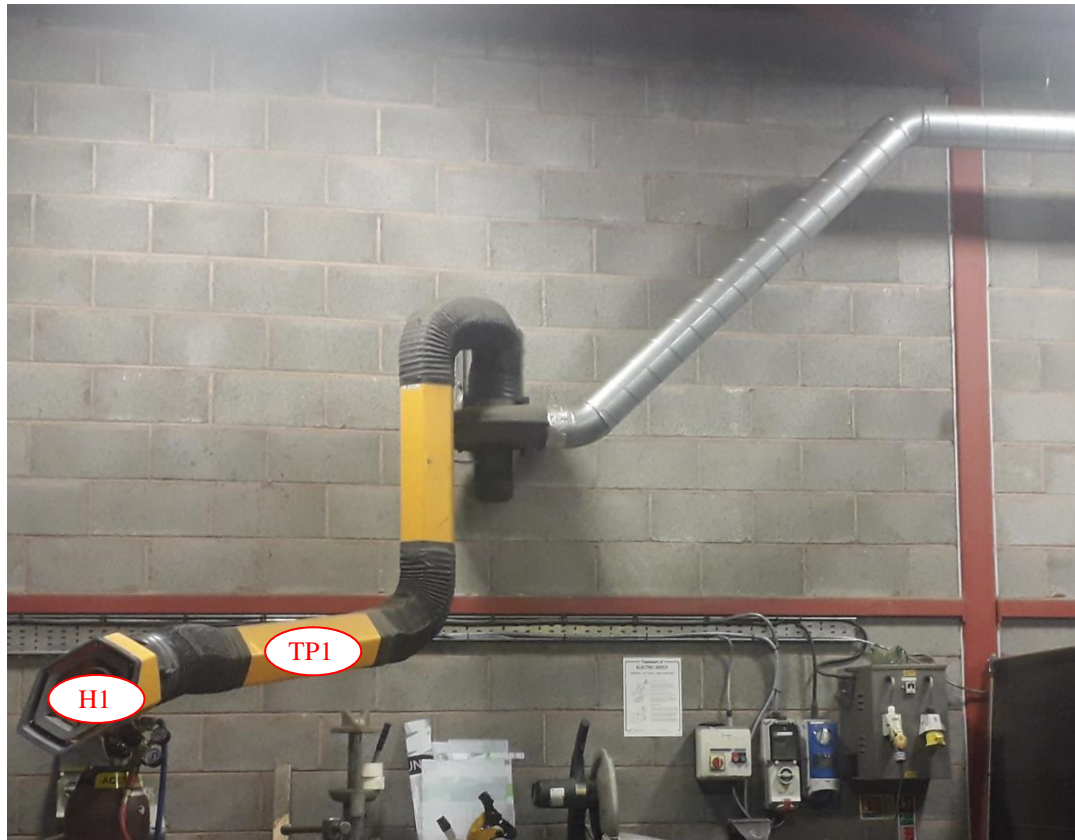
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**(COSHH) REGULATIONS 2002**

**REPORT OF THOROUGH EXAMINATION AND TEST BY A COMPETENT**  
**PERSON OF EXHAUST VENTILATION EQUIPMENT TO MEET THE**  
**REQUIREMENTS OF REGULATION 9.(2)**

- |   |   |
|---|---|
| <b>1. Name of employer responsible for the plant:</b>               | WZ Packaging Ltd  |
| <b>2. Address of Employer:</b>                                      | WZ Packaging Ltd<br>Halesfield 18<br>Telford<br>TF7 4JS |
| <b>3. Period covered by test:</b>                                   | 11.02.2019 – 11.04.2020                                 |
| <b>4. Date of last thorough Examination and test:</b>               | Not Known   |
| <b>5. Location of local exhaust ventilation (LEV) plant:</b>        | Engineering Workshop                                    |
| <b>6. Process and hazardous substances concerned:</b>               | Welding giving off fume and constituent toxic metals    |
| <b>7. Identification of LEV plant:</b>                              | Centrifugal fan connected to arm and captor hood.       |
| <b>8. Manufacturer:</b>   | Not known   |
| <b>9. Description of plant (see Schematic):</b>                     | See Schematic 2 (LEV 2)                                 |
| <b>10. Has there been any change to the system since last test?</b> | N/A   |
| <b>10.1 If yes, give details:</b>                                   | N/A   |

- |  |   |
|--|---|
| <b>11. Condition of LEV plant at time of test - normal production or special conditions?</b>                           | Normal production   |
| <b>12. Is the LEV plant continuing to operate at its designed performance?</b>   | Yes - Satisfactory,<br>Adequate transport and face air velocities measured                          |
| <b>12.1. If no, give reasons:</b>  | N/A   |
| <b>12.2. Any repairs required to maintain the intended operating performance?</b>                                      | Adjustable arm requires tightening to enable hood to hold its position.                             |
| <b>13. Is the LEV plant, when working at its designed performance, sufficient to control the hazardous substances?</b> | Yes<br>Good capture and containment demonstrated using smoke and observed with Tyndall Illumination |
| <b>14. Does this system return exhaust air to the workplace?</b>   | No  |
| <b>15. Any other observations:</b>   | 250mm capture distance established.   |

LOCAL EXHAUST VENTILATION EXAMINATION & TEST (SCHEMATIC 2)  
WZ Packaging – Engineering Workshop



**WZ Packaging 2019**

<b>LOCAL EXHAUST VENTILATION PERFORMANCE VALUES</b>								<b>LEV 2</b>	<b>Table 2</b>
<b>Test Point (TP)</b>	<b>Duct Dia (mm)</b>	<b>Static Pressure (-Pa)</b>	<b>Velocity Pressure (Pa)</b>	<b>Machine Ref</b>	<b>Duct Area (m<sup>2</sup>)</b>	<b>Duct Velocity (m/s)</b>	<b>Volume Flow (m<sup>3</sup>/hr)</b>	<b>Face Velocity (m/s)</b>	<b>Comments</b>
1	175	360	70	Welding Arm	0.0240	10.80	935	5.40	

**CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH**  
**(COSHH) REGULATIONS 2002**

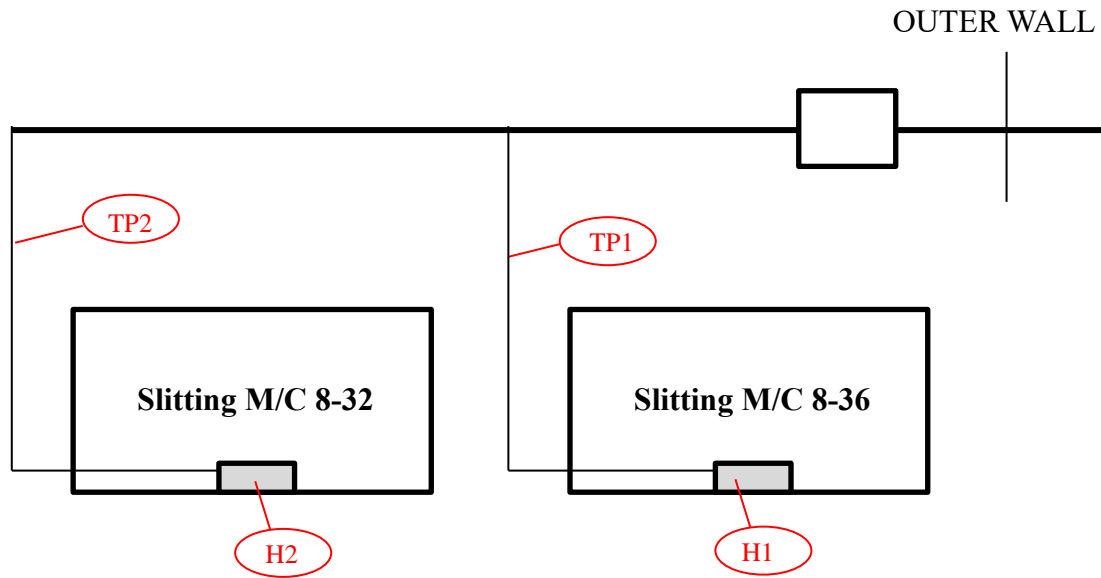
**REPORT OF THOROUGH EXAMINATION AND TEST BY A COMPETENT**  
**PERSON OF EXHAUST VENTILATION EQUIPMENT TO MEET THE**  
**REQUIREMENTS OF REGULATION 9.(2)**

- |   |  |
|---|--|
| 1. <i>Name of employer responsible for the plant:</i>               | WZ Packaging Ltd   |
| 2. <i>Address of Employer:</i>                                      | WZ Packaging Ltd<br>Halesfield 18<br>Telford<br>TF7 4JS                                    |
| 3. <i>Period covered by test:</i>                                   | 11.02.2019 – 11.04.2020  |
| 4. <i>Date of last thorough Examination and test:</i>               | Not Known  |
| 5. <i>Location of local exhaust ventilation (LEV) plant:</i>        | Finishing Area   |
| 6. <i>Process and hazardous substances concerned:</i>               | The use of volatile organic compounds during finishing work activities giving off vapours. |
| 7. <i>Identification of LEV plant:</i>                              | Bifurcated axial flow fan connected to 2 x slitting machines.                              |
| 8. <i>Manufacturer:</i>   | Not known  |
| 9. <i>Description of plant (see Schematic):</i>                     | See Schematic 3 (LEV 3)  |
| 10. <i>Has there been any change to the system since last test?</i> | N/A  |
| 10.1 <i>If yes, give details:</i>                                   | N/A  |



- |  |   |
|--|---|
| <b>11. Condition of LEV plant at time of test - normal production or special conditions?</b>                           | Normal production   |
| <b>12. Is the LEV plant continuing to operate at its designed performance?</b>   | Yes - Satisfactory, Adequate transport and face air velocities measured   |
| <b>12.1. If no, give reasons:</b>  | N/A   |
| <b>12.2. Any repairs required to maintain the intended operating performance?</b>                                      | No  |
| <b>13. Is the LEV plant, when working at its designed performance, sufficient to control the hazardous substances?</b> | No commissioning data provided for performance comparison. Exposure monitoring should be carried out during normal slitting machine production to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control. |
| <b>14. Does this system return exhaust air to the workplace?</b>   | No  |
| <b>15. Any other observations:</b>   | None.   |

LOCAL EXHAUST VENTILATION EXAMINATION & TEST (SCHEMATIC 3)  
WZ Packaging – Finishing Area



**WZ Packaging 2019**

<b>LOCAL EXHAUST VENTILATION PERFORMANCE VALUES</b>								<b>LEV 3</b>	<b>Table 3</b>
Test Point (TP)	Duct Dia (mm)	Static Pressure (-Pa)	Velocity Pressure (Pa)	Machine Ref	Duct Area (m <sup>2</sup> )	Duct Velocity (m/s)	Volume Flow (m <sup>3</sup> /hr)	Face Velocity (m/s)	Comments
1	125	205	30	Slitting M/C 8-36	0.0123	7.07	312	1.50	
2	125	150	25	Slitting M/C 8-32	0.0123	6.45	285	1.60	

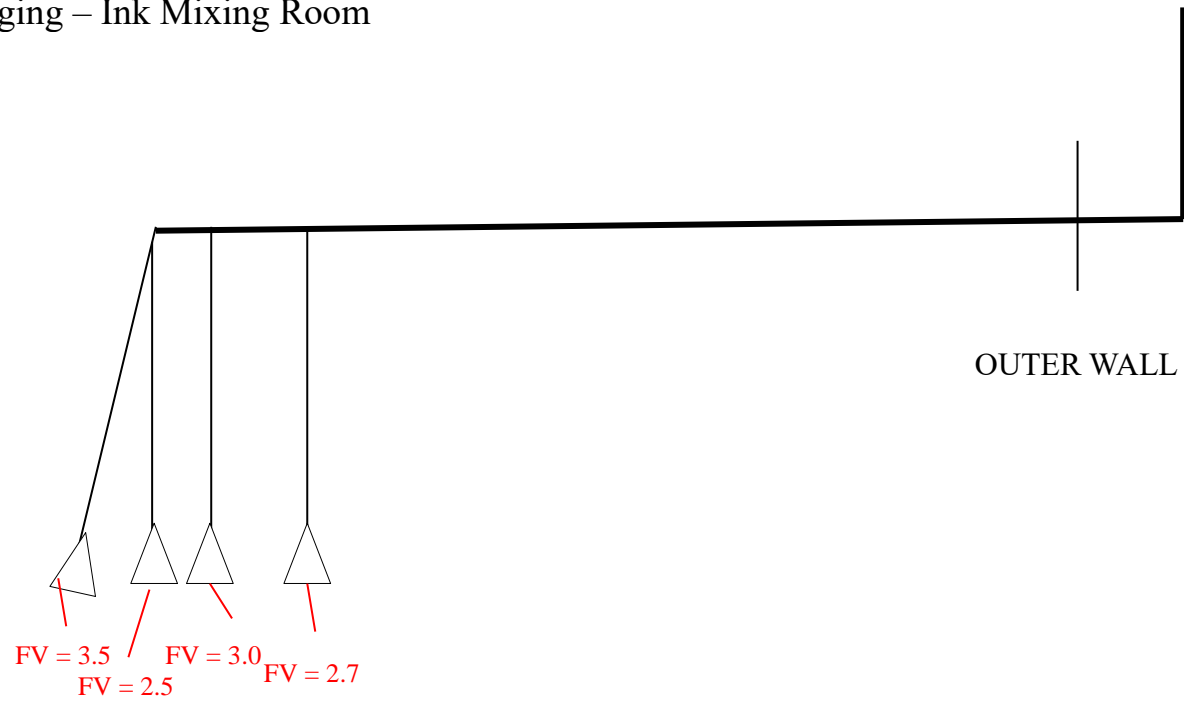
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**(COSHH) REGULATIONS 2002**

**REPORT OF THOROUGH EXAMINATION AND TEST BY A COMPETENT**  
**PERSON OF EXHAUST VENTILATION EQUIPMENT TO MEET THE**  
**REQUIREMENTS OF REGULATION 9.(2)**

- |   |   |
|---|---|
| 1. <i>Name of employer responsible for the plant:</i>               | WZ Packaging Ltd  |
| 2. <i>Address of Employer:</i>                                      | WZ Packaging Ltd<br>Halesfield 18<br>Telford<br>TF7 4JS                                   |
| 3. <i>Period covered by test:</i>                                   | 11.02.2019 – 11.04.2020   |
| 4. <i>Date of last thorough Examination and test:</i>               | Not Known   |
| 5. <i>Location of local exhaust ventilation (LEV) plant:</i>        | Ink Room  |
| 6. <i>Process and hazardous substances concerned:</i>               | The use of volatile organic compounds during ink room work activities giving off vapours. |
| 7. <i>Identification of LEV plant:</i>                              | Ink Room; Multiple arm system with 4 x receptor hoods                                     |
| 8. <i>Manufacturer:</i>   | Not known   |
| 9. <i>Description of plant (see Schematic):</i>                     | See Schematic 4 (LEV 4)   |
| 10. <i>Has there been any change to the system since last test?</i> | N/A   |
| 10.1 <i>If yes, give details:</i>                                   | N/A   |

- |  |   |
|--|---|
| <b>11. Condition of LEV plant at time of test - normal production or special conditions?</b>                           | Normal production   |
| <b>12. Is the LEV plant continuing to operate at its designed performance?</b>   | Yes - Satisfactory,<br>Adequate face air velocities measured  |
| <b>12.1. If no, give reasons:</b>  | N/A   |
| <b>12.2. Any repairs required to maintain the intended operating performance?</b>                                      | No  |
| <b>13. Is the LEV plant, when working at its designed performance, sufficient to control the hazardous substances?</b> | Yes<br>Good capture and containment demonstrated using smoke and observed with Tyndall Illumination. No commissioning data provided for performance comparison.   |
| <b>14. Does this system return exhaust air to the workplace?</b>   | No  |
| <b>15. Any other observations:</b>   | Personal exposure monitoring was carried out to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control. |

LOCAL EXHAUST VENTILATION EXAMINATION & TEST (SCHEMATIC 4)  
WZ Packaging – Ink Mixing Room



**WZ Packaging 2019**

LOCAL EXHAUST VENTILATION PERFORMANCE VALUES								LEV 4	Table 4
Test Point (TP)	Duct Dia (mm)	Static Pressure (-Pa)	Velocity Pressure (Pa)	Machine Ref	Duct Area (m <sup>2</sup> )	Duct Velocity (m/s)	Volume Flow (m <sup>3</sup> /hr)	Face Velocity (m/s)	Comments
H1	200			Ink Room	0.0314		396	3.50	
H2	200			Ink Room	0.0314		283	2.50	
H3	200			Ink Room	0.0314		339	3.00	
H4	200			Ink Room	0.0314		305	2.70	

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**(COSHH) REGULATIONS 2002**

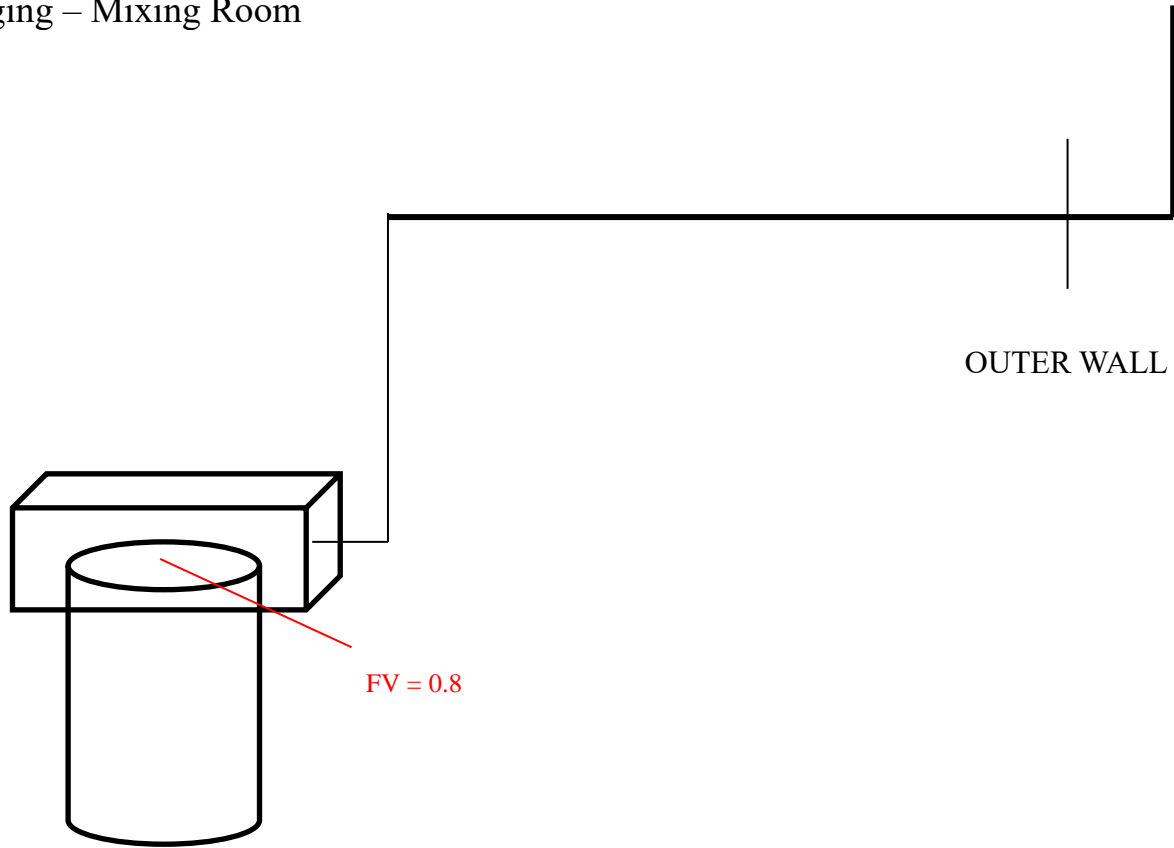
**REPORT OF THOROUGH EXAMINATION AND TEST BY A COMPETENT**  
**PERSON OF EXHAUST VENTILATION EQUIPMENT TO MEET THE**  
**REQUIREMENTS OF REGULATION 9.(2)**

- |   |   |
|---|---|
| 1. <i>Name of employer responsible for the plant:</i>               | WZ Packaging Ltd  |
| 2. <i>Address of Employer:</i>                                      | WZ Packaging Ltd<br>Halesfield 18<br>Telford<br>TF7 4JS                                   |
| 3. <i>Period covered by test:</i>                                   | 11.02.2019 – 11.04.2020   |
| 4. <i>Date of last thorough Examination and test:</i>               | Not Known   |
| 5. <i>Location of local exhaust ventilation (LEV) plant:</i>        | Ink Room  |
| 6. <i>Process and hazardous substances concerned:</i>               | The use of volatile organic compounds during ink room work activities giving off vapours. |
| 7. <i>Identification of LEV plant:</i>                              | Ink Room; Partial enclosure with extraction above open barrel.                            |
| 8. <i>Manufacturer:</i>   | Not known   |
| 9. <i>Description of plant (see Schematic):</i>                     | See Schematic 5 (LEV 5)   |
| 10. <i>Has there been any change to the system since last test?</i> | N/A   |
| 10.1 <i>If yes, give details:</i>                                   | N/A   |



- |  |   |
|--|---|
| <b>11. Condition of LEV plant at time of test - normal production or special conditions?</b>                           | Normal production   |
| <b>12. Is the LEV plant continuing to operate at its designed performance?</b>   | Yes - Satisfactory,<br>Adequate face air velocities measured  |
| <b>12.1. If no, give reasons:</b>  | N/A   |
| <b>12.2. Any repairs required to maintain the intended operating performance?</b>                                      | No  |
| <b>13. Is the LEV plant, when working at its designed performance, sufficient to control the hazardous substances?</b> | Yes<br>Good capture and containment demonstrated using smoke and observed with Tyndall Illumination. No commissioning data provided for performance comparison.   |
| <b>14. Does this system return exhaust air to the workplace?</b>   | No  |
| <b>15. Any other observations:</b>   | Personal exposure monitoring was carried out to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control. |

LOCAL EXHAUST VENTILATION EXAMINATION & TEST (SCHEMATIC 5)  
WZ Packaging – Mixing Room



**WZ Packaging 2019**

<b>LOCAL EXHAUST VENTILATION PERFORMANCE VALUES</b>								<b>LEV 5</b>	<b>Table 5</b>
Test Point (TP)	Duct Dia (mm)	Static Pressure (-Pa)	Velocity Pressure (Pa)	Machine Ref	Duct Area (m <sup>2</sup> )	Duct Velocity (m/s)	Volume Flow (m <sup>3</sup> /hr)	Face Velocity (m/s)	Comments
1				Ink Room	0.1400		403	0.80	700 x 200 mm Enclosure opening

**CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH**  
**(COSHH) REGULATIONS 2002**

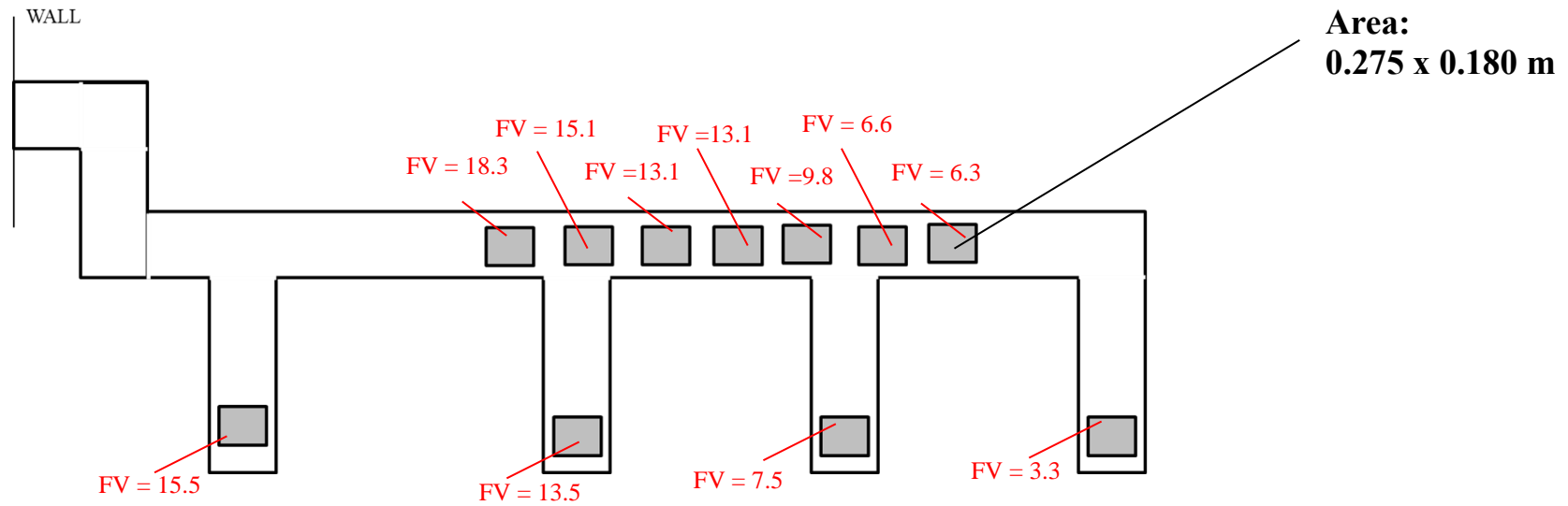
**REPORT OF THOROUGH EXAMINATION AND TEST BY A COMPETENT**  
**PERSON OF EXHAUST VENTILATION EQUIPMENT TO MEET THE**  
**REQUIREMENTS OF REGULATION 9.(2)**

- |   |   |
|---|---|
| 1. <i>Name of employer responsible for the plant:</i>               | WZ Packaging Ltd  |
| 2. <i>Address of Employer:</i>                                      | WZ Packaging Ltd<br>Halesfield 18<br>Telford<br>TF7 4JS                                   |
| 3. <i>Period covered by test:</i>                                   | 11.02.2019 – 11.04.2020   |
| 4. <i>Date of last thorough Examination and test:</i>               | Not Known   |
| 5. <i>Location of local exhaust ventilation (LEV) plant:</i>        | Ink Room  |
| 6. <i>Process and hazardous substances concerned:</i>               | The use of volatile organic compounds during ink room work activities giving off vapours. |
| 7. <i>Identification of LEV plant:</i>                              | Ink Room; General ventilation for solvent storage.  |
| 8. <i>Manufacturer:</i>   | Not known   |
| 9. <i>Description of plant (see Schematic):</i>                     | See Schematic 6 (LEV 6)   |
| 10. <i>Has there been any change to the system since last test?</i> | N/A   |
| 10.1 <i>If yes, give details:</i>                                   | N/A   |

<b>11. Condition of LEV plant at time of test - normal production or special conditions?</b>	Normal production
<b>12. Is the LEV plant continuing to operate at its designed performance?</b>	Yes - Satisfactory, Adequate face air velocities measured
<b>12.1. If no, give reasons:</b>	N/A
<b>12.2. Any repairs required to maintain the intended operating performance?</b>	No
<b>13. Is the LEV plant, when working at its designed performance, sufficient to control the hazardous substances?</b>	System provides general ventilation, not LEV. No commissioning data provided for performance comparison. Personal exposure monitoring was carried out to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control.
<b>14. Does this system return exhaust air to the workplace?</b>	No
<b>15. Any other observations:</b>	None.

# LOCAL EXHAUST VENTILATION EXAMINATION & TEST (SCHEMATIC 6)

## WZ Packaging – Mixing Room



**CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH**  
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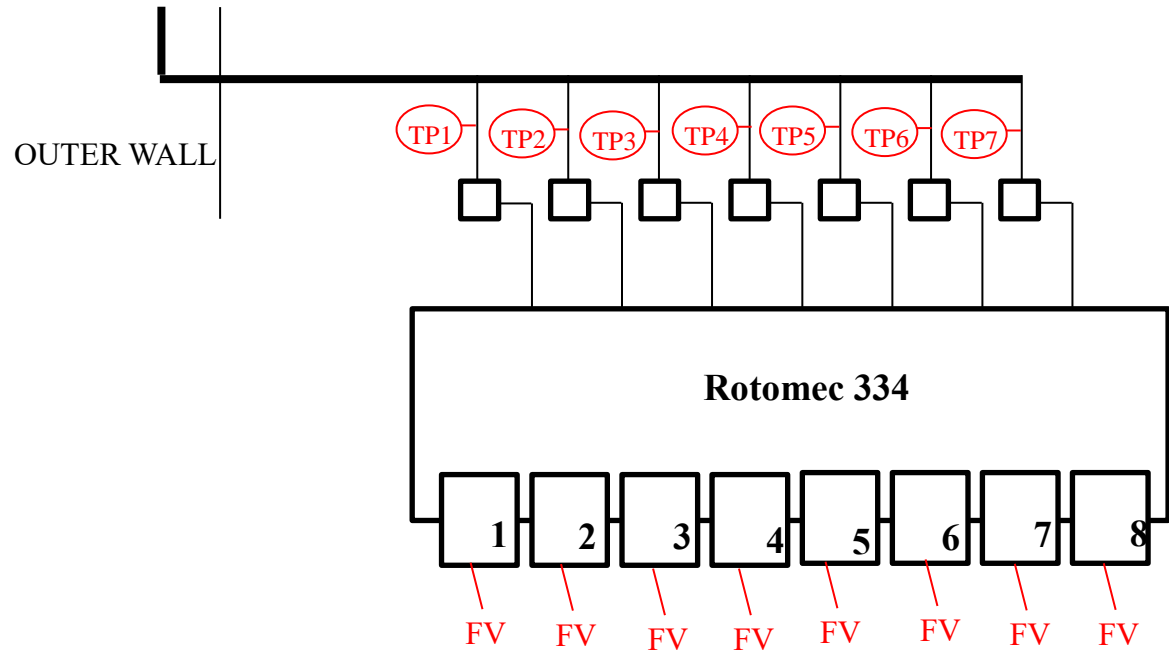
**REPORT OF THOROUGH EXAMINATION AND TEST BY A COMPETENT**  
**PERSON OF EXHAUST VENTILATION EQUIPMENT TO MEET THE**  
**REQUIREMENTS OF REGULATION 9.(2)**

- |   |   |
|---|---|
| <b>1. Name of employer responsible for the plant:</b>               | WZ Packaging Ltd  |
| <b>2. Address of Employer:</b>                                      | WZ Packaging Ltd<br>Halesfield 18<br>Telford<br>TF7 4JS             |
| <b>3. Period covered by test:</b>                                   | 11.02.2019 – 11.04.2020   |
| <b>4. Date of last thorough Examination and test:</b>               | Not Known   |
| <b>5. Location of local exhaust ventilation (LEV) plant:</b>        | Printing Press Area   |
| <b>6. Process and hazardous substances concerned:</b>               | Printing of packaging giving off volatile organic compound vapours. |
| <b>7. Identification of LEV plant:</b>                              | Rotomec Printing Machine 334.                                       |
| <b>8. Manufacturer:</b>   | Not known   |
| <b>9. Description of plant (see Schematic):</b>                     | See Schematic 7 (LEV 7)   |
| <b>10. Has there been any change to the system since last test?</b> | N/A   |
| <b>10.1 If yes, give details:</b>                                   | N/A   |

- |  |  |
|--|--|
| <b>11. Condition of LEV plant at time of test - normal production or special conditions?</b>                           | Normal production  |
| <b>12. Is the LEV plant continuing to operate at its designed performance?</b>   | Yes - Satisfactory,<br>Adequate transport and face air velocities measured   |
| <b>12.1. If no, give reasons:</b>  | N/A  |
| <b>12.2. Any repairs required to maintain the intended operating performance?</b>                                      | No   |
| <b>13. Is the LEV plant, when working at its designed performance, sufficient to control the hazardous substances?</b> | No commissioning data provided for performance comparison. Personal exposure monitoring was carried out to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control. |
| <b>14. Does this system return exhaust air to the workplace?</b>   | No   |
| <b>15. Any other observations:</b>   | None.  |



LOCAL EXHAUST VENTILATION EXAMINATION & TEST (SCHEMATIC 7)  
WZ Packaging – Printing Press Area



**WZ Packaging 2019**

LOCAL EXHAUST VENTILATION PERFORMANCE VALUES								LEV 7	Table 7
Test Point (TP)	Duct Dia (mm)	Static Pressure (-Pa)	Velocity Pressure (Pa)	Machine Ref	Duct Area (m <sup>2</sup> )	Duct Velocity (m/s)	Volume Flow (m <sup>3</sup> /hr)	Face Velocity (m/s)	Comments
1	250	(+)120	5	Rotomec 334	0.0491	2.89	510	2.10	Hood 1
2	400	(+)265	140	Rotomec 334	0.1256	15.28	6909	1.80	Hood 2
3	280	(+)330	35	Rotomec 334	0.0616	7.64	1693	5.90	Hood 3
4	280	(+)325	90	Rotomec 334	0.0616	12.25	2715	4.20	Hood 4
5	350	(+)350	220	Rotomec 334	0.0962	19.15	6631	12.80	Hood 5
6	280	(+)360	250	Rotomec 334	0.0616	20.41	4524	7.50	Hood 6
7	400	(+)220	125	Rotomec 334	0.1256	14.43	6529	5.30	Hood 7
8				Rotomec 334				1.60	Hood 8

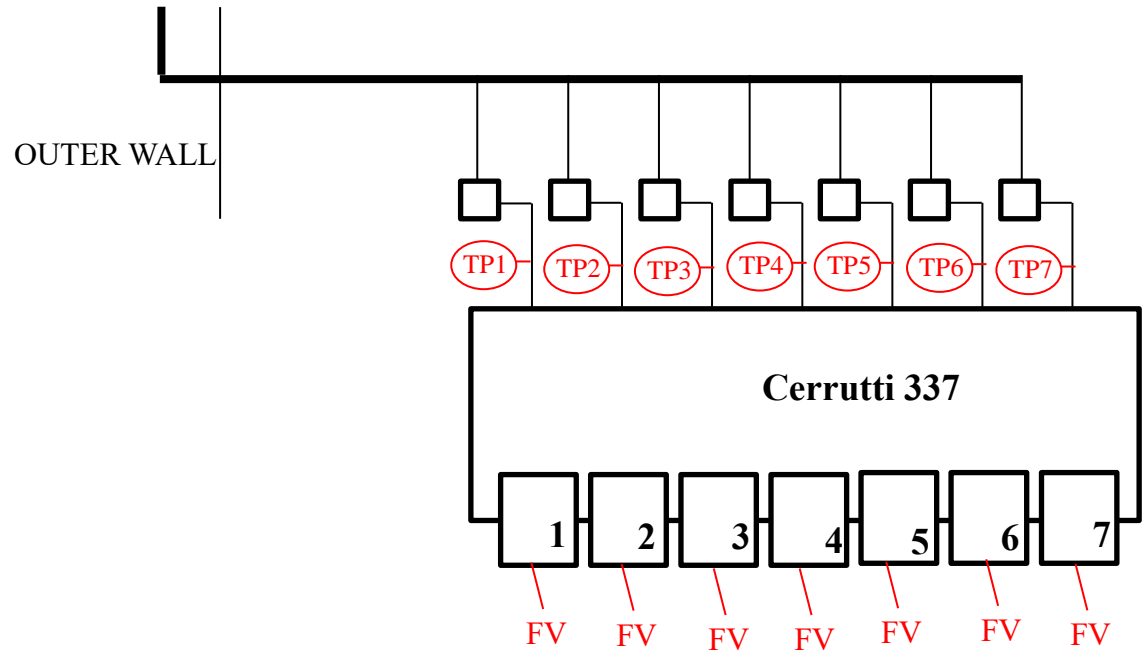
**CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH**  
**(COSHH) REGULATIONS 2002**

**REPORT OF THOROUGH EXAMINATION AND TEST BY A COMPETENT**  
**PERSON OF EXHAUST VENTILATION EQUIPMENT TO MEET THE**  
**REQUIREMENTS OF REGULATION 9.(2)**

- |   |   |
|---|---|
| <b>1. Name of employer responsible for the plant:</b>               | WZ Packaging Ltd  |
| <b>2. Address of Employer:</b>                                      | WZ Packaging Ltd<br>Halesfield 18<br>Telford<br>TF7 4JS             |
| <b>3. Period covered by test:</b>                                   | 11.02.2019 – 11.04.2020   |
| <b>4. Date of last thorough Examination and test:</b>               | Not Known   |
| <b>5. Location of local exhaust ventilation (LEV) plant:</b>        | Printing Press Area   |
| <b>6. Process and hazardous substances concerned:</b>               | Printing of packaging giving off volatile organic compound vapours. |
| <b>7. Identification of LEV plant:</b>                              | Cerutti Printing Machine 337  |
| <b>8. Manufacturer:</b>   | Not known   |
| <b>9. Description of plant (see Schematic):</b>                     | See Schematic 8 (LEV 8)   |
| <b>10. Has there been any change to the system since last test?</b> | N/A   |
| <b>10.1 If yes, give details:</b>                                   | N/A   |

<b>11. Condition of LEV plant at time of test - normal production or special conditions?</b>	Test Conditions
<b>12. Is the LEV plant continuing to operate at its designed performance?</b>	Yes - Satisfactory, Adequate transport and face air velocities measured
<b>12.1. If no, give reasons:</b>	N/A
<b>12.2. Any repairs required to maintain the intended operating performance?</b>	No
<b>13. Is the LEV plant, when working at its designed performance, sufficient to control the hazardous substances?</b>	No commissioning data provided for performance comparison. Exposure monitoring should be carried out during normal printing machine production to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control.
<b>14. Does this system return exhaust air to the workplace?</b>	No
<b>15. Any other observations:</b>	None.

LOCAL EXHAUST VENTILATION EXAMINATION & TEST (SCHEMATIC 8)  
WZ Packaging – Printing Press Area



**WZ Packaging 2019**

LOCAL EXHAUST VENTILATION PERFORMANCE VALUES								LEV 8	Table 8
Test Point (TP)	Duct Dia (mm)	Static Pressure (-Pa)	Velocity Pressure (Pa)	Machine Ref	Duct Area (m <sup>2</sup> )	Duct Velocity (m/s)	Volume Flow (m <sup>3</sup> /hr)	Face Velocity (m/s)	Comments
1		(+)400	60	Rotomec 334		10.00		10.50	Hood 1
2		(+)290	70	Rotomec 334		10.80		5.10	Hood 2
3		(+)470	30	Rotomec 334		7.07		6.20	Hood 3
4		(+)300	40	Rotomec 334		8.16		4.50	Hood 4
5		(+)470	50	Rotomec 334		9.13		4.80	Hood 5
6		(+)500	80	Rotomec 334		11.55		7.50	Hood 6
7		No Access		Rotomec 334				4.50	Hood 7

**CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH**  
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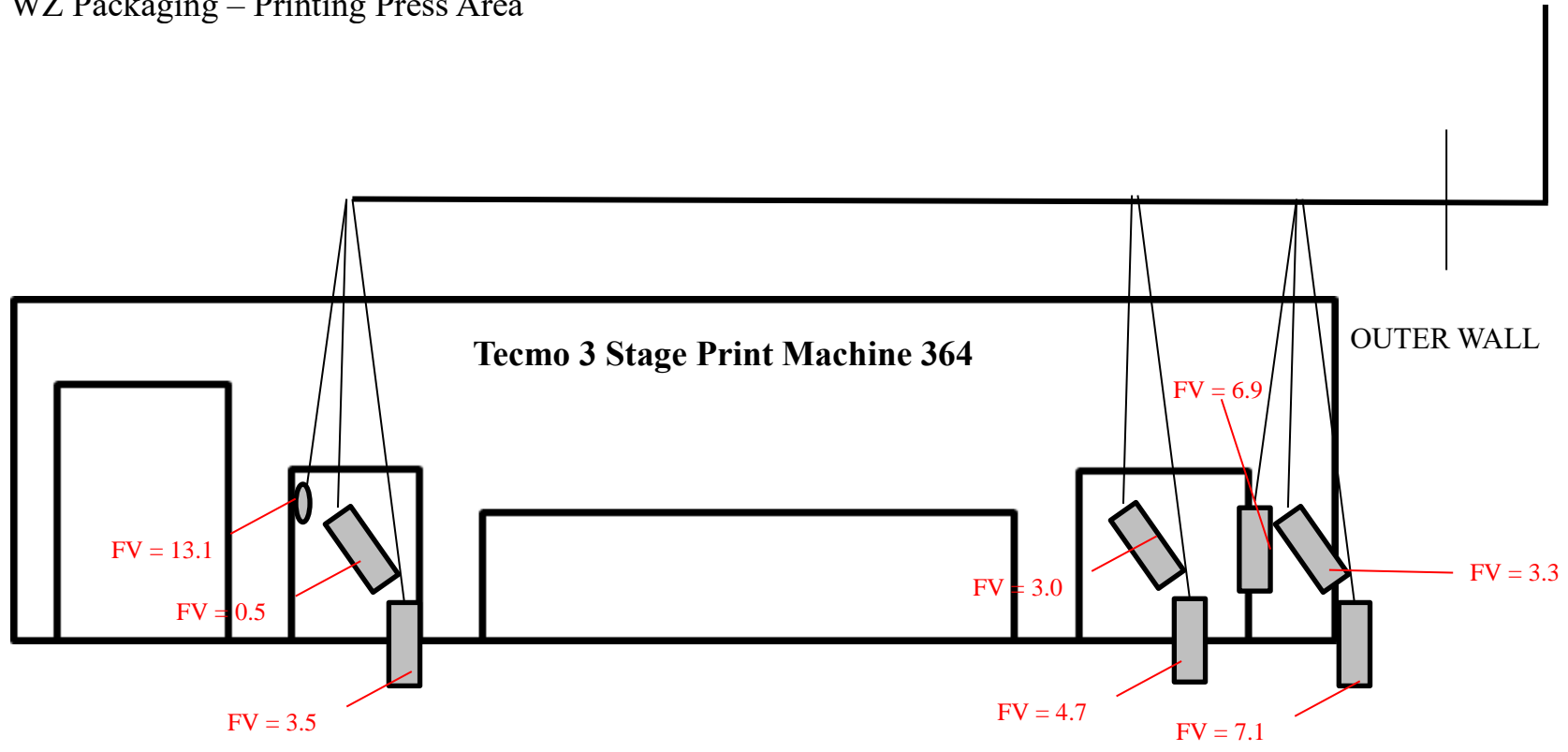
**REPORT OF THOROUGH EXAMINATION AND TEST BY A COMPETENT**  
**PERSON OF EXHAUST VENTILATION EQUIPMENT TO MEET THE**  
**REQUIREMENTS OF REGULATION 9.(2)**

- |   |   |
|---|---|
| <b>1. Name of employer responsible for the plant:</b>               | WZ Packaging Ltd  |
| <b>2. Address of Employer:</b>                                      | WZ Packaging Ltd<br>Halesfield 18<br>Telford<br>TF7 4JS             |
| <b>3. Period covered by test:</b>                                   | 11.02.2019 – 11.04.2020   |
| <b>4. Date of last thorough Examination and test:</b>               | Not Known   |
| <b>5. Location of local exhaust ventilation (LEV) plant:</b>        | Printing Press Area   |
| <b>6. Process and hazardous substances concerned:</b>               | Printing of packaging giving off volatile organic compound vapours. |
| <b>7. Identification of LEV plant:</b>                              | Tecmo 3 Stage Printing Machine 364                                  |
| <b>8. Manufacturer:</b>   | Not known   |
| <b>9. Description of plant (see Schematic):</b>                     | See Schematic 9 (LEV 9)   |
| <b>10. Has there been any change to the system since last test?</b> | N/A   |
| <b>10.1 If yes, give details:</b>                                   | N/A   |

- |  |   |
|--|---|
| <b>11. Condition of LEV plant at time of test - normal production or special conditions?</b>                           | Normal.   |
| <b>12. Is the LEV plant continuing to operate at its designed performance?</b>   | Yes - Satisfactory, Adequate transport and face air velocities measured   |
| <b>12.1. If no, give reasons:</b>  | N/A   |
| <b>12.2. Any repairs required to maintain the intended operating performance?</b>                                      | No  |
| <b>13. Is the LEV plant, when working at its designed performance, sufficient to control the hazardous substances?</b> | No commissioning data provided for performance comparison. Exposure monitoring should be carried out during normal printing machine production to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control. |
| <b>14. Does this system return exhaust air to the workplace?</b>   | No  |
| <b>15. Any other observations:</b>   | Poor hood positioning observed, it is recommended the hoods are moved closer to the source of the volatile organic compound (VOC) vapour.   |



LOCAL EXHAUST VENTILATION EXAMINATION & TEST (SCHEMATIC 9)  
WZ Packaging – Printing Press Area



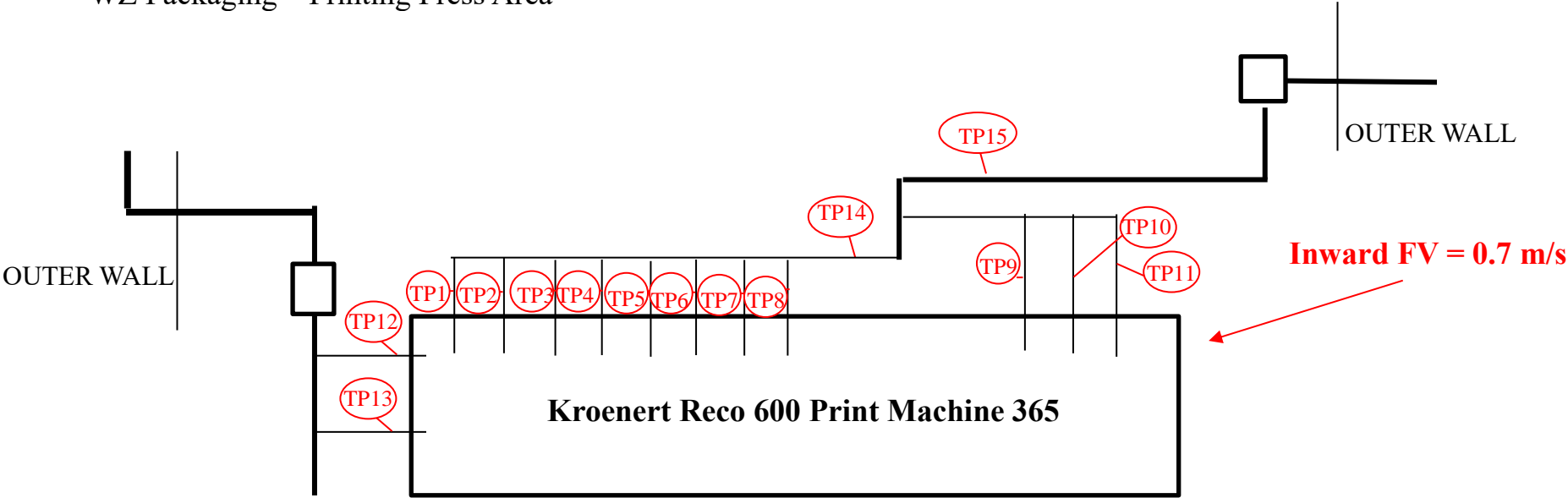
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**(COSHH) REGULATIONS 2002**

**REPORT OF THOROUGH EXAMINATION AND TEST BY A COMPETENT**  
**PERSON OF EXHAUST VENTILATION EQUIPMENT TO MEET THE**  
**REQUIREMENTS OF REGULATION 9.(2)**

- |   |   |
|---|---|
| 1. <i>Name of employer responsible for the plant:</i>               | WZ Packaging Ltd  |
| 2. <i>Address of Employer:</i>                                      | WZ Packaging Ltd<br>Halesfield 18<br>Telford<br>TF7 4JS             |
| 3. <i>Period covered by test:</i>                                   | 11.02.2019 – 11.04.2020   |
| 4. <i>Date of last thorough Examination and test:</i>               | Not Known   |
| 5. <i>Location of local exhaust ventilation (LEV) plant:</i>        | Printing Press Area   |
| 6. <i>Process and hazardous substances concerned:</i>               | Printing of packaging giving off volatile organic compound vapours. |
| 7. <i>Identification of LEV plant:</i>                              | Kroenert Reco 600 Printing Machine<br>365                           |
| 8. <i>Manufacturer:</i>   | Not known   |
| 9. <i>Description of plant (see Schematic):</i>                     | See Schematic 10 (LEV 10)   |
| 10. <i>Has there been any change to the system since last test?</i> | N/A   |
| 10.1 <i>If yes, give details:</i>                                   | N/A   |

- |  |   |
|--|---|
| <b>11. Condition of LEV plant at time of test - normal production or special conditions?</b>                           | Test.   |
| <b>12. Is the LEV plant continuing to operate at its designed performance?</b>   | Yes - Satisfactory,<br>Adequate transport and face air velocities measured  |
| <b>12.1. If no, give reasons:</b>  | N/A   |
| <b>12.2. Any repairs required to maintain the intended operating performance?</b>                                      | No  |
| <b>13. Is the LEV plant, when working at its designed performance, sufficient to control the hazardous substances?</b> | No commissioning data provided for performance comparison. Exposure monitoring should be carried out during normal printing machine production to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control. |
| <b>14. Does this system return exhaust air to the workplace?</b>   | No  |
| <b>15. Any other observations:</b>   | None.   |

LOCAL EXHAUST VENTILATION EXAMINATION & TEST (SCHEMATIC 10)  
WZ Packaging – Printing Press Area



**WZ Packaging 2019**

LOCAL EXHAUST VENTILATION PERFORMANCE VALUES								LEV 10	Table 10
Test Point (TP)	Duct Dia (mm)	Static Pressure (-Pa)	Velocity Pressure (Pa)	Machine Ref	Duct Area (m <sup>2</sup> )	Duct Velocity (m/s)	Volume Flow (m <sup>3</sup> /hr)	Face Velocity (m/s)	Comments
1	125	260	20	Kroenert Reco 365	0.0123	5.77	255		
2	125	290	100	Kroenert Reco 365	0.0123	12.91	570		
3	12	350	0	Kroenert Reco 365	0.0001	0.00	0		
4	125	360	0	Kroenert Reco 365	0.0123	0.00	0		
5	125	360	30	Kroenert Reco 365	0.0123	7.07	312		
6	125	380	1	Kroenert Reco 365	0.0123	1.29	57		
7	125	390	70	Kroenert Reco 365	0.0123	10.80	477		
8	125	390	20	Kroenert Reco 365	0.0123	5.77	255		
9	250	15	0	Kroenert Reco 365	0.0491	0.00	0		
10	250	150	100	Kroenert Reco 365	0.0491	12.91	2281		
11	200	320	20	Kroenert Reco 365	0.0314	5.77	653		
12	350	220	90	Kroenert Reco 365	0.0962	12.25	4242		
13	300	210	40	Kroenert Reco 365	0.0707	8.16	2077		
14	335	395	20	Kroenert Reco 365	0.0881	5.77	1832		
15	580	580		Kroenert Reco 365	0.2642	0.00	0		

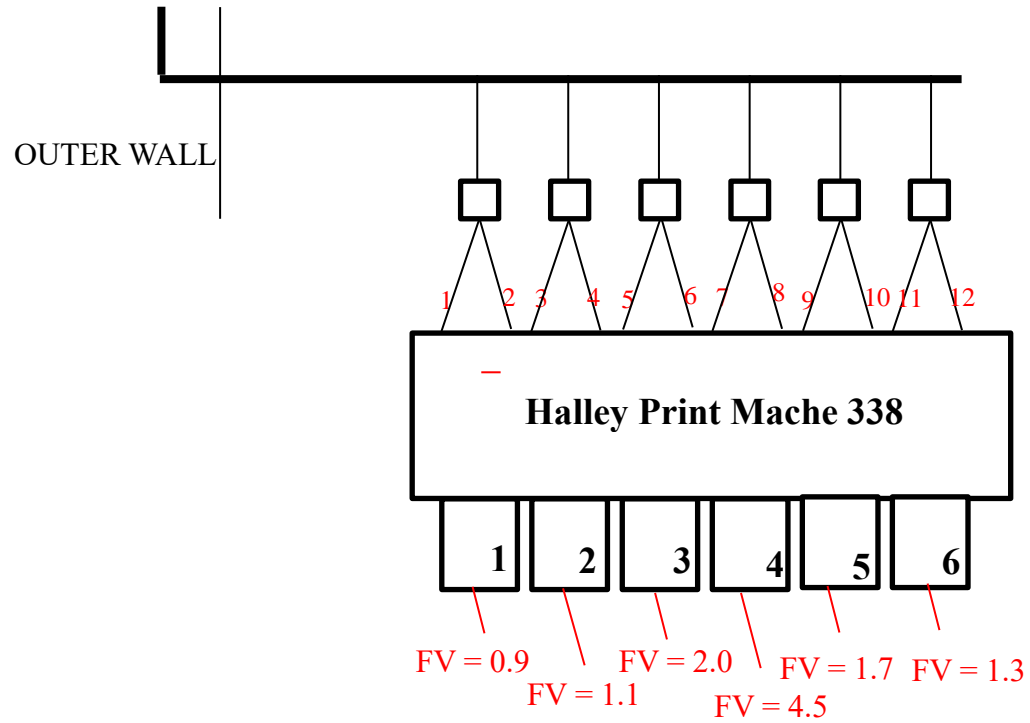
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**(COSHH) REGULATIONS 2002**

**REPORT OF THOROUGH EXAMINATION AND TEST BY A COMPETENT**  
**PERSON OF EXHAUST VENTILATION EQUIPMENT TO MEET THE**  
**REQUIREMENTS OF REGULATION 9.(2)**

- |   |   |
|---|---|
| 1. <i>Name of employer responsible for the plant:</i>               | WZ Packaging Ltd  |
| 2. <i>Address of Employer:</i>                                      | WZ Packaging Ltd<br>Halesfield 18<br>Telford<br>TF7 4JS             |
| 3. <i>Period covered by test:</i>                                   | 11.02.2019 – 11.04.2020   |
| 4. <i>Date of last thorough Examination and test:</i>               | Not Known   |
| 5. <i>Location of local exhaust ventilation (LEV) plant:</i>        | Printing Press Area   |
| 6. <i>Process and hazardous substances concerned:</i>               | Printing of packaging giving off volatile organic compound vapours. |
| 7. <i>Identification of LEV plant:</i>                              | Halley Printing Machine 338   |
| 8. <i>Manufacturer:</i>   | Not known   |
| 9. <i>Description of plant (see Schematic):</i>                     | See Schematic 11 (LEV 11)   |
| 10. <i>Has there been any change to the system since last test?</i> | N/A   |
| 10.1 <i>If yes, give details:</i>                                   | N/A   |

<b>11. Condition of LEV plant at time of test - normal production or special conditions?</b>	Test.
<b>12. Is the LEV plant continuing to operate at its designed performance?</b>	Yes - Satisfactory, Low transport and face air velocities measured
<b>12.1. If no, give reasons:</b>	N/A
<b>12.2. Any repairs required to maintain the intended operating performance?</b>	No
<b>13. Is the LEV plant, when working at its designed performance, sufficient to control the hazardous substances?</b>	No commissioning data provided for performance comparison. Exposure monitoring should be carried out during normal printing machine production to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control.
<b>14. Does this system return exhaust air to the workplace?</b>	No
<b>15. Any other observations:</b>	Airflow dampers restrict the system performance to prevent the foil product from being drawn into the extraction.

LOCAL EXHAUST VENTILATION EXAMINATION & TEST (SCHEMATIC 11)  
WZ Packaging – Printing Press Area





**WZ Packaging 2019**

LOCAL EXHAUST VENTILATION PERFORMANCE VALUES								LEV 11	Table 11
Test Point (TP)	Duct Dia (mm)	Static Pressure (-Pa)	Velocity Pressure (Pa)	Machine Ref	Duct Area (m <sup>2</sup> )	Duct Velocity (m/s)	Volume Flow (m <sup>3</sup> /hr)	Face Velocity (m/s)	Comments
1	300	6	0	Halley 338	0.0707	0.00	0	0.90	
2	300	7	1	Halley 338	0.0707	1.29	328		
3	300	10	2	Halley 338	0.0707	1.83	465	1.10	
4	300	10	1	Halley 338	0.0707	1.29	328		
5	300	8	2	Halley 338	0.0707	1.83	465	2.00	
6	300	10	1	Halley 338	0.0707	1.29	328		
7	300	30	10	Halley 338	0.0707	4.08	1039	4.50	
8	300	5	1	Halley 338	0.0707	1.29	328		
9	300	7	1	Halley 338	0.0707	1.29	328	1.70	
10	300	6	0	Halley 338	0.0707	0.00	0		
11	300	5	0	Halley 338	0.0707	0.00	0	1.3	
12	300	8	1	Halley 338	0.0707	1.29	328		

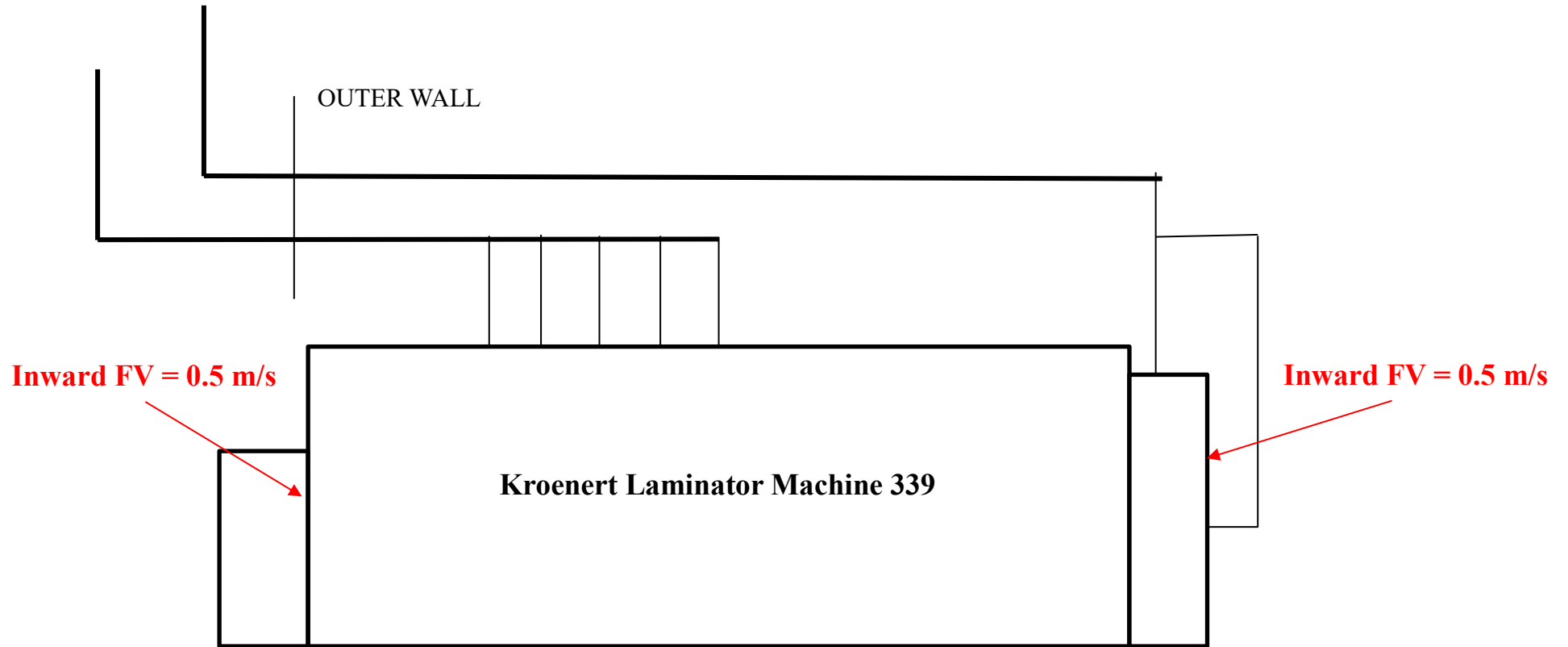
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**REPORT OF THOROUGH EXAMINATION AND TEST BY A COMPETENT**  
**PERSON OF EXHAUST VENTILATION EQUIPMENT TO MEET THE**  
**REQUIREMENTS OF REGULATION 9.(2)**

- |   |   |
|---|---|
| 1. <i>Name of employer responsible for the plant:</i>               | WZ Packaging Ltd  |
| 2. <i>Address of Employer:</i>                                      | WZ Packaging Ltd<br>Halesfield 18<br>Telford<br>TF7 4JS             |
| 3. <i>Period covered by test:</i>                                   | 11.02.2019 – 11.04.2020   |
| 4. <i>Date of last thorough Examination and test:</i>               | Not Known   |
| 5. <i>Location of local exhaust ventilation (LEV) plant:</i>        | Printing Press Area   |
| 6. <i>Process and hazardous substances concerned:</i>               | Printing of packaging giving off volatile organic compound vapours. |
| 7. <i>Identification of LEV plant:</i>                              | Kroenert Laminator Printing Machine<br>339                          |
| 8. <i>Manufacturer:</i>   | Not known   |
| 9. <i>Description of plant (see Schematic):</i>                     | See Schematic 12 (LEV 12)   |
| 10. <i>Has there been any change to the system since last test?</i> | N/A   |
| 10.1 <i>If yes, give details:</i>                                   | N/A   |

<b>11. Condition of LEV plant at time of test - normal production or special conditions?</b>	Normal
<b>12. Is the LEV plant continuing to operate at its designed performance?</b>	Yes - Satisfactory, Adequate face air velocities measured
<b>12.1. If no, give reasons:</b>	N/A
<b>12.2. Any repairs required to maintain the intended operating performance?</b>	No
<b>13. Is the LEV plant, when working at its designed performance, sufficient to control the hazardous substances?</b>	No commissioning data provided for performance comparison. Personal exposure monitoring was carried out to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control.
<b>14. Does this system return exhaust air to the workplace?</b>	No
<b>15. Any other observations:</b>	None.

LOCAL EXHAUST VENTILATION EXAMINATION & TEST (SCHEMATIC 12)  
WZ Packaging – Printing Press Area



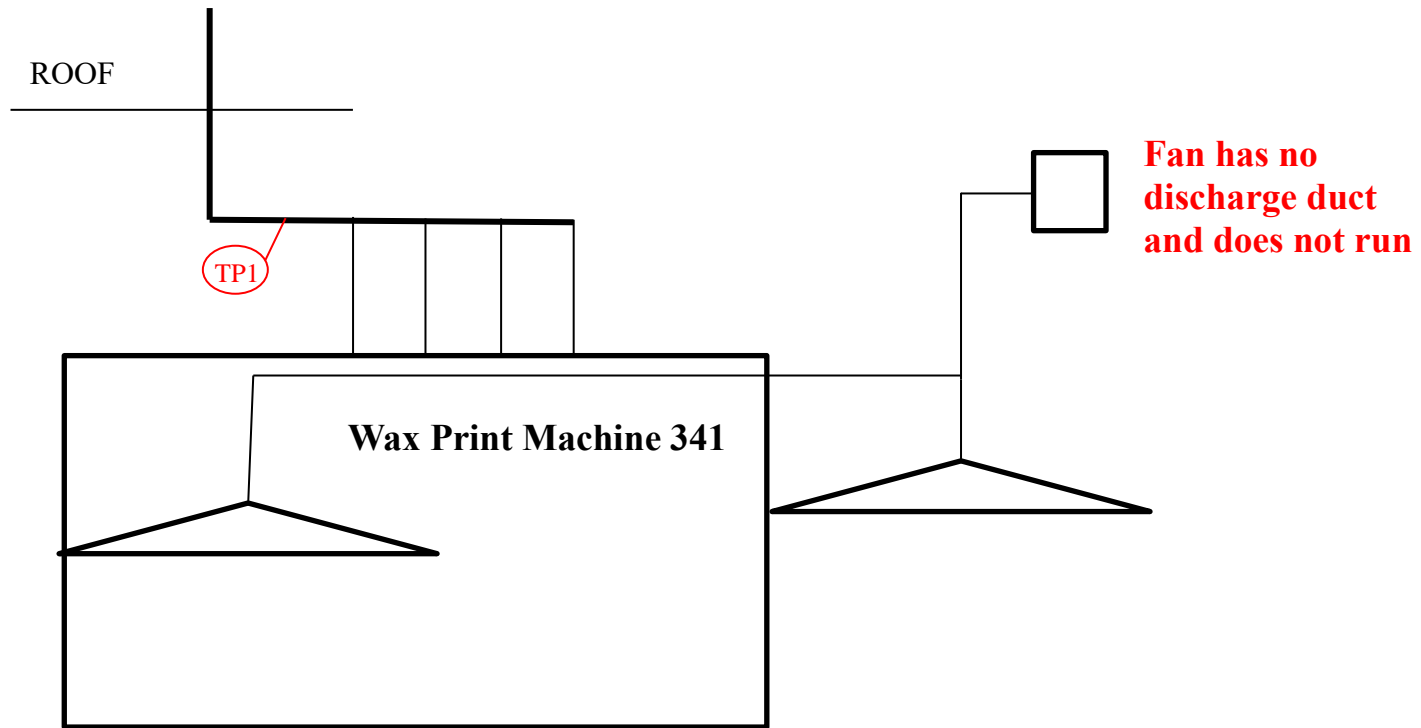
**CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH**  
**(COSHH) REGULATIONS 2002**

**REPORT OF THOROUGH EXAMINATION AND TEST BY A COMPETENT**  
**PERSON OF EXHAUST VENTILATION EQUIPMENT TO MEET THE**  
**REQUIREMENTS OF REGULATION 9.(2)**

- |   |   |
|---|---|
| 1. <i>Name of employer responsible for the plant:</i>               | WZ Packaging Ltd  |
| 2. <i>Address of Employer:</i>                                      | WZ Packaging Ltd<br>Halesfield 18<br>Telford<br>TF7 4JS             |
| 3. <i>Period covered by test:</i>                                   | 11.02.2019 – 11.04.2020   |
| 4. <i>Date of last thorough Examination and test:</i>               | Not Known   |
| 5. <i>Location of local exhaust ventilation (LEV) plant:</i>        | Printing Press Area   |
| 6. <i>Process and hazardous substances concerned:</i>               | Printing of packaging giving off volatile organic compound vapours. |
| 7. <i>Identification of LEV plant:</i>                              | Wax Printing Machine 341  |
| 8. <i>Manufacturer:</i>   | Not known   |
| 9. <i>Description of plant (see Schematic):</i>                     | See Schematic 13 (LEV 13 & 14)                                      |
| 10. <i>Has there been any change to the system since last test?</i> | N/A   |
| 10.1 <i>If yes, give details:</i>                                   | N/A   |

- |  |   |
|--|---|
| <b>11. Condition of LEV plant at time of test - normal production or special conditions?</b>                           | Normal  |
| <b>12. Is the LEV plant continuing to operate at its designed performance?</b>   | Yes Satisfactory (LEV 13),<br>Adequate transport air velocities measured at LEV 13, TP1.<br>No – Unsatisfactory (LEV 14).   |
| <b>12.1. If no, give reasons:</b>  | LEV 14 - Fan not operational and no discharge duct installed!   |
| <b>12.2. Any repairs required to maintain the intended operating performance?</b>                                      | Install discharge duct and ensure that the fan is operational and has sufficient performance to control the VOCs.   |
| <b>13. Is the LEV plant, when working at its designed performance, sufficient to control the hazardous substances?</b> | No commissioning data provided for performance comparison. Exposure monitoring should be carried out during normal printing machine production to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control. |
| <b>14. Does this system return exhaust air to the workplace?</b>   | LEV 13: No<br>LEV 14: Yes   |
| <b>15. Any other observations:</b>   | Qualitative smoke test demonstrated poor capture and control.   |

LOCAL EXHAUST VENTILATION EXAMINATION & TEST (SCHEMATIC 13)  
WZ Packaging – Printing Press Area



**WZ Packaging 2019**

<b>LOCAL EXHAUST VENTILATION PERFORMANCE VALUES</b>								<b>LEV 13</b>	<b>Table 13</b>
Test Point (TP)	Duct Dia (mm)	Static Pressure (-Pa)	Velocity Pressure (Pa)	Machine Ref	Duct Area (m <sup>2</sup> )	Duct Velocity (m/s)	Volume Flow (m <sup>3</sup> /hr)	Face Velocity (m/s)	Comments
1		960	70	Print Machine 341	0.5625	10.80	21872		750 x 750mm square ducting



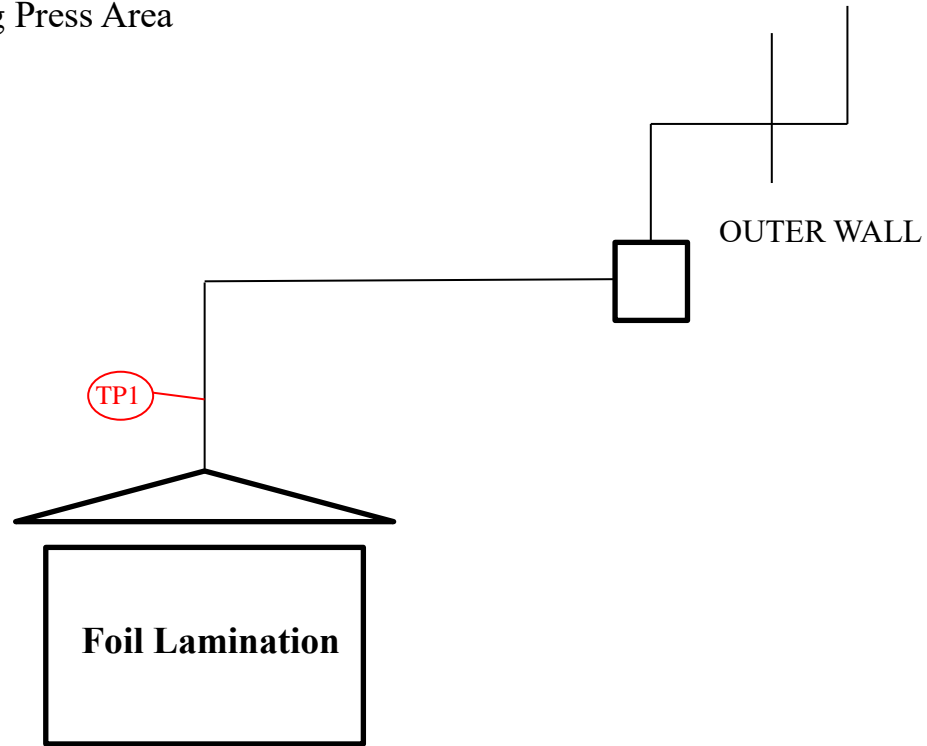
**CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH**  
**(COSHH) REGULATIONS 2002**

**REPORT OF THOROUGH EXAMINATION AND TEST BY A COMPETENT**  
**PERSON OF EXHAUST VENTILATION EQUIPMENT TO MEET THE**  
**REQUIREMENTS OF REGULATION 9.(2)**

- |   |  |
|---|--|
| <b>1. Name of employer responsible for the plant:</b>               | WZ Packaging Ltd   |
| <b>2. Address of Employer:</b>                                      | WZ Packaging Ltd<br>Halesfield 18<br>Telford<br>TF7 4JS                |
| <b>3. Period covered by test:</b>                                   | 11.02.2019 – 11.04.2020  |
| <b>4. Date of last thorough Examination and test:</b>               | Not Known  |
| <b>5. Location of local exhaust ventilation (LEV) plant:</b>        | Printing Press Area  |
| <b>6. Process and hazardous substances concerned:</b>               | Foil lamination giving off volatile organic compound vapours and fume. |
| <b>7. Identification of LEV plant:</b>                              | Foil Lamination (LHS) canopy extraction.                               |
| <b>8. Manufacturer:</b>   | Not known  |
| <b>9. Description of plant (see Schematic):</b>                     | See Schematic 14 (LEV 15)  |
| <b>10. Has there been any change to the system since last test?</b> | N/A  |
| <b>10.1 If yes, give details:</b>                                   | N/A  |

- |  |   |
|--|---|
| <b>11. Condition of LEV plant at time of test - normal production or special conditions?</b>                           | Test.   |
| <b>12. Is the LEV plant continuing to operate at its designed performance?</b>   | Yes - Satisfactory,<br>Adequate transport and face air velocities measured  |
| <b>12.1. If no, give reasons:</b>  | N/A   |
| <b>12.2. Any repairs required to maintain the intended operating performance?</b>                                      | No  |
| <b>13. Is the LEV plant, when working at its designed performance, sufficient to control the hazardous substances?</b> | No commissioning data provided for performance comparison. Exposure monitoring should be carried out during normal printing machine production to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control. |
| <b>14. Does this system return exhaust air to the workplace?</b>   | No  |
| <b>15. Any other observations:</b>   | None.   |

LOCAL EXHAUST VENTILATION EXAMINATION & TEST (SCHEMATIC 14)  
WZ Packaging – Printing Press Area



**WZ Packaging 2019**

LOCAL EXHAUST VENTILATION PERFORMANCE VALUES								LEV 15	Table 15
Test Point (TP)	Duct Dia (mm)	Static Pressure (-Pa)	Velocity Pressure (Pa)	Machine Ref	Duct Area (m <sup>2</sup> )	Duct Velocity (m/s)	Volume Flow (m <sup>3</sup> /hr)	Face Velocity (m/s)	Comments
1	300	95	55	Foil Lamination (LHS)	0.0707	9.57	2436	2.80	Canopy

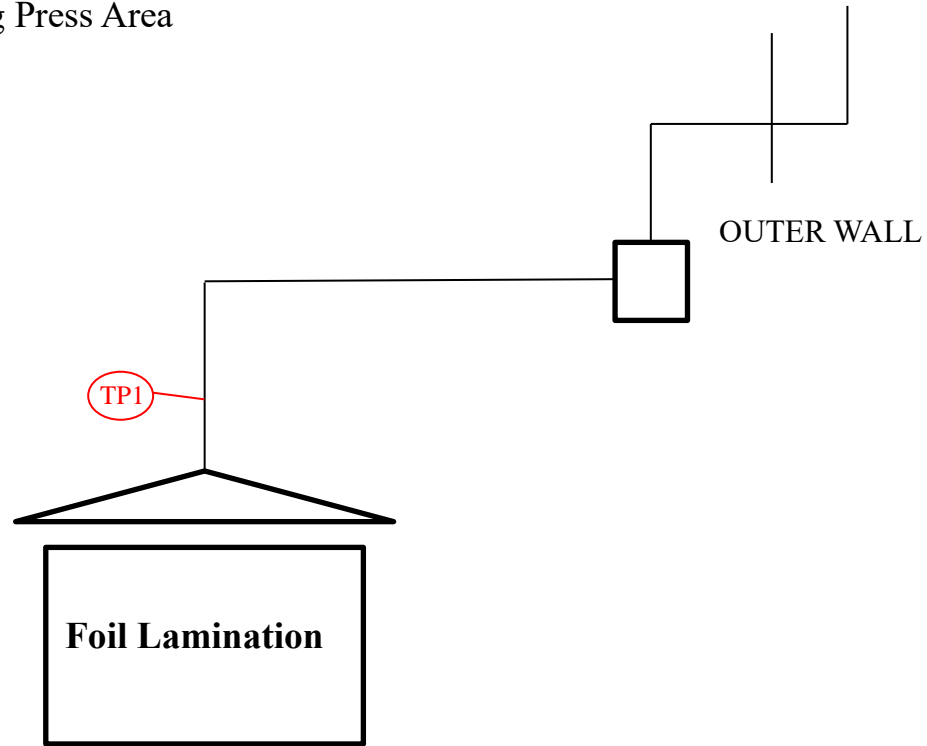
**CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH**  
**(COSHH) REGULATIONS 2002**

**REPORT OF THOROUGH EXAMINATION AND TEST BY A COMPETENT**  
**PERSON OF EXHAUST VENTILATION EQUIPMENT TO MEET THE**  
**REQUIREMENTS OF REGULATION 9.(2)**

- |   |  |
|---|--|
| 1. <i>Name of employer responsible for the plant:</i>               | WZ Packaging Ltd   |
| 2. <i>Address of Employer:</i>                                      | WZ Packaging Ltd<br>Halesfield 18<br>Telford<br>TF7 4JS                |
| 3. <i>Period covered by test:</i>                                   | 11.02.2019 – 11.04.2020  |
| 4. <i>Date of last thorough Examination and test:</i>               | Not Known  |
| 5. <i>Location of local exhaust ventilation (LEV) plant:</i>        | Printing Press Area  |
| 6. <i>Process and hazardous substances concerned:</i>               | Foil lamination giving off volatile organic compound vapours and fume. |
| 7. <i>Identification of LEV plant:</i>                              | Foil Lamination (RHS) canopy extraction.                               |
| 8. <i>Manufacturer:</i>   | Not known  |
| 9. <i>Description of plant (see Schematic):</i>                     | See Schematic 15 (LEV 16)  |
| 10. <i>Has there been any change to the system since last test?</i> | N/A  |
| 10.1 <i>If yes, give details:</i>                                   | N/A  |

- |  |   |
|--|---|
| <b>11. Condition of LEV plant at time of test - normal production or special conditions?</b>                           | Test.   |
| <b>12. Is the LEV plant continuing to operate at its designed performance?</b>   | Not operational.  |
| <b>12.1. If no, give reasons:</b>  | N/A   |
| <b>12.2. Any repairs required to maintain the intended operating performance?</b>                                      | N/A   |
| <b>13. Is the LEV plant, when working at its designed performance, sufficient to control the hazardous substances?</b> | <b>System was not in operation and unable to be tested.</b> No commissioning data provided for performance comparison. Exposure monitoring should be carried out during normal printing machine production to further validate this assessment. The exposure levels should be reviewed annually alongside the thorough examination and test to ensure adequate control. |
| <b>14. Does this system return exhaust air to the workplace?</b>   | No  |
| <b>15. Any other observations:</b>   | None.   |

LOCAL EXHAUST VENTILATION EXAMINATION & TEST (SCHEMATIC 15)  
WZ Packaging – Printing Press Area



**WZ Packaging 2019**

LOCAL EXHAUST VENTILATION PERFORMANCE VALUES								LEV 16	Table 16
Test Point (TP)	Duct Dia (mm)	Static Pressure (-Pa)	Velocity Pressure (Pa)	Machine Ref	Duct Area (m <sup>2</sup> )	Duct Velocity (m/s)	Volume Flow (m <sup>3</sup> /hr)	Face Velocity (m/s)	Comments
1	300			Foil Lamination (RHS)	0.0707				Not in operation



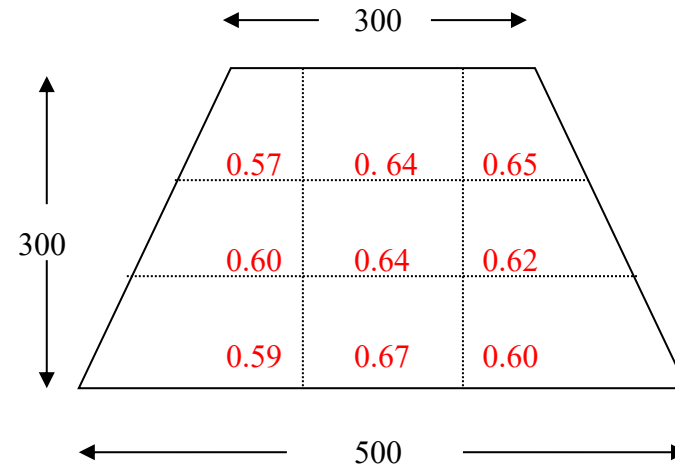
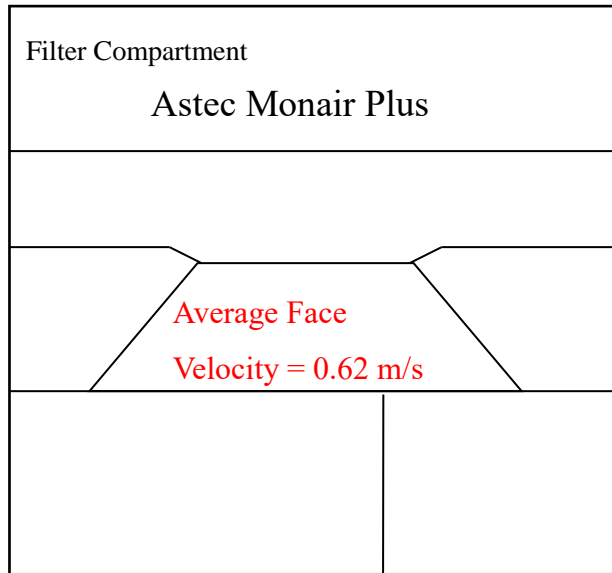
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**(COSHH) REGULATIONS 2002**

**REPORT OF THOROUGH EXAMINATION AND TEST BY A COMPETENT**  
**PERSON OF EXHAUST VENTILATION EQUIPMENT TO MEET THE**  
**REQUIREMENTS OF REGULATION 9.(2)**

- |   |  |
|---|--|
| 1. <i>Name of employer responsible for the plant:</i>               | WZ Packaging Ltd   |
| 2. <i>Address of Employer:</i>                                      | WZ Packaging Ltd<br>Halesfield 18<br>Telford<br>TF7 4JS            |
| 3. <i>Period covered by test:</i>                                   | Retest Required  |
| 4. <i>Date of last thorough Examination and test:</i>               | Not Known  |
| 5. <i>Location of local exhaust ventilation (LEV) plant:</i>        | Laboratory   |
| 6. <i>Process and hazardous substances concerned:</i>               | The use of chemicals giving off volatile organic compound vapours. |
| 7. <i>Identification of LEV plant:</i>                              | Astec Monair Plus Fume Cupboard<br>(500 x 300mm)                   |
| 8. <i>Manufacturer:</i>   | Astec  |
| 9. <i>Description of plant (see Schematic):</i>                     | See Schematic 16 (LEV 17)  |
| 10. <i>Has there been any change to the system since last test?</i> | N/A  |
| 10.1 <i>If yes, give details:</i>                                   | N/A  |

- |  |  |
|--|--|
| <b>11. Condition of LEV plant at time of test - normal production or special conditions?</b>                           | Test.  |
| <b>12. Is the LEV plant continuing to operate at its designed performance?</b>   | No - Unsatisfactory,   |
| <b>12.1. If no, give reasons:</b>  | The filter requires replacing.   |
| <b>12.2. Any repairs required to maintain the intended operating performance?</b>                                      | Replace filter!  |
| <b>13. Is the LEV plant, when working at its designed performance, sufficient to control the hazardous substances?</b> | Yes  |
| <b>14. Does this system return exhaust air to the workplace?</b>   | Yes  |
| <b>15. Any other observations:</b>   | No saturation test has been carried out on the main carbon filter. It is recommended that the filters are changed at regular intervals: The pre-filter every 3 months and the main carbon filter every 3 years (or to manufacturer's specific guidelines). Records should be made of all changes. Filters last changed: <b>Unknown (&gt;3 Years)</b> |

LOCAL EXHAUST VENTILATION EXAMINATION & TEST (SCHEMATIC 16)  
WZ Packaging – Lab Area



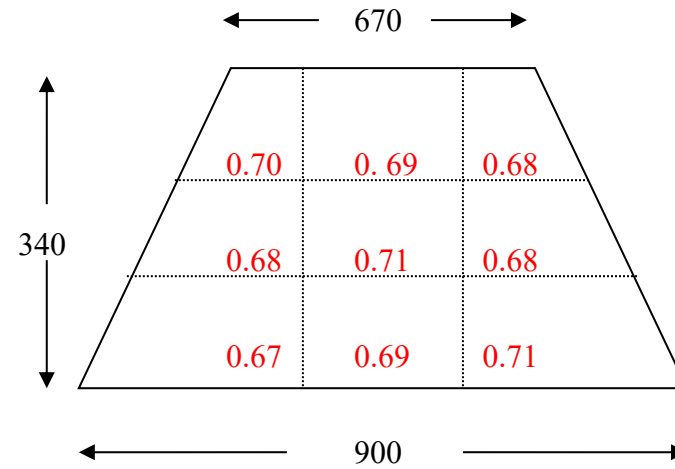
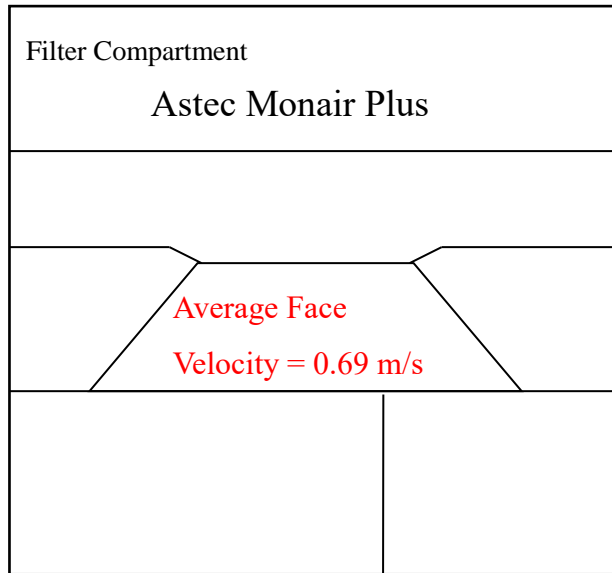
**CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH**  
**(COSHH) REGULATIONS 2002**

**REPORT OF THOROUGH EXAMINATION AND TEST BY A COMPETENT**  
**PERSON OF EXHAUST VENTILATION EQUIPMENT TO MEET THE**  
**REQUIREMENTS OF REGULATION 9.(2)**

- |   |  |
|---|--|
| 1. <i>Name of employer responsible for the plant:</i>               | WZ Packaging Ltd   |
| 2. <i>Address of Employer:</i>                                      | WZ Packaging Ltd<br>Halesfield 18<br>Telford<br>TF7 4JS            |
| 3. <i>Period covered by test:</i>                                   | Retest Required  |
| 4. <i>Date of last thorough Examination and test:</i>               | Not Known  |
| 5. <i>Location of local exhaust ventilation (LEV) plant:</i>        | Laboratory   |
| 6. <i>Process and hazardous substances concerned:</i>               | The use of chemicals giving off volatile organic compound vapours. |
| 7. <i>Identification of LEV plant:</i>                              | Astec Monair Plus Fume Cupboard<br>(900 x 340mm)                   |
| 8. <i>Manufacturer:</i>   | Astec  |
| 9. <i>Description of plant (see Schematic):</i>                     | See Schematic 17 (LEV 18)  |
| 10. <i>Has there been any change to the system since last test?</i> | N/A  |
| 10.1 <i>If yes, give details:</i>                                   | N/A  |

- |  |  |
|--|--|
| <b>11. Condition of LEV plant at time of test - normal production or special conditions?</b>                           | Test.  |
| <b>12. Is the LEV plant continuing to operate at its designed performance?</b>   | No - Unsatisfactory,   |
| <b>12.1. If no, give reasons:</b>  | The filter requires replacing.   |
| <b>12.2. Any repairs required to maintain the intended operating performance?</b>                                      | Replace filter!  |
| <b>13. Is the LEV plant, when working at its designed performance, sufficient to control the hazardous substances?</b> | Yes  |
| <b>14. Does this system return exhaust air to the workplace?</b>   | Yes  |
| <b>15. Any other observations:</b>   | No saturation test has been carried out on the main carbon filter. It is recommended that the filters are changed at regular intervals: The pre-filter every 3 months and the main carbon filter every 3 years (or to manufacturer's specific guidelines). Records should be made of all changes. Filters last changed: <b>Unknown (&gt;3 Years)</b> |

LOCAL EXHAUST VENTILATION EXAMINATION & TEST (SCHEMATIC 16)  
WZ Packaging – Lab Area



### 3. General Recommendations

#### 3.1 Regular Inspection and Checks

In addition to the thorough examination & testing described in this report it is required to conduct regular inspections and checks on the LEV systems. What form this inspection takes place and its frequency, will depend upon the nature of the plant. The COSHH Approved Code of Practice (ACOP) recommends that weekly visual checks should be carried out to identify any obvious defects. If the LEV controls a particularly hazardous substance, then more frequent checks may be necessary. Plant operators need to know what to look for and how to report it.

The regular inspections may include;

- Ensuring that the LEV is always switched on when hazardous substances are being emitted or are likely to be emitted,
- Observing the condition of the suction inlet, e.g. hood, booth etc to see whether it has moved or been damaged.
- Observing the condition of any visible ductwork and duct airflow dampers.
- Observing any evidence of control failures, for example noticing if there are unusual dust deposits or a stronger odour than normal immediately outside the LEV.
- Observing and checking any monitoring instrumentation or alarms that have been fitted to the LEV to indicate its performance, such as a differential pressure gauge on a filter or an airflow device on a fume cabinet.
- Undertaking any minor servicing such as emptying dust collection bins.

#### 3.2 Maintenance

A programme of regular maintenance for all LEV systems should be instituted and suitable records should be kept. This should include checking, cleaning and replacing, where necessary, the following components; fans, motors, grilles, and duct work.

#### 3.3 Workplace Inhalation Exposure Monitoring

Where the control and containment effectiveness of the individual LEV systems is uncertain consideration should be given to undertaking background air sampling and / or personal exposure monitoring.

#### 3.4 Airflow Indicators

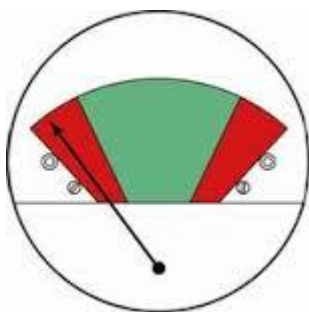
The Health & Safety Executive recommends that LEV systems are fitted with visual devices to provide LEV users with an indication that the hood is working and providing effective control of containment release.

HSE Guidance Note HSG258 “Controlling airborne contaminants at work” states ‘employers need an airflow indicator at every hood because the operator needs some simple indication that the hood is working properly. It becomes critical when an operator has to adjust an airflow damper to get adequate airflow. The airflow indicator must indicate simply and clearly when the airflow is adequate’.

The devices required will vary depending upon the complexity of the system; however, to assist both operators and supervisors it is recommended that airflow indicators clearly demonstrate when the airflow is adequate, for example, using a simple red and green colour coding scheme (e.g. Figure 1).

**Figure 1** Examples of Colour-coded airflow indicators

1.



For additional information see [www.hse.gov.uk/lev/faqs.htm](http://www.hse.gov.uk/lev/faqs.htm)

#### 4. HSE Recommended Performance indicators

The system airflows are compared with the following recommended limits and ranges as published in HSE guidance note HSG258 “Controlling airborne contaminants at work”.

Table A1; Range of Hood / Capture Velocities

Contaminant Cloud Release	Process Examples	Capture Velocity $\text{ms}^{-1}$
Into still air with little or no energy	Evaporation, mist from electroplating tanks.	0.25 to 0.5
Into fairly still air with low energy	Welding, soldering, liquid transfer	0.5 – 1.0
Into moving air with moderate energy	Crushing, spraying	1.0 – 2.5
Into turbulent air with high energy	Cutting, abrasive blasting, grinding	2.5 – 10.0

In each of the categories above a range of capture velocities is shown. The choice of values is dependent upon several factors:

Lower end of range

- Harmful and low toxicity materials;
- Low usages;
- Intermittent uses;
- Larger hoods;
- Some directional airflow towards hood;
- No draughts

Upper end of range

- ‘Toxic’ materials;
- High usages;
- Continuous uses;
- Smaller hoods;
- Airflows away from the hood;
- Draughts



Table A2; Recommended Duct Transport Velocities

Type of Contaminant	Indicative Duct Transport Velocity ms <sup>-1</sup>
Gases and non-condensing vapours	No Minimum Value
Condensing vapours, fume and smoke	Up to 10
Low or medium density dust, low moisture content dust (plastic dust, saw dust), fine dusts and mists.	Up to 15
Process dust (cement dust, brick dust, wood shavings, grinding dust)	Around 20
Large particles, aggregating and damp dusts (metal turning, moist cement dusts, compost)	Around 25

It should be noted that these are recommended airflows only and for individual systems achieving or exceeding these velocities will not necessarily guarantee effective control.

#### 4.1 Static Pressure

Comparison of static pressure readings with past and future measurements will enable conclusions to be drawn regarding changes in system performance, and whether there are any problems in the system.

### 5. Frequency of Statutory thorough Examination & Test of LEV Plant

Frequency of thorough Examination & Test of local exhaust ventilation plant in certain processes;

Regulation 9(2) (a)

Schedule 4	Column 1 Process	Column 2 Minimum Frequency
	Processes in which blasting is carried out in or incidental to the cleaning of metal castings, in connection with their manufacture.	1 Month
	Processes, other than wet processes, in which metal articles (other than gold, platinum or iridium) are ground, abraded or polished using mechanical power, in any room for more than 12 hours in any week.	6 Months
	Processes giving off dust or fume in which non-ferrous metal castings are produced.	6 Months
	Jute cloth manufacture	1 Month
	All other LEV systems	14 Months

Information derived from Control of Substances Hazardous to Health Regulations 2002 (as amended) Approved Code of Practice and Guidance L5.

### 6. Guidance on LEV Documentation

#### 6.1 Information on Essential Documentation for LEV

Upon installation of a LEV system all owners (employers) should with three pieces of documentation, supplied by the LEV provider;

- a commissioning report

a user manual; and  
a logbook.

A brief outline of what should be in this documentation is detailed below. More detailed information can be found in section 8 & 9 of HSE Guidance Note HSG258 “Controlling airborne contaminants at work”.

#### 6.1.1 Commissioning Report

Commissioning is a process which is designed to prove that a lev system is capable of providing effective control and containment.

The LEV Commissioning process comprises of four key stages;

- 1) Installation and verification
- 2) Undertaking technical performance readings to confirm the design specification
- 3) Demonstrating control effectiveness
- 4) Reporting benchmark readings for future examination and tests

Upon completion of the process a report should be produced by the LEV commissioner. This should confirm that the LEV system performs as it was designed and that it provides effective control of airborne contaminants from entering the workplace.

This sets a benchmark for subsequent examination & testing. Comparison of pressure and velocity readings with benchmark measurements will enable conclusions to be drawn regarding changes in system performance, and whether there are any problems in the system.

#### 6.1.2 User Manual

The user manual should be presented with the lev system following commissioning. This should detail how to use the system, maintenance information, available spare parts and details of things that may go wrong. The manual should also have a schematic diagram of the system, indicating the key components, and relevant performance data from the commissioning report such as pressure and velocity readings.

The user manual should also provide information on the required procedures and practices where the control effectiveness of the system is dependent upon correct usage e.g. where personnel manually position hoods to the point of containment release.

#### 6.1.3 LEV System Logbook

Each LEV system should have its own individual logbook which will have details of regular inspection, maintenance and repairs. Ideally it should include;

- Benchmark findings of the commissioning report
- Inspection and maintenance schedules
- Records of checks, maintenance, any replacements or modifications and repairs
- Compliance checks on the correct operation of the system
- Name of person who undertakes the checks

## **Appendix 1**

### **Maintenance of LEV and Inspection Checklists (Log Book)**

## Maintenance Checklist

Item	Maintenance Work Required	Frequency
Extract Hoods	Inspect for signs of damage, check positioning – adjust if necessary.	D/W
	Inspect cleanliness of hoods, canopies and duct interiors	W
Dampers	Inspect for damage, renew as necessary.	D/W
	Check connecting clips and seals.	W
	Check damper is in correct position while machine is operating. At fixed point if the LEV is balanced.	W
	Check that the damper is free to move (if not on a balanced system)	W
Branch Duct	Check joints for tightness.	Q
	Check supports and brackets for damage.	Q
	Check interior for any build-up of particles/ residue.	M
Main Duct	Check joints for tightness.	Q
	Check supports and brackets for damage due to mechanical impact, vibration etc.	Q
	Check interior for any build-up of particles/ residue.	M
Filtration Unit (where applicable)	Check pressure drop across the filtration media.	D
	Check for any visual emission from the exhaust.	W
	Inspect filter bags for damage and wear. Replace as necessary.	D/W
	Check operation of shaking mechanism (including motors), reverse jet system etc.	M
	Lubricate motor bearings.	As recommended by supplier
	Major Service.	A
Fan / air mover	Lubricate bearings.	As recommended by supplier
	Inspect blades for wear damage.	½ A
	Inspect motor for excessive vibration or noise or high temperature.	½ A
	Check soundness of electrical connections.	½ A
	Check earthing.	½ A
	Check mountings.	½ A
	Check brushes if fitted.	½ A
Check tightness of duct connections.	A	
Monitors	Check airflow monitors and gauges.	D
	Check alarm sounds (if fitted).	W
Water Quality (on wet scrubber units)	Check Level and condition.	M
Illumination	Check levels in booths and at working positions.	M

**D-Daily      W-Weekly      M-Monthly      A-Annually**

## Inspection Checklist

Inspection Date	Component Status					Repairs or Modifications	Date of Repairs	Inspector's Initials
	Ducting	Hood	Filter	Fan	Motor			