

**POLLUTION PREVENTION & CONTROL ACT 1999  
POLLUTION PREVENTION & CONTROL (ENGLAND AND WALES)  
REGULATIONS 2000**

**DOCUMENT A : PERMIT**

**Brett Martin Daylight Systems Limited**

Reference Number **PPC/97**

Coventry City Council ("the Council") in accordance with Section 10(2) of the Pollution Prevention & Control (England and Wales) Regulations 2000 ("The Regulations"), hereby permits:

**Brett Martin Daylight Systems Limited**

Whose registered office is:

**Sandford Close  
Aldermans Green Industrial Estate  
Coventry  
CV2 2QU**

**Registered in England No: 1225853**

to operate a Part B installation involving the manufacture of fibre reinforced plastics, as prescribed in Section 4.1 Part B(c) of Schedule 1 to The Regulations, at:

**Brett Martin Daylight Systems Limited  
Sandford Close  
Aldermans Green Industrial Estate  
Coventry  
CV2 2QU**

The permit is subject to the conditions specified in this document consisting of 16 pages and comprising documents A, B and C, plans PPC/97/A, PPC/97/B and Appendix 1.

Signed.....

Alan Bennett, Head of Environmental Health  
A person authorised to sign on behalf of the Council

Dated .....

## **SCOPE**

The installation comprises not just any relevant unit carrying out a Part B activity listed in Schedule 1 to the Regulations, but also directly associated activities which have a technical connection with that activity and which could have an effect on pollution.

All pollutant concentrations shall be expressed at reference conditions of 273K and 101.3kPa, without correction for water vapour content.

Technical Guidance documents used in the preparation of this document:

- Secretary of States Guidance Note PG 4/02(05)
- Secretary of State's Guidance – General Guidance Manual on Policy and Procedures for A2 and B installations. ISBN 0-85521-028-1

Date Annual Fee Required: 1st April of each financial year

Date For Full Compliance: Date permit issued

Permit Prepared By: Neil Wait

Permit Checked By: Michelle Muller

## **LEGISLATION**

1. Pollution Prevention and Control Act 1999.
2. Pollution Prevention and Control Regulations 2000 as amended, schedule 1 as amended

## **BRIEF DESCRIPTION OF THE INSTALLATION REGULATED BY THIS PERMIT**

Definitions referred to in this permit

- An **Activity** is an industrial activity forming part of an installation. Different types of activity are listed within Schedule 1 of the PPC Regulations and are broadly broken down into industrial sectors. Other “associated” activities may also form part of an installation.
- An **Installation** comprises not just any relevant unit carrying out a B activity listed within Schedule 1 to the PPC Regulations, but also directly associated activities which have a technical connection with a schedule 1 activity and which could have an effect on pollution.
- An **Operator** is the person (e.g. a company or individual) who has control over the operation of an installation.
- **Volatile organic compound (VOC)** shall mean any organic compound having at 293K a vapour pressure of 0.01 kPa or more, or having a corresponding volatility under the particular conditions of use.
- **Organic solvent** shall mean any VOC which is used alone or in combination with other agents, and without undergoing a chemical change, to dissolve raw materials, products or waste materials, or is used as a cleaning agent to dissolve contaminants, or as a dissolver, or as a dispersion medium, or as a viscosity adjuster, or as a surface tension adjuster, or a plasticiser, or as a preservative.
- **Stack** includes structures and openings of any kind from or through which substances may be emitted to air.
- **Duct** includes enclosed structures through which gaseous substances may be conveyed.
- **Process vent** includes open terminations of ducts.
- **Authorised Officer** shall mean an officer authorised to carry out duties under the Pollution Prevention and Control Act 1999 and subordinate regulations
- **Logbook** shall mean any electronic or paper means of storage of the required information as agreed by the regulator
- **Local Authority** shall mean Coventry City Council
- **"m"** means metre
- **"m/s"** means metres per second

The general location of the Authorised Process is marked in red on the attached plan PPC/97/A.

## Description of Installation

This permit is for the manufacture of fibre reinforced plastics within the process boundary outlined in red on the attached plan numbered 1.

Deliveries of polyester resin by road tanker are dispensed to a series of closed storage tanks marked A on plan PPC/97/B.

The mixing and preparation of polyester resin in a closed mixing vessel occurs in the area marked B on plan PPC/97/B.

Process line 2 & 3 actions:

Peroxide catalysts is added to the polyester resin and the resin mixture is deposited via sealed plastic tubing onto a bottom carrier film.

Glass matting is added and a second top carrier film to the resin.

The resin is cured in the oven to form glass reinforced plastic sheeting.

The glass reinforced plastic sheeting is trimmed and finished in a area with an Enclosed dust extraction system.

**Table 1**

### List of Process Areas within the Installation and Associated Emission Points, Pollutants of Concern and Abatement Plant Required

Substance	Area	Source	Emission limit / provision	Type of monitoring	Monitoring frequency
VOC	Whole process	Continuous sheet moulding and pultrusion	Mass emission of styrene per tonne of resin used shall not exceed 40kg	See Appendix 1	Biannual
Odour	Whole process	Contained and fugitive sources	Emission are free from offensive odour at any location at or beyond the site boundary	Determined by process assessments	Daily
Benzene	All styrene & resins on site	Styrene or resins used in process	Styrene or resins used shall not contain more than 0.5% benzene impurity.	Provision of certificate of compliance with the specification by supplier	Every Batch

## DOCUMENT B

### CONDITIONS

**All conditions shall have immediate effect unless stated otherwise.**

#### Emission Limits

1. All releases to air, other than condensed water vapour, shall be free from droplets and persistent visible emissions.
2. There shall be no offensive odour beyond the site boundary, as shown on PPC/97/A, as perceived by Coventry Council.
3. The reference conditions for emission limits are 273.15K, 101.3kPa, without correction for water vapour content, unless stated otherwise.
4. The emission limits and provisions shown in Table 1 shall be complied with.

#### Emission Monitoring and other provisions

5. The operator shall keep a logbook containing records of inspections, tests and monitoring, including all non-continuous monitoring, inspections and visual assessments. The logbook shall be kept on site and made available for the regulator to examine. Records shall be kept by the operator for at least two years.
6. Visual and olfactory assessments of emissions should be made frequently and at least once each day whilst the process is in operation. The time, location and results of these assessments shall be recorded.
7. The operator shall notify the regulator at least 7 days before any periodic monitoring exercise to determine compliance with emission limit values. The operator shall state the provisional time and date of monitoring, pollutants to be tested and the methods to be used.
8. The results of non-continuous emission testing should be forwarded to the regulator within 8 weeks of the completion of the sampling.
9. Adverse results from **any** monitoring activity (both continuous and non-continuous) shall be investigated by the operator as soon as the monitoring data has been obtained / received. The operator shall:
  - identify the cause and take corrective action;
  - record as much detail as possible regarding the cause and extent of the problem, and the action taken by the operator to rectify the situation;
  - re-test to demonstrate compliance as soon as possible; and
  - notify the regulator.
10. In cases where offensive odours / abnormal emissions are detected beyond the process boundary the operator shall:

- undertake an assessment / investigation of process operations and odour / emission controls.
  - adjust the process or activity to minimise the odours / emissions; and
  - promptly record the events and actions taken.
11. The regulator must be informed without delay if there is an emission that is likely to have an effect on the local community.
  12. All appropriate precautions must be taken to minimise emissions / odour during start-up and shutdown.
  13. The introduction of dilution air to achieve emission concentration limits must not be permitted.
  14. If emission concentration limits are being met, or do not apply, then dilute air may be introduced where appropriate for the purposes of preventing / diluting odours.
  15. Calibration and compliance monitoring shall meet the following requirements as appropriate. No result shall exceed the emission concentration limits specified, except where either:
    - (a) data is obtained over at least 5 sampling hours in increments of 15 minutes or less; or
    - (b) at least 20 results are obtained where sampling time increments of more than 15 minute are involved; AND in the case of (a) or (b)
    - (c) no daily mean of all 15-minute mean emission concentrations shall exceed the specified emission concentration limits during normal operation (excluding start-up and shut-down); and
    - (d) no 15-minute mean emission concentration shall exceed twice the specified emission concentration limits during normal operation (excluding start-up and shut-down).
  16. Delete
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  19. The frequency of non-continuous quantitative monitoring shall be increased, for example, as part of the commissioning of new or substantially changed activities, or where emission levels are near to or approach the emission concentration limits.
  20. Care is needed in the design and location of sampling systems in order to obtain representative samples. The operator shall ensure that adequate facilities for sampling are provided on vents or ducts. Sampling points on new plant shall be designed to comply with the British or equivalent standards. Where monitoring is not in accordance with the main procedural requirements of relevant standard, deviations should be reported as well as an estimation of any error invoked.

21. The frequency of non-continuous monitoring shall be biannual for all process lines

## **Control Techniques**

22. Emissions from activities likely to give rise to airborne particulate matter, for example the chopping of glass fibre rovings and the cutting and finishing of products, shall be collected and extracted, where necessary, to suitable arrestment equipment.
23. Alternative procedures, such as wet cutting, may be employed if the operator can demonstrate their effectiveness to the satisfaction of Coventry City Council.
24. The use of odourmasking agents and counteractants to meet the provisions of Table 1 shall not be permitted except where the operator can demonstrate that BAT has been used to achieve the objectives of PG Note 4/02 (05) In such instances, Coventry City Council may permit the use of a counteractant. Use in this manner shall be kept under close and regular review.
25. Carbon dioxide shall be continuously pumped into the resin storage tanks marked as A on plan PPC/97/B.
26. Emissions of styrene from the deposition of resin onto the bottom carrier film shall be extracted via the under bed extraction system and only emitted to atmosphere via the discharge stack marked a C on plan PPC/97/B.
27. Waste resin shall be mixed with peroxide catalyst to form fully cured solidification resin and stored in closed containers whilst awaiting collection by private disposal contractor.
28. The pumping of resin in enclosed pipework from storage to the point of use will minimise emissions. Where operational considerations allow, this practice shall be adopted.
29. Resins which give rise to low styrene emissions shall be used wherever possible and in particular where open moulding takes place. Where they are not employed for open moulding, the process operator shall provide justification for this decision to the local enforcing authority. Reasons for not using styrene suppressed resins containing waxes might include the need for a non-slip surface or a requirement for a high degree of structural integrity.
30. The time during which gelation of resin occurs shall be minimised, in order to reduce emissions from this stage of the process.
31. Styrene or resins used in FRP manufacturing processes shall not contain more than 0.5% benzene impurity.
32. The receipt, handling and storage of polyester resins and other potentially odorous or harmful substances shall be carried out in such a way that emissions are prevented, or where not practicable due to process characteristics, minimised and rendered harmless.

33. Resins and amine accelerators shall preferably be stored in fixed tanks. Emissions shall be vented to suitable arrestment equipment if necessary to meet the appropriate provisions in Table 1.
34. Bulk chemical storage tanks shall be completely contained by bunding which is sealed and resistant to the chemicals in storage and capable of holding 110% of the capacity of the largest storage tank.
35. To prevent overfilling, all bulk storage tanks shall be fitted with suitable audible and visual alarms which will operate when any tank is in danger of becoming overfull. Where practicable (for example, where raw material delivery pumps are not mounted on delivery vehicles) an interlock to the tank filling system shall be provided. Alternative tank filling procedures may be followed, subject to the agreement of the local enforcing authority.
36. Where spillages of liquid resin occur, they shall be immediately cleaned up and contaminated material shall be held in a closed bin. Sufficient supplies of decontaminant and a suitable absorbent material shall be kept at all times. A written procedure for dealing with spillages shall be agreed with Coventry City Council.
37. All spillages shall be cleared as soon as possible; solids by vacuum cleaning, wet methods, or other appropriate techniques. Dry sweeping of dusty spillages shall not be permitted.
38. Adequate provision to contain liquid and solid spillage shall be provided. Closed containers shall be used to prevent wind whipping of dusty waste materials, including those from finishing operations.
39. A high standard of housekeeping shall be maintained.
40. Emissions of volatile organic compounds, including styrene, from cleaning operations shall be minimised in accordance with the following:
  - Operators shall be encouraged to make arrangements for recycling for reuse of all dirty solvents which have been used (for example, for equipment cleaning) and all other liquid wastes which contain volatile organic compounds.
  - Cleaning operations shall be reviewed to identify any cleaning steps which can be eliminated.
  - Alternative cleaning techniques shall be used where practicable. Examples include using water (with or without mechanical, chemical or thermal enhancements) or organic solvents which are significantly less volatile.
41. Where manual cleaning is unavoidable:
  - a. cleaning solvents shall be kept in enclosed containers whilst not in active use;
  - b. wiping cloths or brushes shall be impregnated with cleaning solvent in a controlled manner, using a dispenser or similar device;



- c. used wiping cloths or brushes shall be stored in enclosed containers pending recovery or disposal.
42. Stack heights shall be calculated using HMIP Technical Guidance Note D1 (D1). The emission limits in Process Guidance Note PG4/02(05) shall be used as the basis for chimney height calculation. An operator may choose to meet tighter emission limits in order to reduce the required stack height. Alternative dispersion models may be used in agreement with the regulator.
  43. A minimum discharge velocity shall be required in order to prevent the discharged plume being affected by aerodynamic down wash.
  44. Adequate insulation shall be provided to minimise the cooling of waste gases and prevent liquid condensation by keeping the temperature of the exhaust gases above the dewpoint.
  45. Stacks and ductwork shall be cleaned to prevent accumulation of materials, as part of the routine maintenance programme.
  46. Stacks or vents shall not be fitted with any restriction at the final opening such as a plate, cap or cowl, with the exception of a cone which may be necessary to increase the exit velocity of the emissions.
  47. Spares and consumables - in particular, those subject to continual wear - shall be held on site, or should be available at short notice from guaranteed suppliers, so that plant breakdowns can be rectified rapidly.
  48. Operators shall put in place some form of structured environmental management system (EMS), whether by adopting published standards (ISO 14001 or the EU Eco Management and Audit Scheme [EMAS]) or by setting up an EMS tailored to the nature and size of the particular process.
  49. The operator shall maintain a statement of training requirements for each operational post and keep a record of the training received by each person whose actions may have an impact on the environment. These documents shall be made available to the regulator on request.
  50. The training of all staff with responsibility for operating the activity shall include:
    - awareness of their responsibilities under the Permit; in particular how to deal with conditions likely to give rise to VOC emissions, such as in the event of spillage;
    - minimising emissions on start up and shut down; and
    - action to minimise emissions during abnormal conditions.
  51. Effective preventative maintenance shall be employed on all aspects of the activity including all plant, buildings and the equipment concerned with the control of emissions to air. In particular; a written maintenance programme shall be available to the regulator with respect to pollution control equipment, and a record of such maintenance shall be made available for inspection by the regulator.
  52. The operator shall prepare an Odour Response Procedure. This is a summary of the foreseeable situations which may compromise his ability to

prevent and/or minimise odorous releases from the process and the actions to be taken to minimise the impact. It shall be used by operational staff on a day-to-day basis and shall detail the person responsible for initiating the action.

53. The Odour Response Procedure shall include a list of essential spares for odour control equipment (where fitted). The equipment manufacturer should recommend which spares are subject to wear and foreseeable failure and are critical for the correct operation control equipment and these shall be held on site. It may be acceptable for certain spares to be available on guarantee short delivery if the absence of a supply at the site would not lead to complete failure of the odour control equipment or to offensive odours beyond the site boundary.

## **Appendix 1**

### **MONITORING STYRENE EMISSIONS**

Monitoring styrene emissions for the purpose of comparison with the mass emission limits in Table 1.

Wherever possible, emissions of styrene from FRP manufacturing processes should be measured by monitoring the concentration of styrene and the airflow in the exhaust stacks. In this way, a mass emission over a period of time, preferably eight hours but at least a complete process cycle, may be calculated. This can then be compared with, the mass of resin that has been used over the same period. Sampling points should be situated at least five stack diameters downstream from any bends or obstructions in the stack.

Difficulties may arise in situations where there are no extraction points close to the processing area and fugitive emissions represent a significant proportion of the total releases. In these circumstances, measured stack emissions should be supplemented with mass balance calculations in which

resin consumption is compared with the mass of parts produced, allowing for contamination of drapes, filters, tools etc.

Three methods which are appropriate for the determination of styrene emissions are described below:

#### **Flame Ionisation Detection (FID)**

FID based analysers utilise the principle of hydrogen flame ionisation for detection and measurement of organic vapours. The carboncontaining ions that are generated are driven to a collecting electrode and the resulting ionisation current is measured. Instruments are calibrated by the manufacturer against hydrocarbon standards, generally methane or propane. Regular recalibration is required. Correlation to styrene concentrations is achieved using predetermined response factors. FID does respond to other volatile organic compounds, such as cleaning solvents, and the use of these should therefore be avoided during the sampling period. If this is not feasible, the coupling of the FID with a gas chromatograph should be considered, in order that differentiation of the organics present can take place.

#### **Photo Ionisation Detection (PID)**

PID shares the same basic principles as FID, but ionisation is achieved by means of an ultraviolet light source rather than a hydrogen flame.

#### **Infrared vapour analysis**

Organic compounds absorb infrared radiation at characteristic wave lengths. Infrared analysers are factory calibrated for a particular compound. This specificity means that these analysers are particularly suitable for measuring styrene in the presence of other volatiles which may be present in the resin or other materials such as cleaning compounds.

## **DOCUMENT C**

### **RESIDUAL DUTY**

In relation to any aspect of the process not regulated by specific conditions in this permit, then Best Available Techniques shall be used:

For the purposes of the Pollution Prevention and Control (England and Wales) Regulations 2000, “best available techniques” means the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing in principle the basis for emission limit values designed to prevent and, where practicable, generally to reduce emissions and the impact on the environment as a whole; and for the purpose of this definition –

- a) “available techniques” means those techniques which have been developed on a scale which allows implementation in the relevant industrial sector, in the economically and technically viable conditions,

taking into consideration the cost and advantages, whether or not the techniques are used or produced inside the United Kingdom, as long as they are reasonably accessible to the operator;

- b) “best” means, in relation to techniques, the most effective in achieving a high general level of protection of the environment as a whole;
- c) “techniques” includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned.

## **SUPPLEMENTARY NOTES**

These notes do not comprise part of the Permit PPC/97 but contain guidance relevant to the Permit.

### **Inspections and Powers of Entry**

Regular inspections will be carried out by officers of the Council (the Local Authority Inspectors) to check and ensure full compliance with the Permit conditions and residual duties. These inspections may be carried out without prior notice.

Under section 108(6) of the Environment Act 1995 authorised Local Authority Inspectors have been granted powers of entry into any premises for the purposes of discharging relevant duties.

### **Reviews**

The Local Authority has a statutory duty to review the permit at least once every 6 years or in the following circumstances set out in regulation 15 of the Pollution Prevention and Control regulations 2000:

- a) The pollution from the installation is of such significance that the existing emission limit values for the permit need to be revised or new emission limit values need to be included in the permit
- b) Substantial changes in BAT make it possible to reduce emissions from the installation or mobile plant significantly without imposing excessive costs; or
- c) Operational safety of the activities carried out in the installation or mobile plant requires other techniques to be used

### **Health and Safety**

This Permit is given in relation to the requirements of the Pollution Prevention and Control (England and Wales) Regulations 2000. It must not be taken to replace any workplace responsibilities the operator has under Health & Safety legislation. Whenever emission limits quoted in this Permit conflict with occupational exposure limits set under the Health and Safety at Work Act 1974 to secure the health, safety or welfare of persons at work, the tighter limit should prevail.

Installation must be operated in order to protect persons at work as well as the environment. In achieving conditions in this Permit the operator must not adopt any course of action that would put at risk the health, safety or welfare of persons at work.

### **Other Statutory Requirements**

This Permit does not detract from any other statutory requirement, such as the need to obtain planning permission, hazardous substances consent, discharge consent from the Environment Agency, building regulations approval, or a waste disposal licence.

This Permit does not authorise a contravention of any other enactment or any order made, granted or issued under any enactment, nor does it authorise a contravention of any rule or breach of any agreement.

The Operator is advised to consult the relevant Planning Department regarding changes that may be required as a result of this Permit (e.g. stack heights) as they may require planning permission.

### **Transfer of Permits**

Where the operator of an installation wishes to transfer, in whole or in part, his permit to another person, the operator and the proposed transferee shall jointly make an application to the regulator to effect the transfer. Such an application shall be accompanied by the permit and any fee prescribed in respect of the transfer.

In the case of partial transfer, where the original operator retains part of the permit, the application must make clear who will retain control over the various parts of the installation. The application must include a plan identifying which parts of the site and which activities the operator proposes transferring.

The local authority will then determine whether to allow the transfer within a two-month period, unless the local authority and the applicants agree a longer period. Where the local authority approves the transfer, the transfer will take effect from the date requested by the operator or a date that may be agreed by the local authority and the applicants.

### **Variation to Permits**

Variation to permits may be initiated either by the local authority or the operator, either in response to changes in the operation of an installation or if new conditions are needed to deal with new matters. Variations may be required in response to the following.

- Change of operation of the installation. (The operator shall notify the local authority under Section 16(1) of the Regulations.)
- In response to the findings of a periodic review of conditions.
- In response to the findings of an inspection.
- New or revised sector guidance notes

The operator should apply to the Local Authority in order to vary a permit under regulation 17 of the Regulations. The application must be in writing and, in accordance with Part 1 of Schedule 7 to the Regulations contain:

- The name, address and telephone number of the operator.
- The address of the installation.
- A correspondence address.
- A description of the proposed changes.
- An indication of the variations the operator would like to make.
- Any other information the operator wants the authority take account of.

### **Substantial Change**

A substantial change means, in relation to an installation, a change in operation, which in the opinion of the local authority may have significant negative effects on human beings or the environment.

Where the local authority deems that a proposed variation constitutes a substantial change, the operator will be informed of the process to follow.

### **Noise**

This Permit does not include reference to noise. Statutory noise nuisance is regulated separately under the provisions of Part III of the 1990 Act.

### **Appeals**

An Appeal can be made against the conditions in, or variations to this Permit as per Part IV of the Regulations. Appeals are made to the Planning Inspectorate who acts on behalf of the Secretary of State. Appeals against conditions within a Permit must be submitted within 6 months of the date of issue of the permit. Appeals against variation notices must be submitted within 2 months of the date of issue of the notice. Appeals should be despatched on the day they are dated and sent to:

The Planning Inspectorate  
Environmental Appeals Administration  
Room 4/19 – Eagle Wing  
Temple Quay House  
2 The Square  
Temple Quay  
BRISTOL  
BS1 6PN

### **HMSO Publications**

All HMSO publications can be ordered by telephone on Tel: 0870 600 5522, Fax: 0870 600 5533 or e-mail: [book.orders@tso.co.uk](mailto:book.orders@tso.co.uk)

### **Emission Monitoring Protocol**

The documented procedure by which reliable and comparable results are obtained from measurements at source is known as a Protocol.

Protocols ensure that the sampling procedures are carried out correctly and that the results obtained accurately characterise the process.

The main components of a Protocol are as follows:-

1. Calibre and quality of the sampling team.
2. A reference measurement method (standard methods may not always be available)
3. A standard methodology setting out:
  - health and safety considerations
  - pollutants of interest
  - plant operating conditions required

- selection and location of sampling position
- sampling characteristics (e.g. isokinetic etc) and techniques
- sampling frequency
- sampling duration
- number of samples
- type (including make and model), condition and suitability of sampling equipment
- required accuracy
- variability of emissions
- analytical methods including laboratory competence and NAMAS accreditation certificate copy for each pollutant of interest
- analytical precision
- procedures to be adopted if standard methods unavailable
- calibration certificate(s) for sampling equipment
- Quality Control and Quality Assurance procedures
- Presentation of results and associated information.