



**POLLUTION PREVENTION AND CONTROL ACT 1999  
POLLUTION PREVENTION AND CONTROL REGULATIONS 2000**

**Permit Number: 2.3/052464/GJ**

**Installation Address:  
Broadblast Ltd.  
51 Mowbray Street  
Sheffield  
S3 8EN**

**In accordance with Regulation 10 of the Pollution Prevention and Control Regulations (England and Wales) 2000 as amended. Broadblast Ltd is hereby permitted to operate a scheduled activity at the address detailed above, namely the Coating of metal and plastic using 5 tonnes or more per year of organic solvent as described in Schedule 1, Part 1, Chapter 7, Part B, and subject to the following conditions.**

**Signed:**

A handwritten signature in black ink, appearing to be 'A. H.', written over a horizontal line.

**Dated this day: 31 October 2007**

**Assistant Manager  
Authorised by Sheffield City Council to sign on their behalf**

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Process Guidance Note 6/23 (04) Secretary of State's Guidance for Coating of Metal and Plastic Processes has provided the framework for the conditions in this permit.

**Name & Address of Operator:**

Broadblast Ltd  
51 Mowbray St.  
Sheffield  
S3 8EN

Contact Name: Colm Grant  
Contact Telephone: 0114 275 4764

**Registered Office:**

Broadblast Ltd  
51 Mowbray St.  
Sheffield  
S3 8EN

**Address of Permitted Installation:**

Broadblast Ltd  
51 Mowbray St.  
Sheffield  
S3 8EN

**Talking to Us:**

Any communication with Sheffield City Council should be made to the following address quoting the Permit Number:

**Environmental Protection Service  
Sheffield City Council  
2-10 Carbrook Hall Road  
Carbrook  
Sheffield  
S9 2DB**

Alternatively Email: [epsadmin@sheffield.gov.uk](mailto:epsadmin@sheffield.gov.uk)

Telephone: (0114) 273 4651  
Fax: (0114) 273 6464

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## **Explanatory Note to Pollution Prevention and Control Permit for Part B Installations.**

**(This note does not form a part of the Permit)**

The following Permit is issued under Regulation 10 of the Pollution Prevention and Control (England and Wales) Regulations 2000 (S.I. 2000 No.1973), as amended, ("the PPC Regulations") to operate an installation carrying out activities covered by the description in Part 1, Chapter 2, Section 2.3, Part B, subsection (a) of Schedule 1 of those Regulations, to the extent authorised by the Permit:

Aspects of the operation of the installation which are not regulated by conditions of the Permit are subject to the condition implied by Regulation 12(10) of the PPC Regulations, i.e. the Operator shall use the best available techniques for preventing or, where that is not practicable, reducing emissions from the installation as defined in Regulation 3(1) of the PPC Regulations.

### **Process Changes**

Under the provisions of Regulation 16 of the PPC Regulations, you are required to notify the Council of any proposed change in operation at least 14 days before making the change. This must be in writing and must contain a full description of the proposed change in operation and the likely consequences. Failure to do so is an offence.

If you consider that a proposed change could result in the breach of the existing permit conditions or is likely to require the variation of permit conditions then you may apply in writing under Regulation 17(2) of the PPC Regulations. Additionally, if this involves a SUBSTANTIAL CHANGE to the installation you will be required to submit an application, pay the relevant fee and advertise the application accordingly. You may serve a Notice on the Council requesting that they determine whether any change that is proposed would constitute a substantial change before you proceed with application.

### **Variations to the Permit**

The Permit may be varied in the future (by the Council serving a Variation Notice on the Operator). If the Operator itself wants any of the Conditions of the Permit to be changed, a formal Application must be submitted.

### **Surrender of the Permit**

Where the operator of a Part B installation or mobile plant ceases or intends to cease the operation of the activity the operator may notify the regulator of the surrender of the whole permit, in any other case, notify the regulator of the surrender of the permit in so far as it authorises the operation of the installation or mobile plant which he/she has ceased or intends to cease operating. The notification shall contain information as described in Regulation 20 (3) of the PPC Regulations.

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## **Transfer of the Permit or Part of the Permit**

Before the Permit can be wholly or partially transferred to another person, a joint application to transfer the Permit has to be made by both the existing and proposed holders, in accordance with Regulation 18 of the PPC Regulations. A transfer will be allowed unless Sheffield City Council considers that the proposed holder will not be the person who will have control over the operation of the installation or will not ensure compliance with the conditions of the transferred Permit.

## **Annual Subsistence Fee**

In accordance with Regulation 22(2)(c) of the PPC Regulations, the holder of a permit is required to pay a fee for the subsistence of the Permit. This fee is payable annually on 1st April. You are advised that under the provisions of Regulation 21 of the PPC Regulations, if you fail to pay the fee due promptly, Sheffield City Council may revoke the Permit. You will be contacted separately each year in respect to this payment.

## **Public Register**

The Council is required by Regulation 29 of the PPC Regulations to maintain a Public Register containing information on all LAPPC installations and mobile plant. The register is available for inspection by the public free of charge during office hours (Monday to Friday 9.00 am to 5.00 pm) at the following address:

**Environmental Protection Service  
Sheffield City Council  
2-10 Carbrook Hall Road  
Carbrook  
Sheffield  
S9 2DB**

## **Confidentiality**

Sheffield City Council has a duty to consider the question of confidentiality of information supplied to it. If any information supplied is considered confidential, a statement of which information this applies to and the reasons why it is considered confidential should be specified. The Operator is reminded that he may apply to Sheffield City Council for the exclusion of information from the public register under the provisions of the Pollution Prevention and Control Regulations (England and Wales) 2000 as amended.

## **Appeals**

Under Regulation 27(1)(c) of the PPC Regulations operators have the right of appeal against the conditions attached to their permit. Schedule 8 of the PPC Regulations sets out the detailed procedures.

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Appeals against a Variation Notice do not have the effect of suspending the operation of the Notice. Appeals do not have the effect of suspending Permit conditions.

Notice of appeal against the conditions attached to the permit must be given within six months of the date of the Notice, which is the subject matter of the appeal.

## **How to Appeal**

There are no forms or charges for appealing. However, for an appeal to be valid, appellants (the person/operator making the appeal) are legally required to provide:

- written notice of the appeal;
- a statement of the grounds of appeal;
- a statement indicating whether the appellant wishes the appeal to be dealt with by written representations procedure or a hearing - a hearing must be held if either the appellant or enforcing authority requests this, or if the Planning Inspector or the Secretary of State decides to hold one.
- (appellants must copy the above three items to the local authority when the appeal is made)
- a copy of any relevant application;
- a copy of any relevant permit;
- a copy of any relevant correspondence between the appellant and the regulator; and
- a copy of any decision or notice, which is the subject matter of the appeal.

## **Where to Send Your Appeal Documents**

Appeals should be addressed to:

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

In the course of an Appeal process the main parties will be informed of procedural steps by the Planning Inspectorate.

To withdraw an appeal the appellant must notify the Planning Inspectorate in writing and copy the notification to the local authority.

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## **Description of Process.**

The process is operated at the location indicated by green shading on the site plan shown in Schedule 1 to this Permit. The site layout is as indicated by the plan in Schedule 2.

Coating materials are delivered in sealed containers. Wet coating materials are stored in sealed containers in the Paint Store and powder coatings are stored in sealed bags or containers.

### ***Coating of Metal***

The spray application of solvent based coatings utilising HVLP (high volume low pressure), where the atomisation pressure is less than 69kPa (10psi) spray guns and Graco airless spray guns for the coating of steel castings and other metal structures. Depending on the size, form and requirements of the product, spraying takes place in one of 2 spray bays or in the paint shop. All emissions from the spray activities are fugitive to the factory space and then to atmosphere.

Products requiring metal coatings are prepared in a metal spray blast room, which is served by an extraction system which exhausts externally (indicated as S1 on the layout in Schedule 2 of this Permit).

### ***Shotblasting of Metal***

The shotblasting of steel castings and other metal structures in shot blast enclosures. Two of these (Blast room / Automatic) are served by Enviroclean recovery extraction units manufactured by Hodge Clemco Limited, extracted externally through bag filter units (labelled S2 and S3 on the plan in Schedule 2 of this Permit). Two other smaller units and are served by internally exhausting filtration units. The airflow through extractors S1, S2 and S3 are approximately 100 m<sup>3</sup>/min, 120 m<sup>3</sup>/min and 220 m<sup>3</sup>/min respectively. S1 and S2 are fitted with bag filters for particulate emissions abatement, and S3 has a cartridge filter set.

This Permit also applies to the receipt and storage of raw materials, and the handling, storage and transport on site of waste materials within the process boundary.

Pressure pots serving spray guns are filled manually with coating materials as required.

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## Section 1 – Upgrading

1.1 There are no upgrading Conditions in this Permit.

## Section 2 – Emission Limits and Controls.

- 2.1 All emissions to the external air, other than steam or condensed water vapour shall be free from droplets and free from persistent mist and persistent fume.
- 2.2 All emissions shall be free from offensive odour outside the process site boundary.
- 2.3 Where manufacturers' data is not available, the measurement of the volatile organic compound content of coatings shall be undertaken in accordance with Appendix 4 of Process Guidance Note PG 6/23 (04).
- 2.4 The use of coatings or preparations containing isocyanate is prohibited.
- 2.5 The use of odour masking agents is not permitted. Where offensive odour is detected at the process boundary, counteractants may be used only by agreement in writing of the Sheffield City Council Environmental Protection Service.
- 2.6 An emission limit of 5 mg/m<sup>3</sup> (taken as a 30 minute mean concentration) shall apply to emissions to atmosphere from the extractors indicated as S1, S2 and S3 on the plan is Schedule 2 of this Permit.
- 2.7 The introduction of dilution air to achieve emission limits is not permitted.
- 2.8 Final exit velocities at S1, S2 and S3 shall be at least 15 metres per second.
- 2.9 A Target Emission shall apply to releases of solvent vapour from the installation. The target emission and associated calculations shall be calculated according to the method described in clauses 5.5 to 5.7 of PG 6/23 (04), which have been reproduced in Schedule 3 to this permit.
- 2.10 Chimneys and process vents shall not be fitted with any restriction at the final opening (e.g. plate, cap or cowl other than a low resistance cowl). A cone fitted to increase the efflux velocity is permitted provided that discharge is vertically upwards.
- 2.11 There shall be no burning of materials in the open air in connection with the process.
- 2.12 There shall be no persistent visible emission from the process.
- 2.13 Paint application shall only be carried on inside the building with the roller shutter doors closed.

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### Section 3 – Monitoring, Sampling and Measurement of Emissions.

- 3.1 The Permit holder shall ensure that a detailed inventory of all solvent usage shall be kept and forwarded to Sheffield City Council's Environmental Protection Service every twelve months and within four weeks of the end of the six month period to which the inventory relates. This inventory shall include cleaning solvent usage, diluent solvent usage and the solvent or organic compound of, and quantity of coating purchased. The inventory shall also include all solvents removed from the site as waste and any quantities recovered for re-use, the volatile organic compound content of and any non-compliant coatings used and the quantity of solvents used for cleaning or degreasing.
- 3.2 Emissions of particulate matter from the extraction systems indicated as S1, S2 and S3 on the plan in Schedule 2 of this Permit shall be continuously monitored. The monitors shall be fitted with audible and visual alarms nominally set at  $5 \text{ mg/m}^3$  as an instantaneous value. The monitors shall be calibrated and maintained in accordance with manufacturers' specifications.
- 3.3 Sheffield City Council's Environmental Protection Service shall be advised at least 7 days in advance of any periodic monitoring exercise, including manufacturer's calibration of continuous monitors. Results of these exercises shall be forwarded to Sheffield City Council's Environmental Protection Service within 8 weeks of the completion of the exercise.
- 3.4 In any case where the measured emissions exceed the limit specified in condition 2.6 of this Permit, Sheffield City Council's Environmental Protection Service shall be notified within one day of the event. Where the emissions exceed twice the limit, results shall be forwarded as soon as practicable and in no case later than 1 hour later.
- 3.5 Where the results of the non-continuous monitoring (including calibration exercises) demonstrate a breach of the emission concentration limit, the Permit holder shall investigate the cause of the breach and carry out the necessary works or repairs to ensure future compliance with the emission concentration limit. The equipment served by the extraction system which fails to meet the emission concentration limit shall cease to be operated until such time that the cause of the breach has been identified and rectified. A re-test of the emissions shall be undertaken to demonstrate that the corrective action taken has reduced the emissions to within the permissible limit laid down in condition 2.6. Results of the re-test shall be submitted to Sheffield City Council's Environmental Protection Service within 14 days of the monitoring being undertaken. Full details of the event, actions taken to minimise emissions, and actions taken to prevent a recurrence shall be recorded in compliance with Condition 3.8 of this Permit.
- 3.6 The process operator shall ensure that an olfactory assessment of emissions from the building housing the process is carried out at least once a day for a period of at least two minutes when spraying is being carried out. The assessment shall be made down wind of the roller shutter doors at a point on the process boundary. The results of these assessments shall be recorded in accordance with Condition 3.8 of this Permit.

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- 3.7 The Permit holder shall ensure that a visual inspection of the condition of the extraction units, bag filter units, associated housing and ductwork is carried out at least once a week. Any faults, accumulations, deposits, damaged or clogged filter bags or any other defect shall be rectified immediately. The result of these inspections and any remedial action taken shall be recorded in accordance with Condition 3.8 of this permit.
- 3.8 The process operator shall ensure that a records containing all results of inspections, tests and assessments made in accordance with Conditions 3.5, 3.6, 3.7, 3.9, 3.13, 5.9 and 5.12 of this Permit are kept. These records shall include the date and time of the inspection, the nature, colour, persistency and intensity of any emission and a name of the person carrying out the inspection. Adverse results shall be investigated immediately and in all cases shall be recorded. The records shall be kept on the premises available for inspection by authorised officers of Sheffield City Council's Environmental Protection Service. Such records shall be kept for a minimum of two years and shall be furnished in writing to Sheffield City Council on demand.
- 3.9 The Permit holder shall ensure that the PCME DA80 continuous indicative monitors and alarms systems monitoring the performance of the bag filters serving the shotblast rooms are checked at least once per month to ensure sound condition and operation. Any fault or damage shall be rectified without delay. The result of these checks and any remedial action taken shall be recorded in compliance with condition 3.8 of this authorisation.
- 3.10 The PCME DA80 continuous monitoring instrument shall be downloaded at least once a month and six monthly reports shall be submitted to Sheffield City Council's Environmental Protection Service. The reports shall show all alarm events and the steps taken to investigate the alarm events and any remedial action taken. The first report shall be submitted by 1<sup>st</sup> June 2006.
- 3.11 By 31<sup>st</sup> November 2007 the Permit holder shall submit a written procedure of the steps to be taken when the alarm serving the PCME DA80 continuous indicative monitor is activated, to Sheffield City Council's Environmental Protection Service for approval in writing.
- 3.12 Once the procedure for dealing with an alarm event has been approved in writing by Sheffield City Council's Environmental Protection Service, it shall be used in the event of alarm events. The Permit holder shall ensure that relevant staff are trained on the written approved procedure for dealing with an alarm event.
- 3.13 The PCME DA80 continuous monitoring instrument shall be annually calibrated against the isokinetic sampling results carried out in compliance with condition 1.6 and shall be operated and maintained in accordance with manufacturers recommendations. The maintenance and calibration shall be recorded in compliance with condition 3.8 of this Permit.

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## **Section 4 – Materials Handling.**

- 4.1 All spillages shall be cleared as soon as possible and in the case of fine materials this shall be achieved by the use of vacuum cleaning, wet methods, or other appropriate techniques. Dry sweeping or the use of compressed air to blow surfaces clean shall not be permitted. Dusty wastes shall be stored in closed containers and handled in a manner that prevents emissions.
- 4.2 All organic solvents shall be stored in sealed containers prior to use. Emissions from the emptying of storage and mixing vessels and the transfer of coating to the application area shall be contained by the use of covered or closed delivery systems.
- 4.3 Emissions from the emptying of mixing vessels and transfer of materials shall be adequately contained by the use of closed mobile containers, containers with close fitting lids or closed containers with pipeline delivery.
- 4.4 Waste contaminated with solvents such as personal protective equipment, wiping cloths or material used to clear spillages shall be stored in labelled, self-closing metal containers with linings prior to collection for off-site disposal.
- 4.5 All reasonable efforts shall be made to minimise the amount of residual organic solvent bearing material left in drums and other containers after use.
- 4.6 Spillages of materials containing solvents shall be cleared without delay.
- 4.7 Organic solvent containment and spillage equipment shall be available on site. Sealable containers shall be readily available to hold spilled solvent materials prior to disposal off-site.
- 4.8 Prior to disposal empty drums and containers contaminated with organic solvent shall be stored lidded. The drums or containers shall be labelled

## **Section 5 – General Operations**

- 5.1 Any malfunction or breakdown leading to abnormal emissions shall be dealt with promptly and process operations adjusted until normal operations can be restored. All such malfunctions shall be recorded in compliance with condition 3.8 of this permit. If there is likely to be an effect on the local community, Sheffield City Council's Environmental Protection Service shall be informed without delay and by no later than 10.00 am the following working day.
- 5.2 By 31 November 2007 the operator shall submit a maintenance programme in relation to pollution control equipment Sheffield City Council's Environmental Protection Service for written approval. The programme shall include but not be limited to:
  - Cleaning and preventive maintenance of:
    - Spraying equipment;
    - Monitoring equipment;

- Extraction equipment (fans, ductwork, valves etc.);
- Shot blast housing enclosures;
- Storage areas;
- Work areas;
- Breakdowns;
- Essential spares and consumables;
- Training and responsibilities of staff;
- Record keeping;

Once approved in writing, the maintenance programme shall be kept and amended as required (e.g. change of equipment, use of alternative materials or working methods etc.). The maintenance records shall be held on site and shall be made available for inspection by Sheffield City Council Environmental Protection Service upon request.

- 5.3 In the event of failure of any arrestment equipment the process shall be stopped immediately.
- 5.4 The operator shall review cleaning operations involving organic solvents at least every 2 years to identify opportunities for reducing VOC emissions. The conclusions of the review shall be forwarded to the Sheffield City Council's Environmental Protection Service. The first submission shall be made by 1 January 2007.
- 5.5 Organic solvents shall be used on wipes only when non-solvent based cleaning fluids are impracticable. Wipes that have been pre-impregnated with solvents shall be stored in an enclosed container prior to use.
- 5.6 Where manual cleaning using organic solvents is unavoidable:
1. Cleaning solvents shall be kept in enclosed containers while not in use;
  2. Wiping cloths or brushes shall be pre-impregnated using a dispenser or similar device;
  3. Used cloths or brushes shall be stored in sealed containers pending recovery or disposal.
- 5.7 Staff at all levels shall receive the necessary training in their duties relating to control of the process and emissions to air. The training shall include:-
1. Awareness of responsibilities under this Permit with particular emphasis on conditions likely to give rise to emissions (e.g. spillages, alarms, failure of abatement etc.);
  2. Minimising emissions at start-up and shut-down;
  3. Actions to minimise emissions during abnormal operating conditions.
- 5.8 The operator shall retain a statement of training requirements for each operational post. A training record shall be kept for each person whose actions may have an impact on the environment. These documents shall be made available to Sheffield City Council's Environmental Protection Service upon request.

- 5.9 Chimney flues and ductwork serving the bag filter unit shall be inspected at least once per month and cleaned as necessary in order to prevent accumulation of material both on the internal ducting and on external ledges. Details of the inspection and any cleaning necessary as a result of the inspection shall be recorded in accordance with Condition 3.8 of this Permit.

## **Section 6 – Substitution Plan**

- 6.1 The operator shall maintain a register of designated risk phrase materials<sup>1</sup> used in the process. The register shall be made available for inspection by Sheffield City Council's Environmental Protection Service upon request.
- 6.2 The operator shall submit a substitution plan to Sheffield City Council's Environmental Protection Service by 31<sup>st</sup> December 2007. The plan shall describe how the operator is replacing designated substances assigned with Risk Phrase R45, R46, R49, R60 or R61. If replacement of the Risk Phrase substance is not practical, the plan shall include details of the reasons for this, and details of how the operator is controlling and limiting the use of these substances. The plan shall be updated as necessary and updates shall be forwarded to Sheffield City Council Environmental Protection Service.
- 6.3 The substitution plan shall include details of how the use of R40 designated substances is being limited and controlled.
- 6.4 The operator shall inform Sheffield City Council's Environmental Protection Service in writing of any proposed changes to the Risk Phrase register at least 7 days prior to the changes taking place.

## **Section 7 – Solvent Management Plan**

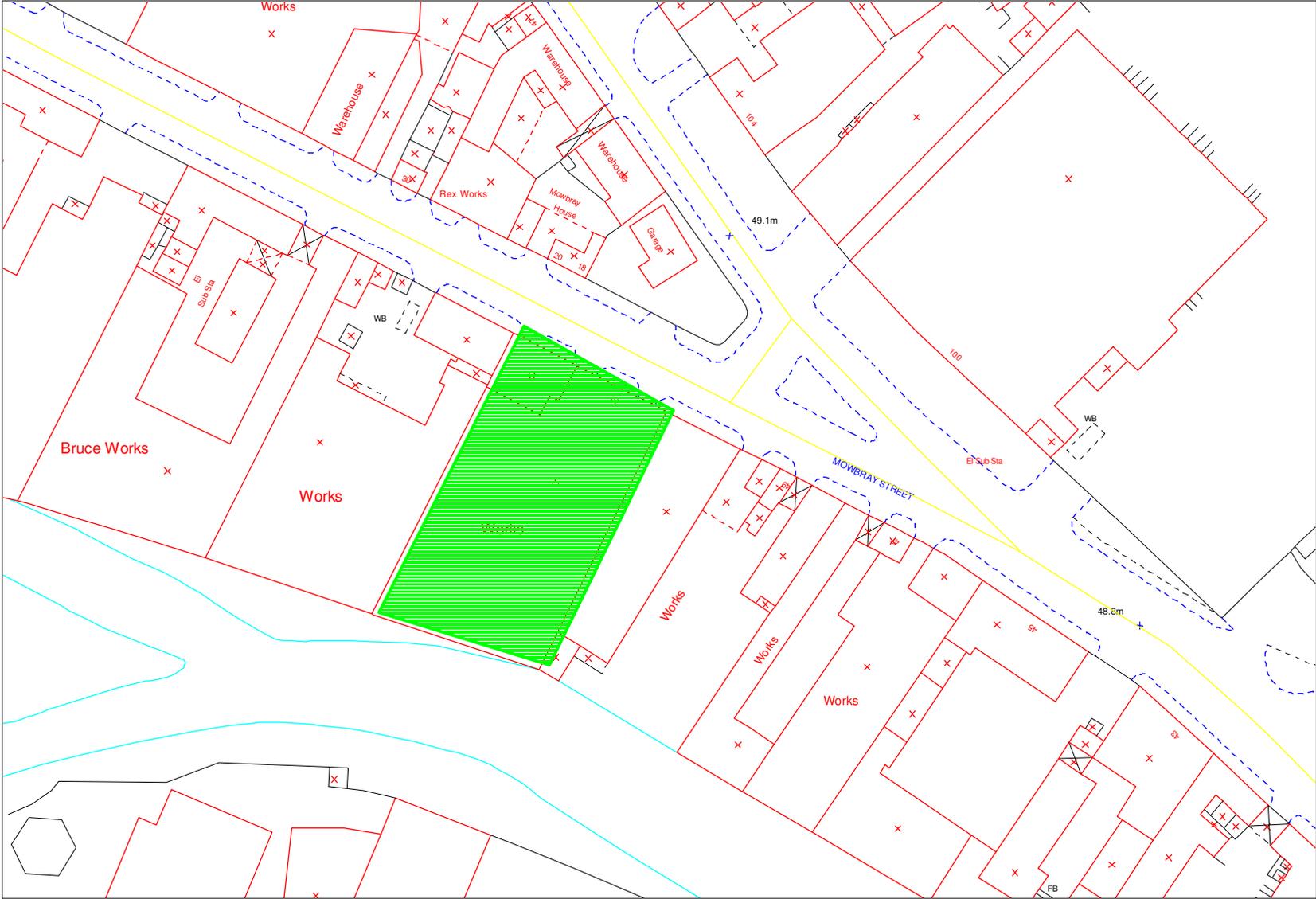
- 7.1 By 31<sup>st</sup> December 2007 the operator shall produce and submit a Solvent Management Plan to Sheffield City Council Environmental Protection Service. The Solvent Management Plan shall be produced in accordance with clauses 5.9 to 5.12 of PG 6/23 (04), which have been reproduced in Schedule 3 to this permit. It shall include (but not be limited to):
1. Decreases in the average solvent content of the total coating and cleaning materials inputs;
  2. Increased efficiency in the use of solids in coating materials; and
  3. Target Emissions Values calculations.
- 7.2 The Solvent Management Plan shall be reviewed at least annually. Review records and updates to Solvent Management Plans shall be forwarded to Sheffield City Council's Environmental Protection Service annually.

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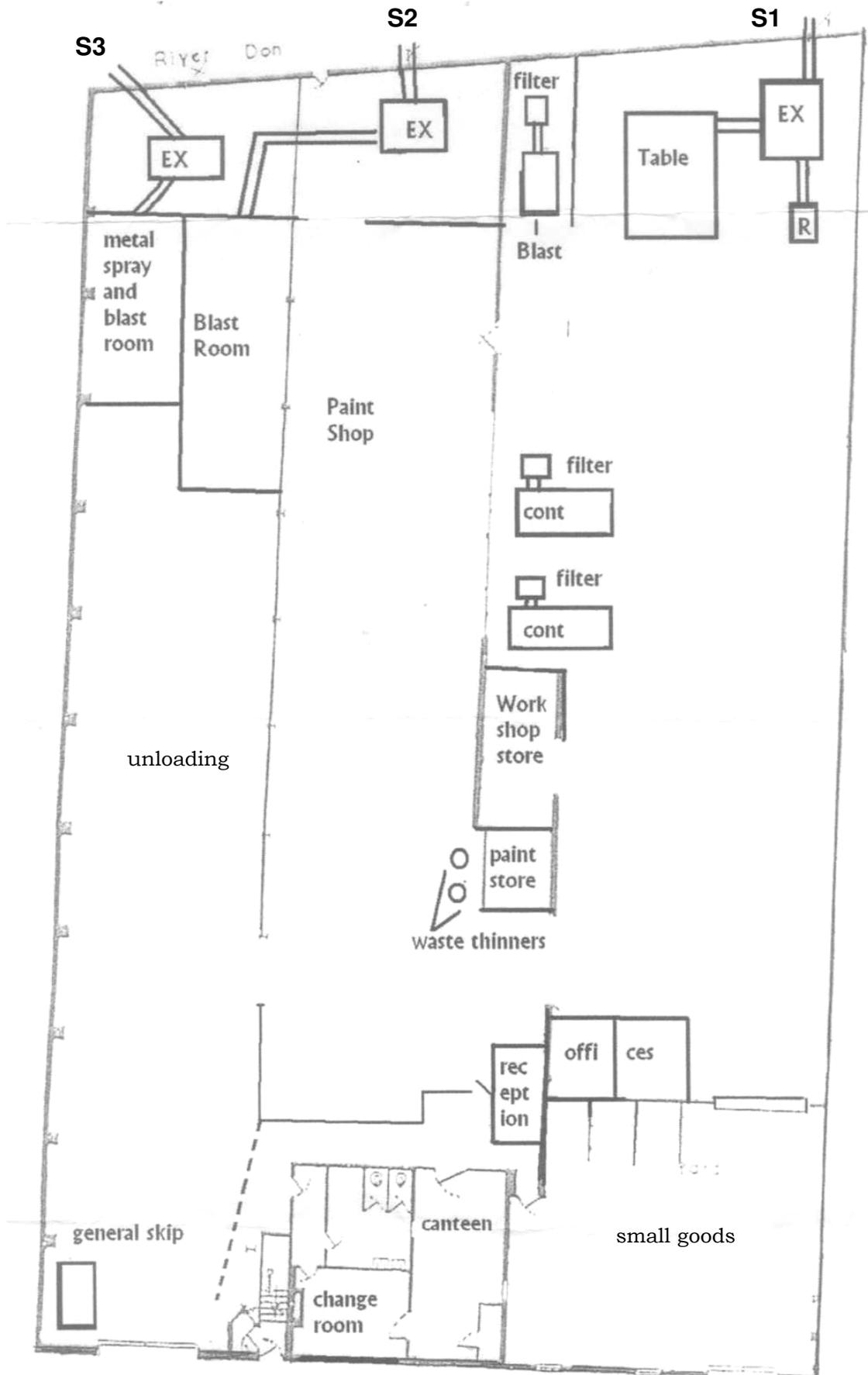
<sup>1</sup> Halogenated VOCs assigned or which need to carry the risk phrase R40 or substances or preparations which because of their content of VOC are assigned or need to carry the risk phrases R45, R46, R49, R60, R61.

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- 7.3 The Solvent Management Plan and reviews shall be implemented as approved or otherwise agreed in writing by Sheffield City Council's Environmental Protection Service.
- 7.4 The operator shall submit details to Sheffield City Council's Environmental Protection Service for written approval any proposal to carry out any of the following activities:
- Replacement of low or no VOC solvent coating systems with conventional high VOC content coating systems;
  - Introduction of conventional high VOC content coating systems into the process;
  - Introduction of conventional high VOC content coating systems onto products where it was not previously used;
  - Introduction of high solids formulations which have no beneficial effect on the product but increase the solids used, except where a reduction in the overall VOC emissions can be demonstrated.

Schedule 1 – Installation Location



Schedule 2 – Installation Layout



## Schedule 3 – Extracts from PG 6/23 (04)

### Reduction Scheme

#### Solvent Reduction Scheme

- 5.5 An operator may choose to use the Reduction Scheme for an installation to achieve emission reductions to a "Target Emission" equivalent to those, which would have been achieved if the concentration emission limits, had been applied.

The following scheme shall operate for installations for which a constant solid content of product can be assumed and used to define the reference point for emission reductions.

The operator shall forward an emission reduction plan, which includes in particular:

- decreases in the average solvent content of the total input; and/or
- increased efficiency in the use of solids

to achieve a reduction of the total emissions from the installation.

- 5.6 The Target Emission for an installation is calculated as follows;
- (a) The Total Mass of Solids in the quantity of coating consumed in a year is determined.
- solids are all materials in coatings that become solid as a result of curing, polymerisation, or the evaporation of the water or solvent
  - all ingredients other than water and organic solvents should be assumed to form part of the solid coating
- (b) **Table 6** Target Emission Values must then be used to determine the Target Emission.

The non-volatile content of the coating, as supplied, will usually be available from the supplier. This may be quoted in g/l or in % mass by weight. In cases of doubt, the reference standard for the determination of non-volatile % mass by weight is BS EN ISO 3251 (also numbered BS 3900: B18). The test conditions may need to be adjusted for the particular conditions of use or when assessing chemically or radiation cured coatings, where otherwise volatile components react to form part of the dry solid coating.

Table 6: Target Emission Values

Installation		Target Emission all Existing Installations at 1/12/98	Target Emission all Existing Installations by 31/10/2005 And Target Emission all New and Substantially changed Installations until 31/10/2004	Target Emission all existing Installations from 31/10/2007 And Target Emission all New and Substantially changed Installations from 31/10/2004
Coating Activity	5 -15 tonnes solvent consumption	Total Mass of Solids x 1	Total Mass of Solids x 0.9	Total Mass of Solids x 0.6
	15 tonnes or more solvent consumption	Total Mass of Solids x 1	Total Mass of Solids x 0.56	Total Mass of Solids x 0.37

#### Compliance with Reduction Scheme

- 5.7 Compliance with Reduction Scheme is achieved if the annual actual solvent emission determined from the Solvent Management Plan is less than or equal to the Target Emission.

- ▶ Where the annual actual solvent emission is:

annual actual solvent emission =  $I_1 - O_8 - O_7 - O_6$  ( $-O_5$  if abatement has been used)

## Determination of Solvent Consumption

- 5.9 Construction of inventories of materials consumed and disposed of may involve the identification of individual organic solvents, or solids. This may give rise to an issue of commercial confidentiality. Information supplied must be placed on the public register, unless exclusion has been granted on the grounds of commercial confidentiality or national security. (Further guidance can be found in chapter 8 of the General Guidance Manual on policy and procedures for A2 and B installations)
- 5.10 A determination of the organic solvent consumption, the total mass of organic solvent inputs minus any solvents sent for reuse/recovery off-site, should be made and submitted to the regulator annually, preferably to coincide with the operators stocktaking requirements, in the form of a mass balance in order to determine the annual actual consumption of organic solvent (C):

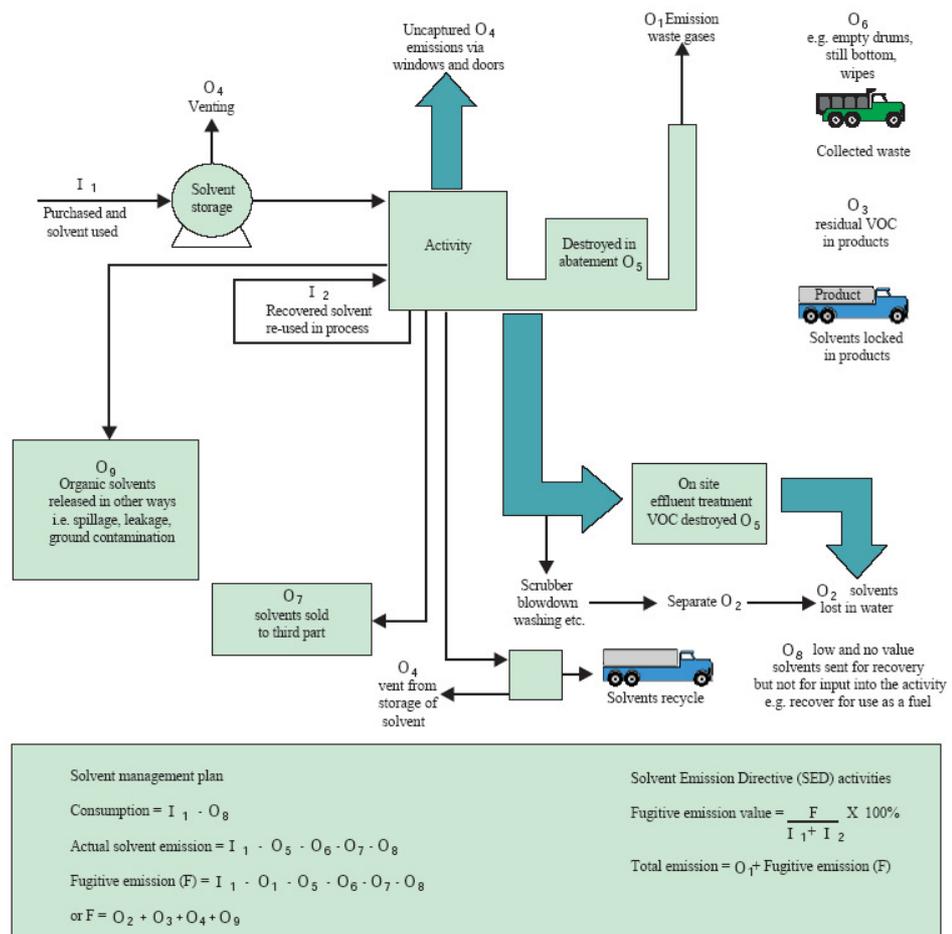
Where:  $C = I_1 - O_8$

$I_1$  Total quantity of organic solvents, or their quantity in preparations purchased which are used as input into the process/activity.

A calculation of the purchased organic solvent Input ( $I_1$ ) to the process/activity, is carried out by recording:

- The mass of organic solvent contained in coatings, diluents and cleaners in the initial stock (IS) at the start of the accounting period; plus
- The mass of organic solvent contained in coatings, diluents and cleaners in the purchased stock (PS) during the accounting period.
- Minus the mass of organic solvent contained in coatings, diluents and cleaners in the final stock (FS) at the end of the accounting period.

Total Organic Solvent Input ( $I_1$ ) = IS + PS – FS



## Solvent Management Plan

### Solvent Management Plan

- 5.11 The Solvent Management Plan provides definitions and calculations to demonstrate compliance with the VOC requirements of this note. The use of the standard definitions and calculations also ensures consistency of VOC compliance across installations with an industrial sector.
- 5.12 The definitions provided must be used in all calculations relating to the Solvent Management Plan (SMP) (Figure 5.1).
- for SED installations using the emission and fugitive limits, the SMP should be used for determining the fugitive emissions (SED Box 5). Once completed, it need not be done until the equipment is modified
  - for process/activities using the reduction scheme, the SMP should be used to determine the actual emissions annually (paragraph 5.7)

#### Definitions:

The following definitions provide a framework for the mass balance calculations used in determining compliance.

Inputs of Organic Solvent in the time frame over which the mass balance is being calculated (I)

$I_1$  The quantity of organic solvents, or their quantity in preparations purchased which are used as input into the process/activity (including organic solvents used in the cleaning of equipment, but not those used for the cleaning of the products).

$I_2$  The quantity of organic solvents or their quantity in preparations recovered and reused as solvent input into the process/activity. (The recycled solvent is counted every time it is used to carry out the activity.)

Outputs of Organic Solvents in the time frame over which the mass balance is being calculated (O)

$O_1$  Emissions in waste gases.

$O_2$  Organic solvents lost in water, if appropriate taking into account waste water treatment when calculating  $O_5$ .

$O_3$  The quantity of organic solvents which remains as contamination or residue in products output from the process/activity.

$O_4$  Uncaptured emissions of organic solvents to air. This includes the general ventilation of rooms, where air is released to the outside environment via windows, doors, vents and similar openings.

$O_5$  Organic solvents and/or organic compounds lost due to chemical or physical reactions. (including for example those which are destroyed, e.g. by thermal oxidation or other waste gas or waste water treatments, or captured, e.g. by adsorption, as long as they are not counted under  $O_6$ ,  $O_7$  or  $O_8$ ).

$O_6$  Organic solvents contained in collected waste.

$O_7$  Organic solvents, or organic solvents contained in preparations, which are sold or are intended to be sold as a commercially valuable product.

$O_8$  Organic solvents contained in preparations recovered for reuse but not as input into the process/activity, as long as not counted under  $O_7$ .

$O_9$  Organic solvents released in other ways.

## SED - ANNEX IIB

### REDUCTION SCHEME

#### 1. Principles

The purpose of the reduction scheme is to allow the operator the possibility to achieve by other means emission reductions, equivalent to those achieved if the emission limit values were to be applied. To that end the operator may use any reduction scheme, specially designed for his installation, provided that in the end an equivalent emission reduction is achieved. Member States shall report according to Article 11 of the Directive to the Commission about the progress in achieving the same emission reduction, including the experience from the application of the reduction scheme.

#### 2. Practice

in the case of applying coatings, varnishes, adhesives or inks, the following scheme can be used. Where the following method is inappropriate the competent authority may allow an operator to apply any alternative exemption scheme which it is satisfied fulfils the principles outlined here. The design of the scheme takes into account the following facts:

- (i) where substitutes containing little or no solvent are still under development, a time extension must be given to the operator to implement his emission reduction plans;
- (ii) the reference point for emission reductions should correspond as closely as possible to the emissions which would have resulted had no reduction action been taken.

The following scheme shall operate for installations for which a constant solid content of product can be assumed and used to define the reference point for emission reductions:

- (i) the operator shall forward an emission reduction plan which includes in particular decreases in the average solvent content of the total input and/or increased efficiency in the use of solids to achieve a reduction of the total emissions from the installation to a given percentage of the annual reference emissions, termed the target emission. This must be done on the following time frame:

Time Period		Maximum allowed total annual emissions
New installations	Existing installations	
By 31.10.2001 By 31.10.2004	By 31.10.2005 By 31.10.2007	Target emission x 1,5 Target emission

- (ii) The annual reference emission is calculated as follows:

- (a) The total mass of solids in the quantity of coating and/or ink, varnish or adhesive consumed in a year is determined. Solids are all materials in coatings, inks, varnishes and adhesives that become solid once the water or the VOCs are evaporated.
- (b) The annual reference emissions are calculated by multiplying the mass determined in (a) by the appropriate factor listed in the table below. Competent authorities may adjust these factors for individual installations to reflect documented increased efficiency in the use of solids.

Activity	Multiplication factor for use in item (ii)(b)
Rotogravure printing; flexography printing; laminating as part of a printing activity; varnishing as part of a printing activity; wood coating; coating of textiles, fabric film or paper; adhesive coating	4
Coil coating, vehicle refinishing	3
Food contact coating, aerospace coatings	2,33
Other coatings and rotary screen printing	1,5

- (c) The target emission is equal to the annual reference emission multiplied by a percentage equal to:
  - (the fugitive emission value + 15), for installations falling within item 6 and the lower threshold band of items 8 and 10 of Annex IIA,
  - (the fugitive emission value + 5) for all other installations.
- (d) Compliance is achieved if the actual solvent emission determined from the solvent management plan is less than or equal to the target emission.