

Process Guidance Note 6/34 (10)

Secretary of State's Guidance for the Re-spraying of Road Vehicles

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1. Introduction

Legal basis

- 1.1 This note applies to the whole of the UK. It is issued by the Secretary of State, the Welsh Assembly Government, the Scottish Government and the Department of the Environment in Northern Ireland to give guidance on the conditions appropriate for the control of emissions into the air from the Re-spraying of Road Vehicles. It is published only in electronic form and can be found on the [Defra website](#). It supersedes PG6/34b(06).
- 1.2 This guidance document is compliant with the [Code of Practice on Guidance on Regulation](#) page 6 of which contains the "golden rules of good guidance". If you feel this guidance breaches the code or you notice any inaccuracies within the guidance, please [contact us](#).
- 1.3 This is one of a series of statutory notes ¹ giving guidance on the Best Available Techniques (BAT) ². The notes are all aimed at providing a strong framework for consistent and transparent regulation of installations regulated under the statutory Local Air Pollution Prevention and Control (LAPPC) regime in [England and Wales](#), [Scotland](#) and [Northern Ireland](#). The note will be treated as one of the material considerations when determining any appeals against a decision made under this legislation.
- 1.4 In general terms, what is BAT for one installation in a sector is likely to be BAT for a comparable installation. Consistency is important where circumstances are the same. However, in each case it is, in practice, for regulators (subject to appeal) to decide what is BAT for each individual installation, taking into account variable factors such as the configuration, size and other individual characteristics of the installation, as well as the locality (e.g. proximity to particularly sensitive receptors).
- 1.5 The note also, where appropriate, gives details of any mandatory requirements affecting air emissions which are in force at the time of publication, such as those contained in Regulations or in Directions from the Government. In the case of this note, at the time of publication the mandatory requirements are those contained in the EU Paints Directive. The Regulations referenced in paragraph 1.3 put the Directive requirements into UK law.

¹ this and other notes in the series are issued as statutory guidance in England and Wales under regulation 64(2) of the Environmental Permitting Regulations. The notes are also issued as statutory guidance in Scotland and Northern Ireland

² further guidance on the meaning of BAT can be found for [England and Wales](#) (in chapter 12), [Scotland](#), and [Northern Ireland](#), (in Chapter 9).

Who is the guidance for?

1.6 This guidance is for:

- **Regulators**

- local authorities in England and Wales, who must have regard to the guidance when determining applications for permits and reviewing extant permits
- the Scottish Environment Protection Agency, (SEPA), in Scotland, and local authorities or the Northern Ireland Environment Agency, (NIEA), in Northern Ireland.

- **Operators**, who are best advised also to have regard to it when making applications and in the subsequent operation of their installation

- **Members of the public**, who may be interested to know what the Government considers, in accordance with the legislation, amounts to appropriate conditions for controlling air emissions for the generality of installations in this particular industry sector.

Updating the guidance

1.7 The guidance is based on the state of knowledge and understanding, at the time of writing, of what constitutes BAT for this sector. The note may be amended from time to time to keep up with developments in BAT, including improvements in techniques, changes to the economic parameters, and new understanding of environmental impacts and risks. The updated version will replace the previous version on the Defra website and will include an index to the amendments.

1.8 Reasonable steps will be taken to keep the guidance up-to-date to ensure that those who need to know about changes to the guidance are informed of any published revisions. However, because there can be rapid changes to matters referred to in the guidance – for example to legislation – it should not be assumed that the most recent version of this Note reflects the very latest legal requirements; these requirements apply.

Consultation

1.9 This note has been produced in consultation with relevant trade bodies, representatives of regulators including members of the Industrial Pollution Liaison Committee, and other potentially-interested organisations.

Policy and procedures

1.10 General guidance explaining LAPPC and setting out the policy and procedures is contained in separate documents for [England and Wales](#), [Scotland](#) and [Northern Ireland](#).

EU Paints Directive (PD).

- 1.11 Most of the activities covered by this note come under [the PD](#). To be a PD activity, it must:
- a) be a vehicle respraying activity listed in Section 7 of Part 2 to Schedule 1 of the EP Regulations
AND
 - b) consume more than 1.0 tonnes of solvent a year for activities in England, Wales & Northern Ireland or consume more than 2.0 tonnes of solvent for activities in Scotland.

Vehicle respraying

- 1.12 Most vehicle respraying plant will have essentially the same characteristics and is expected that the outline application form and permit in Appendices 1 and 2 will normally be used in order to simplify for businesses the process of applying for a permit and to simplify for regulators the process of issuing a permit.

2 Timetable for compliance and reviews

Existing processes or activities

- 2.1 This Note contains all the provisions from previous editions which have not been amended or removed. For installations in operation at the date this Note is published, the regulator should have already issued or varied the permit having regard to the previous editions. If they have not done so, this should now be done.
- 2.2 The new provisions of this note and the dates by which compliance with these provisions is expected are listed in the table below, together with the paragraph number where the provision is to be found. Permits should be varied as necessary, having regard to the changes and the timetable.

Table 2: Compliance timetable

Guidance	Relevant Paragraph/Row in this Note	Compliance Date

- 2.3 Replacement plant should normally be designed to meet the appropriate standards specified for new installations or activities.
- 2.4 Where provisions in the preceding guidance note have been deleted or relaxed, permits should be varied as necessary as soon as reasonably practicable. Section 6 provides a summary of all changes.
- 2.5 For new activities, the permit should have regard to the full standards of this guidance from the first day of operation.
- 2.6 For substantially changed activities, the permit should normally have regard to the full standards of this guidance with respect to the parts of the process that have been substantially changed and any part of the process affected by the change, from the first day of operation

Permit Reviews

- 2.7 Under LAPPC the legislation requires permits to be reviewed periodically but does not specify a frequency. It is considered for this sector that a frequency of once every eight years ought normally to be sufficient for the purposes

of appropriate Regulations³. Further guidance on permit reviews is contained in the appropriate Guidance Manual for England and Wales, Scotland and Northern Ireland. Regulators should use any opportunities to determine the variations to permits necessitated by paragraph 2.2 above in conjunction with these reviews.

- 2.8 Conditions should also be reviewed where complaint is attributable to the operation of the process and is, in the opinion of the regulator, justified.

³ For details see [England and Wales, GGM](#) chapter 26, [Scotland, Practical guide](#) section 10, Northern Ireland [Part B Guidance](#) page 9, [Northern Ireland Part C Guidance](#) chapter 17.

3 Activity description

Regulations

- 3.1 This Note applies to LAPPC installations for the Re-spraying of Road Vehicles The activities are listed for regulation as follows.

Table 3: Regulations listing activities

	Solvent Consumption of activity	England and Wales	Scotland	Northern Ireland
		EPR Schedule 1 reference	PPC Schedule 1 reference	PPC Schedule 1 reference
Part B	More than 1te per year	Section 6.4 Part B	n/a	n/a
Part B	More than 2te per year	n/a	Section 6.4, Part B	
Part C	More than 1te per year	n/a	n/a	Section 6.4 Part C

- 3.2 This note refers to the refinishing of road vehicles and associated degreasing activities performing:

The coating of road vehicles as defined in Directive 70/156/EEC, or part of them, carried out as part of vehicle repair, conservation or decoration outside of manufacturing installations,

In the rest of this section only “process” should be understood to describe the various stages involved in the coating and refinishing operations. It does not necessarily have the same meaning as elsewhere in this note.

- 3.3 In the context of this note, “process” or “activity” comprises the whole process from receipt of raw materials via production of intermediates to dispatch of finished products, including the treating, handling and storage of all materials and wastes relating to the process.
- 3.4 Most, but not all, vehicle refinishing is uniform as there is little variation in the objects coated, coating products and application methods used. The following paragraphs describe the majority of processes.

Application Methods

- 3.5 Most coatings are applied in vehicle spray booths with hand-held spray. Spraying in the open workshop should not occur. A small amount of coating or remover is applied by brush, roller or with a knife. The different techniques

available are listed below. There is some further description of the spraying techniques in Definitions.

- Compliant compressed-air spraying
- High-volume low-pressure (HVLP) spraying
- Airless spraying
- Air-assisted airless spraying
- Spray processes with electrostatic assistance
- Brush/roller application
- Knifing

Surface cleaning and preparation

- 3.6 Substrates must be cleaned before painting. This is generally done manually, using brushes and cloths, with organic solvents or with aqueous cleaners. Use of hand pump spray equipment reduces the amount of cleaning liquid required. Abrasive blasting as well as phosphate spraying can be used to improve paint adhesion and to assist underbody protection.
- 3.7 Any surface unevenness is remedied before painting. Major depressions up to 1 cm are filled with a stopper. Minor depressions are smoothed with fine stopper or alternatively with a spray stopper. The stopper is ground to the desired profile after curing.
- 3.8 Sanding/grinding can be wet or dry. Larger areas are sanded mechanically, whilst smaller areas and edges are sanded by hand. Dry sanders are equipped with a suction device to remove the sanding dust from the workspace.
- 3.9 For subsequent tasks, the stopper surfaces are carefully cleaned. If necessary, silicone removers are employed, as silicone residues can disrupt subsequent paint layers.
- 3.10 Use of paint strippers based on methylene chloride is now much restricted, as damaged panels are more usually replaced, rather than being beaten out, stripped, and repainted. The repair of vintage cars is one area of continued use. Very good ventilation is required to maintain workplace exposure below the OEL, and waste must be segregated to avoid the risk of contaminating drains with residues of methylene chloride.

Priming

- 3.11 After the pre-treatment and preparation of the substrate, a corrosion protection primer or primer surfacer is usually applied to the areas where the bare metal has been exposed by the sanding of the old paintwork. Primer is also

applied to metal substrates, uncoated new parts and to plastic components, to improve adhesion.

- 3.12 On bare non-ferrous metal, e.g. zinc-coated steel and aluminium, etch primers with a high organic solvent content are usually needed.

Filler application

- 3.13 A coat of surfacer is then sprayed onto the sanded fine stopper and primer. The dried coat of surfacer is flatted, and provides a smooth substrate onto which the topcoat adheres well, giving the paint finish good visual properties. An alternative process is wet-on-wet application in which the topcoat is applied straight onto the surfacer immediately after flash-off without intermediate sanding.

Topcoat application

- 3.14 Finally, the topcoat is applied – in one, two or three coats according to the paint system.
- 3.15 Single coat topcoats provide both colour and gloss. For multi-coat systems, paints of different types are employed for the different coats. In two coat topcoats, basecoats impart colour or colour effects (e.g. in metallic and pearl effect paints). Such effects are not available from single coat topcoats. In three coat topcoats, an additional sealer is employed to prevent the surfacer grinning through a rather translucent basecoat film. Clearcoats are applied over the basecoats, and are designed to control the gloss and flow properties of the overall paintwork. Clearcoat can sometimes be applied over single coat topcoats, particularly to blend in a small repair area.

In addition to their optical properties, topcoats also have to provide:

- In-use properties, such as weather-resistance, resistance to fuels, deicing salt and bird droppings, and resistance to stone-chipping and scratching, and
 - Application properties to permit easy matching with the colour shades and effects of the original paintwork, and fast drying and low drying temperatures.
- 3.16 The application of primers, fillers and topcoat is accompanied by the process of seam sealing, stone-chip protection, cavity sealing and undersealing. The coatings used during these other process steps are often applied with specially adapted equipment.

Seam sealing

- 3.17 Weld seams and joints between parts have to be sealed during production and in some cases during refinishing to prevent water penetrating by capillary action, thus giving rise to corrosion. The seam sealant is applied to the primer and is then overpainted. The viscous seam sealant material is brushed on or sprayed on with air-atomising pressure pot guns or compressed-air operated extruder guns with extensions.

Stone-chip protection

- 3.18 Elastic stone-chip protection is applied to the primer, e.g. sprayed on in the door sill area, and subsequently painted with topcoat. It forms an elastic intermediate film designed largely to prevent damage to the primer and hence corrosion. It is applied to the lower sides of cars with a pressure pot or a “schutz gun”.

Cavity Sealing

- 3.19 The aim of cavity sealing is to apply a continuous corrosion-protective film in the cavities of bodies and vehicles in order to prevent corrosion from within. During the spray jet process with preservation wax (containing organic solvent or in the form of a dispersion), the sealant is applied in the cavities by means of probes with a variety of spray nozzles, using manual spray guns.

Underseal

- 3.20 The highly viscous elastic underseal is sprayed only onto the primer, a previously applied seam sealant or onto stone-chip protection on the underbody. It acts as a buffer film to protect the underbody from damage from salt, stone-chipping and the like.

Bonding

- 3.21 Adhesives are being increasingly used for attaching add-on parts.

Equipment Cleaning

- 3.22 The tools used in the application of coatings, such as spray guns, mixing vessels, measuring beakers etc, have to be cleaned after use. The cleaning agents vary according to the type of paint employed. Products containing organic solvents, for instance, are cleaned with organic solvents, water-borne materials are cleaned with water or water-alcohol mixtures, and cavity waxes with special spirits. In order to maintain cleaning performance and permit separate

disposal, these various cleaning agents must not be mixed. Separate cleaning systems are usually employed for the various coating materials (organic solvent and water-borne).

3.23 Spray guns are cleaned in fully enclosed automatic, or semi-automatic, or semi-enclosed manual gun cleaners, with enough extraction to meet health and safety requirements and minimise fugitive emissions whilst not increasing emissions to the environment.

3.24 In fully enclosed automatic gun cleaners, the gun is placed in the cleaner, then organic solvent is pumped from a storage container through the gun. A manual 'clean rinse' is often provided with this system.

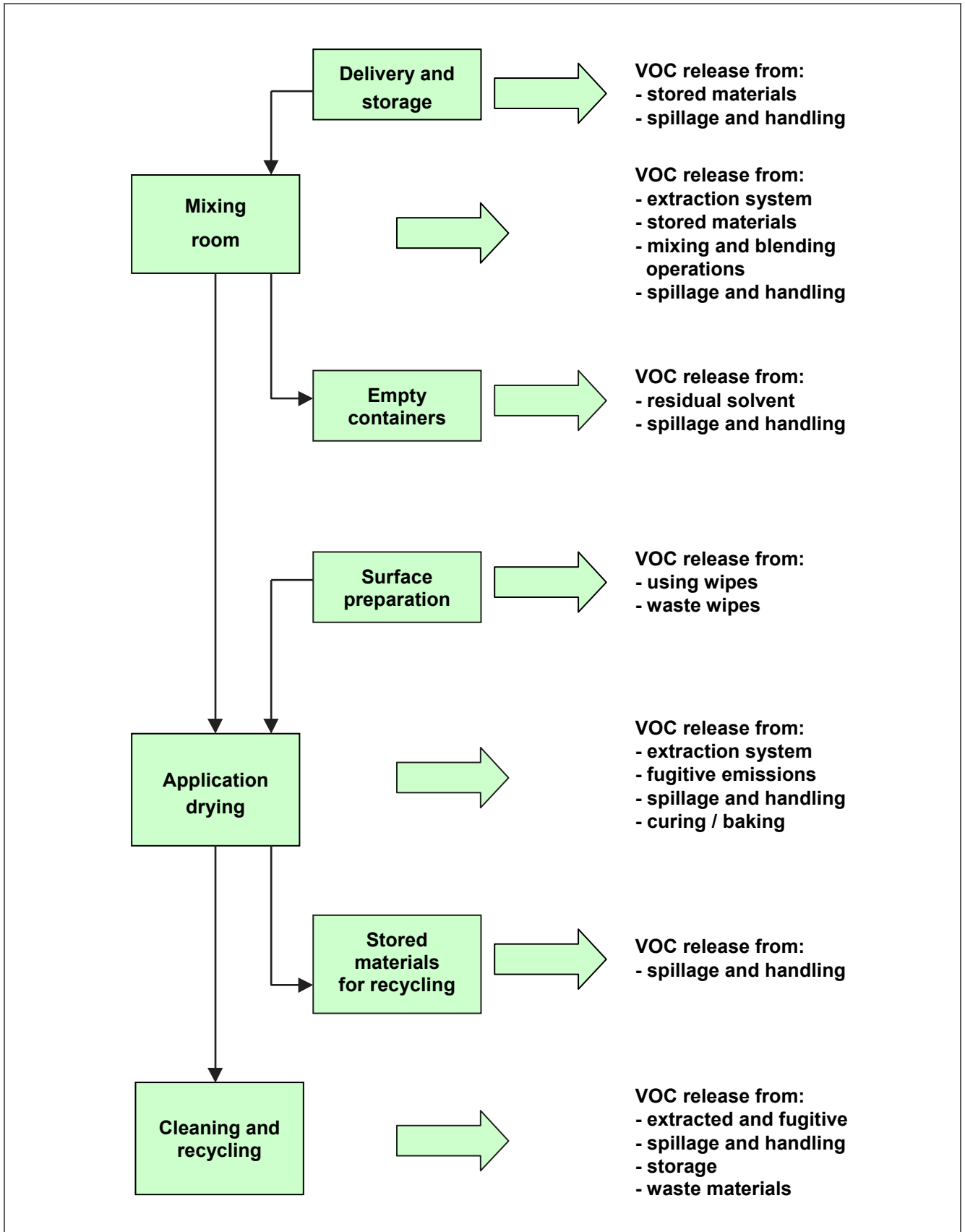
In the case of semi-enclosed manual cleaners, the gun is cleaned by hand with the organic solvent being pumped from a storage container in order to enable both the inside and outside of the gun to be cleaned. A manual clean rinse is also provided.

In both cases the used organic solvent returns to the organic solvent storage container used for the initial wash.

3.25 To keep spray booths clean, operators

- repaint them; or
- line the walls with films or strippable coatings, which are disposed of after use
- cover lights with clear plastic film, or a paint-on, a peelable clear coating

Figure 3.1: Potential VOC Releases from a Typical Vehicle Coating Operation



4 Emission limits, monitoring and other Provisions

- 4.1 Emissions of the substances listed in the Tables below should be controlled.
- 4.2 Guidance on techniques to achieve compliance with BAT limit values and provisions is in Section 5. Monitoring of emissions should be carried out according to the method specified in this section or by an equivalent method agreed by the regulator. Where reference is made to a British, European, or International standard (BS, CEN or ISO) in this Section, the standards referred to are correct at the date of publication. (Users of this Note should bear in mind that the standards are periodically amended, updated or replaced). The latest information regarding the monitoring standards applicable can be found at the [Source Testing Association](#) website. Further information on monitoring can be found in Environment Agency publications [M1 and M2](#)
- 4.3 All activities should comply with the emission limits and provisions with regard to non-VOC releases in [Table 4](#).

Table 4: Emission limits, monitoring and other provisions for non-VOC releases)

All Activities					
Row	Substance	Source	Emission limit/provisions	Type of monitoring	Monitoring frequency
1	Particulate matter	From spray booths	10mg/Nm ³	By guarantee supplied or Manual extractive testing see paragraphs 4.10.	Annual
		Abrasive blasting equipment and other sources (except spray booths)	100mg/Nm ³ for contained sources		
		All processes / activities	50 mg/Nm ³ as 15 minute mean for contained sources		
2	Sulphur dioxide	All processes / activities	1% wt/wt sulphur in fuel	Certification by supplier.	At delivery
		All processes / activities using gas oil as defined in the Sulphur Content of Certain Liquid Fuels Directive (1999/32/EC)	0.1% wt/wt sulphur in fuel		

VOC Compliant Coatings

- 4.4 Compliant coatings as identified in the PD are defined in Table 5 below. Compliance is achieved if the coating applied contains equal or less than the VOC detailed in Table 5.

Table 5 Compliant Coatings.

All Processes/activities			
Row	Volatile Organic Compounds	Recording	
1	Compliant Coatings Compliant coatings should be used. The maximum content of organic solvents (in grammes per litre) which may be present in the coating as applied should not exceed the amounts specified below. All values are maxima, not averages, and guidance on the functions of the materials listed is given in Section 8 Definitions.	Solvent management plan A record should be kept of all paint, hardener, organic solvent and substrate and equipment cleaning materials used. The record should state the total organic solvent usage	
	Product		g/l
	Gunwash		850
	Precleaner		200
	Wash primer		780
	Precoat		540
	Primer surfacer		540
	Non-sand surfacer		540
	Primers for wet-on-wet topcoat application		540
	Topcoats:		
	1-coat conventional		420
	2-coat base and clear		420
	3-coat topcoat systems		420
	Special finishes		840

Monitoring, investigating and reporting

- 4.5 The operator should monitor emissions, make tests and inspections of the activity. The need for and scope of testing, (including the frequency and time of sampling), will depend on local circumstances.
- 4.6 The operator should keep records of inspections, tests and monitoring, including all non-continuous monitoring, inspections and visual assessments. The records should be:
- kept on site
 - kept by the operator for at least two years; and
 - made available for the regulator to examine

If any records are kept off-site they should be made available for inspection within one working week of any request by the regulator.

Information required by the regulator

- 4.7 The regulator needs to be informed of monitoring to be carried out and the results; the results should include process conditions at the time of monitoring.
- The operator should notify the regulator at least 7 days before any periodic monitoring exercise to determine compliance with emission limit values. The operator should state the provisional time and date of monitoring, pollutants to be tested and the methods to be used.
 - The results of non-continuous emission testing should be forwarded to the regulator within 8 weeks of the completion of the sampling.
 - Adverse results from **any** monitoring activity (both continuous and non-continuous) should be investigated by the operator as soon as the monitoring data has been obtained. The operator should:
 - identify the cause and take corrective action
 - clearly record as much detail as possible regarding the cause and extent of the problem, and the remedial action taken.
 - re-test to demonstrate compliance as soon as possible; and inform the regulator of the steps taken and the re-test results.

Visible Emissions

- 4.8 The aim should be to prevent any visible airborne emission from any part of the process. This aim includes all sites regardless of location. Monitoring to identify the origin of a visible emission should be undertaken using BS 1747 Part 1, though more complex monitoring techniques might be required if this standard does not produce adequate results. Where combustion units are in use for dryers then the combustion process should be controlled and equipment maintained as appropriate.

Abnormal Events

- 4.9 The operator should respond to problems which may have an adverse effect on emissions to air.
- In the case of abnormal emissions, malfunction or breakdown leading to abnormal emissions the operator should:
 - investigate and undertake remedial action **immediately**
 - adjust the process or activity to minimise those emissions; and

- promptly record the events and actions taken
- The regulator should be informed without delay, whether or not there is related monitoring showing an adverse result:
 - if there is an emission that is likely to have an effect on the local community; or
 - in the event of the failure of key arrestment plant.
- The operator should provide a list of key arrestment plant and should have a written procedure for dealing with its failure, in order to minimise any adverse effects.

Calibration and compliance monitoring.

- 4.10 Due to the short periods when spraying typically occurs, real time methods for measuring particulates during spraying may need to be derived from reference methods such as BS-EN 13284. Such methods should be averaged over the period that spraying occurs.
- 4.11 Exhaust flow rates should be consistent with efficient capture of emissions, good operating practice and meeting the requirements of the legislation relating to the workplace environment.
- The introduction of dilution air to achieve emission concentration limits should not be permitted.

Sampling provisions

- 4.12 Whether sampling on a continuous or non-continuous basis care is needed in the design and location of sampling systems in order to obtain representative samples for all release points.
- Sampling points on new plant should be designed to comply with the British or equivalent standards, (see paragraph 4.2).
 - The operator should ensure that relevant stacks or ducts are fitted with facilities for sampling which allow compliance with the sampling standards.
 - Where monitoring is not in accordance with the main procedural requirements of the relevant standard, deviations should be reported as well as an estimation of the likely error.

5 Control techniques

Summary of Best Available Techniques

- 5.1 The following table provides a summary of BAT that can be used to control the process in order to meet the emission limits and provisions in [Section 4](#). Provided that it is demonstrated to the satisfaction of the regulator that an equivalent level of control will be achieved, then other techniques may be used.

Table 6: Summary of Control Techniques

Release source	Substance	Control techniques
Storage and handling of organic solvents and materials containing organic solvents	VOC	Use of enclosed mixing and storage vessels
		Siting of storage tanks, Back venting deliveries if needed
		Use of cleaning solutions which are compliant with Table 5
Coating operations	VOC, Isocyanate, Particulate matter	Spray booth enclosure, capture and disposal
Flue Gas	Sulphur oxides	Limit sulphur in fuel
	Carbon monoxide	Good combustion
Preparation and use of isocyanate coatings	Isocyanate	As for VOC

Non VOC Releases Control Techniques

Particulate matter

- 5.2 Emissions of particulate matter should be abated if necessary to meet the emission limit.

Sulphur dioxide

- 5.3 In combustion processes the most significant release of sulphur dioxide occurs as a result of the sulphur content of the fuel burnt and should be addressed by using low sulphur fuel as specified in Table 4.

VOC Control Techniques

VOC and odour control storage

- 5.4 Odour may arise from the receipt, handling and storage of organic solvents and organic solvent containing liquids. Careful siting of storage and mixing tanks, particularly in relation to new and

replacement tanks, and controlled handling of odorous liquids may help prevent offensive emissions off-site. In addition:

- All potentially odorous waste materials should be stored in suitable closed containers or bulk storage vessels, where appropriate vented to suitable abatement plant.

VOC control handling

5.5 The receipt, handling, use and storage of organic solvents and organic solvent containing liquids will give rise to fugitive releases of VOC.

- Coatings containing VOC should be stored in closed storage containers.

Spray Booths

5.6 All paint spraying operations should be carried out in a totally enclosed booth under negative pressure so as to prevent fugitive emissions of odour and particulate matter.

5.7 Spraybooths should be designed to meet the emission limit for particulate matter in Table 4. Regulators should be provided with a guarantee from the spraybooth constructor that a newly-installed booth will meet this emission concentration limit, and the guarantee should be supported by emission test data for the spraybooth type that the guarantee relates to. Where an existing spraybooth is upgraded to achieve the above emission concentration limit in respect of particulate matter, a guarantee should be obtained either from the spraybooth constructor, or the company which carries out the upgrading, that the upgraded booth will meet the emission concentration limit. The guarantee should be supported by emission test data for the spraybooth type, fitted with the filtration system, to which the guarantee relates.

5.8 Where no such guarantee is obtainable, either for a new booth or for an existing booth which has been upgraded, or where the operator feels that upgrading of his existing booth is unnecessary, emission testing from that specific booth should be required, to demonstrate compliance with the emission concentration limit for particulate matter. Additionally, where there are problems of particulate matter an emission monitoring exercise should be required, even if a manufacturers' guarantee is available for the booth.

VOC control cleaning

- 5.9 Cleaning operations will give rise to fugitive releases of VOC
- Cleaning operations involving organic solvents should be periodically reviewed, normally at least once every two years, to identify opportunities for reducing VOC emissions (e.g. cleaning steps that can be eliminated or alternative cleaning methods). The regulator should be provided with a report on the conclusions of the review.
 - Spraygun testing and sprayout following cleaning should be done into the equipment cleaning machine with the extraction running, or into a separate chamber which is provided with extraction. A receptacle should be provided to collect the organic solvent which is put through the spraygun. When not in use, the receptacle should be kept lidded to prevent evaporation and fugitive emission of organic solvent vapour
 - Dispensing of cleaning solvents when used on wipes: should be dispensed by piston type dispenser or similar contained device,.
 - Pre-impregnated wipes should be held within an enclosed container prior to use

VOC control operational

- 5.10 Organic solvent losses can be identified and minimised by operational controls and good operational practice.
- Spray coatings should be applied to passenger cars by using one of the following methods:
 - high volume low pressure (HVLP) (maximum atomisation pressure 67.5kPa) spraying equipment;
 - air assisted airless spraying equipment;
 - electrostatic spraying equipment; or
 - alternatively, a system capable of achieving a transfer efficiency of at least 65%.
 - (For information BS EN 13966 – 1 2003 is a European standard for the determination of the transfer efficiency of liquid coating materials Part 1 concerns flat panels and should be sufficient for evaluating transfer efficiency for this clause).
 - coatings should be applied to commercial vehicles by using one of the techniques above or by using airless spraying equipment.

VOC control waste

- 5.11 Waste contaminated with VOC may give rise to both odorous and fugitive emissions.
- Drums: All drums should be kept tight shut, or, any funnel in the opening should be covered.
 - Tins: Empty tins should be kept closed or dried (dried preferably in a spray booth bake cycle).
 - Organic solvent contaminated wipes and other wastes should be dried or stored in bins.

Note: from a health and safety point of view it is advised that bins should be emptied at least daily, as they not only present a fire hazard, they may also undergo spontaneous combustion.

- for materials that may undergo spontaneous combustion special bins that allow air to circulate beneath and around them to aid cooling are advised or other bins specifically designed for this purpose.
- Dirty solvent and waste paint should be recycled on or off-site; and copies of any receipts should be kept for three years.

General Control Techniques

Dust and spillage control

- 5.12 Adequate provision to contain liquid and solid spillage is needed. Closed containers can prevent wind whipping of dusty, dry waste materials such as materials collected during combustion chamber cleaning or arising from particulate abatement plant:
- dusty wastes should be stored in closed containers and handled in a manner that avoids emissions
 - dry sweeping of dusty materials should not normally be permitted unless there are environmental or health and safety risks in using alternative techniques
 - suitable organic solvent containment and spillage equipment should be readily available in all organic solvent handling areas
 - a high standard of housekeeping should be maintained

Air Quality

Dispersion & Dilution

- 5.13 Pollutants that are emitted via a stack require sufficient dispersion and dilution in the atmosphere to ensure that they ground at concentrations that are deemed harmless. This is the basis upon which stack heights are calculated using HMIP Technical Guidance Note D1 The stack height so obtained is adjusted to take into account local meteorological data, local topography, nearby emissions and the influence of plant structure.

The calculation procedure of D1 is usually used to calculate the required stack height but alternative dispersion models may be used in agreement with the regulator. An operator may choose to meet tighter emission limits in order to reduce the required stack height.

- 5.14 Where an emission consists purely of air and particulate matter, (i.e. no products of combustion or any other gaseous pollutants are emitted) the above provisions relating to stack height calculation for the purpose of dispersion and dilution should not normally be applied. Revised stack height calculations should not be required as a result of publication of this revision of the PG note, unless it is considered necessary because of a breach or serious risk of breach of an EC Directive limit value or because it is clear from the detailed review and assessment work that the Part B process itself is a significant contributor to the problem.

Ambient air quality management.

- 5.15 In areas where air quality standards or objectives are being breached or are in serious risk of breach and it is clear from the detailed review and assessment work under Local Air Quality Management that the Part B process itself is a significant contributor to the problem, it may be necessary to impose tighter emission limits. If the standard that is in danger of being exceeded is not an EC Directive requirement, then industry is not expected to go beyond BAT to meet it. Decisions should be taken in the context of a local authority's Local Air Quality Management action plan. For example, where a Part B process is only responsible to a very small extent for an air quality problem, the authority should not unduly penalise the operator of the process by requiring disproportionate emissions reductions. Paragraph 59 of the [Air Quality Strategy 2007](#) [Volume 1] gives the following advice:

“...In drawing up action plans, local authority environmental health/pollution teams are expected to engage local authority officers across different departments, particularly, land-use and transport planners to ensure the actions are supported by all parts of the authority. In addition, engagement with the wider panorama

of relevant stakeholders, including the public, is required to ensure action plans are fit-for-purpose in addressing air quality issues. It is vital that all those organisations, groups and individuals that have an impact upon local air quality, buy-in and work towards objectives of an adopted action plan.”

Stacks, vents and process exhausts

- 5.16 Liquid condensation on internal surfaces of stacks and exhaust ducts might lead to corrosion and ductwork failure or to droplet emission. Adequate insulation will minimise the cooling of waste gases and prevent liquid condensation by keeping the temperature of the exhaust gases above the dewpoint. A leak in a stack/vent and the associated ductwork, or a build up of material on the internal surfaces may effect dispersion:

Flues and ductwork should be cleaned to prevent accumulation of materials, as part of the routine maintenance programme.

When dispersion of pollutants discharged from the stack (or vent) is necessary, the target exit velocity should be 15m/sec under normal operating conditions, (but see paragraph below regarding wet plumes). In order to ensure dispersion is not impaired by either low exit velocity at the point of discharge, or deflection of the discharge, a cap, or other restriction, should not be used at the stack exit. However, a cone may sometimes be useful to increase the exit velocity to achieve greater dispersion.

An exception to the above is where wet arrestment is used as the abatement . Unacceptable emissions of droplets could occur from such plant where the linear velocity in the stack exceeds 9 m/sec. To reduce the potential of droplet emissions a mist eliminator should be used. Where a linear velocity of 9m/sec is exceeded in existing plant consideration should be given to reducing this velocity as far as practicable to ensure such droplet entrainment and fall out does not happen.

Management

Management techniques

- 5.17 Important elements for effective control of emissions include:
- proper management, supervision and training for process operations;
 - proper use of equipment;
 - effective preventative maintenance on all plant and equipment concerned with the control of emissions to the air; and
 - ensuring that spares and consumables - in particular, those subject to continual wear – are held on site, or available at short notice from guaranteed local suppliers, so

that plant breakdowns can be rectified rapidly. This is important with respect to arrestment plant and other necessary environmental controls. It is useful to have an audited list of essential items.

Appropriate management systems

- 5.18 Effective management is central to environmental performance; It is an important component of BAT and of achieving compliance with permit conditions. It requires a commitment to establishing objectives, setting targets, measuring progress and revising the objectives according to results. This includes managing risks under normal operating conditions and in accidents and emergencies. It is therefore desirable that installations put in place some form of structured environmental management approach, whether by adopting published standards (ISO 14001 or the EU Eco Management and Audit Scheme [EMAS]) or by setting up an environmental management system (EMS) tailored to the nature and size of the particular process. Operators may also find that an EMS will help identify business savings.

Regulators should use their discretion, in consultation with individual operators, in agreeing the appropriate level of environmental management. Simple systems which ensure that LAPPC considerations are taken account of in the day-to-day running of a process may well suffice, especially for small and medium-sized enterprises. Authorities are urged to encourage wider adoption of EMS by operators, but it is outside the legal scope of an LAPPC permit to require an EMS for purposes other than LAPPC compliance. For further information/advice on EMS refer to the appropriate chapter of the appropriate Guidance Manual for [England and Wales](#), [Scotland](#) and [Northern Ireland](#).

Training

- 5.19 Staff at all levels need the necessary training and instruction in their duties relating to control of the process and emissions to air. In order to minimise risk of emissions, particular emphasis should be given to control procedures during start-up, shut down and abnormal conditions. Training may often sensibly be addressed in the EMS referred to above.
- All staff whose functions could impact on air emissions from the activity should receive appropriate training on those functions. This should include:
 - awareness of their responsibilities under the permit
 - steps that are necessary to minimise emissions during start up and shut down
 - actions to take when there are abnormal conditions, or accidents or spillages that could, if not controlled, result in emissions.

- The operator should maintain a statement of training requirements for each post with the above mentioned functions and keep a record of the training received by each person. These documents should be made available to the regulator on request.

Maintenance

5.20 Effective preventative maintenance plays a key part in achieving compliance with emission limits and other provisions. All aspects of the process including all plant, buildings and the equipment concerned with the control of emissions to air should be properly maintained. In particular:

- The operator should have the following available for inspection by the regulator:
 - A written maintenance programme for all pollution control equipment; and
 - A record of maintenance that has been undertaken

6 Summary of changes

The main changes to this Note, with the reasons for the change, are summarised below in Table 7. Minor changes that will not impact on the permit conditions, e.g. slight alterations to the Process Description, have not been recorded.

Table 7: Summary of changes

Section / Paragraph / Row	Change	Reason	Comment
Introduction			
	Simplification of text	Make Note clearer	
	Addition of links	Change to electronic format	Removes need for extensive footnotes/references

7 Further information

Sustainable consumption and production (SCP)

Both business and the environment can benefit from adopting sustainable consumption and production practices.

Estimates of potential business savings include:

- £6.4 billion a year UK business savings from resource efficiency measures that cost little or nothing
- 2% of annual profit lost through inefficient management of energy, water and waste
- 4% of turnover is spent on waste.

When making arrangement to comply with permit conditions, operators are strongly advised to use the opportunity to look into what other steps they may be able to take. Local authority regulators may be willing to provide assistance and ideas, although cannot be expected to act as unpaid consultants.

For the sector covered by this PG note, it is suggested that operators look particularly at:

Health and safety

Operators of processes and installations must protect people at work as well as the environment:

- requirements of a permit or authorisation should not put at risk the health, safety or welfare of people at work
- equally, the permit or authorisation must not contain conditions whose only purpose is to secure the health of people at work. That is the job of the health and safety enforcing authorities

Where emission limits quoted in this guidance conflict with health and safety limits, the tighter limit should prevail because:

- emission limits under the Environment Protection Act 1990 or Pollution Prevention and Control Act 1999 relate to the concentration of pollutant released into the air from prescribed activities
- exposure limits under health and safety legislation relate to the concentration of pollutant in the air breathed by workers
- these limits may differ since they are set according to different criteria. It will normally be quite appropriate to have different standards for the same pollutant, but in some cases they may be in conflict (for example, where air discharged from a process is breathed by workers). In such cases, the tighter limit should be applied to prevent a relaxation of control.

Further advice on responding to incidents

The UK Environment Agencies have published guidance on producing an incident response plan to deal with environmental incidents. Only those aspects relating to air emissions can be subject to regulation via a Part B permit, but regulators may nonetheless wish to informally draw the attention of all appropriate operators to the guidance.

It is not envisaged that regulators will often want to include conditions, in addition to those advised in this PG note, specifying particular incident response arrangements aimed at minimising air emissions. Regulators should decide this on a case-by-case basis. In accordance with BAT, any such conditions should be proportionate to the risk, including the potential for harm from air emissions if an incident were to occur. Account should therefore be taken of matters such as the amount and type of materials held on site which might be affected by an incident, the likelihood of an incident occurring, the sensitivity of the location of the installation, and the cost of producing any plans and taking any additional measures.

8. Compliant Coatings

Method of Measurement of VOC Content of Coatings

- 8.1 This following paragraphs include general guidance on a method of measuring VOC contents of coatings as applied to demonstrate compliance with **Table 5** of the note.
- 8.2 It will normally prove very difficult to calculate VOC content of coatings from coating formulation data. Coating formulation information may be used to establish water content of paint (although this can not make allowance for condensation reactions which produce water in the resin system during stoving) and for total solids content. It is preferable to determine solids content by measurement as detailed below rather than from calculations based upon coating formulation.
- 8.3 The test method should be based upon the following:
- (i) prepare the coating to achieve a formulation typical of the coating applied in the particular process concerned (this may involve the addition of organic solvents or water from viscosity adjustment),
 - (ii) the sample should be thoroughly mixed,
 - (iii) the sample should first be weighed into a graduated syringe or weighing bottle (WA) and sufficient material should be weighed depending upon the anticipated volatile content of the coating for example, assuming a balance accuracy of 0.1mg, it should be sufficient to use 500mg of coating.
 - (iv) precondition an aluminium foil dish, typically about 60mm diameter, in an oven at 353K +/- 5K (80°C +/- 5°C) for 30 minutes and cool and store in a desiccator prior to use,
 - (v) weigh the foil dish (Wc) and discharge the syringe contents into the dish,
 - (vi) the volume of coating used should be determined either by measuring the difference between the initial volume in the syringe and the volume remaining after discharge, or by metering the coating as it is discharged into the foil dish. The volume of coating used is Vc measured in microlitres.
 - (vii) place the dish into a preheated forced draught oven for 2 hours at 353K +/- 5K 80°C +/- 5°C).
 - (viii) determine the weight of coating applied by re-weighing the syringe after discharge to correct for any residual coating in the syringe (WB)

(ix) remove dish from oven and place immediately into a desiccator to cool and weigh to 0.1 mg (WD).

8.4 The volatile content of the coating is:

$$(WA - WB) - (WD - WC) \text{ mg} \dots\dots\dots (1)$$

8.5 It is necessary to make allowance for the weight of water if press (Ww). This can be derived either from formulation data or by determining water content by analysis, for example using gas chromatography. Therefore, the coating VOC content is:

$$\frac{[(WA - WB) - (WD - WC) Ww]}{1000} \text{ grams} \dots\dots\dots(2)$$

8.6 In order to calculate the VOC content of the coating, it is necessary to establish the volume of coating less water in which the measured VOC are present. The volume of water in the sample (Vw) can be derived from the weight of water present as calculated in paragraph 9.5 above, and converting to volume using the density of water. This figure should be expressed in microlitres.

8.7 Therefore, the volume of coating less water in which the measured VOC content is present is:

$$\frac{Vc - Vw}{1,000,000} \text{ litres} \dots\dots\dots(3)$$

8.8 The VOC content of the coating in grams per litre as expressed in **Section 5** of this note is obtained by dividing the result of equation number (2) in paragraph 9.5 above by the result equation (3) in paragraph 9.7 above.

In some circumstances it may be necessary to make minor amendments to the above method taking account of coating characteristics. For example, the temperature of the test oven may need to be increased to reflect the typical stoving temperature that the coating will be raised to in the process oven, but the temperature should be not less than that specified in paragraph 9.3 vii) of this Section. The 2 hour period given in paragraph 9.3 vii) of this section may need to be reduced to coincide with the actual stoving schedule of the coating concerned.

- This method may not be suitable for determining the solids and VOC content of air drying, UV or chemically cured coatings where the coating is not cured by heat in an oven and in these circumstances should be determined by simulating the actual coating curing method.

About Compliant Coatings

Note a – High solvent content wash primers should only be used where it is necessary to achieve adhesion of subsequent coats on difficult, bare metal, surfaces such as aluminium, zinc plates, or galvanised metals. The use of such wash primers should be limited to not more than 5% of the total coatings material usage except where etch primer is used to coat aluminium for the first time.

Special Finishes

Where a special finish is supplied by the manufacturer or distributor to the limit shown in **Table 5** relates to the coating, as applied

Where a special finish is prepared from the mixing of an additive and a standard product, the permitted solvent content of the coating, as applied, will comply with the limit in **Table 5**. The permitted solvent content is determined as follows:

Permitted solvent concentration =

$$\frac{(M \times S3) + (N \times S4) + (P \times S5)}{100} \text{ g/l less water in the coating as applied}$$

Where

M is the percentage of the additive, less any water present in the additive, in the coating as applied.

S3 is the organic solvent content of the additive (g/l less water)

N is the percentage of the standard product, less any water present in the produce, in the coating as applied

S4 is the permissible solvent content of the standard product (see **Table 5**).

P is the percentage of added thinners, less any water present in the thinners, in the coating as applied

S5 is the solvent content of the thinners

Appendix 1: Model Permit Application Form

Local Authority Pollution Prevention and Control

Pollution Prevention and Control Act, 1999

Pollution Prevention and Control (England and Wales) Regulations 2000 (as amended)

When to use this form

Use this form if you are applying to a Local Authority for a permit to operate a vehicle refinishing installation as defined in Pollution Prevention and Control (England and Wales) Regulations 2000 (as amended)

The appropriate fee must be enclosed with the application to enable it to be processed further. When complete send the form and fee and any additional information to:

Insert local authority address

A1.1. Name of the Installation

.....

A1.2. Address of the Installation

.....

.....

.....

Postcode Telephone.....

Ordnance Survey national grid reference 8 characters, (for example, SJ 123 456)..... *Note, there are a number of internet mapping sites which will convert a Post Code to a grid references*

A1.3. Please provide details including reference numbers of any existing authorisation or permit for a vehicle refinishing installation

.....

A2.1. Please provide the full name of company or corporate body or the name of the sole trader or the names of the partners

.....
Trading/business name (if different)

.....
Registered Office address

.....
.....

.....
Postcode Telephone.....

Company Registration Number

A2.2. Holding Companies

Is the operator a subsidiary of a holding company within the meaning of Section 736 of the Companies Act 1985?

No?

Yes? Name of ultimate holding company.....

Ultimate holding company

Registered office address

.....
.....

.....
Postcode Telephone.....

Company Registration Number

A3.1 Who can we contact about your application ?

It will help to have someone who we can contact directly with any questions about your application. The person you name should have the authority to act on behalf of the operator. This could be an agent or consultant rather than the operator.

Name.....

Position.....

Address.....

Postcode.....

Telephone Number.....

Fax Number.....

E-Mail Address.....

B. About the installation

Please provide written information about the aspects of your installation listed below. We need this information to determine whether you will operate the installation in a way in which all the environmental requirements of the PPC Regulations are met.

B1.1 Describe the proposed installation and activities and identify the foreseeable emissions to air from the process.

Doc Reference: _____

B1.2 Once all foreseeable emissions have been identified in the proposed installation activities, each emission should be characterised (including odour) and quantified.

- **atmospheric emissions** should be categorised under the following

- (i) point source, (e.g. chimney / vent, identified by a number and detailed on a plan)
- (ii) fugitive source (e.g. from stockpiles / storage areas).

If any monitoring has been undertaken please provide the details of emission concentrations and quantify in terms of mass emissions. If no monitoring has been undertaken please state this.

(Mass Emission - the quantification of an emission in terms of its physical mass per period of time. Eg. Grams per hour, tonnes per year)

B1.3 For each emission identified from the installations' activities describe the current and proposed technology and other techniques for preventing or, where that is not practicable reducing the emissions. If no techniques are currently used and the emission goes directly to the environment, without abatement or treatment this should be stated

Doc Reference: _____

B1.4 Describe the proposed systems to be used in the event of unintentional releases and their consequences. This must identify, assess and minimise the environmental risks and hazards, provide a risk based assessment of any likely unintentional releases, including the use of historical evidence. If no assessments have been carried out please state.

Doc Reference: _____

B1.5 Describe the proposed measures for monitoring all identified emissions including any environmental monitoring, and the frequency, measurement methodology and evaluation procedure proposed. (e.g. particulate matter emissions, odour etc). Include the details of any monitoring which has been carried out which has not been requested in any other part of this application. If no monitoring is proposed for an emission please state the reason.

Doc Reference: _____

B1.6 Provide detailed procedures and policies of your proposed environmental management techniques, in relation to the installation activities described.

Doc Reference: _____

B1.7. Attach a plan of the premises showing the location of:

- (a) the premises
- (b) spray booths
- (c) organic solvent containing material storage
- (d) organic solvent containing waste storage

B1.8. Supply a description of the location and methods of storage of organic solvent containing materials.

Doc Reference: _____

B1.9. Supply certification of spray booth performance

Doc Reference: _____

B1.10a Are VOC emitting stacks⁴

- at least 3m above the roof ridge height of buildings within 15 m of the stack.
Yes/ No

If “no”, complete **B1.10b**

B1.10b Provide a written plan for the construction, operation and maintenance of stacks emitting VOCs.

Doc Reference: _____

B1.11 Provide details how the mass of VOC emitted and of paint solids used will be determined and recorded

Doc Reference: _____

B1.12. Provide a written plan for the maintenance, inspection and replacement of extract air filters of the spray booth and abrasive blasting equipment plant.

Doc Reference: _____

B1.14 Provide a written plan for measuring particulate emissions from abrasive blasting equipment, using manual extractive testing methods.

Doc Reference: _____

B1.15 Provide a written plan for control of VOC emissions from spray gun testing and sprayout following cleaning.

Doc Reference: _____

B1.16 Provide a written plan for the control of VOC emissions from spray gun and equipment cleaning.

Doc Reference: _____

B1.17 Provide a written plan for the control of VOC emissions from solvent contaminated wipes and other wastes

Doc Reference: _____

⁴ NB – All new VOC emitting stacks are required to vent VOC's at a height greater than 3m above the roof ridge height of buildings within 15 m of the stack

B1.18 State whether any structured environmental management system (such as ISO 14001, EMAS or BS8555) or a tailored system is being used or is planned, and if so what.

Doc Reference: _____

B1.12 Specify what training and instruction staff will be given to ensure that this Permit (if granted) is complied with.

Doc Reference: _____

B2.1 Provide an assessment of the potential significant local environmental effects of the foreseeable emissions (for example, is there a history of complaints, is the installation in an air quality management area?)

Doc Reference: _____

B2.2 Are there any sites of special scientific interest (SSSIs) or European Sites which are within 500 metres of the installation?

No **Yes** Please give names of the sites

.....

B2.3 Provide an assessment of whether the installation is likely to have a significant effect on such sites and, if it is, provide an assessment of the implications of the installation for that site, for the purposes of the Conservation (Natural Habitats etc) Regulations 1994.

Doc Reference: _____

B3 Environmental Statements

B3.1 Has an environmental impact assessment been carried out under The Town and Country Planning (Environmental Impact Assessment) (England & Wales) Regulations 1999, or for any other reason with respect to the installation.

No **Yes** (Please supply a copy of the environmental impact assessment and details of any decision made)

.....

Doc Reference: _____

B4 Additional Information

Please supply any additional information which you would like us to take account of in considering this application.

.....
.....
.....
.....
.....

C1. Fees and Charges

The enclosed charging scheme leaflet gives details of how to calculate the application fee. Your application cannot be processed unless the application fee is correct and enclosed.

C1.1. Please state the amount enclosed as an application fee for this installation.

£.....

Cheques should be made payable to:

We will confirm receipt of this fee when we write to you acknowledging your application.

C1.2. Please give any company purchase order number or other reference you wish to be used in relation to this fee.

C2. Annual charges

If we grant you a permit, you will be required to pay an annual subsistence charge.

If you don't pay, your permit can be revoked and you will not be able to operate your installation.

C2.1. Please provide details of the address you wish invoices to be sent to and details of someone we may contact about fees and charges.

.....
.....
.....

Postcode.....Telephone.....

C3. Commercial confidentiality

C3.1. Is there any information in the application that you wish to justify being kept from the public register on the grounds of commercial confidentiality?

Yes / No If **Yes**, please provide full justification, considering the definition of commercial confidentiality within the PPC regulations (See the general guidance manual).

.....
.....
.....
.....

C4. Data Protection

The information you give will be used by the Local Authority to process your application. It will be placed on the relevant public register and used to monitor compliance with the permit conditions. We may also use and/or disclose any of the information you give us in order to:

- consult with the public, public bodies and other organisations,
- carry out statistical analysis, research and development on environmental issues,
- provide public register information to enquirers,

- investigate possible breaches of environmental law and take any resulting action,
- prevent breaches of environmental law,
- assess customer service satisfaction and improve our service.

We may pass on the information to agents/ representatives who we ask to do any of these things on our behalf.

It is an offence under Regulation 32 of the PPC regulations, for the purpose of obtaining a permit (for yourself or anyone else) to:

- make a false statement which you know to be false or misleading in a material particular,
- recklessly make a statement which is false or misleading in a material particular.

If you make a false statement we may prosecute you, and if you are convicted, you are liable to a fine or imprisonment (or both).

Yes No

C5. Declaration

C5.1. Signature of current applicant(s)*

I / We certify that the information in this application is correct. I / We apply for a permit in respect of the particulars described in this application (including supporting documentation) I / We have supplied.

Please note that each individual applicant must sign the declaration themselves, even if an agent is acting on their behalf.

For the application from:

Premises

name:.....

Signature:

.....

Name:.....

Position:.....

Date:.....

Signature:

.....

Name:.....

Position:.....

Date:.....

* Where more than one person is defined as the applicant, all should sign. Where a company or other body corporate - an authorised person should sign and provide evidence of authority from the board of the company or body corporate.

Appendix 2: Model Permit

ANY PLACE DISTRICT COUNCIL

POLLUTION PREVENTION AND CONTROL ACT 1999

POLLUTION PREVENTION AND CONTROL REGULATIONS 2000, SI 1973 (AS AMENDED)

Permit ref. no.

Installation Details

(i) **Name and address of operator:** + (if appropriate) registered number and office of company.

(ii) **Address of permitted installation:** (outlined on attached plan, and including the location of spray booth(s), areas for storage of organic solvent containing materials and wastes).

The above named company is permitted to operate a vehicle refinishing installation subject to compliance with the following conditions:

Permit Conditions

Non-VOC emissions

Table 8: The following non-VOC emission limits shall apply:

Row		Source	Emission limits / provisions	Type of Monitoring	Monitoring frequency
1	Particulate matter	From spray booths	10 mg /Nm ³	By guarantee supplied by the spray booth constructor (see B1.3 of the application)	None required
		[Abrasive blasting equipment and other sources (except spray booths)]	[50 mg/Nm ³ for contained sources]	Manual extractive Testing in accordance with BS6069: Section 4.3 1992	[in accordance with the written plan (see B1.7 of the application)]
2	Sulphur dioxide	All processes / activities	1% wt/wt sulphur in fuel	Certification by supplier on first delivery.	None required
		All processes/ activities using gas oil as defined in the Sulphur Content of Certain Liquid Fuels Directive (1999/32/EC).	0.1% wt/wt sulphur in fuel		

All emissions shall be determined at the standard reference conditions of 273.15K and 101.3kPa, without correction for water vapour content.

1. The introduction of dilution air to achieve emission concentration limits shall not be permitted. Dilution air may be added for waste gas cooling or improved dispersion where justified, but this must not be considered when determining the mass concentration of the pollutant in the waste gases.
2. The operator shall implement a maintenance schedule a copy of which shall be made available to the regulator upon request..
3. Dusty wastes shall be stored in closed containers.
4. Dry sweeping of dusts and dusty wastes shall not be used.
5. The operator shall keep records of inspections, tests and monitoring in relation to the provisions of the table above. In such cases:

current records 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. The operator shall notify the regulator at least 7 days before any periodic monitoring exercise to determine compliance with the abrasive blasting particulate emission limit values. The operator shall state the provisional time and date of monitoring, pollutants to be tested and the methods to be used.
7. Within 8 weeks of the completion of monitoring activities, the results of non-continuous emission testing shall be forwarded to the regulator.
8. In the event of any adverse results from any monitoring activity in relation to the provisions of the above table, the operator shall investigate as soon as the results are 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
 - record the action taken by the operator to rectify the situation
 - re-test to demonstrate compliance as soon as possible and
 - notify the regulator
9. In the case of abnormal emissions, or malfunction or breakdown leading to abnormal emissions, the operator shall:
 - investigate immediately and undertake corrective action
 - adjust the process or activity to minimise those emissions and
 - promptly record the events and actions taken
 - notify the regulator without delay, if the emission is likely to have an effect on the local community

VOC emissions

10. Surface preparation and painting operations shall be carried out using only coating materials, which are placed on the market for use in vehicle refinishing bodyshops (as identified by a label on the container containing the following information -a description of the product by identification of the contents as a subcategory of Directive 2004/42/CE, the relevant VOC limit values in g/l as referred to in Annex II of Directive 2004/42/CE and the maximum content of VOC in g/l of the product in a

ready to use condition ”). For information, the individual bodyshop products that are covered by this permit are listed in Appendix 4 of Process Guidance Note 6/34b (06).

11. The products used in coating shall be prepared and applied in accordance with the suppliers' instructions. Under no circumstances shall the product be thinned with more than the supplier's stated quantity or percentage of thinner. For information, the maximum, application-ready VOC contents for individual categories of products are listed in Appendix 5 of Process Guidance Note 6/34b (06).
12. All paint spraying operations shall be carried out in a totally enclosed booth under negative pressure, to prevent fugitive emissions of VOCs.
13. Spray applied coatings shall be applied to passenger cars using one of the following methods:
 - high volume low pressure (HVLP) (maximum atomisation pressure 67.5kPa) spraying equipment;
 - air assisted airless spraying equipment;
 - electrostatic spraying equipment; or
 - a system capable of achieving a transfer efficiency of at least 65%, determined in accordance with the procedure set out in BS EN 13966-1:2003 Determination of the transfer efficiency of atomising and spraying equipment for liquid coating materials.

list only those of the above techniques which are intended to be used
14. Spray applied coatings shall be applied to commercial vehicles using one of the techniques in Condition 2.4 or using airless spraying equipment.
15. All spray guns and equipment cleaning shall be carried out in an automatic, totally-enclosed equipment cleaning machine or any other equipment cleaning machine which can achieve comparable or lower emissions. The cleaning machine shall be provided with the minimum of exhaust ventilation that is necessary to prevent the fugitive emission of organic solvent vapour when the machine is opened for introduction or removal of equipment, or for the changing of cleaning solvent.
16. All spray gun testing and sprayout following cleaning shall be carried out in either an equipment cleaning machine with the extraction running or into a chamber which is provided with extraction which is running in accordance with a written procedure a copy of which shall be made available to the regulator upon request .
17. Cleaning solvents shall be dispensed by a piston type dispenser or similar contained device, when used on wipes.
18. Pre-impregnated solvent wipes shall be held within an enclosed container prior to use.
19. Solvent contaminated wipes and other wastes shall be handled in accordance with a written procedure a copy of which shall be made available to the regulator upon request.
20. Organic solvent containment and spillage equipment shall be readily available in all organic solvent handling areas.

21. All solvent containing coatings, thinners and related materials and equipment cleaning materials shall be stored

in the containers in which they were supplied, with the lid securely fastened at all times other than when in use

within spillage collectors, of suitable impervious and corrosion-proof materials and capable of containing 110% of the largest container

away from sources of heat

For information, these conditions should not conflict with the requirements of occupational health and safety regulations

22. All solvent containing wastes shall be stored

in suitable sealed containers with a securely fastened lid, and labelled so that all that handle them are aware of their contents.

within spillage collectors, of suitable impervious and corrosion-proof materials and capable of containing 110% of the largest container

away from sources of heat

23. Cleaning operations involving organic solvents shall be reviewed every [two] years, to identify opportunities for reducing VOC emissions. This will include identification of cleaning steps that can be eliminated or alternative cleaning methods. The regulator shall be provided with a report on the conclusions of the review, within eight weeks of it being completed.

24. Spares and consumables, particularly those subject to continual wear shall be held on site, or shall be available at short notice from guaranteed suppliers, so that spraybooth and abrasive blasting plant breakdowns can be rectified rapidly.

25. Waste solvents and waste coatings shall be recycled [on]/[off]-site. [Copies of receipts of waste materials sold for recycling shall be kept for three years].

Visible and odorous emissions

26. All releases to air, other than condensed water vapour, shall be free from persistent visible emissions.

27. All emissions to air shall be free from droplets.

28. There shall be no offensive odour beyond the site boundary, as perceived by the regulator.

29. Emissions from combustion processes shall in normal operation be free from visible smoke and in any case shall not exceed the equivalent of Ringelmann Shade 1, as described in British Standard BS 2742:1969.

General Conditions

30. All emissions of [Insert x pollutant(s)] shall be emitted from [Insert y stack(s)]. The stacks shall be [Insert z height(s)].

31. The activity shall operate in accordance with [Insert reference environmental management system intended to be used]

32. Staff at all levels shall receive the necessary training and instruction [Insert key elements of the training and instruction programme intended to be used]

33. A record of staff training and instruction shall be maintained by the operator and shall be available to the regulator on request.
34. A written record of all maintenance carried out in accordance with Condition 3 shall be made available for inspection by the regulator.

Appendix 3: Individual bodyshop products covered by this permit

- a) 'preparatory and cleaning' means products designed to remove old coatings and rust, either mechanically or chemically, or to provide a key for new coatings:
- (i) preparatory products include gunwash (a product designed for cleaning spray-guns and other equipment), paint strippers, degreasers (including anti-static types for plastic) and silicone removers;
 - (ii) 'precleaner' means a cleaning product designed for the removal of surface contamination during preparation for and prior to the application of coating materials;
- b) 'Bodyfiller/stopper' means heavy-bodied compounds designed to be applied to fill deep surface imperfections prior to the application of the surfacer/filler;
- c) 'primer' means any coating that is designed for application to bare metal or existing finishes to provide corrosion protection prior to application of a primer surfacer:
- (i) 'surfacers/filler' means a coating designed for application immediately prior to the application of topcoat for the purpose of corrosion resistance, to ensure adhesion of the topcoat, and to promote the formation of a uniform surface finish by filling in minor surface imperfections;
 - (ii) 'general metal primer' means a coating designed for application as primers, such as adhesion promoters, sealers, surfacers, undercoats, plastic primers, wet-on-wet, non-sand fillers and spray fillers;
 - (iii) 'wash primer' means coatings containing at least 0,5 % by weight of phosphoric acid designed to be applied directly to bare metal surfaces to provide corrosion resistance and adhesion; coatings used as weldable primers; and mordant solutions for galvanised and zinc surfaces;
- d) 'topcoat' means any pigmented coating that is designed to be applied either as a single-layer or as a multiple-layer base to provide gloss and durability. It includes all products involved such as base coatings and clear coatings:
- (i) 'base coatings' means pigmented coatings designed to provide colour and any desired optical effects, but not the gloss or surface resistance of the coating system;

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(ii) 'clear coating' means a transparent coating designed to provide the final gloss and resistance properties of the coating system;

e) 'special finishes' means coatings designed for application as topcoats requiring special properties, such as metallic or pearl effect, in a single layer, high-performance solid-colour and clear coats, (e.g. anti-scratch and fluorinated clear-coat), reflective base coat, texture finishes (e.g. hammer), anti-slip, under-body sealers, anti-chip coatings, interior finishes; and aerosols.

Appendix 4 :Product categories and maximum, application ready VOC contents

Table 9: Product categories and maximum, application ready VOC contents

	Product Subcategory	Coatings	VOC g/l(*)
a	Preparatory and cleaning	Preparatory	850
		Pre-cleaner	200
b	Bodyfiller/stopper	Alltypes	250
C	primer	Surface / filler and general (metal) primer	540
		Wash primer	780
d	Topcoat	All types	420
e	Special finishes	All types	840
(*) g/l of ready for use product. Except for subcategory (a) any water content of the product ready for use should be discounted			