Final Draft

Best Practice Guidelines for Vehicle Refinishing for Repair Installations

PART 1: What you MUST do

Required practices for Vehicle Refinishing for Repair

Under the

Limitation of Emissions of Volatile Organic Compounds due to the Use of Organic Solvents in Certain Paints, Varnishes and Vehicle Refinishing Products Regulations 2007

PART 2: What you SHOULD consider doing

Excellent Practices for Vehicle Refinishing for Repair

Contents

Part 2

Draft Guidelines:

These draft guidelines have been prepared as required by Article 5(4) of the Regulations. They are intended to provide a description of the mandatory requirements (Part 1) against which a Vehicle Refinishing installation would be judged in the course of an AIC inspection. They are offered here for consultation and comment. The EPA will take all comments made into consideration while finalising the document. The document will then be submitted to the Minister[1] as required by the Regulations for approval.

[1] Minister for the Environment, Heritage and Local Government

Guidance for Vehicle Refinishing for Repair

PART 1: What you MUST do

Under the 2007 Regulations

Limitation of Emissions of Volatile Organic Compounds
due to the Use of Organic Solvents
in Certain Paints, Varnishes and Vehicle Refinishing Products
Regulations 2007

A guide to the Vehicle Refinishing Products aspect of these Regulations

SUMMARY OF WHAT YOU MUST DO
UNDER THE 2007 REGULATIONS

This page is just a summary list of requirements. More detail on each is given within this document.

IF you carry out vehicle refinishing for repair on an industrial or commercial basis YOU MUST:

1. **Use compliant products**

- From 1 July 2007 you must only use compliant products. To do this – check the label or with your supplier.
- You are allowed use non-compliant products up until 1 January 2008 but only where these were produced before 1 January 2007.

2. Ensure the **management, supervision and staff training** requirements are met.

2. Ensure **HVLP spray guns** and **gunwashing equipment** are used.

3. Ensure **VOC-containing product handling and storage** requirements are met.

4. Ensure **VOC-containing waste** requirements are met.

5. Compile and maintain **appropriate documentation** for inspection.

6. Commission an **inspection** by an Accredited Inspection Contractor (AIC) who will produce a report.

7. Get a **certificate of approval <u>before 1 March 2008</u>,** by submitting the compliant AIC report to your local authority. Certificates for all obligated businesses existing on 1 March 2008 will expire on 1 March 2010. Certificates issued for new businesses will last for two years from date of issue.

8. **Renew** the certificate of approval every second year before its expiry date.

Do	Don't
- Use compliant products from 1 July 2007 - Get a compliant AIC inspection before 1 March 2008 - Inform the EPA if supplied with non-compliant products after 1 January 2008 - Inform the local authority where a breach of the Regulations has occurred - Ensure staff are trained and adequately supervised - Store VOC-containing materials in suitable, clearly identified containers in dedicated areas - Use licensed/permitted waste companies for VOC-containing wastes - Maintain all documentation needed for inspection	- Operate after 1 March 2008 without a Certificate of approval - Wash guns other than in gun washing equipment - Use guns other than HVLP guns - Leave containers with VOC materials open - Dispose of VOC-containing materials as part of domestic or municipal waste - Allow VOC-containing materials go to sewer, drains, watercourses or ground - Have drains in the vicinity of areas where VOCs are used

1.1 Introduction

Part 1 of this Guidance document has been developed to help implement a European Directive[2] on the VOC content of vehicle refinishing products. The Directive has been brought into effect in Ireland through Regulations published in May 2007[3]. Section 5(4) of these Regulations requires the Agency to publish best practice guidelines for vehicle refinishing installations following consultation with, and approval by, the Minister. The requirements set out under Part 1 of this document are to be declared mandatory for installations carrying out vehicle refinishing for repair (see definition below). These requirements will form the basis for the independent AIC inspections which vehicle refinishing installation operators must commission and submit to their local authority for approval.

For vehicle refinishing for repair installations, these 2007 Regulations replace the requirements that were set out under Regulations published in 2002[4].

Please note: The 2002 Solvents Regulations still apply for the original coating of vehicles or trailers (defined as "the original coating of road vehicles as defined in Directive 70/156/EEC or part of them with refinishing-type materials, where this is carried out away from the original manufacturing line, or the coating of trailers including semi-trailers category O"). Separate best practice guidance applies to these installations (see www.epa.ie for information).

1.2 Vehicle Refinishing covered by the 2007 Regulations

Vehicle refinishing covered by the 2007 Regulations is defined as:

"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".

A "vehicle refinishing installation" means any industrial or commercial activity and associated degreasing activities performing vehicle refinishing.

The definition of vehicle refinishing has been abbreviated in this document's title – Vehicle Refinishing for Repair but when in doubt the legal definition applies. The categories of vehicles in Directive 70/156/EEC are reproduced in Appendix 1.

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[2] Directive 2004/42/CE on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products and amending Directive 1999/13/EC.

[3] Limitation of Emissions of Volatile Organic Compounds due to the Use of Organic Solvents in Certain Paints, Varnishes and Vehicle Refinishing Products Regulations 2007 (S.I. No. 199 of 2007).

[4] Emissions of Volatile Organic Compounds from Organic Solvents Regulations 2002 (S.I. No. 543 of 2002).

Please note: Unlike the 2002 Regulations, there is no threshold above which the 2007 Regulations apply – that is, if you carry out any level of vehicle refinishing on an industrial or commercial basis you come under the Regulations.

If you carry out the original coating of vehicles or the coating of trailers you will need to check if you come under the 2002 Regulations – see the Best Practice Guidelines for Vehicle Coating and Refinishing under the 2002 Regulations to determine this.

If your process has a capacity to use at least 10,000 kg (10 tonnes) of organic solvents per year, you need to hold an Integrated Pollution Prevention and Control (IPPC) licence in order to operate. If this is the case, and you are not already IPPC licensed, you must notify the EPA immediately at EPA Headquarters, PO Box 3000, Johnstown Castle Estate, Co. Wexford Tel: 053-9160600). It is anticipated that vehicle refinishing operations in Ireland will not be above this threshold, but the onus is on you to check this.

1.3 Compliant Product Requirements

1.3.1 Effective Dates

From 1 July 2007 you must only use products placed on the market in accordance with the 2007 Regulations. To do this – check the label, the Material Safety Data Sheet (MSDS) or with your supplier (who is obliged to provide you with an MSDS for each product they sell).

Non-compliant products can still be placed on the market without a licence until 1 January 2008, provided it can be shown they have been produced before 1 January 2007. However, it is advisable to switch to compliant products as soon as possible and minimise stocks of non-compliant products.

1.3.2 Compliant Products

Compliant products are those that are at or below the following VOC content in grams per litre of ready for use product (g/l):

Category of product		**Max VOC content** (g/l ready for use) (ex. water content of the product ready for use for types b to e)
a Preparatory & cleaning	Preparatory (gunwash, paint strippers, degreasers and silicone removers)	850
	Pre-cleaner	200
b Bodyfiller/ stopper	All types	250
c Primer	Surface/filler & general (metal) primer	540
	Wash primer	780
d Top coat	All types (base coatings and clear coating)	420
e Special finishes	All types	840

The definitions for VOCs and for each of the above categories of product are set out in Appendix 2.

1.3.3 How to Ensure you are using Compliant Coatings

In short – check the label, MSDS or with your supplier. For vehicle refinishing products produced since 1 January 2007, manufacturers are required to label their products to show that they comply with the 2007 Regulations.

This label must show:

- Which category of product it is (primer, top-coat, etc.).
- The associated max VOC limit under the 2007 Regulations.
- The actual VOC content (g/l) of the product in a ready to use condition.

Therefore it should be straightforward to identify if a product is compliant or non-compliant. If in doubt, don't use the product before checking with your supplier.

1.3.4 Dealing with Non-compliant Products

From 1 January 2008, if you are sold a product that:

- is non-compliant, or
- does not have the required labelling,

The regulations (Article 20) require you to inform the Environmental Protection Agency where such non-compliant or improperly labelled product has been supplied to you.

Such non—compliant products should not be used from 1 January 2008 and should be sent for disposal or recovery by a licensed/permitted waste company.

1.3.5 Existing Stocks of Products

Non-compliant products are not allowed to be used from 1 July 2007 (with the exception of products for refinishing of vintage vehicles). Vehicle refinishing installations may use existing stocks of non-compliant products in the course of their business before 1 January 2008, once it is evident that they were produced before 1 January 2007, and supplied to the vehicle refinishing installation before the entry into force of these regulations. Non-compliant products should be disposed of or recovered by a licensed/permitted waste company.

1.3.6 Vintage Vehicle Exemption

For restoring or maintaining vintage vehicles, you can buy/use vehicle refinishing products that are not compliant, but the following conditions apply:

- A written permit must be obtained from the Minister for the Environment, Heritage and Local Government. A documented substantive case would be needed to be made by experts as to why compliant products could not be used.
- There must be a real need for the particular non-compliant product that compliant products cannot meet.
- Only limited quantities of such products are allowed to be purchased and used.
- While vintage vehicles are defined for the purposes of motor taxation as a vehicle that is 30 or more years old, only vintage vehicles that have particular historical and cultural value are allowed to be restored or maintained using such products. Determination of these issues is a matter for the Minister. Applications should be sent to Air Quality and Climate Change Section, Department of the Environment, Heritage and Local Government, Custom House, Dublin 1.

1.4 Management and Supervision

Staff must be adequately supervised in the course of their work to ensure that proper procedures are adhered to and that training provided is applied correctly to avoid emissions of VOCs to the environment.

There is also an obligation on the installation operator to inform the local authority where a breach of the Regulations has occurred (Article 10(1)). The operator shall take all necessary measures to ensure compliance is restored within the shortest possible time. Where non-compliance poses immediate danger to human health, the operator shall suspend operation of the activity until such situation is remedied.

There is a legal obligation on the operator to provide the authorities with compliance information and they must not obstruct or wilfully withhold information from them.

1.5 Staff Training Requirements

A list should be made of the names of staff who are trained and deemed competent to carry out the following activities:

- operate spray equipment and carry out spray gun cleaning
- carry out paint mixing and preparation
- operate any on-site solvent recycling unit (if relevant).

The following training must be carried out:

- All staff who carry out spraying for vehicle refinishing must be effectively trained in:
    - the correct operation of spray equipment and spray techniques to minimise overspray, and
    - spray gun cleaning that minimises VOC emissions such as use of an enclosed gun cleaning unit, or through soaking in a covered container.
- All staff who are involved in paint mixing and preparation must be trained in the correct operation of preparation and mixing equipment.
- If relevant, all staff who operate any on-site solvent recycling unit must be trained in the correct operation of this equipment.

All of the above training can have been obtained:

- as part of apprenticeship training, or
- from equipment suppliers, or
- from training in-house from another member of staff who has already been trained.

For training obtained through apprenticeship, you should have a copy of the employee's qualification.

You need to have written records of any training carried out either in-house or by equipment suppliers (otherwise such training activity is just a rumour or hearsay and **cannot** be taken into account for inspection purposes). This should include dates of training, what the training consisted of, and the staff (providing the training and those being trained) names and signatures. These records should be retained while the staff member remains at these duties and afterwards for at least two years. Periodic reviews of training should be made by management to introduce any advances in products or equipment and their correct use to avoid excessive VOC emissions. Both new and staff already trained should be given instruction on these advances as appropriate.

Please note: the training described here is in addition to any health and safety training required.

Training may need to be repeated where employees perform duties only intermittently or where supervision shows that significant deviations are occurring from required behaviours or skill levels.

1.6 Equipment Requirements

You will have to meet the following requirements in relation to equipment used:

- HVLP (high volume low pressure) spray guns should be used.
- Gun washing activities using VOC-containing products must be confined to gun washing equipment only. This can be manual or automatic.

1.7 VOC-containing Product Handling and Storage Requirements

You will have to meet the following requirements in relation to storage of VOC-containing product:

- Only containers suitable for storing such chemical products should be used.
- All vessels used to contain such chemicals should be inspected for leaks and corrosion (e.g. closures, integrity of seams, rims, walls checked).
- Containers holding waste VOC materials (including waste materials) should also be clearly labelled and easily identified and distinguished from other containers holding materials not containing VOC.
- There should be no drains to sewer or externally that could be affected by any accidental spillage in the vicinity of areas where VOC-containing liquids are stored, handled and used such as the paint storage area, the paint mixing area, the refinishing area, any gun-wash units or recycling units, and the VOC-containing liquid waste storage area.
- Keep all VOC-containing containers closed when not in use and during transport around the premises, and instruct/supervise all employees on this practice. This includes containers holding VOC-containing waste and containers that are half full.
- VOC-containing material storage area(s) (including waste) must be:
  - Adequately ventilated,
  - able to be secured against vandalism or unauthorised access,
  - arranged to avoid any damage from collisions or spills from trips as far as possible.
  - spill containment and clean-up kits should be in place with people trained to use them correctly. All materials collected following accidental spillages should be stored in a suitable enclosed container pending its collection by a correctly licensed waste collection operator.
- If using an on-site solvent recycling unit, you must ensure that associated VOC emissions are not significant, i.e. that the condenser on the unit is efficient, properly maintained and that the unit is operated correctly.

1.8 VOC-containing Waste Requirements

You will have to meet the following requirements in relation to VOC-containing wastes:

- VOC-containing waste streams:
    - VOC-containing *liquid* wastes should be collected in appropriate, closed containers for disposal or recovery. This includes waste gun-wash, leftover paints, etc.
    - VOC-containing *solid* wastes should be collected in dedicated closed containers[5] for disposal or recovery. This includes waste cloths/rags/paper containing VOCs, any unused bodyfiller, waste spraybooth filters, waste paint solids containing VOCs, etc.
- Maximise the amount of VOC-containing waste streams that are sent for recovery for reuse rather than disposal. This can be achieved through segregation of VOC-containing waste streams that may be suitable for recovery for reuse such as gun-wash and not mixing with other waste streams such as paints. Discussions with waste companies as to what services they supply can be of assistance in this respect.
- Provide suitable facilities and instruct employees on the arrangements at your installation in relation to these waste streams.
- Only use waste contracting companies who are correctly licensed/permitted. You must check that their licence/permit is current and allows them to handle this type of waste. You must also check that they have a current waste collection permit that allows them to collect this type of waste within your local authority area.
- Obtain and keep on file documentation from waste contractors for each shipment of VOC-containing waste collected since 1 July 2007. This should detail how much waste was collected and when, what company collected it, its final destination, and whether it was recovered or disposed. Remember, you are responsible for this potentially hazardous waste and must be able to show, when requested, that it has been properly treated by a correctly licensed/permitted operator.
- Do not dispose of any VOC-containing materials as part of domestic or municipal waste.
- Do not allow VOC-containing materials to enter any drains, sewers or water courses, or be discarded on the ground.

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[5] Improperly stored materials such as cloths, paper or rags soaked with VOCs under certain conditions can lead to spontaneous combustion. Steps to avoid this risk include using small storage containers, emptying these daily, not compressing the material, not mixing with ordinary waste, and keeping in an ambient temperature below 25 ^{o}C.

Also, some solid waste containing dried paint should be considered hazardous materials, for example masking paper, protective clothing or booth filters, where topcoats containing lead or primers containing zinc chromate have been used. These wastes should be stored appropriately and collected by a correctly licensed/permitted waste operator.

1.9 Certificate of Approval

After 1 March 2008 you will need a **Certificate of Approval** in order to operate a vehicle refinishing installation within the law. It is an offence under S.I. 199 of 2007 to operate without one after this date.

To obtain your Certificate of Approval, you will need to get a compliant inspection carried out by an Accredited Inspection Contractor (AIC). The AIC will produce a report, which you must submit to the local authority before 1 March 2008 (local authorities have 21 days in which to issue their approval or otherwise). The cost of the AIC inspection must be borne by you. If you undergo an AIC audit and are found to be non-compliant, you must correct any non-compliance immediately and achieve a compliant audit result before applying to the local authority for a Certificate of Approval.

For new installations, a compliant AIC report must be submitted to the local authority and their approval obtained before commencing operations. Where planning permission applies, the requirements of these Regulations shall also apply.

1.9.1 The Accredited Inspection Contractor (AIC)

The inspection contractor used to prepare the AIC Report must be accredited by the Irish National Accreditation Board (INAB) to ISO 17020 under the 2002 Regulations. A list of accredited AICs is available at www.inab.ie or contact INAB at Wilton Park House, Wilton Place, Dublin 2. Phone 01 607 3003.

1.9.2 The AIC Report

The AIC Report demonstrates whether or not your facility complies with the requirements of the 2007 Regulations.

It will recommend whether a Certificate of Approval should be granted or refused and the reasons for the decision. It may also contain recommendations or conditions considered necessary by the AIC to ensure compliance with the requirements, including time-frames as relevant. For compliant reports, such recommendations and conditions may relate to issues, which if they were not to be addressed, might result in a non-compliance arising with the requirements. Where a non-compliant report is issued, the recommendations and conditions may relate to those issues that have actually resulted in a non-compliance with the requirements.

1.9.3 Obtaining the Certificate of Approval

To obtain your certificate of approval, submit the following to your local authority:

- the registration form in Appendix 2 of these Guidelines.
- the compliant AIC report.
- a fee of €50.

Contact your local authority environment section to find out the procedure for registration.

If the local authority is satisfied that the Regulations are being complied with it must issue the certificate of approval within 21 days of an application being submitted. Any recommendations or conditions in the AIC report will be attached to the certificate of approval.

If the local authority considers that the Regulations are not being complied with, it will notify you of its refusal to issue a certificate. The local authority can pursue prosecution for an offence under the Regulations if considered necessary.

The local authority can also look for further information if it is not satisfied with the AIC Report.

1.9.4 Renewing the certificate of approval

The frequency of inspection by an AIC depends on the expiry date of your Certificate of Approval. Certificates of Approval are granted by the local authority and will be valid for 2 years before expiry. For all obligated businesses in existence on 1 March 2008, the Certificate of Approval will expire on 1 March 2010. For renewal of a Certificate of Approval, another AIC inspection must be carried and the associated AIC report, along with completed renewal application form and registration fee, should be submitted to the local authority not less than 28 days before the expiry date of the current certificate of approval.

1.9.5 Offences under the 2007 Regulations

Either the EPA or local authorities can prosecute persons accused of committing offences under these Regulations. Failure to comply with the Regulations can lead to a fine of up to €3,000, or 12 months imprisonment, or both.

Offences can include operating without a Certificate of Approval, or not complying with the requirements of the Certificate of Approval.

Where non-compliance with the requirements of these Regulations poses an immediate danger to human health, the local authority can require suspension of the operation for so long as the non-compliance continues and until it is satisfied the installation complies with these Regulations.

1.9.6 Avoiding Nuisance

Operating a vehicle refinishing installation in compliance with the requirements of these Regulations should normally avoid nuisance being caused to neighbouring premises. However, Solvents/VOCs have particular odour properties which require any exhaust or fugitive gasses to be adequately dispersed. Complaints of solvent odours will need to be competently assessed to ensure that human health is not endangered.

1.9.7 Enforcement

The main onus to comply lies with the activity operator and it shall be an offence to operate from 1 March 2008 other than in compliance with a valid Certificate of Approval. There is a legal obligation on the operator to inform the authorities where non-compliant product is supplied or where non-compliant conditions have arisen at their installation. They must cease operations where human health is in immediate danger. Operators must not obstruct or wilfully withhold information from competent bodies.

The local authorities are the competent bodies responsible for the enforcement of the Regulations within their functional area. The EPA is the Competent Authority for the purposes of the Directive and these Regulations and will exercise general supervision and offer guidance as necessary. The EPA Office of Environmental Enforcement will support the local authorities work in this regard through the Environmental Enforcement Network.

It is anticipated that a programme of information dissemination, in addition to consultation on this guidance document, will result in the majority of obligated operators registering. AICs will be entitled to offer their services to all relevant operators and may inform the authorities where they suspect non-registration is occurring. Obligated activities that do not register can expect escalating enforcement action including inspection, formal warning and legal action.

1.10 AIC Inspection

1.10.1 Preparing for the AIC Inspection

You will need to do a certain amount of work before you bring an AIC in to inspect your premises. You will need to gather the following:

1 A list of all vehicle refinishing products in use at the installation since 1 July 2007 (or for the relevant period in the case of subsequent audits), broken down into the categories of product shown in the table in section 3.2.

2 Confirmation that each vehicle refinishing product purchased since 1 July 2007 that was produced since 1 January 2007 meets the VOC limits set and is labelled (or within the relevant period for subsequent audits).

3 Records of the total litres purchased per month for each refinishing product since 1 July 2007 (or for the relevant period in the case of subsequent audits).

4 Records showing HVLP guns and gun wash equipment are in proper use.

5 For VOC-containing waste sent off-site since 1 July 2007(or for the relevant period in the case of subsequent audits), the documentation obtained from the waste company. This is for VOC-containing liquid waste (e.g. gunwash) and VOC-containing solid waste (e.g. solvent containing rags, solvent containing paint solids, etc).

6 Where you are using the exemption for vehicle refinishing products for vintage vehicles: since 1 July 2007 you must provide the written permit from the Minister for the Environment, list the vehicle refinishing product names, the category of refinishing products, the VOC content of such products, the quantities used, and the make, model and vehicle registration number of each of the vintage vehicles refinished.

7 A list of the personnel who operate spray equipment, who carry out paint mixing and preparation, and, where applicable, who operate any on-site solvent recycling unit.

8 Written records of all relevant training carried out either in-house or by equipment suppliers.

9 Written procedures for the acceptance (goods inwards) of VOC containing products checking for compliance with labelling and VOC content.

10 Written procedures for all activities involving the use and handling of VOC containing substances and waste.

Your supplier(s) will be able to provide you with a lot of the above information in items 1 to 3, but it is up to you to ensure all the refinishing products in your store-room are on your list and are compliant by the dates specified.

Non-compliant products (except those explicitly permitted for vintage vehicle restoration but not including those surplus to requirements following vintage vehicle restoration) should not be retained beyond the end of 2007. Permitted non-compliant products should be stored separately and their use subjected to appropriate controls. If they are not used up in the course of refinishing by the end of 2007, they should be treated by an appropriately licensed waste company. If they are still available in your storeroom after 1 January 2008 the AIC can only assume that they are "in use".

N.B. there will be a Microsoft Excel spreadsheet available (www.epa.ie) that can be used to record the above information.

The checklist in the following section can be used as an aid before getting an AIC inspection.

1.10.2 CHECKLIST BEFORE UNDERTAKING AN AIC INSPECTION

Y/N	QUESTION
Compliant Product Requirements	
	Are all vehicle refinishing products listed and categorised into the category of product?
	Has the actual VOC content (g/l) of the product in a ready to use condition been listed?
	Are all products compliant with the relevant maximum VOC limit for the category of product? (from 1 January 2008)
	Are all product containers labelled with the category of product, associated maximum VOC limit, and actual VOC content?
	Has the quantity of each of the vehicle refinishing products purchased since 1 July 2007 been listed?
Vintage Vehicle Exemption	
	Is refinishing of vintage vehicles carried out? (if not, ignore the rest of the questions in this "vintage vehicle exemption" section).
	Do you have a list of the names of such vehicle refinishing products used since 1 July 2007? (or for the relevant period in the case of subsequent audits) NB You need a permit from the Minister for the Environment
	Have you categorised them into the type of coating?
	Have you listed the associated VOC content of each product?
	Have you listed the quantities of each product used since 1 July 2007? (or for the relevant period in the case of subsequent audits)
	Have you listed the make, model and vehicle registration number of each of the vintage vehicles refinished since 1 July 2007? (or for the relevant period

	in the case of subsequent audits)
	Are materials designated for vintage vehicle restoration stored in a clearly defined location away from compliant product?
Management and Supervision	
	Are staff supervised to ensure procedures are adhered to?
Staff Training Requirements	
	Have you a list of the names of all staff who operate spray equipment and carry out spray gun cleaning ?
	Have you a list of the names of all staff who carry out paint mixing and preparation?
	Where relevant, have you a list of the names of all staff who operate any on-site solvent recycling unit (where present)?
	Have staff who carry out spraying been trained in the correct operation of spray equipment and gun cleaning either as part of apprenticeship documented training, documented training from equipment suppliers, or documented in-house training from a trained staff member?
	Have staff who carry out paint mixing and preparation been trained in the correct operation of preparation and mixing equipment either as part of apprenticeship training, training from equipment suppliers, or in-house training from a trained staff member?
	Where relevant, have all staff who operate any on-site solvent recycling unit been trained in the correct operation of this equipment either as part of apprenticeship training, training from equipment suppliers, or in-house training from a trained staff member?
	Has all training that has been provided in-house or provided by equipment suppliers been documented with dates of training, what the training consisted of, and the staff names, trainers' names and signatures?
	Are all staff familiar with the standard operating procedures for the activities in which they are involved? Are staff supervised adequately in the course of their work to ensure that procedures are followed and training correctly applied?
Equipment Requirements	
	Are HVLP spray guns only in use?
	Is gun washing only carried out in gun washing equipment?
VOC-containing Product Handling and Storage Requirements	
	Are there any drains that could be affected by an accidental spillage in the vicinity of areas where VOC-containing liquids are stored, handled and used?
	Are all VOC-containing containers kept closed when not in use?
	Are employees instructed to do this?
	Have you designated VOC-containing material storage area(s)?
	Are these storage area(s) ventilated?

	Are these storage area(s) able to be secured against vandalism or unauthorised access?
	Are these storage area(s) arranged to avoid any damage from collisions or spills from trips as far as possible?
	Is there a Standard Operating Procedure for actions in the event of accidental spillages?
VOC-containing Waste Requirements	
	Have you maximised the amount of VOC-containing waste streams that are sent for recovery for reuse rather than disposal?
	Have you set up adequate arrangements for the handling, storage and recovery/disposal of VOC-containing *liquid* wastes (gun-wash and waste liquid products)?
	Have you set up adequate arrangements for the handling, storage and recovery/disposal of VOC-containing *solid* wastes (waste cloths/rags/paper containing VOCs and waste paint solids containing VOCs)?
	Have you checked that the companies you use for removal of VOC-containing waste are currently licensed/permitted to take this waste?
	Have you instructed employees on these arrangements for VOC-containing solid and liquid wastes?
	Have you retained waste transfer documentation for all VOC-containing waste shipments since 1 July 2007? (or for the relevant period in the case of subsequent audits)
	Have you checked that such documentation contains: - how much waste was collected, - when waste was collected, - what company collected it - the company collection permit number, - the final destination of the waste, - whether the waste was recovered or disposed.

1.10.3 The Inspection Process

The Accredited Inspection Contractor (AIC) inspector may ask for your documentation in advance of the day of the inspection.

On the day of the inspection, the AIC inspector will:

- Review the documentation that you have compiled on the list of all vehicle refinishing products in use at the installation from 1 July 2007 (or for the relevant period in the case of subsequent audits), broken down into the categories, and confirmation that they meet the limits set for each category.
- Carry out spot checks on the back up documentation for these figures (e.g. against labelling on product cans, invoices, waste certificates of disposal, etc.).
- Tour areas of the premises relevant to the refinishing operation – spray booths/ovens, paint mix rooms, vehicle preparation areas where solvents are used, solvent recycling units (where used), paint and thinners storage areas, waste solvent storage areas, location of booth/oven stack outlets, etc.
- Interview relevant employees – e.g. sprayers, purchasing personnel, etc.

It should be noted that the inspector is looking for documented and observable evidence that you have complied with the requirements of this guidance. That is where documentation helps a lot along with demonstrable good practice in the workplace.

It may be the case that a follow up visit is required – this depends on the outcome of the inspection and the professional judgement of the AIC inspector. NB: the National Protocol that the AIC inspector will use, and which contains the AIC report template, is available at www.epa.ie

Appendix 1.1 Categories of Vehicles from Directive 70/156/EEC as amended

Category M: Motor vehicles with at least four wheels , designed and constructed for the carriage of passengers.

- Category M_1: Vehicles designed and constructed for the carriage of passengers and comprising no more than eight seats in addition to the driver's seat.
- Category M_2: Vehicles designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass not exceeding 5 tonnes.
- CategoryM_3: Vehicles designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass exceeding 5 tonnes.

Category N: Motor vehicles with at least four wheels designed and constructed for the carriage of goods.

- Category N_1: Vehicles designed and constructed for the carriage of goods and having a maximum mass not exceeding 3.5 tonnes.
- Category N_2: Vehicles designed and constructed for the carriage of goods and having a maximum mass exceeding 3.5 but not exceeding 12 tonnes.
- Category N_3: Vehicles designed and constructed for the carriage of goods and having a maximum mass exceeding 12 tonnes.

Category O: Trailers (including semi-trailers)

- Category O_1: Trailers with a maximum mass not exceeding 0.75 tonne.
- Category O_2: Trailers with a maximum mass exceeding 0.75 metric ton but not exceeding 3.5 tonnes.
- Category O_3: Trailers with a maximum mass exceeding 3.5 but not exceeding 10 tonnes.
- Category O_4: Trailers with a maximum mass exceeding 10 tonnes.

'Maximum mass' means technically permissible maximum laden mass.

Taken from Council Directive 70/156/EEC of 6 February 1970 on the approximation of the laws of the Member States relating to the type-approval of motor vehicles and their trailers, Official Journal L 042 , 23/02/1970 as amended.

Appendix 1.2 Definitions

These definitions are taken from the Limitation of Emissions of Volatile Organic Compounds due to the Use of Organic Solvents in Certain Paints, Varnishes and Vehicle Refinishing Products Regulations 2007 (S.I. No. 199 of 2007).

The definition of "**Volatile organic compound**" (VOC) is as follows:

> any organic compound with an initial boiling point less than or equal to 250°C measured at a standard pressure of 101.3 kPa.

The definition of **"VOC content"** is as follows:

> the mass of VOCs, expressed in grams/litre (g/l), in the formulation of the product in its ready to use condition. The mass of VOCs in a given product which react chemically during drying to form part of the coating are not considered part of the VOC content.

A definition of each of the **categories of products** is as follows:

(a) "**preparatory and cleaning"** means products designed to remove old coatings and rust, either mechanically or chemically, or to provide a key for new coating:

(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 surface/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 primer surfacer:

(i) "**surfacer/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, under-coats, 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 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.

(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 1.3 Application Form for the Certificate of Approval

LIMITATION OF EMISSIONS OF VOLATILE ORGANIC COMPOUNDS DUE TO THE USE OF ORGANIC SOLVENTS IN CERTAIN PAINTS, VARNISHES AND VEHICLE REFINISHING PRODUCTS REGULATIONS 2007

Application for Certificate of Approval/Renewal of Certificate of Approval

Name and address of the operator of the vehicle refinishing installation:

Address of the vehicle refinishing installation if different from above:

I am applying for a certificate of approval/renewal of certificate of approval (delete as appropriate) for the above named installation under article 13/article 14 (delete as appropriate) of the above-named Regulations.

I enclose the report of the accredited inspection contractor for the above installation, together with the registration fee of €50.00.

Signature.....

Date.....

Guidance for Vehicle Refinishing for Repair

PART 2: What you should consider doing

Excellent Practices for Vehicle Refinishing for Repair

A guide to what is considered current state of the art for vehicle refinishing for repair

Part 2: Contents

2.1 Introduction

Part 1 of this document deals with mandatory requirements for vehicle refinishing for repair under the 2007 Regulations. This section of the document, Part 2, outlines what is considered "state-of-the-art" or "World Class" for the vehicle refinishing for repair sector, particularly in relation to VOC-material use and emissions. These techniques are not current requirements under the 2007 Regulations, but may be practices which you could consider implementing at your facility. In many cases these will save you money in the long run and improve work quality as well as protecting employee health and the environment.

2.2 Choice of Repair Method

There are techniques which can be used in certain instances which can avoid the need for spraying in such cases. Using such alternatives will help free up the booth for other spray work:

- Dry guide coat. Guide coats are used to show up imperfections in fillers and primers prior to sanding. A dry product is available which can be used instead of aerosols or paint. This avoids VOC emissions and waiting time for the guide coat to dry.
- Scratch/chip repair systems. These systems can be used in certain instances for minor scratches or chips. They allow mixing of very small amounts of paint. These systems use much less paint and less masking is required. You may have to ensure quality of finish is sufficient for the job required.
- Paintless dent repair. Used for very small dents where paintwork is not damaged and is not located at the edge of a panel. A massaging tool massages out the dent from the inside out. A series of tools is used which allow the massaging tool to work in more awkward areas.

2.3 Choice of Coatings

2.3.1 Evaluate Products in Use

Carry out a written assessment of all refinishing products in use to identify those that contain the following substances:

- VOCs - list actual VOC content against the VOC limit for the category of product in question.
- substances which are hazardous to health or to the environment. The material safety datasheets of refinishing products in use should be reviewed to identify what risk phrases have been assigned, if any.

Determine and record at what level such substances are present.

Undertake regular assessments of such refinishing products to identify potential for substitution with alternative materials that:

- result in reduced VOC emissions
- contain substances which are less hazardous to health or to the environment than those currently in use.

By tracking the usage of each product, you can prioritise high use products for substitution.

2.3.2 Current Alternatives

The final VOC content limits that were adopted in the Directive (see Part 1), are actually more generous in some of the categories than the levels originally identified by an EU study[6].

Hence there are products commercially available for some of the categories of coatings that go beyond the compliant coating VOC limits, i.e. they have even lower solvent content than that specified in the Regulations.

Such products should be used where feasible, taking into account effects of using additional energy as applicable.

2.3.3 Future Alternatives

There are alternative coatings used in other areas but being developed for the refinishing sector which may be used in future including:

- UV-A curing technology. Will reduce energy costs associated with curing coatings.

- Use of supercritical carbon dioxide instead of VOCs as the solvent in paint systems. The use of supercritical carbon dioxide also provides superior atomisation during spraying.

2.4 Choice of Equipment

2.4.1 Application Equipment

In addition to the use of HVLP spray guns as specified in Part 1, excellent practice includes:

- Use of gravity cups rather than siphon cups in HVLP guns which give reduced paint wastage and are easier to clean.

[6] Reducing VOC emissions from the vehicle-refinishing sector (Entec UK Limited and the paint research Association, August 2000).

- Use of roller application of coatings for areas that will not be visible such as internal areas that will not be on display. This gives higher transfer efficiency than spraying.
- For large single colour paint jobs use of pumped remote paint feed. Minimises potential wastage through mixing, residual paint in containers, etc. Also allows use of equipment that mixes the two components just before the spray gun. This minimises wastage due to mixing too much material or through delays in the spraying operation.

2.4.2 Spray Booths

Excellent practice for spray booths includes:

- Use of spray booths for carrying out all spraying activities.
- Ensuring spray booths are designed with optimal air flowates and minimum air turbulence. Design should aim to minimise overspray landing on lighting and walls.
- Ensuring booths are designed to minimise energy use through recirculating air-flow during curing phase, heat exchange between the exhaust/incoming air, programmable painting and curing times, automatic switching to idling mode when not spraying, and variable speed drive motors on the extraction system.
- Ensuring spray booth lighting is designed for the optimal level of lighting and kept at this through regular cleaning of light fixtures and walls and planned lamp replacement at fixed intervals. Ensuring the booth walls have been coated white will increase the effectiveness of the lighting.
- Establishing the optimal air flow-rate for the spray booth, in conjunction with the supplier if necessary, and operating the booth at this flow-rate when spraying.
- Regularly replacing spray booths filters for particulate removal according to the manufacturers instructions. Establishing the frequency at which filters should be replaced and implementing this. Newer models have filter pressure drop monitoring which indicates when replacement is needed.
- Keeping spray booths clear of any clutter to minimise air turbulence.

2.4.3 Compressed Air Supply System

Excellent practice for compressed air includes:

- Ensuring a design and layout of the compressed air delivery lines that minimises pressure drop.
- Use of an air supply system that removes moisture, oil, and dust.
- Ensuring the compressor is sized correctly to minimise energy costs.
- Use of pressure gauges on the system and ensuring they are working.

- Maintenance: draining the air compressor daily, or use of an automated drainage timer on the system.

2.5 Benchmarking

Benchmarking your use of vehicle refinishing products against your level of activity.

Litres of coatings and gun wash used per month or Litres per individual sprayer per month etc.	versus	Number and type of jobs in the month or Number of painting hours in the month or Monthly turnover etc.

This can be used to track your own performance over time, or can be used to compare your operation with other refinishing operators willing to share data.

2.6 Surface Preparation

Appropriate surface preparation to ensure optimal coating and minimise reworks. Excellent practice includes:

- Washing off dirt using detergent and water followed by a water rinse before using any pre-cleaners.
- Use of pre-cleaners that can be diluted with water, where possible. Waterborne products based on alcohol and detergents below the compliant limit of 200 g/l are available.
- Use of spray bottles for pre-cleaners to spray a mist of pre-cleaner on the surface which is then wiped with a cloth. This uses less solvent than soaking or pouring liquid solvent on cloths. Alternatively, use cans with plunger/piston pumps for pre-cleaners.
- Use of a rental service for cloths instead of disposing them. This service provides clean cloths, collects used cloths, and launders them for reuse while recovering the solvents.
- Use of dispensing units for fillers that give out the exact amount required to reduce wastage.
- Removing parts from vehicles before coating where feasible – this will reduce masking requirements.

2.7 Paint Mixing

Accurate estimation of, and mixing of, the amount of coating needed. Excellent practice includes:

- Measuring the area to be painted accurately.
- Use of paint manufacturers' charts and specifications to mix the right quantity. Use of a colorimeter or spectrophotometer could be considered.
- Use of an electronic precision scales. Ensure this is calibrated on a periodic basis and kept clean. Enclosing the scales in a sealed plastic bag to prevent spillages from causing weighing inaccuracies.
- Use of an automated paint dispenser.
- Use of a computerized precision paint mixing system which allows paint use by individual sprayers to be logged, improves work scheduling, and assists with stock control.
- Use of software for calculating material requirements for each job based on the type of repair and the repair area. This makes it easier to mix small amounts and reduces wastage.
- Use of colour matching software.
- Use of software for job colour scheduling to minimise frequency of gun cleaning.
- Use of a system of preparing small metal test blanks along with every job to aid future colour matching.
- Establishing a process of comparing estimated and actual paint used to refine estimation techniques.

2.8 Refinishing Operation

Excellent practices for each time spraying is carried out include:

- Choosing spray gun nozzle size to match refinishing product; choosing air hose recommended by the spray gun manufacturer.
- Ensuring air passages in the gun are not clogged.
- Ensuring air pressure matches that recommended by the spray gun manufacturer, and air is not too hot (causes solvent to evaporate before reaching the surface).
- Setting up the spray gun correctly (lowest air pressure chosen that will still provide the required atomisation; optimal fan width suitable for the specific job and fluid flowrate) with a test spray of the pattern before beginning work.
- Ensuring booth air flow and temperature are at the required levels.

- Operating the spray gun correctly (gun to workpiece distance, spray gun held perpendicular to the surface, constant speed, timing of start and end triggering, spray pattern, overlap previous stroke by 50%, visual feedback, edge painting techniques).

Use of a laser guidance device on the spray gun to ensure optimal distance is maintained could be considered. This uses two laser beams that form a single dot when the spray gun is at the optimum distance. Too close, too far, or angled, the beams separate into two dots. Allows for high efficiency spraying and accurate 50% overlap.

2.9 Drying

Infrared drying lamps can be used for curing small painted areas, reducing energy costs by avoiding heating the entire booth and freeing up the spray booth at the same time.

2.10 Spray Gun Cleaning

Excellent practice for spray gun cleaning includes:

- Cleaning equipment immediately before paint hardens.
- Storing left over primer and basecoat for reuse.
- Pouring excess paint into a separate container before cleaning the spray gun. Such waste paint should be disposed of appropriately for recovery or disposal.
- Use of a spatula to scrape out paint residue from the gun cup before cleaning to reduce contamination of the gun-wash.
- Pre-cleaning the gun-cup before putting it into the gun cleaner to prolong gun-wash life.
- Use of gun cleaning equipment which:
    - Is automated. Automation minimises the amount of solvent used and reduces the man-hour requirement. Use of the manual option in the equipment should be minimised.
    - Re-circulates, filters and reuses gun-wash during the cleaning operation.
    - Recovers spray out rather than let it vent to the extraction system.
    - Sends spent solvent to an enclosed container for eventual off-site recovery and reuse.
    - Is covered.
    - Is ventilated but kept to the minimum required for occupational health.

- In addition to sending waste gun-wash off-site for recovery and reuse as specified in Part 1, use of:
    - spray gun wash that has already been recovered from other industries and purified/recycled.
    - low VOC solvents.
- If using an on-site recycling unit, ensuring VOC emissions associated are not significant, i.e. that the condenser on the unit is efficient.

2.11 Material Handling

Excellent practice for materials handling includes:

- Use of enclosed containers for local dispensing of thinners, precleaners, degreasers, etc. such as spray bottles, small plunger cans that dispense small amounts of solvents onto a cloth, or containers with sealed nozzles.
- Minimising the amount of single use aerosols as these prove expensive and are wasteful in terms of empty packaging. Alternatively use bulk material with refillable sprays or refillable aerosols that can be pressurised with the compressed air supply.
- Keeping a spill kit to hand to wipe up any significant solvent spillages and training of workers in its use.
- Use of a bunded area or bunded pallet for storage of VOC-containing liquid material and liquid waste.
- Use of a temperature controlled storage area to keep viscosity at optimum levels.
- Air extraction of solvent-using gun washing equipment and the paint storage area.

2.12 Maintenance

Excellent practice for maintenance includes:

- Regular replacement of spray gun parts to ensure they are not worn.
- Regular inspection of air supply system for leaks and fixing of them as soon as possible.
- Regular replacement of filters in spray booths and exhausts at the frequencies specified by the manufacturer and keeping a written log as to when they are replaced.
- Regular inspection of spray booth filters to ensure they are fitting correctly, are not damaged, and are not excessively clogged.
- Regular cleaning the filters in the gun-washing equipment.
- Regular inspection of gun-washing equipment for any leaking hoses or poor fitting lids and replace as soon as possible.

2.13 Training

Excellent practice is to carry out regular refresher training on all of the above for all relevant employees.

2.14 Avoiding nuisance

Noise from fans, operations, equipment and traffic movements need to be managed to ensure harmony with local conditions.