Installation Description B1

The Reefer Trailer Centre is a body shop dedicated to the repair and refurbishment of HGV refrigerated trailers and is requesting a permit for the painting of these trailers at its site on Whieldon Road, Stoke on Trent, ST4 4HP.

The site incorporates a 4-trailer open workshop suitable for working on 4 HGV trailers at a time. Trailer preparation is carried out in order that trailers can be painted in one of our 2 spray booths, adjacent to the preparation bays.

Preparation Bays

Activities including grinding and sanding of HGV trailers to prepare them for final paintwork finish. Trailers are worked on by trained technicians to manufacturers guidelines and any fumes generated in the sanding of trailers are exhausted via an integral system that has been installed in the workshop open bay area. Extraction equipment is provided for all sanding equipment which is extracted into a filter bank in the plant room. There are 9 points of extraction for this particulate in the preparation bay area.

Once structural repairs are complete trailers are prepared for painting. This involves masking of the trailer with paper and adhesive tape. Control of particulate matter from sanding and grinding activities in this area are dealt with by our extraction system, filter bank and general good housekeeping.

Paint Mixing room

Paint is mixed in a ventilated mixing room. Exhaust shown on “extraction chimney points 3” drawing. The room is mechanically vented to achieve an air change rate of 20+ air changes per hour. This is sufficient to prevent solvent emissions into the workshops. The door is tight fitting and has a self-closing mechanism. Full specification attached to this application “paint mixing room reefer trailer 22”.

Spray Booth 1 & 2

Of identical proportions and fitted with the same extraction and filtration equipment. Clean air is drawn into the bays through filters. As the air moves through the bay during the spraying process air passes through a filter bank before it can escape into the atmosphere. The filter type is a Volz glass fibre mat. Specification attached “Dust stop new data sheet”

Both spray Booths have been supplied and commissioned by reputable company STL who have been manufacturing and commissioning spray booths since 1993 and are considered one of the UK's leading manufacturers in this area.

The paint material used is two-pack paint including primers. Some of the metallic or pearlescent finishes are over lacquered with clear, two-pack lacquer. Paint is applied with suction and gravity fed air atomising spray guns. High velocity Low Pressure guns, with better than 65% transfer efficiency, are currently in use for all paint materials. Compressed air is filtered at the take-off point within the booths and is supplied via 2 electrically- driven scroll compressors. Painting operatives wear airline breathing equipment and the air is tested regularly to BS4275 for breathing air purity.

When painting is finished there is an initial period where the extraction rate in the spray booth is reduced, and air is re circulated through the spray booth heating system. The booth heating is provided by an indirect gas burner. All exhausts are passed to the atmosphere via a stainless-steel flue pipe which passes through the roof of the plant room. For most paint jobs baking time is circa 40 minutes at 65 degrees centigrade. Once the trailer has cooled down the masking and tape is removed.

Potential VOC risk areas are the spray booths, preparation bays, paint mixing room and gun cleaning cabinet (Sited in the paint mixing room). Particulate matter from spray painting activities is dealt with via the filter system

<u>Spray Gun Cleaning</u>

Prior to cleaning, the guns are drained of all unused paint. The receptacle is a sealable drum which, when full is removed by a specialist licenced contractor, for recycling. After use the guns are cleaned in a specialist gun cleaning machine which recirculates the cleaning solvent. Spray guns are partly stripped and then the components are placed over the cleaning nozzles within the gun washer. An air operated pump recirculates the solvent through the nozzles, effecting the cleaning. At the end of the process a small quantity of thinners is used to rinse through and blow through the gun to ensure the gun is completely clean. Specification of sprag gun cleaning machine is attached to this application "spray gun cleaning manual".

Foreseeable Emissions to Air

Particulate matter (dust) from sanding grinding activities. Controlled by extraction system, filter bank and good housekeeping.

Particulate matter from spray painting activities – filter system in spray booths

VOC from paints, cleaning solvent and thinners. Only compliant coatings are used.

Aspect and Impact Assessment Spray Booth

Aspect	Impact	Control Measure	Result
Use of Paint, cleaning solvent and Thinners	Harmful to the environment -Air and soil	Air extraction system in use and maintained. Waste management control Spillage response plan implemented Management Audits carried out and deficiencies actioned. All coatings are compliant	Controlled – not significant
Generation of Wastepaper	Use of natural resources	Waste Paper is segregated Recycle where possible	Controlled – not significant
Use of electricity	Depletion of fossil fuels	Use of LED lights to minimise power consumption Lights only used when required All machinery and equipment maintained to ensure optimum performance	Controlled – not significant

B2

Extraction and emission points for the installation are as shown in plan "Extraction chimney points 3 off". There is a chimney for each spray booth located in the plant room which extracts for both spray booths and a chimney

from the paint mixing room where all “fugitive source” items are stored. No monitoring of emissions has been done.

B3

Spray booth emissions are filtered before being extracted through the chimneys shown in the plant room “extraction chimney points 3 off”.

Filtration system – This is used to remove particulates because of grinding and sanding from the preparation bay area.

Gun Wash – This is used to removed toxic paint and resulting fumes from all spray guns.

Paint tins – Original paint tins used to store paint that hasn’t been completely utilised from a tin. Lids refastened securely.

B4

Bunds provided for opened thinners tanks to stand on in the paint mixing room.

Closed cloche cabinets are used for stored paint, cleaning solvent and thinners tins.

Any cloths or rags that have encounter material that emits fumes are disposed of through an environmental waste recycling company.

Spill kits are provided for any potential spillages on site.

B5

A daily visual check is undertaken to ascertain if there are any emissions that are being emitted.

B6

Techniques for environmental management for installation activities include daily visual checks of the spray booths and filter banks, exhaust systems for the air supply in the spray booth preparation area. The plant and gas burner in the plant room is serviced every 6 months in line with manufacturers guidelines by the OEM.

Daily inspections of bag filters ensure the dust from spray booth preparation area is cleared away when they are full and ensures efficient operation of the extraction system.

Gun cleaning process are in place to ensure that this activity is well managed as described in B1.

All solvent waste is stored in the paint mixing room and disposed of by our external specialist contractor “premier clean (Midlands) Ltd”.

B7

Plan attached to this application “plan of premises and spray booth”.

Organic solvent containing material is stored in the paint mixing room (position 1 on drawing) and Waste storage is also in the paint mixing room in position 2 shown on the plan “organic solvent storage”.

B8

All organic solvent containing materials are kept in the paint mixing room.

B9

Attached to the application are commissioning and performance certificates for spray booth one and two. “Booth 1 com 01, com 02, com 03 and booth 2 com 01, com 02 and com 03”

B10

Dispersion model to be provided by manufacturer and installer of the spray booths, STL.

B11

VOC emission and paint solids used is measured via an online portal with our chosen supplier of paints which is Cunbar. At any given time, we can access this portal and show live information on our use of paint solids and mass of VOC is emitted.

B12

Spray Booth filters must be checked daily to ensure they are operating and fitted correctly. If the filter is not operating correctly or is fitted incorrectly it must be changed immediately. A log of these inspections is kept on the form below.

Paint Booth Filter Check/Change Log Sheet -

Spray Bay: _____

Filters must be checked daily and changed when required						
Date	Time	Checked	Changed	Reason	Signature	Gauge Reading

Spray booths are also checked daily and visually to make sure they are in a suitable condition for safe use and that they are free from items including waste that could potentially affect the efficient running of the extraction equipment. Please see “paint Booth Inspection” attached to this application.

B13

Not Applicable

B14

Description of spray gun cleaning is given in B1.

B15

Spray gun cleaning is carried out in the paint mixing room which is filtered and exhausted via a stainless-steel flue.

B16

VOC emissions from solvent contaminated wipes and other wastes are dealt with in the following way.

1 x 12-yard Contaminated paper poly closed skip

1 x 12-yard Contaminated waste skip (overalls etc) closed tight container to prevent off gassing of VOCs

1 x 8-yard crushed paint can skip closed container tight to prevent off gassing of VOCs

1 x 3Yard skip, solid waste cake closed tight container to prevent off gassing of VOCs

Waste Solvent collection by Premier Clean (Midlands) ltd.

B17

Not Applicable

B18

All staff operating in both the preparation bays and spray booths are given a full induction on commencement of employment. Staff members are given the relevant training for operating in these areas that are subject to emissions. Including and not restricted to the use of spray guns, cleaning correctly of spray guns, correct storage of spray guns, handling of paints, cleaning solvent and thinners safely, storing of paints, cleaning solvent and thinners, how to deal with a spillage and how to safely dispose of potentially hazardous items.

Toolbox Talk programme is in use for all staff working in both the spray booths and preparation bay areas.

B19 & B21

Not applicable

B20

No SSSI's within 500 metres of the installation

B21

Our facility is based in an industrial area and as such poses no significant impact to natural habitats for conservation

B22

No environmental impact assessment has been carried out.