



## ERA 21. Motor Vehicle Workshop Operation

### Environmental Protection Act 1994

#### DEFINITION>>

A motor vehicle workshop operation consists of operating a workshop on a commercial basis involving any of the following relating to motor vehicles:

- Maintaining mechanical components, engine cooling radiators or body panels;
- Spray painting body panels; or
- Detailing or washing.

A motor vehicle workshop for the purposes of this legislation does not include:

- Operating a workshop for the purposes of a farming, gas, mining or petroleum activity
- A fleet vehicle workshop to maintain or repair fewer than 10 vehicles;
- Washing motor vehicles if all the water used is discharged to a sewerage infrastructure under a trade waste approval or the washing is required under a law of the State for weed or pest control;
- Operating a workshop to maintain or repair:-
  - auto electrical, exhaust, suspension or air conditioning components of motor vehicles; or
  - wheels or tyres of motor vehicles, including wheel alignments; or
  - minor scratches, chips or dents using a brush, air brush or paintless method; or
  - motor vehicle hoses.
- operating a mobile and temporary workshop

In this section—

**Maintaining** includes servicing, tuning, reconditioning or repairing. **mechanical**

**Components** includes brakes, clutch, differential, gearbox, hydraulic systems, transmission and other drive-train equipment.

**Motor vehicle** means—

- a vehicle that is propelled by a motor that forms part of the vehicle and moves on wheels; or
- rolling stock; or
- an aircraft; or
- a boat.

#### VEHICLE SERVICING AND MAINTENANCE>>

##### Protect stormwater, groundwater and land from contamination

- Maintain impervious bunds around all stored oil (including waste oil) and solvent containers. Cover or roof any outside storage area.
- Cover all stored oils (including waste oils) and solvents.
- Place a drip tray under vehicles to catch spent oil, solvents or detergents.
- Use suitable absorbent, including biodegradable agents, to clean up liquid spills.
- Collect and store waste oil in appropriate enclosed containers for recycling.

Contaminated oil is to be disposed via a licensed waste removalist.

- Always drain used oil filters and collect oil for recycling.
- Appoint a staff member to regularly monitor liquid level in containers to avoid any overflow and to detect leakage. A dipstick can be used for this purpose.

**Note:** *The groundsheet or waste container must be large enough to cover the whole component or system of the vehicle that is being worked on.*

- Clean the used groundsheet or waste container using dry methods or in such a manner that does not contaminate stormwater or the ground.
- Use a waste oil collection tray during any oil change service to avoid oil spillage.

### **Minimise the risk of fire hazards**

- Avoid the use of sawdust or other readily combustible absorbents to clean up flammable liquid spills.

**Note:** *Oily and greasy rags and oil-soaked sawdust can spontaneously combust if stored in a confined space.*

### **Protect the air from particles and gaseous emissions**

- Never burn oily/greasy rags and paper, oil-soaked sawdust, plastics and rubber. Wrap and place waste materials in an industrial bin.

### **Minimise waste and site contamination**

- Store batteries that are damaged and/or unsuitable for reuse under cover and in a spill tray until a reputable recycler collects them.
- Recycle waste oil filters and oil.
- Never place any containers or vessels containing residual oil and fluid in industrial waste bins unless drained and cleaned.

## **PARTS CLEANING AND VEHICLE WASHDOWN>>**

### **Minimise VOC (Volatile Organic Compound) emissions into the atmosphere**

- Volatile liquids such as hydrocarbon solvents:
  - > must be stored in a covered container to prevent evaporation into the environment
  - > should be pumped instead of poured
  - > reuse or recycle solvents wherever possible
  - > return solvents that are unsuitable for reuse by the operator to a reputable solvent recycler.

### **Prevent contamination of stormwater, waterways, groundwater or soil and damage to the sewerage system**

*Wastewater from vehicle washdown must not drain to stormwater.*

- Never discharge wastewater, or let it escape, to the stormwater drainage system or the surrounding land.
- Carry out any washing in a covered and impervious area. It must be adequately bunded and drained to a holding tank or the sewer through a **trade waste approved** treatment system (usually an oil/silt interceptor trap or separator). The traps can be installed above or below ground as permanent or mobile installations (eg. when premises are leased a mobile system may be preferred).
- Direct wastewater to the sewerage system under the conditions of a **Trade Waste Permit**.
- For wastewater holding tanks, use quick-break degreasing compounds and detergents to reduce emulsification of oils and other hydrocarbons.
- Collect wastewater that is not reused, recycled or disposed of to sewer and dispose via a licensed waste removalist.
- Ensure ongoing maintenance of oil/silt interceptor trap/separator including the removal of sludge by a waste removalist.

### **Prevent contamination of stormwater and minimise water usage**

- In locations not serviced by Council sewerage system, collect the wastewater in a sump for either:
  - > Disposal via a licensed liquid waste removalist
  - > Treatment and reuse.

- > Recycle and reuse wastewater from on site treatment systems in other areas of the operation. This will minimise water usage and the associated costs.

### **Minimise environmental harm from potentially harmful cleaning compounds**

- Use environmentally friendly cleaners and avoid chlorinated solvents such as 1,1,1 trichloroethane (TCA) and methylene chloride. Water-based cleaners (e.g. alkaline degreasers/detergents) are best.

*Note: The solvent 1,1,1 trichloroethane is a controlled substance and must be reclaimed (see Schedule 2, Environment Protection Regulation 1998).*

- Where possible, clean parts with a brush rather than with solvents and aqueous degreasers such as alkaline or caustic soda.
- Use water pressure cleaning where suitable.

### **RADIATOR REPAIRS>>**

#### **Prevent radiator coolant (such as glycols), heavy metals, sludges and contaminated water entering the waterways and surrounding ground**

- Radiator coolant can be:
  - > directed to the sewerage system under the conditions of a **Trade Waste Permit**
  - > collected and disposed of via a licensed waste removalist
  - > stored separately in durable, enclosed containers and collected for recycling by a reputable recycler
  - > treated in the workshop and reused.
- Sludge from acid and alkaline baths must be collected for disposal via a licensed waste removalist
  - > Recycle solid wastes such as radiator cores and tanks.
- Dispose of caustic solutions that contain heavy metals/sludges from aqueous baths and radiator washings through:
  - > a waste removalist
  - > neutralisation of caustic solutions, separation of oily sludges and reuse of process water.
- Dispose of non-hazardous solid wastes and hoses to an industrial bin.

### **BRAKE FLUID>>**

#### **Prevent brake fluid entering the stormwater system, contaminating the waterways and the ground**

- Brake fluid can either be:
  - > stored separately in appropriate enclosed containers in a controlled area and disposed of via a licensed waste removalist, or
  - > stored separately and collected for recycling and reuse

### **SPRAY PAINTING AND PANEL BEATING>>**

#### **Surface Cleaning and Preparation**

- The by-products of surface preparation (e.g. sanding and filling) and cleaning of vehicles and vehicle parts that have environmental risks include:
  - > fine dusts
  - > water runoff from washing
  - > dirty stormwater runoff from the use of open aprons
  - > noise from equipment, powered tools, compressors and even loud radios.

#### **Prevent contamination of stormwater and minimise liquid trade wastes (wastewater), airborne dusts, water usage, labour and disposal costs**

- Never discharge wastewater, or let it escape, to the stormwater drainage system or onto the surrounding land.
- Bund and roof work areas.
- Wet areas are to be impervious (e.g. concrete floors).
- Drain water runoff or drainage from rubdown, washing or wet sanding to a suitable sump, holding tank or the sewerage system via a **trade waste approved** interceptor.
  - > Alternatively, pump washdown waters from a sump and treat (e.g. filtration, settling, aeration and chlorination) for reuse.
- A licensed waste removalist can also dispose of wastewater from a sump or holding tank. This is essential in any unsewered areas.
  - > Use a wet sponge and a bucket to wet sand prepared surfaces. Then use a wet/dry vacuum cleaner with bag filter to collect the sludge and dust instead

of sweeping and hosing down with water. Bag the dust or dried sludge before placing in the industrial bin for disposal to landfill.

- > Use tools connected to an efficient dust extraction system when dry sanding and grinding.

### Noise Control

- Control loud mechanical noises (and vibration), power tools and compressors. These can disturb the neighbours during panel beating activities.

### Minimise air emissions and oils in wastewater

- Surface and parts cleaning often requires the use of organic solvents, degreasers and detergents. Control the use of these to prevent solvent vapours and emulsified oils in wastewater.
- Collect solvents which are unsuitable for reuse in sealed containers for recycling either:
  - > internally (if cost effective)
  - > through a licensed solvent recycler.
- Use 'quick-break' degreasing compounds and detergents to reduce the emulsification of oils and other hydrocarbons where it is necessary to clean oily or greasy parts. Check with your supplier on the availability of these products.

### AUTOMOTIVE AIR CONDITIONING>>

#### Prevent release of Chlorofluorocarbons (CFCs) and R12 gases to the environment

(Schedule 2, 3, 4, 5, 8 and 9 *Environmental Protection Regulation 1998*)

- Only people with appropriate qualifications should handle air conditioning refrigerant gases and ozone-depleting substances. These should be handled in accordance with the 'Code of Practice for the Control of Chlorofluorocarbons from Motor Vehicle Air Conditioners' and *Environmental Protection Regulation 1998* at all times.
- Always reclaim refrigerant gases rather than discharge to the atmosphere.

### Spray Painting

- Spray painting involves the use of liquid and solid formulations that consist of

paints, lacquers, powder coatings, surface preparation products, removers, finishes, solvents and thinners.

- Some paints consist of a base and separate hardener pack (two-pack paints e.g. polyurethanes). Paints or coatings may be baked or cured at elevated temperatures to increase drying or retention times for polymer coatings.
- Environmental risks are related mainly to the volatile solvents and fine particles (e.g. pigments and resins) produced by spray painting.

### PAINT MIXING>>

#### Minimise solvent exposures

- Conduct paint mixing and batch preparation in a well-ventilated room.

Position a vapour extraction inlet to draw vapours away from the operator and connect to a filtered extraction system such as the spray booth ventilation system.

### SPRAY PAINTING GUNS>>

#### Reduce overspray wastes and air emissions

- Use efficient spray painting equipment (transfer efficiency > 65%) such as high volume low pressure (HVLV) spray guns and airless electrostatic spray guns. Their use will substantially reduce solvent VOCs emissions as well as paint use and operating costs.

### SPRAY PAINTING OUTSIDE WORKSHOP>>

#### Prevent air emissions

- **No** spray painting is permitted outside the workshop, other than touch-ups including scratches, small dents and stone chips. Where a touch-up is done it must not cause an environmental nuisance.

**Note:** Never spray paints containing isocyanates (e.g. some two-packs) and/or lead outside of a fully enclosed spray booth.

## SPRAY PAINTING INSIDE WORKSHOP>>

### Prevent air emissions

- Discharges or over-spray must not escape through workshop doorways and windows.
- In certain circumstances alternative control measures may be permitted subject to approval through your license conditions.

## SPRAY PAINTING BOOTHS>>

### Control air emissions to meet air quality standards

- Spray painting must be conducted in a fully enclosed booth that has an exhaust fan and a filtration system with particle removal efficiency of at least 90%. The following table lists preferred filtration methods.

APPLICATION RATE	FILTRATION SYSTEM	FILTRATION EFFICIENCY
0-4 litres per hour	Dry (fibre) filter, water scrubber	> 90%
> 4 litres per hour	Water scrubber, activated carbon adsorption and dry (fibre) filter	> 90%

- Overspray from large production can rapidly block dry filter pads; therefore where paint application rate is more than 4 litres/hour, a water scrubber is the preferred filtration system.
- Exhaust gases must be discharged vertically through a stack with:
  - > an internal diameter of not less than 0.5 metres **and**
  - > either 8 metres high above the ground or 4 metres higher than the highest ridgeline of the surrounding buildings within 15 metres of the stack, whichever is higher.
- Exit velocity of the exhaust gases must not be less than 10 metres per second. The stack must be fitted with an effective rain protection device that does not inhibit the vertical flow of gases.
- A monitoring port must be installed at the exhaust stack. Refer to *Australian Standard AS4323.1 (1995) - Stationary Source Emissions. Method 1: Selection of Sampling Positions.*

- The above conditions may be adjusted for particular circumstances if warranted by the risks involved.
- Large continuous spray painting operations and operations very close to sensitive areas may be required to install more advanced filtration system (e.g. activated carbon filter) to reduce the total volatile organic compound (VOCs) levels in the exhaust gases. These operations will be assessed on a case by case basis.
- *For spray booth design requirements, refer to Aust. Standard (AS/NZS 4114.1 and 4114.2:1995) for Spray Painting Booths and check with the Queensland Division of Workplace Health and Safety.*

### Ensure proper functioning of the spray booth

- Properly and regularly maintain filtering devices as per manufacturers' advice and specifications or as required for effective operation. Points to watch are:

#### Water Scrubber

- sprays must function correctly
- make-up water float level must be correct
- manometer must be fitted to indicate negative pressure between the entrainment and distribution plates
- follow suppliers' recommendations on addition of water and chemicals.

#### Dry (Fibre) Filter

- filter must fully cover support frame spaces
- dial gauge or manometer must be fitted to indicate static pressure drop and replacement of filters
- spare filters must be kept on the premises.

### Ensure proper disposal of waste material

- Collect accumulated sludge from any wet scrubber systems for recycling, or disposal using a licensed waste removalist.
- Collect waste paints, thinners and solvents in covered containers either for recycling or for disposal through a licensed waste removalist.

## **SPRAY EQUIPMENT CLEANING>>**

### **Minimise VOC emissions, the generation of hazardous wastes and labour costs**

- Use a gun wash station or similarly effective equipment for the cleaning of spray equipment. Scrape the paint cups free of residual paint with a plastic spatula before cleaning equipment.
- Store all volatile solvents such as paint thinners and gun wash, in covered containers with taps to avoid the need to pour solvents.
- Store all contaminated and spent solvents used for cleaning equipment in sealed drums for:
  - > disposal by a licensed waste removalist
  - > recycling via a reputable solvent recycler
  - > onsite recycling and reuse

**Note:** *The above control measures are the minimum requirements for spray painting operations. Under some circumstances such as large scale operations in sensitive areas and where complaints have arisen from the operation, more stringent standards may be applied, including modelling, evaluation and monitoring.*