Decision Report

Application for Works Approval

Part V Division 3 of the *Environmental Protection Act 1986*

Works Approval Number	W6731/2022/1
Applicant	David Robert Evans
File number	DER2022/000446
Premises	Geographe Sandblasting 22 Dryandra Court PICTON 6229 Legal description Lot 9 on Plan 89768 As defined by the premises map attached to the issued works approval
Date of report	14 November 2022
Decision	Works approval granted

Table of Contents

1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of a Category 81 - metal coating facility at 22 (Lot 9) Dryandra Court, Picton (the premises, Geographe Sandblasting). As a result of this assessment, works approval W6731/2022/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) has considered and given due regard to its regulatory framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary and overview of premises

On 1 September 2022, David Evans (the applicant) submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act) for the establishment of a metal coating facility with an assessed production capacity of 10,000 litres (L) of paint per year. The applicant also proposes to undertake abrasive blasting, but this is not a prescribed activity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations)

The premises is located within a zoned light industrial area, approximately 6 km southeast of the central business district of Bunbury.

The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in works approval W6731/2022/1.

Applicant infrastructure and operations

The applicant did not provide details of the proposed operations including maintenance procedures for infrastructure and management operational procedures. The premises consists of the following infrastructure.

- x1 enclosed sandblasting shed.
- x2 enclosed paint spraying sheds that are joined together and open internally.
- x1 sea container used to store paint
- x1 baghouse on sandblasting shed
- x2 900 filter fans with an abstraction ability of 30 air changes per hour in one of the paint spraying sheds.

Overall details of the operation and infrastructure to control emissions and discharges was limited within the application.

Applicant history

The applicant previously held registration R283/2014/4 for spray painting up to 20,000 L at 22 Palmer Crescent, Davenport.

Since 2005, the department has received over 43 complaints regarding dust, odour and paint overspray from the activities of David Evans (Geographe Sandblasting) activities at three different premises (including the current location subject to this application). Operations at the current premises have resulted in 16 reports from adjacent commercial premises that include physical

health impacts relating to dust, odour and paint overspray causing workers to seek medical attention and / or have time off work to recover.

DWER inspected the current premises on 18 June 2019 identifying several alleged offences contrary to the *Environmental Protection (Abrasive Blasting) Regulations 1998* (Abrasive Blasting Regs) and the *Environmental Protection (Metal Coating) Regulations 2001* (Metal Coating Regs). An infringement notice was issued for operating a painting booth that did not meet *AS/NZS 4114.1: 2003 Spray painting booths, designated spray painting and paint mixing rooms- design and construction and testing standard* (now superseded to AS/NZS 4114.2020).

Several Environmental Field Reports (EFRs) were issued to the applicant in 2019 by DWER, with recommendations to:

- clean up waste on external surfaces (garnet and paint was observed outside the sheds);
- ensure waste is cleaned up after each blasting operation (as garnet was found to be accumulating inside the sandblasting shed and outside around the baghouse);
- operating a blasting chamber that is not sealed (holes in the enclosed shed);
- repair baghouse/filter (leak in baghouse that was operating unsealed);
- ensure the paint booth meets AS/NZS 4114.1:2003 standard, and
- submit an application for DWER works approval and registration.

3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway, and impact to receptors in accordance with the *Guideline: Risk Assessments* (DWER 2020).

To establish a risk event there must be an emission, a receptor that may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect on the receptor from exposure to that emission.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this decision report are detailed in Table 1 below. Table 1 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 1: Proposed applicant controls (from application)

Emission	Sources	Potential pathways	Proposed controls
Construction – Previous been installed			
Noise	Construction of paint booth, sand blasting chamber and extraction points	Air / windborne pathway	Construction activity has and will occur within an existing industrial site.
Operation			
Noise	Metal coating and	Air /	Operations are within existing buildings with

Emission	Sources	Potential pathways	Proposed controls
	sand blasting operations	windborne pathway	concrete floors. Located in an industrial area.
Paint fumes, particulates			Operated within existing buildings with concrete floor. Sandblasting building has baghouse / cyclone extraction unit. Spray painting building has two 900 filter fans fitted to 900 mm width x 900 mm length x 6500 mm height ducting, with the ability to undertake 30 air changes per hour.
Odour			
Contaminated stormwater from paint drift, paint and garnet particulates from / garnet spillage, paint spillages and overspray		Direct discharge to land or surface drainage	Operated within existing buildings with concrete floor.

3.1.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), the delegated officer has excluded the applicant's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies and is provided for under other state legislation.

Table 2 below provides a summary of potential human and environmental receptors that may be impacted because of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental Siting* (DWER 2020)).

Table 2: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
Rural residential premises	270 m north of the premises boundary
Industrial premises	Adjacent to the premises on the north, east and western boundaries. 200 m west of the premises boundary.
Environmental receptors	**Distance from prescribed activity**
Palusplain wetland – multiple use	Within premises and immediate surrounds
Underlying groundwater - Bunbury Groundwater Area. Bunbury East, Perth – Superficial Swan aquifer (non-potable purposes) Bunbury East, Perth – Leederville aquifer	Superficial groundwater within 1 m of the surface, no bores close to premises but will drain to nearest surface water body. Leederville bore users surrounding the premises in all

(non-potable purposes)	directions.
Surface water drainage Local drainage network discharged into the East Picton Main Drain that discharges into Ferguson River	 120 m north and 160 m east of the premises boundary 320 m southeast of the premises boundary 540 m south of premises boundary

3.1.3 Review of infrastructure and operations with current guidelines

Appendix 1 Table 5 compares the applicant's known controls to current industry standards for the management of emissions of spraying painting and sandblasting as detailed in the Metal Coating Regs, Abrasive Blasting Regs and Australian Standard 4114.2020. It is noted that the application lacks details including documentation that demonstrates conformance to the regulations and Australian Standards for construction, operations, and maintenance.

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and considers potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Works approval W6731/2022/1 that accompanies this decision report authorises establishment/construction. The conditions in the issued works approval, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A registration is required following the completed construction authorised under the works approval to authorise emissions associated with the ongoing operation of the premises i.e. metal coating activities. A risk assessment for the operational phase has been included in this decision report, however registration will not be finalised until the department assesses the Works Approval Compliance Certificate that must accompany the Registration application.

Table 3: Risk assessment of potential emissions and discharges from the premises during construction and operation

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Construction								
Construction of paint booth, sand blasting chamber and extraction points	Noise	Air / windborne pathway causing impacts to health and amenity	Residences 270 m north and industrial premises adjacent north, east, and west of the premises boundary	Within an industrial area. Refer to Section 3.1	Minimal local scale impact to amenity. C = Slight The risk event may only occur in exceptional circumstances L = Rare **Low Risk**	Y	No conditions	The delegated officer considered that the construction had already occurred and that any other refitting works will occur with existing buildings in an industrial area will minimise the impact of noise. The provisions of the *Environmental Protection (Noise) Regulations 1997* apply.
Operation (including time-limited-operations operations)								
Metal coating and sand blasting operations	Noise	Air / windborne pathway causing impacts to health and amenity	Residences 270 m north and industrial premises adjacent north, east, and west of the premises boundary	Operates within enclosed buildings. Refer to Section 3.1	Minimal local scale impact to amenity. C = Slight The risk event may only occur in exceptional circumstances L = Rare **Low Risk**	Y	No conditions	The delegated officer considered that the facility operates within an industrial area within enclosed existing buildings that are considered suitable to minimise the likelihood of impact occurring associated with noise. Operation of the infrastructure on the premises will be required to comply with the *Environmental Protection (Noise) Regulations 1997*
	Emissions to air: Paint fumes, particulates, and odour	Air / windborne pathway causing impacts to health and amenity		Operates within buildings, has unspecified ventilation extraction systems and baghouse. Refer to Section 3.1	Mid-level or frequent medical treatment and high-level impact to amenity. C = Major The risk event could occur at some time L = Possible **High Risk**	N	**Condition 1** **Condition 3**	The delegated officer has considered the distance of the premises to industrial receptors, the history of complaints regarding the applicants' operations, the applicant's prior infringement notice and EFNs (2019), the lack of detail on controls within the application and that it is unknown if the premises operates to the AS/NZS 4114.2020 (Australian Standards) Metal Coating Regs and Sand Blasting Regs and assessed the risk as high. The applicants' controls were assessed and were considered insufficient to mitigate the risk of fumes and particulates impacting the health and amenity of nearby sensitive receptors. Operation of the applicant's facility is required to comply with the Australian Standards, Metal Coating Regs and Sand Blasting Regs. The delegated officer considered that the following conditions are required to be regulated to manage the risk to sensitive receptors by: • Constructing and operating the facility to the Australian Standards, Metal Coating Regs and Sand Blasting Regs. • An Environmental Compliance Report must be submitted and certified by a qualified engineer that the Australian Standards, Metal Coating Regs and Sand Blasting Regs are complied with for the construction and operations of the facility.

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
	Contaminated stormwater from paint and garnet particulates from garnet spillages, paint spillages and paint overspray	Direct discharge to land causing soil, groundwater and surface water contamination from contaminated stormwater	Superficial groundwater within 1m of the surface that drains to surrounding multiple use palusplain wetlands and local drainage networks 120 m north and 160 m east of the premises boundary.	Operates within existing buildings with concrete floors. Refer to Section 3.1	Low-level onsite impacts, minimal local offsite impacts. Low level impact to amenity C = Minor The risk event could occur at some time L = Possible **Medium Risk**	N	**Condition 1** **Condition 3**	The delegated officer has considered the distance of the premises to industrial receptors, groundwater and surface waterbodies, the history of complaints regarding the applicants' operations, the applicant's prior infringement notice and EFNs (2019), the lack of detail on controls within the application, and that it is unknown if the premises operates to Australian Standards, Metal Coating Regs and Sand Blasting Regs, and assessed the risk as medium. The applicants' controls were assessed and were considered insufficient to mitigate the risk of contaminated water, garnet and paint spillages and paint over spraying impacting on the amenity of nearby sensitive receptors and contamination of soil, groundwater, and surface water bodies from contaminated stormwater. Operation of the applicant's facility is required to comply with the Australian Standards, Metal Coating Regs and Sand Blasting Regs. The delegated officer considered that the following conditions are required to be regulated to manage the risk to sensitive receptors by: • Constructing and operating the facility to the Australian Standards, Metal Coating Regs and Sand Blasting Regs. • An Environmental Compliance Report must be submitted and certified by a qualified engineer that the Australian Standards, Metal Coating Regs and Sand Blasting Regs are complied with for construction and operations of the facility.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk Assessments* (DWER 2020).

Note 2: Proposed applicant controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

4. Decision

The delegated officer has considered the application for a works approval and undertaken a risk assessment of emissions and discharges. The delegated officer risk assessed the emissions for construction and operations to be a combination of low, medium, and high. The delegated officer considered:

- the applicant's history of complaints regarding sand blasting and metal coating activities at the premises,
- the applicant's prior infringement notice and EFNs (2019), and
- the lack of details in respect to the emission control infrastructure including an audit against the metal coating and abrasive blasting regulations,

and determined that the applicant's controls were insufficient to manage the risk to the health and amenity of close industrial receptors and the environment. The delegated officer determined that the applicant must demonstrate compliance to the following regulations and Australian Standards for construction and operations prior to being granted a Registration to operate the facility. They are:

- *Environmental Protection (Abrasive Blasting) Regulations 1998* (Abrasive Blasting Regs)
- *Environmental Protection (Metal Coating) Regulations 2001* (Metal Coating Regs)
- *AS/NZS 4114:2020 Spray painting booths, designated spray painting and paint mixing rooms- design and construction and testing standard* (AS/NZS 4114.2020 / Australian Standard).

A qualified engineer will be required to sign off on the Environmental Compliance Report as evidence that the facility has been constructed in accordance with the above Regulations and Australian Standards.

Once an Environmental Compliance Report has been submitted, the works approval holder can submit a registration application under section 5B of the *Environmental Protection Regulations1987* for category 81 metal coating to operate the facility.

5. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

Consultation method	Comments received
Application advertised on the department's website on 10 October 2022	None received
The City of Bunbury was advised of the proposal on 4 October 2022	The City of Bunbury replied on 2 November 2022 confirming that the development approval for the facility was not required due to existing use at another site that was transferrable.
Applicant was provided with draft documents on 8 November 2022	The applicant replied on the 10 November 2022 waiving the remaining comment period.

6. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that a works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. Evans 2022, *Application for a works approval and supporting documents*, Bunbury Western Australia

Appendix 1: Applicants controls compared to current regulations and standards.

Table 5: Applicants controls compared to current industry regulations and standard for spray painting and abrasive blasting facilities.

Requirement	Guideline requirements/performance measures.	Applicant controls	Met or not met
Environmental Protection (Metal Coating) Regulations 2001			
Spray painting booth to be used if possible	All spray painting in a spray-painting booth unless a booth cannot be reasonably used because of size, shape, position or location of the object being painted.	Unknown if applicant has or is proposing a spray booth	Not met
Spray painting in the open	An operator must not carry-on spray painting unless it is carried on in such a manner that no paint over spray is carried on (no paint over spray)	Spray in an enclosed but unsealed shed with concrete floor	Not met – Reportable incidents of over spraying
Spray painting booth	An operator must ensure that spray painting booth used to carry on metal coating: (a) is designed, constructed, installed and maintained in accordance to AS/NZS4114.1 (b) is fitted with an efficient mechanical ventilation and dust extraction system which is operating so that – i. no visible paint over spray escapes from the spray painting booth. ii. All air from the spary painting booth passes through a ventilation and dust extraction system before being discharged into the environment iii. Air discharge into the environment does not contain any substance that causes pollution.	Unknown if the applicant has a spray painting booth or fully sealed shed. Ventilation system with unknown extraction ability for dust and paint fumes	Not met
Disposal of liquid waste	(1) An operator must ensure that no liquid waste escapes from the premises. (2) An operator must not discharge liquid waste into the environment.	Operation occurs within an enclosed building. Details unknown.	Not met
Disposal of solid waste	An operator must ensure that solid waste is disposed of at a landfill site or waste treatment facility licensed under Part V of the Act	No information provided	Not met
Environmental Protection (Abrasive Blasting) Regulations 1998			
Blasting chambers to be used if possible	An operator must carry on all abrasive blasting in a blasting chamber unless such a chamber cannot reasonably be used because of the size, shape, position, or location of the object being blasted.	No information provided	Not met
Blasting chambers	An operator must ensure that a blasting chamber – (a) Is completely sealed; or (b) Is fitted with mechanical ventilation and dust extraction system which operates so that – (i) No visible dust escapes from the blasting	Operates in an enclosed but unsealed building with a baghouse / cyclone extract system.	Not met

Requirement	Guideline requirements/performance measures.	Applicant controls	Met or not met
	chamber; (ii) All air from the blasting chamber passes through the ventilation and dust extraction system before being discharged into the environment; and (iii) Air discharged into the environment does not contain any visible dust or more than 50 milligrams of particulate matter per cubic metre.	Unknown if meets requirements.	
Abrasive blasting in the open (not in a chamber)	An operator must not carry-on abrasive blasting in the open unless it is carried on in such a manner that no visible dust escapes from the premises at which the blasting is carried on	Operates in an enclosed but unsealed building with a baghouse	Not met
Waste disposal	An operator must ensure that – (a) All waste material is cleaned up at the conclusion of each abrasive blasting operations (b) No waste materials escapes from the premises at which the blasting is carried on; (c) All waste material is disposed of at an appropriate landfill site or waste treatment facility the occupier od which holds a licence under Part V of the Act in respect of that site or facility.	No information provided	Not met
AS/NZS 4114:2020: Spray painting booths, designated spray-painting areas and paint mixing rooms			
1.4.3 Spray painting booth	Spray painting booths shall be classified as follows: (a) Open fronted booth (two walls, roof with air extraction through filtered rear wall and an open face or front). (b) Enclosed type batch booth – room or large cabinet where spraying is conducted. Air flow is either down draught, cross draught, end draught or a combination.	No information provided	Not met
1.4.8 Spray painting area	A three-dimensional zone within a spray-painting booth where spray painting may occur. This is defined as the area limited by the- (a) vertical planes 0.8 m from the walls and the horizontal planes 0.5 m above the floor and 0.8 m below the ceiling; or (b) Otherwise specified by the booth manufacturer and recorded in the user manual. (c) Tunnel or production booth – open ends with a continuous process through hem. Down draught or cross draught.	Enclosed building. No detailed information provided.	Not met
Air flow system for spray booths 1.4.4.1 to 1.4.4.5	Air flow system of the following: • Full down draught system • Semi down draught system • Cross flow system • On floor down draught systems	Has an air flow system – type is unknown	Not met – unknown system
1.4.5 Designated spray-painting areas	Designated spray area shall not be used for general use but may be applied where a conventional spray booth is not practical. Designated spray areas may be applied when the background concentration in a room can be controlled by either artificial ventilation or the volume of the room, providing adequate	Unknown	Not met

Requirement	Guideline requirements/performance measures.	Applicant controls	Met or not met
	dispersion of flammable vapour.		
1.5 Documentation	It is necessary to ensure that any installation conforms to the appropriate certification documents as well as with this standard. Safety, operational and maintenance instructions shall be supplied for the spray painting booth, mixing room and designated spray areas.	No information provided	Not met
1.6 Qualifications of personnel	The design, construction, maintenance, testing and inspection of installations covered by this standard shall be carried out by a competent peri\son.	No information provided	Not met
Spray booth design and construction 2.2 Materials	Materials used in the construction of the booth shall- (a) Withstand the operating temperature without deterioration (b) Have internal walls that are impervious to the substances used within the booth (c) In the event of fire, not support combustion (d) Be capable of passing the high impact test for Group II detailed in AS/NZS60079.10.1 (e) Prevent the migration of particles beyond the booth (f) Static dissipative or conductive.	No information provided	Not met
2.3 Expansion	All structural supports and materials shall be designed and selected with adequate factors of safety for the expected maximum operating temperatures, consideration being given to the stress imposed by expansion	Unknown	Not met
2.4 Doors	All doors providing access to enclosed booths shall incorporate a means of interlocking to prevent the spray painting operation proceeding without all doors being firmly shut.	Unknown	Not met
2.4.2 Emergency doors	All enclosed booths in which an operator is required to work shall be provided with an effective means for emergency exit.	Unknown	Not met
2.6 Interior surfaces	All interior surfaces within a booth, shall have a smooth finish to prevent the build-up of paint..	Unknown	Not met
2.7 Glazing	Glazing fitted to windows and luminaries shall be sealed to prevent the escape of vapours and shall be securely fixed in position. Glass such as toughened safety glass, laminated safety glass or laminated wire glass that complies with AS 2208 is acceptable.	Unknown	Not met
2.11 Electrical Equipment	All associated electrical equipment shall be suitable for its intended purpose.	Unknown	Not met
2.12 Electric filament infrared heating	Electric filament infrared heating may only be used within the booth for curing and baking during a bake cycle.	Unknown	Not met
2.14 Ventilation design 2.14.1 General	The ventilation system shall be designed in accordance with the following: (a) Only air of an acceptable quality shall enter an enclosed spray booth. To achieve this, the source of air supply shall be taken from outside the building in which the booth is located.	Unknown Two ducts of unknown design and integrity	Not met

Requirement	Guideline requirements/performance measures.	Applicant controls	Met or not met
	(b) The air supply system shall be arranged to reduce the possibility of mixing the exhaust air with the intake air; thereby maintaining the quality of air (a) A minimum of 2m vertical separation between the air supply inlet and the exhaust located at a higher elevation. (b) A minimum of 0^{o} to 90^{o} between the direction of the airflow entering the system intake and the direction of the airflow existing the system exhaust. (c) A continuous, uniform and evenly distributed supply of air shall flow throughout the spray painting area to the exhaust outlets. There shall be no pockets of still air in the booth. (d) A monitoring system or systems shall be provided for sensing airflow for both hazard removal by air dilution in accordance with AS/NZS 60079.13 and adequate velocity in the spray painting area as detailed in Clause 2.14.3 Airflow sensing devices shall be proven in the no-flow state prior to each start-up and shall prevent start-up if this self-check fails. The monitoring circuits shall be designed and arranged to fail-safe and cease the spray painting process until the fault has been rectified. (e) The difference in air pressure between the spray painting area and air outside the spray painting booth shall not exceed 50 Pa for both positive and negative pressure type booths.		
2.14.3 Spray cycle airflow rate	During the spray cycle, the airflow shall be the greater of – (a) That which provides, for the purpose of air dilution, a concentration of flammable vapour in air, six times lower than that specified in AS 1375 or (b) That which produces, when the booth is empty and the airflow is tested in accordance with Clause 4.5, the minimum velocities of- (i) Where spray painting is done by an electrostatic process only 0.40 m/s (ii) Full down draught booths 0.25 m/s (iii) Special booths (semi draught and on floor down draught booths) where airflow is vertical in part of the spraying area and horizontal in another part – Vertical down airflow are 0.25 m/s Where airflow is substantially horizontal 0.50 m/s (iv) Other processes. eg cross flow types 0.50 m/s (v) The value specified by the spary painting booth manufacturer or supplier when greater than the value specified in item (ii) item (iii) or item (iv).	Unknown	Not met
2.15 Ventilation control 2.15.1 General	The control system shall ensure that the ventilation system is kept in effective operation during the entire time spraying is in progress and for the periods required by Clause 1.15.2 to Clause 2.15.4	Unknown	Not met
2.16 Exhaust	The outlets and inlets shall be located as to avoid	Unknown	Not met

Requirement	Guideline requirements/performance measures.	Applicant controls	Met or not met
air 2.16.1 Exhaust air outlets	unnecessary turbulence and so prevent the formation of pockets of vapour within the booth. During the spary cycle, the discharge shall be vertical with a minimum egress velocity of 10 m/s averaged over the area of the exhaust outlet. Air shall be exhausted into the atmosphere to a location where it does not cause contamination of other air used for building or equipment ventilation. As a minimum requirement, the outlet shall be 3m above the building roof and discharge vertically.		
2.16.2 Exhaust fans	All spray painting booths shall have an exhaust fan(s) suitable for their intended use. In addition, fan(s) and fan(s) motors including an axial flow fan(s) installed within the ducts shall be accessible for regular maintenance and cleaning. The entry of the motor drive shafts or drive belts, through exhaust ducts, shall meet the requirements of Clause 2.14(b) or be adequately sealed to prevent the egress of the exhaust air. Id these requirements cannot be met, explosion-protected drive motors may be required.	Unknown	Not met
2.16.3 Exhaust air cleaning	The contaminated exhaust air shall be cleaned before it is discharged into the atmosphere. Filters, washing sprays or scrubbers shall be used to remove particles from the air before it enters the exhaust system. Filter systems shall be designed to ensure that the maximum velocity recommended by the filter manufacturer is not exceeded. Filters and filter supports shall be on adequate strength to withstand the loading placed on them.	Unknown	Not met
2.17 Ducts	All ducts associated with the booth shall conform with the following: (a) Ducts shall be constructed entirely of sheet steel or other non-combustible material complying with Clause 2.2 and shall be adequate strength and rigidity to meet normal conditions of service and installation. Where subject to mechanical damage they shall be adequately protected. They shall be adequately braced and supported. (b) Ducts shall be sealed throughout and shall have no openings other than those required for the proper operation and maintenance of the equipment. Laps in duct joints shall be made on the inside of the duct and in the direction of the airflow. Small openings designed for the entry of drive shafts associated with exhaust fans do not require sealing providing there is no escape of flammable concentration. (c) The joints in ducts shall be suitable for their untended use which may include the use of either arc or gas-welded, spot-welded, or riveted joints. Sot soldering methods shall not be used as the sole means of providing adhesion between joint surfaces. (d) The entrance to fresh air inlet ducts to the booth shall be protected by screens of aperture approximately 12.5 mm and so guarded that they cannot be obstructed. (e) For cleaning and inspection purposes, access to ventilation ducts shall be provided. (f) Ducts that provide passage for fumes which leave a combustible deposit shall be provided with access	Two fume extracting ducts of unknown integrity.	Not met

Requirement	Guideline requirements/performance measures.	Applicant controls	Met or not met
	doors for cleaning. (g) The design of ducts shall be such that vapours condensing them do not drip back into the booth exhaust port. Means shall be provided to collect any deposit in a trap which can be periodically cleaned. (h) Where common inlet or exhaust ducts are used for more than one booth, means shall be employed to prevent the transmission of contaminants between booths.		
Section 4 Tests 4.2 Documentation	Documents submitted shall provide full and correct specification of the safety aspects of the booth including detailing operating and maintenance instructions.	Unknown	Not met
4.3 Functional test	The booth and associated equipment shall be given a functional test for an appropriate time to ensure that all the requirements contained in this Standard have been meet.	Unknown	Not met
4.4 Ventilation system test	The ventilation system shall be operated and tested to verify that — (a) the requirements for pre- and post-purging conform to Clause 2.18: (b) the ventilation interlocks associated with doors and ducts operate in accordance with the requirements and the set point parameters for sensing failure; (c) the airflow of the system is in accordance with the requirements of Clause 2.14.3 and Clause 2.14.4: and (d) (d) during the spray cycle, the discharge velocity is in accordance with the requirements of Clause 2.16.1	Unknown	Not met
4.5 Air flow test	Airflow velocity in the spray booth painting area shall be assessed based on the following measurement principles: (a) The area shall be divided into grids. The plane of these grids shall be perpendicular to the required airflow direction, with each grid size no greater than 2 m2. Grids shall be no greater than 1.5 m apart, with the first grid at the air entry into the spray booth painting area and the last grid at the exit from the spray booth painting area. (b) Where the air flow changes direction, there shall also be a grid at each direction change (e.g. a change from vertical to horizontal flow would require a grid at the end of the vertical flow and a grid at the start of the horizontal flow). (c) The minimum number of measurements shall be eight. (d) the average of all measurements shall be not less than the values shown in Clause 2.14.3. with no single measurement less than 50 % of the average. (e) the direction of air flow shall be established for each measurement.	Unknown	Not met
Section 5 Maintenance 5.1 General	Maintenance is to be carried out by competent persons in accordance with the manufacturer's instructions and this Standard. Electrical equipment located in hazardous areas shall be inspected and maintained according to AS/NZS 60079.17.	Unknown	Not met
Appendix A Designated spray areas	Work site and operational risk and impact assessments shall be carried out including assessment of the dispersion or ventilation considerations for safe operations. Procedures and controls shall include the aspects identified in	Unknown	Not met

Requirement	Guideline requirements/performance measures.	Applicant controls	Met or not met
A.1 General	Clause A.2 to Clause A.9.		
A. 2 Construction	The fixed walls, ceiling, doors and floor encompassing a designated spray painting area shall be constructed of, or lined with, material conforming to Clause 2.2.	Unknown	Not met
Appendix B Paint mixing rooms	The type of pain mixing rooms covered in this standard are Figures B.1 Paint mixing room attached to booth with direct access, B.2 Paint mixing room attached to booth with indirect access and B.3 Free standing paint mixing room.	Unknown	Not met
B.2 Design and construction B.2.1 General	The paint mixing room and its associated fittings shall be of durable construction. The design shall take into account the — (a) inherent hazards associated with equipment operating in these environments (e.g. elevated temperatures, mechanical damage, corrosive agents]; (b) likely health hazards to operators from toxic materials contained and processed; and (c) (c) the need for ensuring reliable and safe operation over the maximum expected life of the paint mixing room and its associated equipment.	Unknown	Not met
B.2.7 Ducts	All ductwork associated with the room shall conform to Clause 2.17 [with the exception of Item (e) and Item (f)].	Unknown	Not met
B.2.9 Ventilation arrangement	The ventilation arrangement shall include an extraction system to maintain the paint mixing room at a negative pressure (as compared with adjoining areas other than the spray booth). NOTE 1 This does not preclude a negative pressure to an adjoining spray booth. The ventilation rate shall be based on assessment in accordance with AS/NZS 60079.10.1 for the control and dilution of vapours subject to the following minimum flow rates: (a) *Australia only* — 10 m3/m2 of the floor area/per minute. The extraction system shall include inlets at floor level and at the rear of any mixing workbench or similar location, in accordance with Clause 2.16.	Unknown Applicant advised that two 900 filter fans with an abstraction ability of 30 air changes per hour.	Not met