

# WORK HEALTH AND SAFETY (MINES AND PETROLEUM SITES) REGULATION 2022

## Registration of Diesel Engine Systems Design Order 2022

I, **Garvin Burns**, Chief Inspector, with the delegated authority of the Secretary, Regional NSW, pursuant to section 187(5) of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2022, make the following Order.

Dated this 29th day of August 2022

Garvin Burns  
Chief Inspector  
Regional NSW

### 1. Name of Order

This Order is the *Registration of Diesel Engine Systems Design Order 2022*.

### 2. Commencement

This Order commences the day it is published in the NSW Government Gazette.

### 3. Interpretation

In this Order:

**AS** is a reference to Australian Standards.

### 4. Revocation

The *Registration of Diesel Engine Systems Design Order 2018* published in the NSW Government Gazette No.119 of 9 November 2018 at pages 8457-8458 is revoked.

### 5. Design requirements

#### 5.1. General:

All diesel engine system must be fitted with a compliance plate as identified in:

- (a) AS 3584.1 – Section 4 – ‘Compliance plate’
- (b) AS 3584.2 – Section 4 – ‘Marking’

(c) AS 3584.4 – Section 5 – ‘Compliance plate’

5.2. Fire-protected diesel engine system (FpDES):

Except as provided in paragraphs 5.4 and 5.5, fire-protected diesel engine systems used in underground coal mines must be designed in accordance with AS 3584.1:2021 as identified in Section 3 – ‘Design and construction’

5.3. Explosion-protected diesel engine system (ExDES):

Except as provided in paragraphs 5.4 and 5.5, explosion-protected diesel engine systems used in underground coal mines must be designed in accordance with AS 3584.2:2021 as identified in Section 3 – ‘Design and construction’

5.4. Where a design does not fully comply with the requirements in paragraph 5.2 or 5.3, the designer must specify the published technical standards or the engineering principles used to identify controls, in accordance with the hierarchy of risk control measures in Part 3.1 of the Work Health and Safety Regulation 2017, that have been incorporated in the design to achieve at least an equivalent level of safety as the requirements of paragraph 5.2 or 5.3.

5.5. If the design of a diesel engine system that is registered under Part 5.3 of the WHS Regulations is altered and the alteration may affect health or safety:

- (a) the altered parts of the diesel engine system must be designed to comply with the requirements of paragraphs 5.2 or 5.3 of this Order.
- (b) an assessment must be undertaken, and documented, by the designer to assess the impact that the design alteration has on unaltered parts of the diesel engine system.
- (c) where the assessment undertaken in paragraph 5.5(b) shows there has been a reduction in the effectiveness of existing control measures of any other parts of the diesel engine system caused by the alteration, that is, there has been a detrimental effect on health and safety caused by the alteration or performance, these parts must comply with the design requirements in paragraphs 5.2 or 5.3 of this Order.
- (d) any parts of the diesel engine system which are not affected by the alteration must continue to comply with the design requirements of the design order that was in effect on the date that the registration for the design of the diesel engine system was granted.

## 6. Testing and performance requirements

6.1. Fire-protected diesel engine system (FpDES):

- (a) except as provided in paragraph 6.4, fire-protected diesel engine systems used in underground coal mines must be tested and meet the relevant performance requirements specified in AS 3584.1:2021 as identified in Section 5 – ‘Testing’.
- (b) determination of maximum surface temperature in accordance with AS 3584.1:2021 Appendix C is to be reported from data logging instruments.
- (c) minimum ventilation rate for the purpose of WHS(MPS)R cl 71(3)(a)(i) is the greater of:
  - (i) AS 3584.4 section 4.1
  - (ii) volume of air required to dilute brake specific duty cycle NRSC if greater than AS 3584.4 section 2.10

6.2. Explosion-protected diesel engine system (ExDES):

- (a) except as provided in paragraph 6.4, Explosion-protected diesel engine systems used in underground coal mines must be tested and meet the relevant performance requirements specified in AS 3584.2:2021 as identified in Section 5 – ‘Testing’.
- (b) determination of maximum surface temperature in accordance with AS 3584.2 Appendix C is to be reported from data logged instruments and supported by thermographic images.
- (c) minimum ventilation rate for the purpose of WHS(MPS)R cl 71(3)(a)(i) is the greater of
  - (i) AS 3584.4 section 4.1
  - (ii) volume of air required to dilute brake specific duty cycle NRSC if greater than AS 3584.4 section 2.10

6.3. Emissions – Diesel engine systems for underground coal mines:

Except as provided in paragraph 6.4, all diesel engine systems used in underground coal mines must be tested and meet the relevant performance requirements specified in AS 3584.4:2021 as identified in the following parts:

- (a) Section 2 – ‘Test cycles’
- (b) Section 3 – ‘Particulate filter tests’
- (c) Section 4 – ‘Determination of ventilation requirements’

6.4. If the design of a diesel engine system that is registered under Part 5.3 of the Work Health and Safety Regulation 2017 is altered, and the alteration may affect health or safety, the altered parts of the diesel engine system, including those parts that may have been redesigned due to detrimental

effects identified in the assessment undertaken in paragraph 5.5 (b) above, must be tested and meet the relevant performance requirements in paragraphs 6.1 – 6.3 of this Order.

- 6.5. Any parts of the diesel engine system which are not affected by the alteration must continue to comply with the performance requirements of the design order that was in effect on the date that the registration for the design of the diesel engine system was granted.

## **7. Test facility**

- 7.1. The test facility used for testing the diesel engine system must be a test facility which is independent of the designer, manufacturer or supplier.
- 7.2. The test facility must have test equipment with calibration traceable to the International System of Units (SI) by reference to national measurement standards, quality processes and work methods for performing the specific tests described in the standards referred to in this Order. This must be demonstrated through:
- (a) accreditation by the National Association of Testing Authorities (NATA); or
  - (b) where demonstrated to the regulator that a NATA-accredited facility is not available,
    - (i) through accreditation by an organisation that is a signatory to the ILAC MRA (International Laboratory Accreditation Cooperation Mutual Recognition Arrangement); or
    - (ii) a suitably qualified and experienced testing facility along with past test experience with diesel engine systems, which has been independently audited within the last 2 years.

## **8. Determination of applications for registration of design made before commencement of this Order**

If an application for the registration of design of a diesel engine system made in accordance with clause 250 of the Work Health and Safety Regulation 2017 to which the standards specified in the *Registration of Diesel Engine Systems Design Order 2018* applies is made before the commencement of this Order, and the application has not been finally determined before that commencement, the application is to be determined as if this Order had not commenced.