

WORK HEALTH AND SAFETY (MINES AND PETROLEUM SITES) REGULATION 2014

Registration of Person-riding Hoists (Winding Systems) in Small Gemstone
Mines Design Order 2018

I, Garvin Burns, Chief Inspector, with the delegated authority of the Secretary, Department of Planning and Environment, in pursuance of clause 177(5) of the *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014* ("the Regulation") make the following Order.

Dated this 6th day of November 2018.

Garvin Burns
Chief Inspector
Department of Planning and Environment (by delegation)

1. Name of Order

This Order is the *Registration of Person-Riding Hoists (Winding Systems) in Small Gemstone Mines Design Order 2018*.

2. Commencement

This Order commences on Friday 9 November 2018.

3. Interpretation

In this Order:

MDG is a reference to mining design guidelines produced by the NSW Government and published on the NSW Department of Planning and Environment's Resources Regulator website.

person-riding hoist means a winding system used in an underground mine, that is a small gemstone mine, where the winding system lifts no more than 40 metres from the surface of the small gemstone mine to the underground workings and carries no more than two people.

Regulation means the *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014*.

small gemstone mine has the same meaning it has in clause 3 of the Regulation.

winding system has the same meaning as it has in clause 3 of the Regulation.

4. Revocation

The *Registration of Person-Riding Hoists (Winding Systems) in Small Gemstone Mines Design Order 2015* published in the NSW Government Gazette No. 71 of 21 August 2015 at pages 2667, is revoked.

5. Design requirements

5.1 Except as provided in paragraph 5.2, all person-riding hoists must be designed to meet the design requirements of section 2 of MDG 42.1 Guideline for person-riding hoists (winding systems) in small gemstone mines Part 1: Design, as amended from time to time.

5.2 Where a design does not comply, in full or part, with section 2 of MDG 42.1, the designer must specify the published technical standards or the engineering principles used to identify controls, in the order of the hierarchy of risk controls in Part 3.1 of the *Work Health and Safety Regulation 2017*, incorporated in the design to achieve at least an equivalent level of safety as the design requirements in the guideline.

6. Performance standards

All person-riding hoists must be tested and meet the performance standards specified in section 2.7 of MDG 42.1, as amended from time to time.

[n2018-3828]

WORK HEALTH AND SAFETY (MINES AND PETROLEUM SITES) REGULATION 2014

Registration of Diesel Engine Systems Design Order 2018

I, Garvin Burns, Chief Inspector, with the delegated authority of the Secretary, Department of Planning and Environment, in pursuance of clause 177(5) of the *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014* ("the Regulation") make the following Order.

Dated this 6th day of November 2018.

Garvin Burns
Chief Inspector
Department of Planning and Environment (by delegation)

1. Name of Order

This Order is the *Registration of Diesel Engine Systems Design Order 2018*.

2. Commencement

This Order commences on Friday 9 November 2018.

3. Interpretation

In this Order:

MDG is a reference to mining design guidelines produced by the NSW Government and published on the NSW Department of Planning and Environment's Resources Regulator website.

4. Revocation

The *Registration of Diesel Engine Systems Design Order 2015* published in NSW Government Gazette No. 52 of 26 June 2015 at page 1851 is revoked.

5. Design requirements

5.1 Except as provided in paragraph 5.2, all diesel engine systems used in underground coal mines must be designed to meet the design requirements of MDG 43 *Technical Standard for the Design of Diesel Engine Systems for Use in Underground Coal Mines*, as amended from time to time.

5.2 Where a design does not comply, in full or part, with MDG 43, the designer must specify the published technical standards or the engineering principles used to identify controls, in the order of the hierarchy of risk controls in Part 3.1 of the *Work Health and Safety Regulation 2017*, incorporated in the design to achieve at least an equivalent level of safety as the design requirements in the guideline.

6. Performance and testing standards

All diesel engine system designs must be tested and meet the performance standards specified in MDG 43, as amended from time to time.

[n2018-3829]

WORK HEALTH AND SAFETY (MINES AND PETROLEUM SITES) REGULATION 2014

Registration of Powered Winding System (other than a person-riding hoist) Design Order 2018

I, Garvin Burns, Chief Inspector, with the delegated authority of the Secretary, Department of Planning and Environment, in pursuance of clause 177(5) of the *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014* ("the Regulation") make the following Order.

Dated this 6th day of November 2018.

Garvin Burns
Chief Inspector
NSW Department of Planning and Environment (by delegation)

1. Name of Order

This Order is the *Registration of Powered Winding System (other than a person-riding hoist) Design Order 2018*.

2. Commencement

This Order commences on Friday 9 November 2018.

3. Interpretation

Australian Standard or *AS* is a reference to a standard published by or on behalf of Standards Australia.

MDG is a reference to mining design guidelines produced by the NSW Government and published on the NSW Department of Planning and Environment's Resources Regulator website.

person-riding hoist means a winding system used in an underground mine, that is a small gemstone mine, where the winding system lifts no more than 40 metres from the surface of the small gemstone mine to the underground workings and carries no more than two people.

Note: A person-riding hoist is subject to a separate Order made pursuant to clause 177(5) of the Regulation.

Regulation means the *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014*.

winding system has the same meaning as it has in clause 3 of the Regulation.

4. Revocation

The *Requirements for Design Registration of Powered Winding Systems* published in the NSW Government Gazette No. 24 of 2 February 2007 at pages 684-687, is revoked.

Note: Pursuant to clause 34(5) of Schedule 12 of the Regulation, the *Requirements for Design Registration of Powered Winding Systems* published in the Gazette of 2 February 2017 is taken to be an order under clause 177(5) of the Regulation and may be revoked in the same way as an order made under that clause.

5. Design Requirements

5.1 Except as provided in paragraph 5.2, all powered winding systems, other than a person-riding hoist, must be designed to meet the design requirements of:

- a. MDG 33:1998 '*Guideline for design, commissioning & maintenance of drum winders*' (sections 2 to 7); and
- b. MDG 2005:2003 '*Electrical technical reference for the approval of power winding system*' (sections 2 to 5).

5.2 Where a design does not comply, in full or part, with the guidelines listed in paragraphs 5.1 (a)-(b), the designer must specify the published technical standards or the engineering principles used to identify controls, in the order of the hierarchy of risk controls in Part 3.1 of the *Work Health and Safety Regulation 2017*, incorporated in the design to achieve at least an equivalent level of safety as the design requirements in the guidelines.

5.3 In addition, except as provided in paragraph 5.4, a powered winding system, other than a person-riding hoist, must be designed in accordance with the design criteria contained in the following guidelines and standards, as is relevant to the type of the powered winding system:

Mining Design Guidelines

- c. MDG 26:1999 *Guideline for the examination, testing and discard of mine winder ropes*

Australian Standards

- d. AS 1554.1–2004 *Structural steel welding – Welding of steel structures*
- e. AS 3600–2001 *Concrete structures*
- f. AS 3637.1–2005 *Underground mining – Winding suspension equipment – General requirements*
- g. AS 3637.2–2005 *Underground mining – Winding suspension equipment – Detaching hooks*
- h. AS 3637.3–1997 *Underground mining – Winding suspension equipment – Rope cappings*
- i. AS 3637.4–2002 *Underground mining – Winding suspension equipment – Drawbars and connecting links*
- j. AS 3637.5–2005 *Underground mining – Winding suspension equipment – Rope swivels and swivel hooks*
- k. AS 3637.6–2005 *Underground mining – Winding suspension equipment – Shackles and chains*
- l. AS 3751–2005 *Underground mining – Slope haulage – Couplings, drawbars, and safety chains*
- m. AS 3785.1–2006 *Underground mining – Shaft equipment – Shaft overwind safety catch system*
- n. AS 3785.2–2006 *Underground mining – Shaft equipment – Shaft winding arresting systems*
- o. AS 3785.3–2005 *Underground mining – Shaft equipment – Drum winding gripper systems*
- p. AS 3785.4–2002 *Underground mining – Shaft equipment – Conveyances for vertical shafts*
- q. AS 3785.5–1998 *Underground mining – Shaft equipment – Headframes*
- r. AS 3785.6–1996 *Underground mining – Shaft equipment – Guides and rubbing ropes for conveyances*
- s. AS 3785.7–2006 *Underground mining – Shaft equipment – Sheaves*
- t. AS 3785.8–1994 *Underground mining – Shaft equipment – Personnel conveyances in other than vertical shafts*
- u. AS 3990–1993 *Mechanical equipment – Steelwork*
- v. AS 4100–1998 *Steel structures*.

5.4 Where a design does not comply, in full or part, with the guidelines or standards listed in paragraphs 5.3 (c)-(v) as are relevant to the type of powered winding system, the designer must specify the published technical standards or the engineering principles used to identify controls, in the order of the hierarchy of risk controls in Part 3.1 of the *Work Health and Safety Regulation 2017*, incorporated in the design to achieve at least an equivalent level of safety as the design requirements in those guidelines and standards.

[n2018-3830]

WORK HEALTH AND SAFETY (MINES AND PETROLEUM SITES) REGULATION 2014

Registration of Detonators Design Order 2018

I, Garvin Burns, Chief Inspector, with the delegated authority of the Secretary, Department of Planning and Environment, in pursuance of clause 177(5) of the *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014* (“the Regulation”) make the following Order.

Dated this 6th day of November 2018.

Garvin Burns
Chief Inspector
NSW Department of Planning and Environment (by delegation)

1 Name of Order

This Order is the *Registration of Detonators Design Order 2018*.

2 Commencement

This Order commences on Friday 9 November 2018.

3 Interpretation

In this Order:

HSE is a reference to the Health and Safety Executive, United Kingdom.

Regulation means the *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014*.

4 Revocation of Requirements for Registration of Detonators used in Underground Mines at a Coal Workplace

The *Registration of Detonators Design Order 2015* published in the NSW Government Gazette No 52 of 26 June 2015 at page 1849 is revoked.

5 Design requirement

5.1 Except as provided in paragraph 5.2, all detonators must be designed to meet the design requirements of paragraphs 5.1 (a) – (c).

- (a) All detonators used in underground coal mines must be copper-cased with leading wires of copper complying with HSE Testing Memorandum No 13 (TM13) *Conditions of Test and Approval of Electric Detonators*, Appendix ‘C’ excluded, (as amended from time to time).
- (b) All detonators, including its associated components, must be designed so that the detonator is capable of satisfactorily initiating detonation in the explosive or explosives in which it is intended to be used, without itself being an effective ignition source of a methane-enriched atmosphere.
- (c) The detonator must be of such character as not to be liable to deteriorate or to become dangerous under conditions of storage or use.

5.2 Where a design does not comply, in full or part, with requirements listed in paragraphs 5.1 (a)-(c), the designer must specify the published technical standards or the engineering principles used to identify controls, in the order of the hierarchy of risk controls in Part 3.1 of the *Work Health and Safety Regulation 2017*, incorporated in the design to achieve at least an equivalent level of safety as the design requirements of paragraphs 5.1 (a)-(c).

6 Testing requirements

6.1 Test facility

All compliance testing must be carried out by:

- (a) Health and Safety Laboratory, United Kingdom, or
- (b) a suitably qualified and experienced independent laboratory conducting testing to an equivalent standard.

6.2 Test method

Detonators must be tested in accordance with the relevant requirements of HSE Testing Memorandum No 13 (TM13) *Conditions of Test and Approval of Electric Detonators*, Appendix 'C' excluded (as amended from time to time).

7 Performance standards

7.1 Except as provided in paragraph 7.2, all detonators must be designed to meet the requirements of paragraphs 7.1 (a)-(b)

- (a) When tested, the design of the detonator must provide evidence that it is capable of satisfactorily initiating detonation in the explosive or explosives in which it is intended to be used.
- (b) All detonators must pass the following performance requirements:
 - (i) **Fusehead resistance:** the electrical resistance of the fusehead must be not less than 0.9 ohms and not greater than 1.8 ohms.
 - (ii) **Firing current:** with a current of 0.6 ampere d.c. applied for 50 milliseconds, the probability of a misfire must not exceed 1 in 10 000.
 - (iii) **No-fire current:** with a current of 0.25 ampere d.c., applied for 5 seconds, the probability of a detonator firing must not exceed 1 in 10 000.
 - (iv) **Detonator resistance:** not more than 2% of the detonators of any one type must have a total resistance, inclusive of the leading wires, of more than 2.2 ohms.
In addition, for delay detonators, the mean delay time for each delay number should correspond approximately to the nominal delay time. And, the tolerance on the delay time should be such that the probability of the delay time of a detonator taken at random from one delay number in series overlapping the delay time of a detonator similarly taken from an adjacent delay number must not exceed 1 in 20 (i.e. an overlap probability less than 0.05).
 - (v) **Detonator series firing:** when a current of 1.25 amperes d.c. is applied for 4 milliseconds there shall be no failure in 20 consecutive rounds each of 10 detonators connected in series.
 - (vi) **Detonator incendivity tests:** when fired in the presence of a methane-air mixture containing 9% methane, in a steel lined chamber of approximate dimensions 710mm x 265mm x 50mm sealed along the top by polythene film, using a current of 1.25 amperes d.c. applied for 4 milliseconds, the probability of ignition must be such that not more than 14 ignitions in 200 tests are produced.

7.2 Where a design does not comply, in full or part, with the requirements of paragraphs 7.1 (a)-(b), the designer must specify the published technical standards or the engineering principles used to identify controls, in the order of the hierarchy of risk controls in Part 3.1 of the *Work Health and Safety Regulation 2017*, incorporated in the design to achieve at least an equivalent level of safety as the requirements of paragraphs 7.1 (a)-(b).

[n2018-3831]