

Department of Primary Industries

COAL MINE HEALTH AND SAFETY ACT 2002

Types of Electrical Plant Used in Hazardous Zone

I, ROBERT REGAN, Chief Inspector, pursuant to clause 19(1)(c) of the Coal Mine Health and Safety Regulation 2006 ("the Regulation"), by this notice:

1. revoke the notice made under clause 19(1)(c) of the Regulation titled "Types of Electrical Plant used in Hazardous Zone" dated 17 December 2007 and published in the New South Wales Government Gazette No. 185 of 21 December 2007, pages 10473-10474 and any notice revived as a result of this revocation; and
2. specify the types of electrical plant that may be used in a hazardous zone as those described in the Schedule below.

SCHEDULE

1. Generally

- 1.1 Where the voltage rating of electrical plant to be used in longwall hazardous zones exceeds 4000 V ac., the operator must:
 - 1.1.1 notify the Chief Inspector 12 months prior to the intended installation date; and
 - 1.1.2 on request supply the Chief Inspector with information specified by the Chief Inspector.
- 1.2 Where the voltage rating of electrical plant to be used in hazardous zones that are in a production area and are not a longwall hazardous zone exceeds 1200V ac., the operator must:
 - 1.2.1 notify the Chief Inspector 12 months prior to the intended installation date; and
 - 1.2.2 on request supply the Chief Inspector with information specified by the Chief Inspector.
- 1.3 The types of electrical plant that may be used in a hazardous zone must comply with the voltage rating requirements specified in 1.1 and 1.2 and satisfy any of the requirements specified in 1.4, 1.5, 1.6, or 1.7.
- 1.4 Electrical apparatus:
 - for which a valid certificate of conformity exists, which accords with clause 2 of this Schedule, and
 - for which the applicable information listed in clause 3 is maintained as required by that clause, and
 - which the Manager of Electrical Engineering of the coal operation has determined is suitable for its intended environment.
- 1.5 Electrical apparatus:
 - of a type detailed on the list Explosion Protected Electrical Apparatus Approvals List, as amended from time to time, and
 - for which the applicable information listed in clause 3 of this Schedule is maintained as required by that clause, and
 - which the Manager of Electrical Engineering of the coal operation has determined is suitable for its intended environment.

(Note: The above list is available from <http://www.dpi.nsw.gov.au/minerals/safety/resources/electrical-engineering/topical-issues>)

- 1.6 Electric cables conforming to AS/NZS 1802, Electric cables - Reeling and trailing - For underground coal mining purposes.
- 1.7 Electric cables conforming to AS/NZS 1972, Electric cables - Underground coal mines - Other than reeling and trailing.
- 1.8 Any electric cable determined as suitable by the operator (in consultation with the manager of electrical engineering for the coal operation), that is used solely as part of an intrinsically safe circuit or is integral to a caplamp.
- 1.9 In a hazardous zone where the flammable gas concentration is greater than 1.25% by volume in the general body of air, only the following types of electrical plant.
 - 1.9.1 Electrical apparatus for which a valid certificate of conformity exists, which accords with section 2 of this Schedule, or electrical apparatus of a kind detailed on the list "Explosion Protected Electrical Apparatus Approvals List" and in relation to which the information section 3 of this schedule, and the certificate of conformity has been issued for one or more of the explosion protection techniques and associated levels of protection (or protection category) and types of plant listed in sections 1.9.1.1, 1.9.1.2, 1.9.1.3, or 1.9.1.4
 - 1.9.1.1 Any type of plant certified as intrinsically safe, category "ia", as defined in AS/NZS 60079.11:2000 Electrical apparatus for explosive gas atmospheres, Part 11: Intrinsic safety 'i'.
 - 1.9.1.2 Any type of plant certified as encapsulated, level of protection "ma", as defined in AS/NZS 60079.18:2005 Electrical apparatus for explosive gas atmospheres, Part 18: Construction, test and marking of type of protection encapsulation "m" electrical apparatus.
 - 1.9.1.3 Gas detectors / monitors certified as special protection "s" as defined in AS/NZS 1826(Int):2006 Electrical equipment for explosive gas atmospheres—Special protection—Type of protection 's'.
 - 1.9.1.4 Caplights for use in mines susceptible to firedamp, protection type "I" as defined in AS/NZS 62013.1:2001 Caplights for use in mines susceptible to firedamp parts 1 and 2, or protection type "s". (This type of apparatus must be withdrawn to a safe area when the flammable gas concentration exceeds 2% in the general body of air by volume).
 - 1.9.2 Cables with energised conductors connected to the type of plant described in 1.9.1.1, 1.9.1.2, or 1.9.1.3 must contain only circuits that are intrinsically safe, category "ia".

1.10 In a hazardous zone where the flammable gas concentration is not greater than 0.5% by volume in the general body of air, the following type of portable non-explosion protected plant may be used:

1.10.1 portable apparatus:

- 1.10.1.1 which is only powered by internal batteries
- 2.10.1.1 with batteries which are securely fastened within the apparatus and can not inadvertently detach from the apparatus
- 3.10.1.1 with circuits which do not produce incendive arcs in normal operation
- 4.10.1.1 which does not have any components or parts exposed to coal dust, that can exceed a surface temperature of 150°C in normal operation. (Where coal dust is prevented from entering the internal parts by an appropriate Ingress Protection (IP) rating, maximum surface temperature of any component must not exceed 450°C)
- 5.10.1.1 which is suitable for its duty
- 6.10.1.1 which is suitable for the work environment
- 7.10.1.1 in relation to which any accumulation of static charge has insufficient discharge energy to ignite methane, and
- 8.10.1.1 and in relation to which any radiated energy has insufficient energy to ignite methane and/or explosives.

2. Valid certificate of conformity

The certificate of conformity:

- 2.1 for Group I (mines susceptible to firedamp) as defined in section 4 of AS/NZS 60079.0:2005 Electrical apparatus for explosive gas atmospheres, Part 0: General requirements, or, for plant that is intrinsically safe, Group II associated apparatus, as defined in AS/NZS 60079.0:2005 Electrical apparatus for explosive gas atmospheres, Part 0: General requirements, and
- 2.2 must be an AUS Ex certificate of conformity, or, an ANZ Ex certificate of conformity, or, an IEC Ex certificate of conformity, and
- 2.3 in the case of restrained plugs and receptacles, must also attest to compliance with AS1299 "Electrical equipment for coal mines – Flameproof restrained plugs and receptacles"

3. Information

- 3.1 The following information supplied by the manufacturer or supplier of the plant:
 - 3.1.1 where the plant is certified, a copy of the certificate of conformity
 - 3.1.2 where the plant only has an approval, a copy of the approval
 - 3.1.3 where the plant is certified and approved, a copy of the certificate of conformity and a copy of the approval
 - 3.1.4 information in accordance with section 30 of AS/NZS 60079.0 Electrical apparatus for explosive gas atmospheres, Part 0: General Requirements

3.1.5 information in accordance with the requirements of Chapter 5 of the Occupational Health and safety Regulation 2001, and

3.1.6 plant drawings that:

- 1.1.6. identify all features of the plant that form part of the explosion protected properties,
- 2.1.6. give sufficient detail so that the plant can be verified as complying to the drawing,
- 3.1.6. Give sufficient detail so that the plant can be verified as complying with the certificate of conformity,

4.1.6 are traceable to the drawings used in testing and assessment for certification purposes, and

5.1.6 meet the requirements of any relevant code of practice or notice by the Chief Inspector published in the Government Gazette.

3.2 Information supplied as referred to in clause 3.1 must be maintained at the coal operation, or, where the owner of the plant is not the operator of the coal operation, at a location, determined as acceptable by the manager of electrical engineering for the coal operation, to enable the plant to be verified as conforming to the certificate of conformity, installed, used, maintained, overhauled, and repaired. This information must also comply with the requirements of AS2290.1 "Electrical equipment for coal mines – Introduction and maintenance. Part 1 For hazardous areas".

Definitions:

ANZ Ex certificate of conformity	A certificate of conformity issued under the Australian/New Zealand Certification Scheme for explosion-protected electrical equipment
AUS Ex certificate of conformity	A certificate of conformity issued under the Australian Certification Scheme for explosion - protected electrical equipment
IEC	International Electrotechnical Commission
IEC Ex certificate of conformity	A certificate of conformity issued under the International Electrotechnical Commission Certification Scheme for explosion-protected electrical equipment

Dated this 23rd day of January 2008

ROBERT REGAN,
Chief Inspector

COAL MINE HEALTH AND SAFETY ACT 2002

Notice under clause 37(a)(ii) of Coal Mine Health and Safety Regulation 2006

Types of Explosives for use in an Underground Mine

I, ROBERT REGAN, Chief Inspector under the Coal Mines Health and Safety Act 2002, pursuant to clause 37(a)(ii) of the Coal Mine Health and Safety Regulation 2006 ("the Regulation"), by this notice restrict the use of explosives in underground parts of the mine to explosives of a type conforming to the requirements specified in the Schedule below.