

Compilation of regulatory approaches used in various countries

Information received by the Secretariat through a survey in 2009

At its seventeenth session, the Working Party mandated the Sectoral Initiative on Equipment for Explosive Environments to prepare a comparison table detailing the different regulatory approaches used in various markets, based on information collected through a questionnaire.

This document sets out answers received to date from Australia, Brazil, the European Union, the Russian Federation and the United States of America.

1. Which national directives/laws control the placing on the market of equipment for explosive atmospheres?

Countries	Replies
Australia	<p><i>Note: This answer only relates to coal mining in the state of New South Wales (NSW). Queensland is the other major coal mining state with hazardous areas and has state-based legislation concerning this matter. For Group II industries– defined as places with an explosive gas atmosphere other than mines susceptible to firedamp - the legislation is again state- based, and generally hazardous area requirements are defined through the national wiring rules (AS/NZS3000) which in turn refer to AS/NZS2381 (Selection, Installation for hazardous areas). This note also applies to all other answers from Australia in this questionnaire.</i></p> <p>NSW Coal Mine Health and Safety Act 2002 NSW Coal Mine Health and Safety Regulation 2006. This regulation requires Ex-equipment to meet requirements specified in a Government Gazette - http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0005/203198/Types-of-electrical-plant-used-in-hazardous-zones---CMHS-Act-2002.pdf</p>
Brazil	The INMETRO Regulation “Portaria 83:2006” states the requirements for Electrical Equipment for use in Explosive Atmospheres of vapours and gases. This Regulation will be replaced in 2009 by a new INMETRO Regulation that will include dust atmospheres.
European Union	The directive 94/9/EC and its national implementation by the member states specify the rules.
New Zealand	Electricity Act 1992 and Electricity Regulations 1997 (Note Electricity Regulations 2009 due to be released soon. Will cover both regimes where appropriate).
Russian Federation	The Federal Law “On Industrial Safety of Hazardous Industrial Facilities” was adopted in 1997 No 116 FL, part 7, points 1, 2 and 3.
United States of America	US MINING: Federal Law governs the design and use of explosion-protected equipment in United States mines. More specifically: “Federal Coal Mine Health and Safety Act of 1969”, Public Law 91-173: “Federal Mine Safety and Health Act of 1977”, Public Law 95-164 (amends Public Law 91-173); “Mine Improvement and New Emergency Response act of 2006 (Miner Act)”, Public Law 109-236 (amends Public Law 95-164

2. Are there compulsory conformity assessment procedures in place?

Countries	Replies
Australia	Yes, the gazette notice requires Ex-equipment to be certified under the IEC Ex-Scheme or ANZ (Australia New Zealand) Ex-Scheme. These schemes require conformity assessment against the published standards.
Brazil	The procedure for mandatory certification (RAC – Conformity Assessment Procedure) is specified in the INMETRO Regulation “Portaria 83:2006”
European Union	The directive 94/9 requires the conformity assessment procedure of explosion protected equipment. Depending on the categories (safety level) a notified body shall be involved. The notified body issue an EC-Type Examination Certificate. Additionally the directive 94/9 require a quality module of the product or production facility.
New Zealand	<p>1. Not at this time as this is primarily controlled under the Electricity Act and Regulations which are performance based.</p> <p>2. When the Electricity Regulations 2009 are introduced, they will mandate AS/NZS 3000 and AS/NZS 2381.1 (or AS/NZS 60079.10.1, 60079.14 and 60079.17 if they are published prior to the introduction of the Regulations); this will mean that New Zealand will only accept:</p> <ul style="list-style-type: none"> (a) IEC Ex-Scheme (b) AUS Australian or ANZ (Australia New Zealand) Ex-Schemes (c) Other Type 5 Type testing schemes to IEC and AS/NZS Standards; (d) ATEX Equipment under specified conditions; (e) FM and UL equipment that is battery powered and has no integrated chargers.
Russian Federation	Safety rules for certification of electrical equipment used in explosive environment are specified in RS 03-538-03.
United States of America	US MINING: Federal Law requires the US Department of Labour (USDOL) Mine Safety and Health Administration (MSHA) to administer the requirements contained in Title 30, Code of Federal Regulations (Mineral Resources) pertaining to explosion-protected equipment. Current regulations only recognize “explosion-proof” and “intrinsically safe” as acceptable means for explosion-protecting equipment, where such equipment is required to be used in mining applications.

3. What is the role of national or international standards for the conformity assessment procedures (are they used in regulations and how)?

Countries	Replies
Australia	National standards for Ex-equipment are adopted IEC standards (note Ex-‘s’ – special protection is an Australian New Zealand Standard, Ex-‘n’ is not permitted in NSW underground coal mine hazardous areas). Conformity assessment against the Ex-standards is required by regulation via the above mentioned gazette notice. Conformity assessment is part of certification.
Brazil	It is mandatory to use national standards harmonized with IEC standards. For those cases where it is not available a harmonized standard must be use the equivalent IEC standard.
European Union	The directive requires fulfilling the general requirements specified in the directive and not the fulfilling of a standard. Usually the harmonized standards, published in the Official Journal of the European Commission, are used. The harmonized standards have adopted the IEC-Standards (Parallel Voting). In an annex of the European standard specific requirements of the directive are incorporated.
New Zealand	<p>1. Under the current Electricity Regulations 1997 those schemes meeting the requirements set out in AS/NZS 2381.1 are accepted as being a means of demonstrating that the equipment is</p>

Countries	Replies
	electrically safe for use in New Zealand; 2. Under the Electricity Regulations 2009 compliance will have to be verified to the above schemes because the base hazardous area standards will be mandated.
Russian Federation	As there is no mutual acceptance of the standards; all equipment should pass the certification procedures according the RS 03 – 538-03.
United States of America	US MINING: There is no blanket acceptance of national or international harmonized standards for mining applications. Federal Regulations permit approval of explosion-proof equipment that has been designed and tested according to IEC Standards, as long as certain additional criteria stated in the regulations are met.

4. What is the process of legal acceptance of the standards (national, regional, international)?

Countries	Replies
Australia	Legal acceptance is via the above mentioned gazette notice, this only recognises Australian standards (AS & AS/NZS), which in turn are adoptions of the IEC standards.
Brazil	For hazardous location area, the national standard harmonized must be used. If the Brazilian standard is not available the IEC standard must be used.
European Union	The adoption of the standards (harmonisation) based on the Decision of the European Commission together with the Consultant and CENELEC TC 31.
New Zealand	1. This has been dealt with the Standards Process for a number of years which the Electricity Regulator had been very active in so was part of the decision making process; 2. How this occurs in the future is uncertain in New Zealand as it is unclear as to who the Electricity Regulator will be for these types of installations but as the IECEx System is where New Zealand is heading that may not be an issue.
Russian Federation	As a rule during the development of national standards the international standards are used, but with corrections due to national specific features supported by technical or economic targets.
United States of America	US MINING: The development and adoption of US Mining regulations are governed by the “Administrative Procedures Act” (Title 5 - United States Code - Chapter 5, Sections 511-599). In general, MSHA must first draft and propose a regulation and then allow for public review and comment before finalizing a regulation. US mining regulations are also constrained by current mining laws which prohibit the promulgation of any safety standard that reduces the protection afforded miners below that provided by current mining law.

5. Who is authorized to conduct the conformity assessment? (Are results of conformity assessment done abroad accepted?)

Countries	Replies
Australia	Conformity assessment is done by organisations accredited under the ANZ Ex-Scheme or IEC Ex-Scheme. Conformity assessment is accepted from overseas organisations that are accredited under the IEC Ex-Scheme. That is an IEC Ex-Certificate of Conformity from any Certification Body that is recognized under the IEC Ex-Scheme is acceptable.

Countries	Replies
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Brazil	The conformity assessment is carried out by certification bodies accredited by INMETRO. According to the INMETRO Regulation “Portaria 83:2006”, the acceptance of test results performed outside Brazil can be considered only if the test laboratory is accredited by some ILAC Full Member and if the laboratory accreditation scope covers the same standards required in the Brazilian Law. Any other activity performed by Certification Body, such as inspections, is allowed only if there is a Memorandum of Understanding between the Brazilian Certification Organization and the Certification Body abroad.
European Union	The notified bodies execute the conformity assessment. All member states have the right to nominate their notified bodies within their territory.
New Zealand	These are done as per the requirements of the schemes accepted by the Standards we use. New Zealand does not have any additional controls over the ones of the recognised schemes.
Russian Federation	The specially accredited centres of certification are responsible for assessments. They can take part in the testing of equipment and the results of the testing are accepted in making decisions to issue a certificate of conformity.
United States of America	US MINING: Under Federal Law, MSHA is the only organization authorized to issue approval for explosion-protected equipment. Some approval regulations permit the testing and evaluation of products by the applicant or third party; however, MSHA has the ultimate authority to issue approval for the equipment.

6. Who is authorized to conduct the accreditation of the conformity assessment bodies and based on which requirements? (Is accreditation of foreign conformity assessment bodies possible?)

Countries	Replies
Australia	<ol style="list-style-type: none"> 1. Accreditation is scheme dependent: (a) For international (IEC) it is the IEC Ex-Scheme, and (b) For national (the ANZ Ex-Scheme) it is JASANZ (Joint Accreditation Scheme for Australia and New Zealand). 2. Criteria are based on International Guides and specific scheme requirements. 3. Foreign conformity assessment bodies are permitted in accordance with the IEC Ex-Scheme.
Brazil	According to CONMETRO 004:2002 law, only INMETRO can conduct the accreditation of Certification Organizations and Test Laboratories, according to ISO Guide 65 and ISO 17025. The accreditation of foreign assessment bodies is possible.
European Union	The Member States of the European Community nominate their notified bodies within their territory. The criteria of the nomination are an accreditation in accordance to the IEC/ISO 17025 and EN 45011/12. Foreign notified bodies (outside their territory) can not be nominated by a member State.
New Zealand	Again these are done as per the requirements of the schemes accepted by the Standards we use. New Zealand does not have any additional controls over the ones of the recognized schemes.
Russian Federation	The accreditation procedures are ruled by GOST R 51000.5-96. And according to clause 5 point 2 of Federal Law “On Industrial Safety of Hazardous Industrial Facilities”, the bodies of accreditation (the Rostekh regulirovanie) should have their decisions approved by the Rostekhnadzor. Accreditation of foreign assessment bodies is possible based on ISO and IEC documents.
United States of America	US MINING: MSHA will observe the testing and evaluation of explosion-protected equipment conducted by the applicant or third party. However, there is no formal accreditation issued.

7. Which additional directives/laws have a product for use in explosive environments to comply with? (Common for all products and/or for specific products?)

Countries	Replies
Australia	For ALL products – NSW Occupational Health and Safety Act 2000 NSW Occupational Health and Safety Regulation 2001 – In particular, Chapter 5 – Plant Safety
Brazil	The manufacturer has to fulfil all relevant Regulations concerning his product.
European Union	The manufacturer has to fulfil all relevant directives concerning his product. Depending on the product it could be the machinery of low voltage directive. A list of potential “New Approach” directives can be uploaded.
New Zealand	As with questions 1 and 8.
Russian Federation	There is a list of standards and other regulating documents for each specific type of equipment and production.
United States of America	US MINING: Federal mining laws and regulations (see above) contain specific requirements for different types of products.

8. Are there additional or special directives/laws for putting products into operation (in addition to placing a product on the market)?

Countries	Replies
Australia	It is the above mentioned law that controls the putting into operation of the product; that in turn constrains the putting of the product on the market in the first place.
Brazil	The use of products in hazardous locations is regulated by the Labour Ministry Regulation NR-10.
European Union	The use (installation, maintenance, repair and overhaul, etc.) of explosion protected products is specified in the directive 99/92. This directive specifies minimum requirements and can be completed by national regulations of the member states. These additional requirements are not allowed to affect the product itself.
New Zealand	1. Health Safety and Employment Act 1992 and Health and Safety in Employment Regulations 1995; 2. Health Safety and Employment (Mining - Underground) Regulations 1999. (Note: These regulations have only broad electrical statements in them and as of this time no specific electrical safety regulations have been put in place to cover mines. Generally the Mines follow Australian Mining Legislation and Standards); 3. Health and Safety in Employment (Petroleum Exploration and Extraction) Regulations 1999; 4. Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001.

9. Which are the procedures for the market surveillance and who is responsible?

Countries	Replies
Australia	<p>Market surveillance is ad-hoc and there are a number of market surveillance opportunities:</p> <ul style="list-style-type: none"> • Market surveillance at manufacture – ANZ ex Scheme and IEC Ex-Scheme • Market surveillance by the purchaser – Legislation requires employers to determine the suitability of equipment (generally vested in the Manager of Electrical Engineering, which is a statutory coal mine position) • Market surveillance by the repairer/overhauler – Legislation requires these organisations to be licensed • Market surveillance by the Mining Regulator – Investigation of specified reportable incidents, licensing of Ex-repair facilities, mine site assessments and random reviews (including testing per the standard).
European Union	<p>The market surveillance is organized by the member states. All market surveillance authorities communicate every 6 month within their ADCO meeting. With the safeguard clause of the directive 94/9 the market surveillance can act. Complained product will be published in the internet (RAPEX) to communicate it to the population.</p>
United States	<p><u>US MINING</u>: MSHA’s quality assurance specialists perform audits of approved products and address field complaints of defective or non-conforming products. Discrepant products must be brought into compliance or removed from mines.</p>
Russian Federation	<p>The market of explosive protected equipment is controlled by state bodies on the stages of production and importing.</p>

10. What are the regulations for inspection, maintenance and repair of the equipment?

Countries	Replies
Australia	<ul style="list-style-type: none"> • Coal Mine Health and Safety Regulation 2006 • Occupational health and Safety Regulation 2001 • Coal mine Health and Safety Regulation 2006, specifically requires repair at licensed facilities
European Union	<p>The use of explosion protected equipment is specified in the directive 99/92. The implementation of the directive into national laws can specify the rules of inspection, maintenance, repair and overhaul. International standards (IEC) exist, but they are not legally binding to the member states, they are not harmonised. A heterogeneous system has been established.</p>
United States	<p>US MINING: Federal mining laws and regulations (see above) address inspection, maintenance and repair of the equipment.</p>
Russian Federation	<p>Operation, maintenance and repair procedures of equipment are regulated by GOST R 513300.18-99. Inspection of the equipment safe operation is conducted by the Rostekhnadzor regional offices. Those bodies have the right to enforce regulations and apply penalties in case of operators’ non-conformity.</p>