AS/NZS 1826:2008

Australian/New Zealand Standard™

Electrical equipment for explosive gas atmospheres—Special protection—Type of protection ‘s’

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-014, Equipment for Explosive Atmospheres. It was approved on behalf of the Council of Standards Australia on 25 March 2008 and on behalf of the Council of Standards New Zealand on 11 April 2008.
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-014, Equipment for Explosive Atmospheres, to supersede AS/NZS 1826(Int):2006.

The intent of AS/NZS 1826 is to allow the design, assessment and testing of equipment or parts of equipment that cannot be classified within a recognized technique or combination of recognized techniques because of functional or operational limitations. However, it has to be demonstrated that the equipment is safe for use in the area requiring the Equipment Protection Level (EPL) for which it is intended.

The AS/NZS 60079 series of Standards does not have an equivalent part to AS/NZS 1826 although Ex ‘s’ is mentioned as a permitted marking in AS/NZS 60079.0.

AS/NZS 60079.26 provides for equipment to be used in an area requiring EPL Ga equipment but depends on combining techniques already described in other parts of the Standard.

This Standard may also be used to certify equipment which is required to be used in an area requiring a higher EPL than the underlying protection techniques allow. This would require additional control measures to be applied. Designers need to first consider all possibilities for design to established explosion-protection techniques described in the AS/NZS 60079 series or IEC equivalent, or to combinations of techniques as described in AS/NZS 60079.26, before resorting to type of protection Ex ‘s’.

NOTE: Some equipment in the past that was certified to Ex ‘s’ Standard could now be readily certified, with modification if needed, to one or more of the protection techniques covered in the AS/NZS 60079 series.

This Standard is not to be considered as a last resort in the event that equipment fails compliance to a technique in the AS/NZS 60079 series.

The Ex ‘s’ technique is necessarily based on identification of failure modes and assessment of the risk of failure in the identified modes. In this regard the safety of the equipment has to be equal to or greater than comparable techniques. For example, for an area requiring EPL Ga equipment, the equipment has to have equivalent or greater safety than Ex ‘ia’, Ex ‘ma’ or combined techniques described in AS/NZS 60079.26.

The probability of failure, of the identified failure modes, may need to be demonstrated to be of a similar likelihood as the failures that occur in recognized types of protection.

Full safety life cycle conditions may be necessary and form part of the mandatory directions for safe use of the equipment, to ensure ongoing levels of safety during the operational life of the equipment.

By its very nature, testing and assessment to Ex ‘s’ cannot be as prescriptive as for other techniques. It is anticipated that considerable dialogue is required between the manufacturer and the testing station. Additional tests may be devised by the testing station, to ensure the relevant level of safety is achieved.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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