

Australian/New Zealand Standard™

Explosive atmospheres

Part 35.1: Caplights for use in mines susceptible to firedamp—General requirements—Construction and testing in relation to the risk of explosion



AS/NZS 60079.35.1:2011

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-023, Electrical Equipment in Mines and Quarries.

The objective of this Standard is to specify the requirements for the construction, testing and marking of caplights, including caplights with a point of connection for other equipment, for use in mines susceptible to firedamp (Group I—Electrical equipment for explosive gas atmospheres as defined in AS/NZS 60079.0).

This Standard is identical with, and has been reproduced from, IEC 60079-35-1, Ed.1.0 (2011), *Explosive atmospheres—Part 35-1: Caplights for use in mines susceptible to firedamp—General requirements—Construction and testing in relation to the risk of explosion*.

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References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

<i>Reference to International Standard</i>	<i>Australian/New Zealand Standard</i>
IEC	AS/NZS
60079 Explosive atmospheres	60079 Explosive atmospheres
60079-0 Part 0: Equipment—General requirements	60079.0 Part 0: Equipment—General requirements
60079-1 Part 1: Equipment protection by flameproof enclosures “d”	60079.1 Part 1: Equipment protection by flameproof enclosures ‘d’
60079-7 Part 7: Equipment protection by increased safety “e”	60079.7 Part 7: Equipment protection by increased safety ‘e’
60079-11 Part 11: Equipment protection by intrinsic safety “i”	60079.11 Part 11: Equipment protection by intrinsic safety ‘i’

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INTRODUCTION

The general revision and updating of this second edition have been necessitated by the advent of new technologies related to caplight design, in particular those related to lithium batteries and light-emitting diode (LED) light sources, the growing practice of incorporating electronic circuits and the introduction of intrinsically safe caplights which can be certified without reference to performance requirements. It is intended that there should be a stronger link between Part 1 (Construction) and Part 2 (Performance) of this Standard by upgrading the reference in the Scope from a note to a requirement.

In addition, as this standard is now to become part of the IEC 60079 series, changes have been made to bring it more in line with others in the series by cross referencing. This has enabled a reduction in the number and length of clauses in the standard.

AUSTRALIAN/NEW ZEALAND STANDARD

Explosive atmospheres

Part 35.1:

Caplights for use in mines susceptible to firedamp—General requirements—Construction and testing in relation to the risk of explosion**1 Scope**

This part of IEC 60079-35 specifies requirements for the construction, testing and marking of caplights, including caplights with a point of connection for other equipment, for use in mines susceptible to firedamp (Group I – electrical equipment for explosive gas atmospheres as defined in IEC 60079-0). It deals only with the risk of the caplight becoming a source of ignition.

The requirements for performance are in IEC 60079-35-2.¹

This standard supplements and modifies the general requirements of IEC 60079-0 except as indicated in Table 1. Where a requirement of this standard conflicts with a requirement of IEC 60079-0, the requirements of this standard take precedence.

Compliance with this standard will provide an EPL of Mb (see 4.1 of this standard). If an EPL of Ma is required, the caplight will need to conform to the requirements of 4.2 of this standard, which in turn refers to IEC 60079-11.

It is expected that from time to time, caplights conforming to this standard (EPL Mb) will operate in atmospheres where the firedamp exceeds statutory levels that require the withdrawal of people from the high firedamp atmosphere to a non-hazardous area.

In designing equipment for operation in conditions other than those given above, this standard may be used as guidance; however, additional testing may be required.

Where a caplight is assessed as intrinsically safe equipment, Ex ia, conforming to IEC 60079-11 only the clauses/subclauses listed in 4.2 require application.

¹ IEC 60079-35-2, *Caplights for use in mines susceptible to firedamp – Part 2: Performance and other safety-related matters* (to be published).