

Australian/New Zealand Standard™

Explosive atmospheres

**Part 34: Application of quality systems
for equipment manufacture**



AS/NZS 80079.34:2012

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-014, Explosive Atmospheres. It was approved on behalf of the Council of Standards Australia on 27 January 2012 and on behalf of the Council of Standards New Zealand on 24 January 2012.

This Standard was published on 20 February 2012.

The following are represented on Committee EL-014:

Auckland Regional Chamber of Commerce
Australian Chamber of Commerce and Industry
Australian Coal Association
Australian Industry Group
Australian Institute of Petroleum
Australian Institute of Refrigeration, Air Conditioning and Heating
Australian Petroleum Production and Exploration Association
Australian Pipeline Industry Association
Bureau of Steel Manufacturers of Australia
Consult Australia
Department of Industry and Investment NSW
Department of Mines and Energy, Qld
Electrical Compliance Testing Association
Electrical Contractors Association of New Zealand
Electrical Regulatory Authorities Council
Energy Networks Association
Engineers Australia
Environmental Risk Management Authority New Zealand
Institute of Electrical Inspectors
Institute of Instrumentation, Control and Automation Australia
Institution of Professional Engineers New Zealand
Mining Electrical and Mining Mechanical Engineering Society
Ministry of Economic Development, New Zealand
National Electrical and Communications Association
New Zealand Employers and Manufacturers Association (Central)
The Aviation and Marine Engineers Association
WorkCover New South Wales

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.saiglobal.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR AS/NZS 80079.34.

Australian/New Zealand Standard™

Explosive atmospheres

Part 34: Application of quality systems for equipment manufacture

First published as AS/NZS 80079.34:2012.

COPYRIGHT

© Standards Australia Limited/Standards New Zealand

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher, unless otherwise permitted under the Copyright Act 1968 (Australia) or the Copyright Act 1994 (New Zealand).

Jointly published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001 and by Standards New Zealand, Private Bag 2439, Wellington 6140

ISBN 978 1 74342 031 7

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-014, Explosive Atmospheres.

The objective of this Standard is to establish the specific requirements for a quality system that can be used by an organization for the production of equipment and protective systems for explosive atmospheres.

This Standard is identical with, and has been reproduced from, ISO/IEC 80079-34, Ed.1.0 (2011), *Explosive Atmospheres—Part 34: Application of quality systems for equipment manufacture*.

As this Standard is reproduced from an International Standard, the following applies:

- (a) Its number appears on the cover and title page while the International Standard number appears only on the cover.
- (b) In the source text ‘this part of ISO/IEC 80079’ should read ‘this Australian/New Zealand’.
- (c) A full point substitutes for a comma when referring to a decimal marker.

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
ISO/IEC	AS ISO/IEC
17050 Conformity assessment—Supplier's declaration of conformity	17050 Conformity assessment—Supplier's declaration of conformity
17050-1 Part 1: General requirements	17050.1 Part 1: General requirements
ISO	AS/NZS ISO
9000 Quality management systems—Fundamentals and vocabulary	9000 Quality management systems—Fundamentals and vocabulary
9001 Quality management systems—Requirements	9001 Quality management systems—Requirements

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An ‘informative’ appendix is only for information and guidance.

CONTENTS

	<i>Page</i>
1	Scope.....7
2	Normative references7
3	Terms and definitions7
4	Quality management system.....9
4.1	General requirements9
4.2	Documentation requirements.....9
4.2.1	General9
4.2.2	Quality manual9
4.2.3	Control of documents9
4.2.4	Control of records.....10
5	Management responsibility11
5.1	Management commitment.....11
5.2	Customer focus11
5.3	Quality policy11
5.4	Planning.....11
5.4.1	Quality objectives11
5.4.2	Quality management system planning.....11
5.5	Responsibility, authority and communication11
5.5.1	Responsibility and authority.....11
5.5.2	Management representative12
5.5.3	Internal communication.....12
5.6	Management review12
5.6.1	General12
5.6.2	Review input.....12
5.6.3	Review output.....12
6	Resource management.....12
6.1	Provision of resources.....12
6.2	Human resources12
6.2.1	General12
6.2.2	Competence, training and awareness12
6.3	Infrastructure.....13
6.4	Work environment13
7	Product realization13
7.1	Planning of product realization13
7.2	Customer-related processes.....13
7.2.1	Determination of requirements related to the product.....13
7.2.2	Review of requirements related to the product.....13
7.2.3	Customer communication13
7.3	Design and development13
7.3.1	Design and development planning.....13
7.3.2	Design and development inputs.....13
7.3.3	Design and development outputs.....13
7.3.4	Design and development review13
7.3.5	Design and development verification14

	<i>Page</i>
7.3.6 Design and development validation	14
7.3.7 Control of design and development changes.....	14
7.4 Purchasing	14
7.4.1 Purchasing process	14
7.4.2 Purchasing information	15
7.4.3 Verification of purchased product	15
7.5 Production and service provision	16
7.5.1 Control of production and service provision	16
7.5.2 Validation of processes for production and service provision	16
7.5.3 Identification and traceability	16
7.5.4 Customer property.....	16
7.5.5 Preservation of product	17
7.6 Control of monitoring and measuring equipment.....	17
8 Measurement, analysis and improvement	17
8.1 General	17
8.2 Monitoring and measurement	17
8.2.1 Customer satisfaction	17
8.2.2 Internal audit	17
8.2.3 Monitoring and measurement of processes.....	18
8.2.4 Monitoring and measurement of product	18
8.3 Control of nonconforming product.....	18
8.4 Analysis of data.....	19
8.5 Improvement	19
8.5.1 Continual improvement.....	19
8.5.2 Corrective action	19
8.5.3 Preventive action.....	19
Annex A (informative) Information relevant to particular types of protection and specific products.....	20
Annex B (informative) Verification criteria for elements with non-measurable paths used as an integral part of a type of protection	29
Bibliography.....	32
Table A.1 – Component/feature compatibility	22

INTRODUCTION

This International Standard specifies requirements for a quality system that can be used by an organization for the production of equipment and protective systems for explosive atmosphere.

It can also be used by third parties, including certification bodies, to assess the organization's ability to meet conformity assessments system requirements and/or regulatory requirements.

The application of this standard is intended to cover both electrical and non-electrical equipment and protective systems. The detailed content (e.g. annexes) is currently more focused on the established equipment standards for electrical equipment. However, IEC sub-committee 31M has recently been formed with the responsibility for the development of standards for non-electrical equipment. It is anticipated that, where appropriate, these standards, or requirements related to them, will be referenced within this standard in the future.

Manufacturer's quality requirements are an integral part of most certification schemes and as such this Standard has been prepared with the IECEx equipment certification scheme requirements in mind, is intended to support the ATEX scheme requirements for a manufacturer's quality system and can be applied in other national or regional certifications schemes that relate to the manufacture of explosion-protected equipment.

AUSTRALIAN/NEW ZEALAND STANDARD

Explosive atmospheres

Part 34:

Application of quality systems for equipment manufacture

1 Scope

This part of ISO/IEC 80079 specifies particular requirements and information for establishing and maintaining a quality system to manufacture Ex equipment including protective systems in accordance with the Ex certificate.

It does not preclude the use of other quality systems that are compatible with the objectives of ISO 9001:2008 and which provide equivalent results.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050-426, *International Electrotechnical Vocabulary – Part 426: Equipment for explosive atmospheres*

IEC 60079-0, *Explosive atmospheres – Part 0: Equipment – General requirements*

ISO/IEC 17050-1, *Conformity assessment – Supplier's declaration of conformity – Part 1: General requirements*

ISO 9000:2005, *Quality management systems – Fundamentals and vocabulary*

ISO 9001:2008, *Quality management systems – Requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-426, IEC 60079-0 and ISO 9000:2005, as well as the following definitions, apply.

3.1**Ex Component**

part of Ex equipment or a module (other than an Ex cable gland), marked with the symbol “U”, which is not intended to be used alone and requires additional consideration when incorporated into Ex equipment or systems for use in explosive atmospheres

NOTE This definition is identical to that of IEC 60079-0, except that the term “electrical” has been replaced by “Ex” to allow a broader application of the definition.

3.2**Ex Equipment**

machines, apparatus, fixed or mobile devices, control components and instrumentation thereof and detection or prevention systems which, separately or jointly, are intended for the generation, transfer, storage, measurement, control and conversion of energy for the processing of material and which are capable of causing an explosion through their own potential sources of ignition