



How to Apply Hazardous Area Australian Standards

3-Day Workshop* - Tuesday 13 - Thursday 15 Oct 2020

Melbourne (Glen Waverley)

This workshop provides a sound understanding of electrical compliance and your responsibilities in Group II (flammable gases, liquids and vapours) and Group III (combustible dusts) hazardous areas. This workshop is suitable as first time or refresher training for personnel requiring a comprehensive understanding of electrical installations in hazardous areas.

Potential sources of ignition are often taken into hazardous locations where flammable liquids, gases, vapours and dusts are generated, processed, handled and stored. These flammable substances can easily ignite from an arc, spark or heat. It is essential you avoid accidental ignition of these flammable substances.

Based on the current Australian Standards, trainees will receive an introduction to hazardous area legislation and a detailed understanding of how hazardous areas are classified, and sources of ignition. This workshop also provides a sound understanding of how to use the relevant Australian Standards to select, install, inspect, test and maintain hazardous area electrical installations.

Ensure you remain compliant* and maintain your hazardous area skills and knowledge by booking this essential workshop today.

Workshop topics:

- How to prevent hazardous area fires and explosions
- Legislation, compliance and competency
- How Group II and Group III hazardous areas are classified
- How to read hazardous area classification drawings
- How to read equipment markings
- How to recognise sources of ignition
- How explosion protection techniques prevent explosions
- How to select, install, inspect and maintain:
Ex d, Ex e, Ex i, Ex iD, Ex m, Ex mD, Ex n, Ex o, Ex p, Ex pD, Ex q, Ex s and Ex t equipment

**Continuing education or training is required – see clause 4.5 of AS/NZS600079.14:2017 and clause 4.2 of AS/NZS600079.17:2017*

Workshop Outline

1) Introduction

- Hazardous areas
- Who is responsible
- Statute laws and standards
- AS/NZS3000 non compliance issues
- Qualifications and competency

2) Hazardous Area Classification

- Ignition curves
- Zone classification - Group II
- Gas classification - equipment group
- Temperature classification - T Class
- Ambient temperature range of explosion protected equipment
- Area classification - Group II
- Combustible dusts - Group III

3) Ignition

- Sources of ignition
- Ignition triangle

4) Types of Protection

- Ex d - Flameproof
- Ex e - Increased Safety
- Ex n - Non-Incendive
- Ex p and Ex pD - Pressurization
- Ex m and Ex mD - Encapsulation
- Ex o - Oil Immersion
- Ex q - Powder/Sand Filling
- Ex s - Special Protection

- Ex t - Protection by Enclosure
- Ex i and Ex iD - Intrinsic Safety

5) Electrical Protection of Hazardous Area Equipment

- Isolation
- Locked in off position
- Overcurrent, internal short circuit and earth fault protection
- Protection of Intrinsically Safe equipment

6) Equipotential Bonding

7) Selection of Equipment

- List of Australian Standards
- AUS Ex, ANZEx and IECEx certified equipment
- Permitted electrical equipment
- Other standards certified equipment

8) Theory of Intrinsic Safety

- Zener diodes
- Zener barrier
- "Ex ia", "Ex ib" and "Ex ic" Zener barriers
- Earthing
- Isolation barrier theory

9) Certification

- Certification of electrical equipment
- Simple apparatus
- Energy storing Ex i equipment
- Cable parameters of Ex i equipment
- Matched power of Ex i equipment
- Matching Ex i equipment and Ex i barrier certificates

10) Installation of

- Ex d - Flameproof
- Ex e - Increased Safety
- Ex n - Non-Incendive
- Ex p and Ex pD - Pressurization
- Ex m and Ex mD - Encapsulation
- Ex o - Oil Immersion
- Ex q - Powder/Sand Filling
- Ex s - Special Protection

- Ex t - Protection by Enclosure
- Ex i and Ex iD - Intrinsic Safety
- Ex i - Insulation test

11) Inspection and Testing

- Inspection schedules
- Testing

12) Maintenance and Repair

13) Summary

14) Self Appraisal

- Appraisal questionnaire
- Appraisal questionnaire answers

15) Discussion

Delivery of Workshop

Workshops are presented using PowerPoint slides, video clips, examples of hazardous area classification drawings, real hazardous area electrical equipment and the Australian Standards.

The Workshop Author and Presenter

Colin Baker is a practising professional engineer, qualified workplace assessor (Certificate IV) and workplace trainer who has been involved with surge protection, intrinsic safety and hazardous area installations since 1970. He has worked for some of the major manufacturers of hazardous area instrumentation and has gained significant surge protection and hazardous area experience through designing, installing, commissioning and inspecting equipment and installations.

Colin has provided training and technical support to many chemical, petrochemical and public utility companies around the world and has written and presented numerous papers locally and internationally.

An H Class Licensed Electrical Inspector (Vic) and an Accredited Auditor (Qld), Colin is qualified to inspect hazardous area electrical installations under the 2009 Victoria Electricity Safety (Installation) Regulations and the 2002 Queensland Electrical Safety Regulation.

He sits on the joint Australian/New Zealand Standards committees MS-066 (was P-012) for hazardous area competency, EL-014 for equipment in explosive atmospheres and MS-011 for classification of hazardous areas. He sits on sub-committees EL-014-4 for standards on Intrinsic Safety, Encapsulation, Special Protection and Combustible Dusts; ME-026-02 for standards on industrial hazardous area trucks; EL-014-8 for standards on spray painting booths; EL-014-1 for standards for fuel dispensing; EL-014-13 Technical Advisory Group and has provided input for EL-014-9 for standards on gas detectors.

Explosion Protection Technology is a leading independent and Australian owned consulting and training organisations founded by Colin. The company specialising in the safety of hazardous area electrical installations based on the current Australian Standards including:

- Classifying hazardous areas
- Checking electrical installations located in hazardous areas
- Assisting clients to obtain certification of hazardous area electrical equipment
- Running hazardous area workshops

Enrolment Form

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Melbourne (Glen Waverley)

Please print clearly when completing this form

Name: Mr / Ms / Dr

(First Name and Surname for Name Badge. If name is different for Certificate please print below.)

Job Title:

Company Name:

Address:

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To secure your place in this workshop please complete this Enrolment Form and the Payment Form email sue@eptech.com.au

The payment can be made by credit card (MasterCard or Visa), cheque or EFT. A Tax Receipt will be forwarded to you upon receipt of payment.

Checklist: (Tick the box to ensure your booking is complete)

- Complete Enrolment Form
- Complete Payment Form
- Forward both completed forms by email. Contact details below.

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Please print clearly and email this Payment Form together with your Enrolment Form and Purchase Order (if applicable).

Company Name: _____

Name of Person making payment: _____

Telephone: _____

Email: _____

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Amount being paid: _____

Workshop fees: Ensure we receive your Enrolment Form and your payment together.

By Monday 20 April 2020: \$1,050.00 + \$105.00 (GST) = \$1,155.00 per person

After Monday 20 April 2020: \$1,200.00 + \$120.00 (GST) = \$1,320.00 per person

The workshop fee must be paid by start of the workshop.

Please tick the method of payment.

EFT Bank: ANZ, 92 High Street, BERWICK, VICTORIA, 3806

BSB: 013 542 Account Number: 4094 25557

Account Name: Explosion Protection Technology Pty Ltd

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