**4.4 Unit Ex 002 – Perform classification of hazardous areas**

**4.4.1 Scope**

This unit of Competence covers knowledge and skills to classify areas where explosive materials may exist. It requires the ability to gather and analyse data relative to explosion hazards, determine the extent of risk and establish and document zones (nothing that the zoning of hazardous areas can be different depending on national regulations and rules).

This unit of competence is based on IEC 60079-10-1 and IEC 60079-10-2 and any other relevant standards that apply to this Unit of Competence.

**4.4.2 Prerequisites**

Competence in this unit requires a degree, diploma or equivalent in technical subject.

For an operative this area of classification should be carried out by those who have a comprehensive understanding of properties of flammable materials, area classification and zoning processes and equipment types, along with electrical and mechanical safety.

For a responsible person this unit should be carried out by those who understand the relevance and significance of properties of flammable materials the processes and procedures for documenting and recording equipment types/selection, competence and electrical and mechanical safety.

**4.4.3 Elements and performance criteria**

**4.4.3.1 Criteria for an operative**

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| --- | --- | --- | --- | --- |
| **Elements** | | Performance criteria | | Critical aspects of evidence |
| 2.1 | Determine the type and extent of explosion hazard | 2.1.1 | Functions and process equipment in the area are determined and hazardous materials identified from specifications, hazard and risk and/or written consultation with process specialist personnel | Accessing necessary information and identifying hazardous products involved in a given process, explosive properties of materials involved in a given process, and potential sources and characteristics of release of hazardous products |
| 2.1.2 | Explosion and physical properties of hazardous materials are listed, together with the title of the authority from which the data is obtained |  |
| 2.1.3 | Gas groupings and temperature class of flammable gases, vapours and/or dusts that may be present in the area are established from collected data |  |
| 2.1.4 | Potential sources of release and/or dust layering are identified from specifications and diagrams and reviewed with process specialist personnel | Analysing data in the context of explosion risk |
| 2.2 | Establish the type and extent of zones | 2.2.1 | Zones are determined by similarity to examples in Standards or from first principles | Determining area delineation and documenting area classifications |
| 2.2.2 | Where first principles are used, grades, sources and magnitude of release and dust layering are established from specifications and diagrams and reviewed with process specialist personnel |  |
| 2.3 | Document classification and delineation of zones | 2.3.1 | Area classification documentation is completed in accordance with requirements and submitted to appropriate personnel |  |
| 2.3.2 | Classification documentation records are filed for future reference and for incorporation in the verification dossier |  |

**4.4.3.2 Criteria for a responsible person**

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| **Elements** | | Performance criteria | | Critical aspects of evidence |
| 2.4 | Prepare for area classification | 2.4.1 | Arrangement are made in accordance with the requirements for an area classification to be carried out | Legislative and company requirements have been followed |
| 2.4.2 | Appropriate personnel are deployed | Knowledge and skills (Competence) of personnel |
| 2.4.3 | Input documentation in relation to area classification is obtained and forwarded to appropriate personnel | Hazardous material data, plant and process details |
| 2.5 | Confirm that the area classification in complete and documented | 2.5.1 | The area classification is documented in accordance with procedures | Report and drawings |
| 2.5.2 | Responsibility for review and maintenance of the area classification is defined | Review personnel and period |

**4.4.4 Scope limitations**

Scope limitations by Group are acceptable to Unit Ex 002 (refer to Table 4.1)

**4.4.5 Evidence guide – Critical aspects of evidence**

Evidence of competence in this unit shall show:

a) Competent performance associated with each element of competence by employing the techniques, procedures, information and resources available in the workplace and encompassing the aspects for which competence is sought according to Table 4.4.3

b) An understanding of the knowledge and associated skills essential to performance as given in:

5.3 Explosive atmospheres and explosion-protection principles

5.7 Explosive atmospheres classification techniques

c) A practical application of the knowledge and skills essential to performance as given in:

5.8 Hazardous area classification work performance