259602

Describe sources of and control measures for noise in a work place

**NQF Level 1 Credits 2**



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| 259602  | Describe sources of and control measures for noise in a work place  |
| **SAQA US ID** | **UNIT STANDARD TITLE** |
| 259602  | Describe sources of and control measures for noise in a work place  |
| **ORIGINATOR** | **REGISTERING PROVIDER** |
| SGB Occupational Health and Safety  |   |
| **QUALITY ASSURING BODY** |
| -   |
| **FIELD** | **SUBFIELD** |
| Field 09 - Health Sciences and Social Services | Preventive Health  |
| **ABET BAND** | **UNIT STANDARD TYPE** | **OLD NQF LEVEL** | **NEW NQF LEVEL** | **CREDITS** |
| Undefined  | Regular  | Level 1  | NQF Level 01  | 2  |
| **REGISTRATION STATUS** | **REGISTRATION START DATE** | **REGISTRATION END DATE** | **SAQA DECISION NUMBER** |
| Registered  | 2008-11-26  | 2011-11-26  | SAQA 0579/08  |
| **LAST DATE FOR ENROLMENT** | **LAST DATE FOR ACHIEVEMENT** |
| 2012-11-26    | 2015-11-26    |

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| In all of the tables in this document, both the old and the new NQF Levels are shown. In the text (purpose statements, qualification rules, etc), any reference to NQF Levels are to the old levels unless specifically stated otherwise.  |
| This unit standard does not replace any other unit standard and is not replaced by any other unit standard.  |
| **PURPOSE OF THE UNIT STANDARD**  |
| Learners competent in this unit standard will be able to describe sources of noise and control noise pollution through the use of Hearing Protection Devices. People credited with this unit standard will be able to:  Explain the specified requirements pertaining to noise exposure in a work place.  Describe the various sources of noise in a work place.  Describe the personal protective measures that can be taken against exposure to noise.  |
| **LEARNING ASSUMED TO BE IN PLACE AND RECOGNITION OF PRIOR LEARNING**  |
|  Communication at NQF Level 1.  Mathematical literacy at NQF Level 1.  |
| **Specific Outcomes and Assessment Criteria:**  |
| **SPECIFIC OUTCOME 1**  |
| Explain the specified requirements pertaining to noise exposure in a work place.  |
| **ASSESSMENT CRITERIA**  |
| **ASSESSMENT CRITERION 1**  |
| The occupational exposure limit to noise in a workplace is explained in terms of specified requirements.  |
| **ASSESSMENT CRITERION 2**  |
| The effects of continuous exposure to noise are explained in terms of the consequences to the individual's health, safety and productivity.  |
| **ASSESSMENT CRITERION 3**  |
| The need for noise zoning is explained in terms of specified requirements.  |
| **SPECIFIC OUTCOME 2**  |
| Describe the various sources of noise in a work place.  |
| **ASSESSMENT CRITERIA**  |
| **ASSESSMENT CRITERION 1**  |
| The various sources of noise in a work place are described in general and those occurring in the learner's place of work are named.  |
| **ASSESSMENT CRITERION 2**  |
| Protective measures that can be taken against exposure to noise are explained in terms of the learner's own place of work.  |
| **SPECIFIC OUTCOME 3**  |
| Describe the personal protective measures that can be taken against exposure to noise.  |
| **ASSESSMENT CRITERIA**  |
| **ASSESSMENT CRITERION 1**  |
| Personal protective equipment to control exposure to noise pollution is described in terms of specified requirements.  |
| **ASSESSMENT CRITERION 2**  |
| Correct use, storage and hygiene of personal protective equipment are explained in terms of legal and site-specific requirements.  |
| **Critical Cross-field Outcomes (CCFO):**  |
| **UNIT STANDARD CCFO IDENTIFYING**  |
| Solve problems.  Note: The ability of the learner to correctly identify the source and origin of loud noise contributes to his/her problem solving skills.  |
| **UNIT STANDARD CCFO WORKING**  |
| Work effectively with others as a member of a team/group/organisation/community.  Note: The ability and willingness of the learner to accept, interpret and delegate work instructions correctly, during the measuring process, indicates that he/she can work effectively as a team member in the bigger organisational structure.  |
| **UNIT STANDARD CCFO ORGANISING**  |
| Organise and manage oneself and one's activities responsibly and effectively.  Note: The identification of conditions that may influence the performance and well being and the taking of appropriate action will indicate that the learner can organise and manage activities in his/her working environment.  |
| **UNIT STANDARD CCFO COMMUNICATING**  |
| Communicate effectively using visual, mathematics and language skills in the modes of oral and written presentations.  Note: The ability of the learner to use visual and language skills when reporting noise levels will indicate his/her effectiveness to communicate information.  |
| **UNIT STANDARD CCFO DEMONSTRATING**  |
| Demonstrate an understanding of the world as a set of related systems.  Note: The ability of the learner to identify and refer anomalous behaviour to a specialist confirms understanding that a specific observation, inference, action or decision can have an interrelated effect.  |

***Unit Standard:* Describe Sources of an Control Measures for Noise in a Workplace (259602)**

Specific Outcome 1:

**Your evidence must show:**

* Attach TASK 1
* PRODUCT SAMPLE 1 – Refer to Practical Task 1 and attach the written evidence hereto.
* PROJECT 1 – Write a report on the following:
	+ Explain the specified requirements pertaining to noise exposure in a workplace
	+ Explain the occupational exposure limits to noise in a workplace
	+ Explain the effects of continuous exposure to noise in the workplace

Specific Outcome 2:

**Your evidence must show:**

* Attach TASK 2
* Attach TASK 3
* Attach TASK 4
* PROJECT 2 – Write a report on the following:
	+ Describe the various sources of noise in a workplace
	+ Describe protective measures that can be taken against noise exposure in a workplace

Specific Outcome 3:

**Your evidence must show:**

* Attach TASK 5
* Attach TASK 6

**SECTION 1**

***Noise in a Workplace***

**After completing this Learning Unit you should be able to:**

* Explain the requirements pertaining to noise exposure in a workplace
* Explain the effects of continuous noise exposure

The ear is a marvellous piece of engineering by nature. It has a huge dynamic range (it can pick up the quietest of whispers as well as very loud noises). However, exposure to loud noises like drills or discos, can result in the temporary loss of the ability to hear quiet sounds. This is known as temporary threshold shift. This happens because the ear’s sensitivity decreases to compensate for the continuous loud noise. The ear normally recovers its sensitivity a few hours after the noise has stopped. For example, people coming out of a music concert shout because their hearing is temporarily affected.

Persistent exposure to noisy machinery or loud music can result in a permanent threshold shift. This is known as noise induced hearing loss. This occurs gradually and often goes unnoticed by the sufferer for a long time. However, this loss of hearing is permanent. Some sounds are very dangerous and can cause instant and permanent hearing loss by causing damage to the ear. Because of this danger to staff and visitors, the measurement and control of noise is an important Health and Safety issue.

**So, what is “loud”?**

Before we answer this, one needs to look at how noise is measured. The unit of measurement used for noise is a decibel and is abbreviated to dB. The term “Sound Pressure Level” is used to refer to the level of noise that is produced by a source as shown below:

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| **Source** | **Sound Pressure Level (SPL)** |
| Library | 30 to 40 dB |
| Conversation | 50 to 60 dB |
| Loud radio | 65 to 75 dB |
| Busy street | 75 to 80 dB |
| Heavy lorry @ 7 metres | 90 to 100 dB |
| Disco / nightclub | 100 to 110 dB |
| Metal workshop | 110 to 120 dB |
| Jet aircraft @ 25 metres | More than 140 dB |

Most experts agree that anyone exposed to more than 80dB of noise all day, has more risk of losing their hearing over a few years. It is also considered that anyone exposed to more than 85dB of noise all day has a very high risk of losing their hearing in time.

Some impulsive sounds, like gunshots are very dangerous and can cause instant damage to hearing.

ACTIVITIES

TASK 1 – This task needs to be placed in your POE.

Using your own workplace as a guide – establish how much noise the employees are exposed to on a daily basis.

Attach the evidence to your POE.

***Sources of Noise***

**After completing this Learning Unit you should be able to:**

* Identify the various sources of noise
* Describe protective measures that can be used for noise

TASK 2 – This task needs to be placed in your POE

In a busy office, there is a small print room where all the printing takes place on three different printers. There are also two papers shredders in there and a number of computers. Members of staff go in often to retrieve prints etc, or shred documents. No one is in there for more than 5 minutes at a time. However, the office junior spends a total of 2 hours in there in an average day.

Using your meter guideline in the previous section, establish how long the source is used during the day and which members of staff are close to it. What is the noise level?

Attach the evidence to your POE.

TASK 3 – This task needs to be placed in your Portfolio of Evidence.

In a warehouse, the Goods Inwards section opens out to a loading bay. Trucks back on to this all day long. Members of staff are always at hand to check and sign paperwork, and help unload the goods. The trucks have their engine on for a total of 3 hours a day, and all staff working in Goods Inwards are affected equally.

Using your meter guideline in the previous section, establish how long the source is used during the day and which members of staff are close to it. What is the noise level?

Attach the evidence to your POE.

TASK 4 – This task needs to be placed in your Portfolio of Evidence.

In a metal workshop, various items of machinery are used throughout the day. All operators working here are exposed to the noise for a period of 7 hours.

Using your meter guideline in the previous section, establish how long the source is used during the day and which members of staff are close to it. What is the noise level?

Attach the evidence to your POE.

If high risk exposure times are exceeded, then there is a significant possibility of hearing damage. The following actions need to be taken by the employer:

* Reduce exposure to noise by the use of sound insulation or by other means
* Make sure that members of staff working in high risk areas use hearing protection
* Mark areas where there is a high risk with notices. This is usually known as a Hearing Protection Zone (HPZ)
* Ensure that other staff or visitors entering a HPZ wear hearing protection
* Carry out hearing tests on staff to check for early signs of hearing loss.

***Protective Measures***

**After completing this Learning Unit you should be able to:**

* Describe protective measures that must be taken
* Describe the use and storage of protective measures

TASK 5 – This task needs to be placed in your Portfolio of Evidence.

With the assistance of your workplace mentor, establish the protective measures that can be taken in your own workplace against the exposure of noise.

Attach the evidence to your POE.

TASK 6 – This task needs to be placed in your Portfolio of Evidence.

Referring to Task 5, explain how the protective equipment (if required) is used and stored in your own workplace.

Attach the evidence to your POE.

**Description of Assessment Activities, Criteria and Methods**

| **ACTIVITY** | **CRITERIA** | **METHODS** | **TYPES OF EVIDENCE** |
| --- | --- | --- | --- |
| Formative & summative | 259602 SO1 – Explain the specified requirements pertaining to noise exposure in a workplace | POEKNOWLEDGE TESTOBSERVATION | FORMATIVE TASKPRODUCT SAMPLEPROJECTQUESTIONNAIREPRACTICAL TASK |
| Formative & summative | 259602 SO2 – Describe the various sources of noise in a workplace | POEKNOWLEDGE TESTOBSERVATION | FORMATIVE TASKPROJECTQUESTIONNAIREPRACTICAL TASK |
| Formative & summative | 259602 SO3 – Describe the personal protective measures that can be taken against exposure to noise | POEKNOWLEDGE TEST | FORMATIVE TASKQUESTIONNAIRE |