ABRASIVE WHEELS

ACCREDITATION
Upon successful achievement learners will be issued with a Smart Awards certificate valid for 3 years.

TYPE, LEVEL AND GRADING
Training and Assessment
Level 2
Pass

DURATION AND RATIO
1-day experience/refresher. Trainer 1.10
Machine 1:2

PRE-REQUISITE
This qualification is available to anyone over the age of 16 who is capable of reaching the required standard. There are no barriers that restrict access or progression thereby promoting equal opportunity. It is expected however that learners will have a level of literacy adequate to cope with the assessment.

ENTRY REQUIREMENTS
There are no formal entry requirements and Smart Awards will not restrict access on the grounds of prior academic attainment, age, employment, geographic location or any other grounds. There are no barriers that restrict access or progression thereby promoting equal have a level of literacy adequate to cope with the examination.

SECTOR SUBJECT AREA (SSA)
5.2 Building and Construction

AGE RANGE
18yrs plus

SAFE PRACTICE
It is the responsibility of the centre in consultation with the assessor to ensure that risk assessments have been carried out. During this training you must take account of the relevant worksite operational requirements, procedures and safe working practices.

INTRODUCTION

This training course aims to give learners knowledge, understanding and basic skills in the safe use of abrasive wheels. It introduces learners to the hazards and risks involved with abrasive wheels operation and to comply with health and safety legislation. The target audience is aimed at those working on the telecoms network including suppliers and contractors.

Performance Objectives

- Comply with health and safety and other relevant regulations
- Confirm that the machine is set up for activities
- Deal promptly and effectively with problems
- Shut down the equipment to a safe condition
- Hazards and risks arising from the use of abrasive wheels
- Methods of marking abrasive wheels
- How to store handle and transport abrasive wheels
- How to inspect and test abrasive wheels for damage
- The functions of all the components used with abrasive wheels
- How to assemble abrasive wheels correctly
- The proper method of dressing an abrasive wheel
- The correct adjustment of the work rest on grinding machines
- The use of suitable personal protective equipment

Learning Outcomes

- Be able to work safely
- Be able to use an abrasive wheel safely
- Recognition of hazards
- Know relevant health and safety legislation and industry good practice

Structure

Learners must achieve one mandatory unit to pass.

Purpose

Prepare for further learning or training and/or develop knowledge and/or skills in a subject area.

EXPECTATIONS AT LEVEL 2

Summary
Achievement at level 2 reflects ability to select and use relevant knowledge, ideas, skills and procedures to complete well-defined tasks and address straightforward problems. It includes taking responsibility for completing tasks and procedures and exercising autonomy and judgement subject to overall direction or guidance.

Knowledge and Understanding
- Use understanding of facts, procedures and ideas to complete well-defined tasks and address straightforward problems.
- Interpret relevant information and ideas.
- Be aware of the types of information that are relevant to the area of study or work.
- Demonstrate and/or work with knowledge and understanding of basic processes, materials and terminology.

Application and Action
- Complete well-defined, generally routine tasks and address straightforward problems.
- Select and use relevant skills and procedures
- Select appropriate tools and materials and use safely and effectively (for example without waste)
- Adjust tools where necessary following safe practices
- Plan and organise both familiar and new tasks
- Identify, gather and use relevant information to inform actions
- Identify how effective actions have been

Autonomy and Accountability
- Take responsibility for completing tasks and procedures
- Exercise autonomy and judgement subject to overall direction or guidance
- Show an awareness of others' roles, responsibilities and requirements in carrying out work

ASSESSMENT
Practical assessment
Multiple choice questions

Assessment Criteria

Performance criteria – you must be able to:

- Work safely at all times, complying with health and safety and other relevant regulations, directives and guidelines
- Follow the correct specifications for the component to be produced. Determine what has to be done and how the machine will be set to achieve this
- Mount and set the required work-holding devices, work piece and cutting tools Set the machine tool operating parameters to achieve the component specification
- Check that all safety mechanisms are in place and that the equipment is set correctly for the required operations
- Deal promptly and effectively with problems within your control and report those that cannot be solved

Knowledge and understanding – you need to know and understand:

- The specific safety precautions to be taken when setting up workholding devices and grinding wheels on grinding machines (such as surface grinding, cylindrical, internal, thread and profile grinding)
- Your duties and responsibilities under The Abrasive Wheels Regulations, with reference to the mounting of abrasive wheels
- The hazards associated with setting and operating grinding machines (such as moving parts of machinery, sparks/airborne particles, bursting grinding wheels, insecure components), and how they can be minimised
- How to start and stop the machine, in normal and emergency situations
- The importance of ensuring that the machine is isolated from the power supply before mounting grinding wheels and workholding devices
- The importance of wearing the appropriate protective clothing and equipment (PPE) and of keeping the work area clean and tidy
- The basic operation of the various grinding machines, and typical operations that they can perform how to handle and store grinding wheels, safely and correctly
- Terminology used in grinding, in relation to the activities undertaken
- The range of workholding methods and devices that are used on grinding machines
- The methods of mounting and setting the workpiece in/on the workholding devices, and the tools and equipment that can be used for this
- The various grinding operations that are used to produce the required profiles, and the types of wheels that are used
- How to check that the grinding wheels are in a safe and serviceable condition (such as free from damage, cracks, correctly balanced)
- The methods of mounting and securing the grinding wheels to the machine spindles methods of forming the wheels to the required profile (such as use of pantograph, diamond dressing units, thread crushing rolls)