



**NPTC**

Registered Charity No. 1096429

STONELEIGH PARK, WARWICKSHIRE CV8 2LG

Tel: 024 7685 7300 Fax: 024 7669 6128

Email: [information@nptc.org.uk](mailto:information@nptc.org.uk)

**LEVEL 2  
CERTIFICATE OF COMPETENCE  
IN THE  
SAFE USE OF ABRASIVE WHEEL MACHINES  
  
ASSESSMENT SCHEDULE**

© NPTC 2006

## NPTC Level 2 Certificate of Competence In The Safe Use of Abrasive Wheel Machines

### Candidate Information

#### Introduction

The scheme will be administered by NPTC.

NPTC will:

- Publish
  - Scheme regulations
  - Assessment schedule
  - Assessment material
- approve centres to co-ordinate and administer the scheme
- set standards for the training of Verifiers and Assessors
- recruit, train and deploy Verifiers
- manage verification
- issue certificates to successful Candidates

#### The Certificate of Competence

Certificates of competence will be awarded to Candidates who achieve the required level of competence in the Units to which their Certificate relates.

#### Instruction

Attendance at a course of instruction is not a pre-requisite for an application for an assessment but potential Candidates are strongly advised to ensure that they are up to the standards that will be expected of them when they are assessed.

NPTC does **not** hold a register of instructors; however instruction will normally be available from recognised training providers and/or centres of further or higher education active in the areas covered by this certificate. Further information on training may be obtained from the centre.

#### Access to Assessment

Assessment Centres will be responsible for arranging assessment on behalf of a Candidate. Assessment may only be carried out by an Assessor approved by NPTC for that scheme. Under no circumstances can either instructors involved in the preparation of candidates, or the candidates work place supervisors, or anyone else who might have a vested interest in the outcome, carry out the assessment.

The minimum age limit for Candidates taking certificates of competence is 16 years. There is no upper age limit.

#### Assessment

Assessment is a process by which it is confirmed that the Candidate is competent in the Units within the award to which the assessment relates. It is a process of collecting evidence about his/her capabilities and judging whether that evidence is sufficient to attribute competence.

The candidate must be registered through an NPTC approved Assessment Centre for this qualification prior to assessment.

The result of the assessment will be recorded on the assessment report form.

The schedule of assessment contains the criteria relating to:

- Observation of practical performance
- Assessment of knowledge and understanding

#### Performance Evaluation

The result of each assessment activity is evaluated against the following criteria:

- 4 = Meets or exceeds the assessment criteria by displaying a level of practical performance and/or underpinning knowledge, with no 'minor' or 'critical' faults. (Competent).
- 3 = Meets the requirements of the assessment criteria for both the practical performance and the underpinning knowledge, with some 'minor' faults but no 'critical' faults. (Competent).
- 2 = Does not fully satisfy the requirements of the assessment criteria, being unable to perform the practical task satisfactorily or being deficient in underpinning knowledge leading to the recording of minor faults. (Not yet competent).
- 1 = Does not satisfy the requirements of the assessment criteria, being unable to perform the practical task satisfactorily or safely or being deficient in underpinning knowledge leading to the recording of a critical fault. (Not yet competent).

A list of registered Assessment Centres is available from NPTC. ([www.nptc.org.uk](http://www.nptc.org.uk))

#### Verification

Verification is a process of monitoring assessment; it is an essential check to confirm that the assessment procedures are being carried out in the way that NPTC has laid down. The overall aim of verification is to establish a system of quality assurance that is acceptable in terms of both credibility and cost effectiveness.

Approved Assessors will be subject to a regular visit by the verifier at a time when assessments are being undertaken.

A selection of assessment reports completed by the assessor will be evaluated by an NPTC approved verifier.

Compliance with the verification requirements is a pre-requisite for Assessors remaining on NPTC's list of approved assessors.

### **Complaints and Appeals**

NPTC and its Assessment Centres have a formal Complaints and Appeals procedure. In the event of a any dissatisfaction with the arrangements and conditions of assessment, the candidate should first contact the Assessment Centre through whom the assessment was arranged and submit the complaint in writing.

For further information on NPTC's Equal Opportunities Policy and Complaints and Appeals Procedures, please refer to [www.nptc.org.uk](http://www.nptc.org.uk)

### **Learning Outcomes**

The candidate will be able to:

- Inspect abrasive wheels and machines for damage
- Select, fit and adjust an abrasive wheel appropriate to the material and machine being used, safely without supervision
- Operate abrasive wheel machines within a named industrial environment, to complete a specified task safely, without supervision
- Use all tools and equipment safely
- Observe all relevant Health and Safety legislation

### **Guidance Notes for Candidates and Assessors**

The assessment is divided into 2 compulsory units:

- Unit 1 Select, Inspect and Fit Abrasive Wheels
- Unit 2 Operate Abrasive Wheel Machines

Candidates must successfully achieve all assessment items in both units.

The Certificate will be endorsed with the type of machine that was used in the assessment.

Either 1) "Bench Mounted" or 2) "Portable Hand Held"

Plus

Either a) "Electric" or b) "Compressed Air" or c) "Engine" driven

### **Safe Practice**

Appropriate Personal Protective Equipment (PPE) must be worn at all times.

The abrasive wheel machines and any other equipment must be operated in such a way that the Candidate, Assessor, other persons or equipment are not endangered.

**If these conditions are not observed this will result in the Candidate not meeting the required standard.**

It is recommended that suitable barrier creams be used when necessary.

### **Validation of Equipment**

Manufacturer's instruction book should be available.

All equipment being used for this assessment must comply with the relevant requirements of the Provision and Use of Work Equipment Regulations (PUWER) 1998

Any appropriate abrasive wheel machine complying with legal requirements is acceptable for the test, provided it is suitably equipped for **all** test items to be carried out.



### **Additional Information**

May be sought from the relevant manufacturers' operator manuals or any other appropriate training or safety publication.

| Unit 1 Select, inspect and fit abrasive wheels   |   |
|--|---|
| ASSESSMENT ACTIVITY  | ASSESSMENT CRITERIA   |
| <p>1. Demonstrate knowledge of the legal and safety requirements relating to the use of abrasive wheel machines in the context of:</p> <p>Guarding requirements</p> <p>Abrasive wheel legislation</p> <p>Personal protective equipment required</p> <p>Power supply to the machine</p> | <p>Statutory guarding requirements</p> <ul style="list-style-type: none"> <li>- Suitable guards should be fitted to the machine to protect operator from moving parts, in accordance with manufacturers instructions</li> <li>- Guards should be correctly adjusted</li> </ul> <p>Current relevant legislation requires operators to:</p> <ul style="list-style-type: none"> <li>- Not put themselves or others in danger</li> <li>- Be trained and competent before using or fitting an abrasive wheel</li> <li>- Wear appropriate Personal Protective Equipment (Eye protection must be worn)</li> <li>- Ensure all controls and stop switches are clearly marked on the machine</li> <li>- Conduct a visual safety check of electrical cables and connections before use</li> </ul> <p>Unless otherwise stated in the manufacturers handbook, PPE should include:</p> <ul style="list-style-type: none"> <li>- Safety boots</li> <li>- Eye/face protection</li> <li>- Hearing protection</li> <li>- Dust mask and/or dust extraction equipment</li> <li>- Suitable gloves</li> <li>- Suitable overalls</li> </ul> <p>Either:</p> <p><b>Electric</b></p> <ul style="list-style-type: none"> <li>- 110 volt equipment preferred over 240 volt</li> <li>- Circuit breakers should be used if not integrated into machine</li> <li>- Visual inspection of machine <u>and</u> power supply should be made prior to operation</li> <li>- Need for valid Portable Appliance Test (PAT) certificate for the machine</li> <li>- All safety decals are in place</li> <li>- Positive On/Off switch</li> </ul> <p>Or</p> <p><b>Compressed air</b></p> <ul style="list-style-type: none"> <li>- Checks to electrical supply to compressor (as above)</li> <li>- Flexible hoses and connections checked for damage and wear</li> <li>- Adjustment of air pressure and flow are suitable for the machine</li> <li>- All safety decals are in place</li> <li>- Lubrication system for the air motor is operational and adjusted as required</li> </ul> <p>Or</p> <p><b>Engine driven</b></p> <ul style="list-style-type: none"> <li>- Engine is running smoothly</li> <li>- All controls are marked and operational</li> <li>- All safety decals are in place</li> <li>- Engine does not operate above maximum speed identified for the machine</li> <li>- Fuelling area is isolated from sources of ignition</li> </ul> |

| <b>Unit 1 Select, inspect and fit abrasive wheels (continued)</b>  |  |
|--|--|
| <b>ASSESSMENT ACTIVITY</b>   | <b>ASSESSMENT CRITERIA</b>   |
| 2. Demonstrate knowledge of what is involved in a Risk Assessment  | <p>Risk Assessment must be specific to:</p> <ul style="list-style-type: none"> <li>- Site</li> <li>- Task</li> <li>- Machine</li> </ul> <p>Risk Assessment must contain:</p> <ul style="list-style-type: none"> <li>- Identified hazards</li> <li>- Evaluated risk</li> <li>- Control measures to be implemented</li> <li>- Emergency procedures</li> </ul> <ul style="list-style-type: none"> <li>- Risk Assessment must be communicated to operator</li> </ul>   |
| 3. Demonstrate knowledge of potential risks when operating an abrasive wheel machine   | <p>Potential risks may include:</p> <ul style="list-style-type: none"> <li>- Wheel/disc contact</li> <li>- Wheel burst/disintegration</li> <li>- Fire</li> <li>- Dust</li> <li>- Noise</li> <li>- Vibration</li> <li>- Flying particles</li> <li>- Electrocution</li> <li>- Burns</li> </ul>   |
| 4. Select a suitable abrasive wheel for the type of machine and material being cut or ground   | <ul style="list-style-type: none"> <li>- Identify material to be cut or ground</li> <li>- Use information provided on: <ul style="list-style-type: none"> <li>• Abrasive wheel label</li> <li>• Manufacturers information sheets</li> <li>• Other information sources to select a suitable abrasive wheel for the machine and its intended use</li> </ul> </li> </ul>  |
| 5. Carry out detailed inspection of the abrasive wheel<br><br>Demonstrate knowledge of action to be taken in the event of a wheel being damaged, contaminated or cracked   | <ul style="list-style-type: none"> <li>- Identify damage and common faults on sample wheels (to be provided by assessor)</li> <li>- Carry out a "ring test" on vitrified wheels following the manufacturer instructions. (bench mounted grinders only)</li> <li>- Damaged or faulty wheels should be destroyed/broken to prevent them being used and disposed of.</li> </ul>   |
| 6. Carry out a detailed inspection of the wheel mounting system on the abrasive wheel machine<br><br>Identify damage and common faults found on machines<br><br>Take appropriate action in the event of components being damaged or faulty | <p>Inspect the following components:</p> <ul style="list-style-type: none"> <li>- Spindle</li> <li>- Flanges</li> <li>- Bearings</li> <li>- Threads</li> <li>- Other machine specific components</li> </ul> <p>Common faults include:</p> <ul style="list-style-type: none"> <li>- Damaged guards</li> <li>- Loose wires</li> <li>- Anti-vibration mountings worn</li> <li>- Poor fitting to bench</li> <li>- Decals missing</li> </ul> <p>Action to be taken:</p> <ul style="list-style-type: none"> <li>- Repair immediately</li> <li>- Report to supervisor</li> <li>- Clean out the wheel guard</li> </ul> |

| <b>Unit 1 Select, inspect and fit abrasive wheels (continued)</b>  |  |
|--|--|
| <b>ASSESSMENT ACTIVITY</b>   | <b>ASSESSMENT CRITERIA</b>   |
| 7. Fit the abrasive wheel to the machine   | <ul style="list-style-type: none"> <li>- Fit the abrasive wheel to the Machine using appropriate tools in accordance with manufacturers instructions</li> <li>- Fit appropriate guards to the machine</li> <li>- Adjust guards on the machine</li> </ul>   |
| 8. Carry out safety checks and adjustments on the machine with the wheel fitted  | <ul style="list-style-type: none"> <li>- Check true rotation of the wheel</li> <li>- Fit and adjust work rest (bench mounted grinders only)</li> <li>- Test run the machine and report findings</li> </ul>   |
| 9. Carry out maintenance operations on the machine as outlined in manufacturers handbook/operators manual<br><br>Demonstrate knowledge of the terms "true the wheel" and "dress the wheel" | <ul style="list-style-type: none"> <li>- Inspect the machine</li> <li>- Adjust components, (belts, work rests, other machine specific components)</li> <li>- To true the wheel is to remove flat spots or high spots on the circumference with an appropriate hardened tool, to prevent vibration when grinding</li> <li>- True the wheel (bench mounted grinders and machine grinders only)</li> <li>- To dress the wheel is to re-roughen the grinding surface following glazing or excessive wear. Abrasive surface is conditioned using a suitable wheel-dressing tool.</li> <li>- Dress the wheel (bench mounted grinders and machine grinders only)</li> </ul> |

| Unit 2 Operate abrasive wheel machines   |   |
|--|---|
| ASSESSMENT ACTIVITY  | ASSESSMENT CRITERIA   |
| <p>1.1 Identify all controls, adjustments and safety decals on the machine</p> <p>1.2 Demonstrate knowledge of the meaning of the decals identified, for example:</p> <div style="text-align: center;">  <br/>  </div> | <p>For the machine being used Identify the following:</p> <ul style="list-style-type: none"> <li>- The function of all controls on the machine</li> <li>- All adjustments on the machine and the reason for them</li> <li>- Safety decals on the machine</li> <li>- Other information given on the machine and in the instruction book</li> </ul><br><ul style="list-style-type: none"> <li>- Hearing Protection required</li> <br/> <li>- Eye Protection required</li> </ul>   |
| <p>2. Carry out pre-starting safety checks on the machine</p>  | <ul style="list-style-type: none"> <li>- Carry out pre-starting checks in accordance with manufacturers instruction book, to include:</li> <li>- Checks to power supply appropriate to type as stated in Unit 1, Activity 1.4</li> <li>- Detailed inspection of the machine covering the following areas: <ul style="list-style-type: none"> <li>• Correct grinding wheel or cutting disc is fitted</li> <li>• Condition of disc or wheel</li> <li>• Safe attachment of the wheel or disc, including flanges, blotters, wheel distortion and run out</li> <li>• Correct and safe guarding of the machine as highlighted in Unit 1, Assessment Activity 1.1</li> <li>• Correct fitting and adjustment of work rest if appropriate</li> </ul> </li> <li>- Carry out safety and pre-start checks appropriate to the machine and work situation</li> <li>- Check the operation of the coolant system and coolant level (if appropriate)</li> <li>- Check any safety interlocks and operator protection systems</li> <li>- Report findings as appropriate</li> <li>- Act on findings as appropriate</li> </ul> |
| <p>3. Test start the machine</p>   | <ul style="list-style-type: none"> <li>- Fill the coolant system to the correct level if required</li> <li>- Fuel or power up machine as appropriate</li> <li>- Start the machine</li> <li>- Run the machine and check for correct operation</li> </ul>   |



| <b>Unit 2 Operate abrasive wheel machines (continued)</b>             |   |
|---|---|
| <b>ASSESSMENT ACTIVITY</b>  | <b>ASSESSMENT CRITERIA</b>  |
| 4. Check the area for hazards   | <ul style="list-style-type: none"> <li>- Carry or move the machine safely to the working area (if applicable)</li> <li>- Check the area for potential hazards:               <ul style="list-style-type: none"> <li>• Potential sources of ignition</li> <li>• Water (electrical machines)</li> <li>• People or animals</li> <li>• Stable footing</li> </ul> </li> <li>- Take precautions appropriate to the situation:               <ul style="list-style-type: none"> <li>• Remove sources of ignition</li> <li>• Avoid contact with water</li> <li>• Keep safe working distance from others</li> <li>• Ensure firm footing before starting</li> </ul> </li> </ul> |
| 5. Use the machine for carrying out a specified task                  | <ul style="list-style-type: none"> <li>- Ensure that the work is secure</li> <li>- Ensure that appropriate PPE/RPE is worn</li> <li>- Carry out cutting and/or grinding operation in accordance with job specification and appropriate to the machine</li> <li>- Check quality of work following initial operation</li> <li>- Repeat the operation to demonstrate skills in using the machine in a range of situations</li> <li>- Constant awareness of dangers that may arise</li> </ul>   |
| 6. Clean the machine and prepare for storage                          | <ul style="list-style-type: none"> <li>- Clean the machine using appropriate methods, in accordance with company policy</li> <li>- Prepare the machine for storage, including removal of the abrasive wheel (for portable handheld machines)</li> </ul>   |
| 7. Demonstrate knowledge of the need to inspect the machine after use | <ul style="list-style-type: none"> <li>- Machine inspected to establish:               <ul style="list-style-type: none"> <li>• Wear,</li> <li>• Damaged and/or missing components</li> </ul> </li> <li>- Ensures any defects are rectified before it is next used</li> </ul>   |