

**LEVEL 2 AWARD
IN
CHAINSAW AND RELATED OPERATIONS (QCF)**

CS31 - FELL AND PROCESS SMALL TREES
(pre-requisite CS30)

Maximum recommended guidebar length: 380mm (15")

This unit covers trees whose effective diameter at felling height is between 200mm and 380mm (8" and 15") (i.e. less than guidebar length)

ASSESSMENT SCHEDULE

CHAINSAW AND RELATED OPERATIONS (QCF)

CS31 - FELL & PROCESS SMALL TREES

Introduction

The scheme is 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 Learners

The Certificate of Competence/ ID Card

Certificates of Competence/ ID Cards will be awarded to Learners 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 to an application for an assessment but potential Learners are strongly advised to ensure that they are up to the standard 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 local Assessment Centre.

Access to Assessment

Assessment Centres will be responsible for arranging assessment on behalf of a Learner. 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 learners, or the learners work place supervisors, or anyone else who might have a vested interest in the outcome, carry out the assessment.

The minimum age limit for Learners 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 Learner 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 learner must be registered through an NPTC approved Assessment Centre for this qualification prior to assessment.

The schedule of assessment contains the criteria relating to:

- Observation of practical performance
- Assessment of knowledge and understanding

When all the criteria within the Units for which assessment has been sought have been completed the result(s) will be recorded on the Learner Assessment Report Form(s).

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)

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 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 NPTC.

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

Safe Practice

At all times during the assessment, the chainsaw and other equipment must be operated in a safe manner in accordance with industry good practice, whatever the task being carried out.

If these conditions are not observed this may result in the Learner not meeting the required standard.

1. Assessors must hold a current 'First Aid at Work' Certificate.
2. It is strongly recommended that Learners hold at least a recent, recognised 'Emergency First Aid at Work (EFAW)' Certificate.
3. All chainsaws used in the assessments must comply with Arboriculture and Forestry Advisory Group (AFAG) Safety Guide 301, HSE Chainsaws at Work INDG317(rev1), in terms of safety features, and be a model and size suited to the task(s) required.
4. Recommended guidebar lengths should be observed, although variations may be accepted at the discretion of the Assessor where this is appropriate to the task.
5. Learners should be familiar with the saw, associated machinery and appropriate tools that they are going to use.
6. A spare working chainsaw must be available.
7. Appropriate Personal Protective Equipment (PPE) must be worn at all times by both the learner and the assessor. All PPE used must comply with AFAG Safety Guide 301, HSE Chainsaws at Work INDG317 (rev1), Health and Safety Executive publications and current legal requirements in terms of specification and use.
8. A First Aid kit meeting current regulations, of the appropriate size for the number of persons on site, must be available (AFAG 802), along with appropriate fire fighting and suitable welfare facilities e.g. Hand cleansing wipes.
9. The learner **must** be equipped with a personal first aid kit in accordance with AFAG802.
10. The Assessor must ensure a Risk Assessment has been carried out, and sufficient control measures implemented. In particular, the location of the site and weather conditions should be assessed, details of access, etc, which may be required by emergency services must be noted, as well as the nearest Accident and Emergency Hospital Unit. The means of contacting the emergency services must be established. All recorded risk assessment information should be clearly legible and accessible to all operators and completed for all locations where assessment activities are scheduled to take place.
11. Manual handling techniques must comply with current legislation.
12. Any necessary permission must have been granted, and notifications made as appropriate: (e.g. Local Planning Authority, Forestry Commission, Forest Enterprise, Highways Authority, Private owners, statutory undertakers, Police, etc).
13. All equipment being used for this assessment must comply with relevant requirements of the Provision and Use of Work Equipment Regulations (PUWER) 1998.
14. Information may be sought from the relevant operator manuals or any other appropriate training or safety publication. This **would not** include the NPTC schedule of assessment for the duration of the assessment activity.
15. The current Regulations for transport, handling and storage of fuel and oils must be complied with.
16. Provision must be made to avoid the risk of environmental pollution.
17. It is the responsibility of the Assessor and the Learner to ensure that any additional requirements and provisions are met as relevant to this qualification.
18. At all times during the felling operation, learners must act in a way so as not to endanger themselves, the assessor or any other person or equipment. Work must be carried out to achieve the requirements of the assessment criteria in accordance with all relevant and current legislation and good practice guidance (e.g. INDG317, Chainsaws at Work, AFAG Guides 302, 303, 304 and 307).
19. If required, relevant records must be accurately kept.
20. Appropriate steps should be taken to maintain effective teamwork in respect of other persons on site during the assessment. This may include taking steps to ensure effective communication and safety precautions.
21. Assessors must ensure that they are within their verification time periods for the assessments they wish to undertake as per NPTC Assessor Code of Practice.

If these conditions are not observed this may result in the Learner not meeting the required standard.

Complaints and Appeals

NPTC and its Assessment Centres have a formal Complaints and Appeals procedure. In the event of any dissatisfaction with the arrangements and conditions of assessment, the learner 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

Learning Outcomes

The learner will be able to:

1. Identify the Risk Assessment and Emergency procedures on a work site
2. Select and prepare equipment required for safe and effective felling
3. Fell small trees safely and accurately using an appropriate method
4. Fell leaning trees using a safe technique
5. Remove branches safely in a manner appropriate to the branching habit
6. Crosscut stems accurately and safely to a given length and diameter specification
7. Stack timber using appropriate manual handling techniques
8. Take down small hung-up trees safely using appropriate hand tools

This assessment contains 4 compulsory parts as follows:

Part 1: Fell Small Trees using a chainsaw

Part 2: Remove branches from small trees using a chainsaw by appropriate method

Part 3: Crosscut felled trees

Part 4: Takedown of hung up trees using hand tools

All activities within the assessment are mandatory unless otherwise indicated in the text.

Prior to assessment in this unit, learners must successfully achieve **CS 30.1 and 30.2 - Maintain and Operate the chainsaw**

A minimum of two trees must be felled to the required standard one of which may be hung up for assessment in Part 4. The learner must achieve Part 1 assessment activity 6 and either assessment activity 7 or 8 (at the assessor's choice).

Learners must successfully achieve all Assessment Activities unless otherwise specified.

Qualifications and Credit Framework (QCF) – Unit value

The Award to Fell and Process Small Trees has a credit value of 3 credits on the QCF:

Assessment and site requirements:

- Range of trees with an effective diameter at felling height of between 200mm and 380mm (8" and 15"), either conifer or broad-leaved, or both, of which some can be made to hang up in neighboring trees
- Rear handled chainsaw in good condition [maximum recommended guidebar length: 380mm (15")]
- Sufficient fuel and oil for the assessment, appropriate to saw model
- Appropriate felling aids (e.g. felling lever, wedges, etc)
- A winch appropriate to the tree size must be available on site in case manual methods of take-down are unsuccessful
- Stump treatment if applicable
- Demonstrate Knowledge sections of the assessment activities can include practical operations to part satisfy the criteria.
- Sufficient working space must be provided to each learner to allow the assessment to be conducted effectively without comprising other work site or assessment activities.
- Assessors should complete a pre-use inspection of all work equipment intended to be used during the course of the assessment. Ensuring equipment meets the requirements of suitability in terms of size, condition, safety features etc.

Part 1: Fell Small Trees using a chainsaw

ASSESSMENT ACTIVITIES	ASSESSMENT CRITERIA
<p>1. Select and wear Personal Protective Equipment (PPE, Safety clothing)</p>	<p>PPE in accordance with health and safety requirements and Risk Assessment e.g.</p> <ul style="list-style-type: none"> - Chainsaw safety trousers - Chainsaw safety boots - Safety helmet - Eye and ear protection - Gloves appropriate for the task - Non-snag outer clothing - Personal First Aid Kit - Whistle
<p>2. Demonstrate knowledge of planning the felling operation</p> <p>Demonstrate knowledge of the legal constraints in relation to proposed tree felling</p> <p>Demonstrate knowledge of the environmental considerations which may affect to tree felling</p>	<ul style="list-style-type: none"> - The conditions of the site, including terrain, soil and weather must be considered - Identify the correct trees to be felled by agreed method - A safe working distance of at least two tree lengths between workers must be maintained - No unauthorised person within two tree lengths, or directly below on steep slopes - Working in a 'pairing system' so that regular contact with partner is maintained - No felling if wind conditions are such that control over the felling direction will be lost - Operators on site should all have a failsafe method of communication (e.g. whistle) to raise the alarm in the event of an accident - Ensure that all underground and overhead way-leaves have been accurately identified before felling commences - Ensure clearances as laid down within AFAG 804 are maintained when felling in proximity to overhead power lines - Use of brash mat or other system for ground protection as appropriate - Use of natural felling bench where available to aid ergonomic working - Signs must be erected warning others of the work carried out - Additional measures taken if public likely to enter the two tree length exclusion zone, e.g. look-out near paths etc. - Once any felling cut has been started on a tree, the tree must not be left standing - A Felling Licence may be required - T.P.O's (Tree Preservation Order) - Conservation areas - Wildlife and Countryside Act - Water Guidelines recommended for sites - Protection of wildlife - SSSI's, Nature reserves etc - Archaeological and historic features - Amenity or Landscape considerations
<p>3. Check and prepare chainsaw for operation</p>	<ul style="list-style-type: none"> - Chain tension and condition checked for safe and effective use - Safety features checked for condition and function - External nuts and bolts checked for security - Chainsaw contains sufficient fuel and chain oil for operations
<p>4. Prepare the site for felling</p>	<ul style="list-style-type: none"> - Control measures identified in Site Specific Risk Assessment are applied - Determine the felling direction in relation to method of extraction or conversion - Set up a felling bench if required - Remove debris from around the base of the trees to be felled and compact vegetation to facilitate felling at appropriate height - Remove dead or suppressed trees and any other vegetation adjacent to the tree or in the felling direction that may be a danger - Inspect the felling area and adjacent trees for dead wood and insecure branches - Ensure no unauthorised person is within 2 tree lengths distance

Part 1: Fell Small Trees using a chainsaw (continued)	
ASSESSMENT ACTIVITIES	ASSESSMENT CRITERIA
<p>5. Prepare the tree for felling by safe brashing</p> <p>Demonstrate knowledge of the dangers of using a pushing chain</p>	<p>Remove low branches taking into account:</p> <ul style="list-style-type: none"> - Correct "break-in" - Position of the saw in relation to the operator, bar on opposite side of stem - Height to which branches are removed - Saw body not above shoulder height - Operating technique - Brashing close to the stem <ul style="list-style-type: none"> - The saw can run back on the chain towards the operator pushing him/her off balance, contacting body with bar/chain or causing kickback injury - The saw must be pushed in close to the tree and out of line of the body to prevent this happening, avoiding using pushing chain on heavier branches
Part 1: Fell Small Trees using a chainsaw (continued)	
<p>A <u>minimum</u> of two trees must be felled to the required standard one of which may be hung up for assessment in Part 4. The learner must achieve assessment activity 6 and <u>either</u> assessment activity 7 <u>or</u> 8 (at the assessor's choice)</p>	
ASSESSMENT ACTIVITIES	ASSESSMENT CRITERIA
<p>6. Fell a tree in the required direction accurately.</p> <p>Demonstrate knowledge of the dangers of using a pushing chain</p> <p>Demonstrate knowledge of the techniques to be used to fell a tree that has "sat back" against the intended felling direction.</p> <p>Demonstrate knowledge of situations where the angle of sink cut can be varied</p> <p>Demonstrate knowledge of alternative felling methods for smaller trees</p>	<ul style="list-style-type: none"> - Choice of felling direction made - Escape route(s) prepared and selected - Tree Inspected for signs of rot or decay e.g. Fungal growth Cavities Die back - Remove buttresses or cut into root spurs to prevent tearing where appropriate <p>A sink is cut to determine felling direction, using:</p> <ul style="list-style-type: none"> - Safe stance - Top sink cut at an appropriate angle and height - Bottom sink cut as near to ground level as practicable - Cuts of appropriate depth - Sink cuts meet accurately - Sink facing in the chosen direction of fall - Chain brake used appropriately <p>The main felling cut/s made using:</p> <ul style="list-style-type: none"> - Safe stance - Level cut(s) at appropriate height at or above level of sink - "Pushing chain" or "pulling" chain - Safe withdrawal of the saw - Chain brake as appropriate <ul style="list-style-type: none"> - A hinge is retained of adequate dimensions - Appropriate aid tools are used safely if required to fell tree - A prepared escape route is used as soon as the tree begins to fall - Site checked for safety once tree has fallen <ul style="list-style-type: none"> - The saw can run back on the chain towards the operator causing lacerations, kickback or loss of balance - The saw must be locked in by the operator (e.g. leg behind the saw) to prevent this happening - Make a small boring cut into back of tree at position of felling cut and insert felling lever to lift tree over - Make new felling cuts to fell tree (in the direction of lean if site conditions allow) - Drive a wedge into the main felling cut to lift tree over - Tree may be required to break off stump sooner than normal (e.g. felling over a bank or obstacle) so a sink shallower than normal is made - Tree required to stay attached to the stump (e.g. on a steep slope or adjacent to a watercourse etc.) so a sink more open than normal is made - e.g. 'v' cut or step cuts

Part 1: Fell Small Trees using a chainsaw (continued)

ASSESSMENT ACTIVITIES	ASSESSMENT CRITERIA
<p>EITHER :</p> <p>7. Fell a tree is that is weighted <u>in</u> the felling direction</p> <p>Demonstrate knowledge of the consequence of not using the correct technique to a tree is that is weighted in the felling direction</p> <p>Demonstrate knowledge of felling a tree which is slightly weighted <u>against</u> the intended felling direction</p>	<ul style="list-style-type: none"> - Determine felling method and safe working zones - Select and prepare escape route(s) - Prepare a sink of the correct dimensions - Keep head and body away from rear of tree - Bore in from the side of the tree behind the sink to leave an adequate hinge - Cut away from the hinge to leave a 'hold' at the rear - Sever appropriately - A hinge is retained of adequate dimensions - Appropriate aid tools are used safely if required to fell tree - A prepared escape route is used as soon as the tree begins to fall - Site checked for safety once tree has fallen <ul style="list-style-type: none"> - The tree can split and hit the operator - The tree can split and throw the chainsaw - A spur or root can fly up and hit the operator <ul style="list-style-type: none"> - Determine felling method and safe working zones - Select and prepare escape route(s) - Prepare a sink of the correct dimensions - Felling cuts made and felling aid employed using a safe and effective felling method - A hinge is retained of adequate dimensions - Appropriate aid tools are used safely if required to fell tree - A prepared escape route is used as soon as the tree begins to fall - Site checked for safety once tree has fallen
<p>OR</p>	
<p>8. Fell a tree which is slightly weighted <u>against</u> the intended felling direction</p> <p>Demonstrate knowledge of the consequences of not using the correct technique when felling a tree which is slightly weighted against the intended felling direction</p>	<ul style="list-style-type: none"> - Determine felling method and safe working zones - Select and prepare escape route(s) - Prepare a sink of the correct dimensions - Felling cuts made and felling aid employed using a safe and effective felling method - A hinge is retained of adequate dimensions - Appropriate aid tools are used safely if required to fell tree - A prepared escape route is used as soon as the tree begins to fall - Site checked for safety once tree has fallen <ul style="list-style-type: none"> - The tree can sit back and trap the saw - The tree can sit back and fracture the hinge
<p>Demonstrate knowledge of felling a tree is that is weighted in the felling direction</p>	<ul style="list-style-type: none"> - Determine felling method and safe working zones - Select and prepare escape route(s) - Prepare a sink of the correct dimensions - Keep head and body away from rear of tree - Bore in behind the sink to leave an adequate hinge - Cut away from the hinge to leave a 'hold' at the rear - Sever appropriately - A hinge is retained of adequate dimensions - Appropriate aid tools are used safely if required to fell tree - A prepared escape route is used as soon as the tree begins to fall - Site checked for safety once tree has fallen

Part 2: Remove branches from small trees using a chainsaw by appropriate method

ASSESSMENT ACTIVITIES	ASSESSMENT CRITERIA
1. Demonstrate knowledge of the risks to consider when removing branches	<ul style="list-style-type: none"> - Tripping or falling over or into obstacles - Contacting obstructions with chainsaw causing kick back injury or saw damage - Tree rolling onto operator if working on lower side of tree on a slope - Spring back from cut branches or saplings when severed - Falling debris from surrounding trees
2. Branches are removed from the tree using an appropriate method	<p>Good Working Practice will include:</p> <ul style="list-style-type: none"> - Correct stance and support of the saw on tree or right leg - Left thumb around the front handle - Neither handle released while the chain is moving - Apply chain brake if reaching across bar - Apply chain brake when negotiating obstacles - Not walking when the saw is on the same side of the tree as the operator without applying the chainbrake - Avoid working on lower side of tree on side slopes <p><u>Do not:</u></p> <ul style="list-style-type: none"> - Reach too far round with saw on far side of tree - Cut towards legs or body - Use tip of guidebar - Overreach with chainsaw - Straddle the stem <p>Choice of work method:</p> <ul style="list-style-type: none"> - Systematic Sequence of cuts and position of the saw to remove branches as appropriate for the branching habit - All branches removed flush with the stem
3. Remove the top of the tree	<ul style="list-style-type: none"> - Cut top at appropriate diameter - Remove top with a safe method of cutting - Dispose of top according to Job Specification
4. Remove remaining branches	<ul style="list-style-type: none"> - Turn stem using appropriate aid tools/ techniques - Use stem for protection when removing remaining branches - Use a safe and effective method to sever remaining branches - Use under-sweep technique if applicable - All branches removed flush with the stem
5. Leave site in tidy condition	<ul style="list-style-type: none"> - Ensure no branches are left on fences, paths, roads, timber stacks, young trees etc or in ditches, ponds, waterways etc - Brush stacked tidily, if appropriate, ready for subsequent handling (e.g. for a wood chipper)
6. Demonstrate knowledge of the reasons for de-limbing flush with the stem	<p>Sprags / stubs or poorly cut branches can:</p> <ul style="list-style-type: none"> - Injure the person moving the timber - Increase friction when pulling along the ground - Damage other trees when extracting - Prevent timber entering machines (e.g. chipper, peeler or saw bench) - Hinder stacking or loading - Pick up brush, soil, stones etc that damage the chainsaw or other equipment when pulling timber

Part 3: Crosscut felled trees	
ASSESSMENT ACTIVITIES	ASSESSMENT CRITERIA
<p>1. Crosscut pole length timber under guidebar length to a given specification</p> <p>Stack produce for subsequent handling</p>	<ul style="list-style-type: none"> - Correct use of PPE during chainsaw operations - Safe starting procedure adopted - Safe stance including: <ul style="list-style-type: none"> • Legs and feet are clear of the chain • Chainsaw is stable/secure/supported during crosscutting • Minimal risk of muscular/skeletal injury - Bar aligned to maintain accuracy - Head out of line of chain - Use of throttle to cut safely and efficiently - Cutting techniques employed to complete severance of timber - Appropriate boring technique - Sequence of cuts to prevent saw becoming trapped - Appropriate aids used for lifting, rolling or levering - Tension and compression cuts should meet - Chain brake used appropriately - Accuracy of measurement within reasonable tolerance - Saw switched off and left in safe position, bar cover replaced - - Use of appropriate aids to handle / move products - Correct stance during lifting - Avoiding excessive lifting by levering, sliding, rolling - Quality of stacking must be to an agreed job specification - Position of stack appropriate to method of extraction - Manually constructed stacks are limited to 1 metre high - Stacks should be left in a safe, stable condition - Roads, footpaths, etc. clear of debris and waste materials

Part 4: Takedown of hung up trees using hand tools	
ASSESSMENT ACTIVITIES	ASSESSMENT CRITERIA
<p>1. Prepare the site to facilitate take down</p>	<ul style="list-style-type: none"> - Assess position of tree and check condition of hinge - Remove debris and obstacles from take down route - Decide on the final felling direction - Prepare new escape routes as appropriate - Select and position aid tools as required - No unauthorised person within two tree lengths or directly below on steep slopes
<p>2. Demonstrate knowledge of unsafe practice during the take down of a hung-up tree</p>	<p>As per industry good practice</p> <ul style="list-style-type: none"> - Do <u>not</u> fell the supporting tree - Do <u>not</u> fell another tree across the hung up tree - Do <u>not</u> walk or work under a hung up tree - Do <u>not</u> climb the hung up tree - Do <u>not</u> cut pieces off the butt end of a hung up tree - Do <u>not</u> leave a hung-up tree unless it is clearly marked and a supervisor informed
<p>3. Partially sever the hinge with the chainsaw</p>	<ul style="list-style-type: none"> - Correct stance - Safe position to side of tree - Position and angle of cuts - Cutting technique for removal of appropriate part of the hinge - Safe withdrawal of the saw - Approximately 10% -20% of hinge left to support the tree on each/either side appropriate to take down method utilised - Safe placement of the saw on completion of cuts

Part 4: Takedown of hung up trees using hand tools

ASSESSMENT ACTIVITIES	ASSESSMENT CRITERIA
<p>4. Take down the tree using hand tools</p> <p>Demonstrate knowledge of correct procedures to be adopted when a hung up tree is taken down by the use of a winch</p> <p>Demonstrate knowledge of correct procedures to be adopted when a hung up tree cannot be taken down by the use of hand tools or a winch</p>	<ul style="list-style-type: none">- Aid tool positioned and attached safely and effectively <p>Aid tool operated using:</p> <ul style="list-style-type: none">- Straight back- Correct pushing technique- Correct lifting technique- Correct grip- Repositioning aid tool- Not working in danger areas- Releasing aid tool as tree falls- Use escape route(s) <ul style="list-style-type: none">- If tree does not fall through roll out technique, remnant of hinge removed by safe method (if still attached) and tree is “walked” down with e.g. a wooden pole <ul style="list-style-type: none">- Tree in a stable condition before being processed <p>Safe working procedures to be adopted should include:</p> <ul style="list-style-type: none">- The winch cable free from obstructions.- No-one must enter the triangle formed by the cable when offset pulling.- Do not step over a tensioned winch cable- Appropriate PPE is worn- Clear pre-determined communications are essential when operating a winch- The chainsaw operator is in charge of the operation and gives the instructions to the winch operator.- Work must stop immediately if anyone enters the exclusion zone- Never leave tensioned winch systems unattended <ul style="list-style-type: none">- Tree is taken down through use of machinery- Tree is marked off with warning tape and a supervisor informed