

To include in all translations:

This is a translation of the original English version of the EFESC handbook and its appendices.

This translated version is subordinate to the original English version.

EUROPEAN CHAINSAW STANDARDS: 2018

ECS 3: Advanced Tree Felling and Safe Winch Systems (Medium & Large Trees)

What the chainsaw operator must be able to do: Safely felling trees over effective guide bar length on felling height, removing branches and top and work with a winch

ECS3-1	TAKE CARE OF YOURSELF (PPE) AND OTHERS AROUND YOU AT WORK - Chainsaw operator to wear appropriate PPE
1:01	Chainsaw safety trousers
1:02	Chainsaw safety boots
1:03	Safety helmet
1:04	Eye & ear protection
1:05	Gloves appropriate to task
1:06	Non-snag outer clothing
1:07	Personal /Squad First Aid Kit - on work site
1:08	Whistle/Mobile/Radio
ECS3-2	PLANNING THE WORK INCLUDING WHAT TO DO IN AN EMERGENCY - Chainsaw operator must be able to identify hazards relevant to the site & trees to be worked on:
2:01	Risk Assessment – walk site
2:02	Method statement - verbal
2:03	Emergency planning
ECS3-3	OPERATIONAL SAFETY CHECKS- Chainsaw operator must be able to check chainsaw for condition/sharpness etc and pre-use safety:
3:01	Cold/Warm start method (ground/'leg lock')
3:02	Safe start distance from fuel (min.1m or greater according to national guidance)
3:03	Function of chain brake tested, left hand guard and throttle lock
3:04	Saw checked for oiling (e.g. oil throw test or oil present on drive links)
3:05	Chain not moving when throttle released (no chain creep)
3:06	On/off switch is working (pull choke to stop if not, then label not to be used)
3:07	Chain tension 'warm' re-checked

ECS3-4	MEET LEGAL & SITE ENVIRONMENTAL REQUIREMENTS IN ACCORDANCE WITH NATIONAL STANDARDS - Chainsaw operator must be able to check specifications:
4:01	Protection of fauna, flora, wildlife, waterways, site specifications etc, regards pollution/damage:
4:02	Use bio-oils whenever possible
4:03	Prevent waste or dispose of it without causing further damage, in accordance with the regulations, especially according to the standard for recyclable waste
ECS3-5	PREPARE THE TREE FOR FELLING BY SAFE BRASHING - Chainsaw operator must be able to remove low branches considering:
5:01	Correct “break-in”
5:02	Position of the saw in relation to the operator, bar on opposite side of stem or out of line of head/neck and body when removing low branches
5:03	Saw body not above shoulder height
5:04	Operating technique
5:05	Brushing close to the stem as appropriate to the situation
ECS3-6	FELLING TREES IN A SAFE & ERGONOMIC WAY - Chainsaw operator must be able to fell safely the following types of tree: upright; backward weighted; forward weighted or side-weighted. A winch may be used to assist the felling if felling aids not considered sufficient.
6A:1	Trees Inspected for signs of rot or decay, loose branches & accurate evaluation of weight distribution
6A:2	Choice of felling direction made
6A:3	Escape route(s) prepared and selected
	Chainsaw operator must be able to cut a sink to determine felling direction, using:
6B:1	Safe stance
6B:2	Top sink / notch cut made (normally between 45-60°)
6B:3	Bottom sink cut as close to ground as practicable (unless site criteria different)
6B:4	Cuts 20-30% into stem unless tree condition dictates otherwise
6B:5	Sink cuts to meet accurately (not undercut)
6B:6	Sink facing in the chosen direction of fall
6B:7	Applied chain brake if reaching across bar and when negotiating obstacles
6B:8	Boring cut made where appropriate into the middle of the sink at appropriate height, depth and width to remove center of the tree
	Chainsaw operator must be able to make the main felling cut/s using a safe and effective felling method (e.g. 'Danish' / 'saved corner' cut; a bore and radial cut, a 'boring cut' technique leaving rear hold; or any other cut appropriate to the aspect of the tree).
6C:1	Correct felling method chosen for the particular aspect of the tree
6C:2	Safe stance
6C:3	Buttresses removed &/or “ears” cut to avoid tearing, as appropriate
6C:4	Checks site for specific safety conditions (including third parties) before the main felling cut started & shout verbal warning: no unauthorized persons within two tree lengths or directly below on steep slopes

6C:5	Main felling cut no more than 10% of tree diameter above level of sink
6C:6	Felling cuts made with “pushing chain” or “pulling” chain as appropriate
6C:7	Safe withdrawal of the saw and chain brake used as appropriate
6C:8	Final position of operator is in safe position relative to aspect of tree
6C:9	A hinge retained appropriate to the tree diameter, aspect and condition
6C:10	Appropriate aid tools as required to fell tree
6C:11	The operator fully uses a prepared escape route as soon as the tree begins to fall
6C:12	Look up and check for loose branches, tops etc.
ECS3-7	REMOVE BRANCHES & CROSSCUT STEMS IN A SAFE & ERGONOMIC WAY - Safe working practice will include:
7A:1	Correct stance and support of the saw on tree and/or right leg
7A:2	Left thumb around the front handle
7A:3	Neither handle released while the chain is moving
7A:4	Apply chain brake or switch off saw if reaching across bar, clearing branches or when negotiating obstacles
	Chainsaw operator must be able to avoid:
7A:5	Walking when saw is on same side of tree as operator without applied chain brake
7A:6	Reaching too far round with saw on far side of tree
7A:7	Cutting towards legs or body
7A:8	Using kick-back zone on tip of guide bar
7A:9	Overreaching with chainsaw
7A:10	Straddling the stem or branches
7A:11	Working on lower side of tree on side slopes
	Chainsaw operator must be able to de-limb / brake down trees using a safe and effective method appropriate for the branching habit, cut flush with the stem:
7B:1	Sequence of cuts and position of the saw to remove branches is appropriate for the branching habit , end result flush with the stem
7B:2	Work from top side of the tree on side slopes
7B:3	Small branch wood removed before cutting main branches as appropriate
7B:4	Work only from compression side of branches under severe ‘side’ tension
7B:5	Compression and tension forces are assessed and appropriate cuts used
7B:6	Heavy branches gradually reduced in length
7B:7	Work inwards carefully to deal with ascending and overhanging branches
7B:8	Do not work under overhanging limbs
7B:9	Retain main supporting branches on stem as appropriate
7B:10	Roll the trunk to bring branches over shoulder height to a safe cutting level as appropriate

	Chainsaw operator must be able to remove the top of the tree in accordance with site specifications (top cut at right angles with appropriate tension/compression cuts):
7C:1	Cut top(s) at appropriate diameter
7C:2	Remove top(s) with a safe method of cutting
7C:3	Dispose of top(s) according to Job Specification
	Remove remaining branches using a safe and effective method (using an “under sweep” technique only, is not acceptable):
7D:1	Turn stem using appropriate aid tools/techniques
7D:2	Use stem for protection when removing remaining branches
7D:3	Use a safe and effective method to sever remaining branches
7D:4	All branches removed flush with the stem
	Crosscut pole length timber over guidebar length in diameter to a specification. Chainsaw operator must be able to use:
7E:1	Safe stance; Head/neck are not allowed across of line of chain (unless checking the line of the cuts with bar tip in full view)
7E:2	Reducing cuts as appropriate
7E:3	Correct boring technique
7E:4	Correct angle and depth of cuts
7E:5	Compression cut first as appropriate
7E:6	Correct location of final (tension) cut
7E:7	Correct use of throttle
7E:8	Correct accuracy of cuts
7E:9	Correct use of chain brake
7E:10	Accuracy of measurement within reasonable tolerance
7E:11	Appropriate aids for rolling / lifting
ECS3-8	CHAINSAW OPERATOR MUST BE ABLE TO TAKE DOWN A HUNG-UP TREE IN A SAFE & ERGONOMIC WAY WITH A WINCH OR HE/SHE MUST ALSO BE ABLE TO SET UP A WINCH SYSTEM FOR ASSISTED FELLING OF A TREE: (Winch can be hand or machine operated but must be adequate for the size of tree. All components, including anchor points, must be fit for purpose and compatible with the system used.) Safe working practice will include:
	Chainsaw operator must be able to prepare the site to facilitate take down procedure:
8A:1	Assess position of tree and check condition of hinge
8A:2	Remove debris and obstacles from take down route
8A:3	Decide on the final felling direction
8A:4	Prepare new escape routes as appropriate
8A:5	Select and position winch equipment as required
8A:6	No unauthorized person within two tree lengths or directly below on steep slopes

	Chainsaw operator must be able to partially sever the hinge of hung-up tree with the chainsaw using:
8B:1	Correct stance
8B:2	Safe position to side of tree
8B:3	Position and angle of cuts for removal of appropriate part of the hinge
8B:4	Safe withdrawal of the saw leaving 10-20% retaining hinge either side
	Chainsaw operator must be able to set up winch taking into consideration:
8C:1	Stump Shaped (if applicable)
8C:2	Supporting remnants of hinge removed carefully
8C:3	Position of strop on the butt
8C:4	Attachment of winch cable to strop
8C:5	Position and anchorage of winch, all components, including anchor points, must be fit for purpose and compatible with the system used
8C:6	Communication with winch operator is clearly established (if applicable)
8C:7	Gloves used if cable handled
	Chainsaw operator must be able to safely operates the winch:
8D:1	Position of winch operator
8D:2	Winch is operated until tree falls
8D:3	Reposition strop at butt or reposition anchor as appropriate
8D:4	Offset winch with e.g. a snatch block on steep slopes or around obstacles if appropriate
8D:5	Use escape route(s)
8D:6	Tree is winched until stable condition on the ground
8D:7	Strops removed, checked and stowed
8D:8	Winch rope rewound correctly
8D:9	Site left safe & tidy
What the chainsaw operator must know and understand: ECS3:	
1	Demonstrate knowledge of how to identify hazards and comply with the control measures of risk assessments
2	Demonstrate knowledge of emergency planning and procedures for the site using the actual emergency plan for that site
3	Demonstrate knowledge of electrical emergency planning and procedures
4	Demonstrate knowledge of the safety considerations to be observed in planning the felling operation
5	Demonstrate knowledge on safety points to consider when felling a larger tree that is weighted in the felling direction
6	Demonstrate knowledge on safety points to consider when felling a larger tree which is weighted against the intended felling direction
7	Demonstrate knowledge of optional techniques that help to ensure the felling direction and / or quality of timber is maintained when felling large trees
8	Demonstrate knowledge of the consequence of not using the correct technique to a tree is that is weighted in the felling direction

9	Demonstrate knowledge of the consequences of not using the correct technique when felling a tree which is slightly weighted against the intended felling direction
10	Demonstrate knowledge of felling rotten or dead trees
11	Demonstrate knowledge of identification of safety points when planning the branch removal procedure
12	Demonstrate knowledge of the safety considerations required during crosscutting
13	Demonstrate knowledge of how to remove a trapped saw
14	Demonstrate knowledge of requirements to consider when timber is stacked
15	Demonstrate knowledge of the safety considerations when selecting the winching equipment used
16	Demonstrate knowledge of the safety points that the chainsaw operator needs to consider in relation to the winching operation
17	Demonstrate knowledge of multiplication of forces encountered when using pulleys/snatch blocks for offset pulling and double rigging and choice of anchor points

ECC3 assessment: EFESC prescriptions of tasks and criteria

To obtain a European Chainsaw Certificate level 3, you must pass an assessment in which your skills and knowledge, both theoretical and practical, are tested.

With this certificate you can prove your competence to work according to the European minimum Chainsaw Standards level 3.

If National standards or assessment procedures are more stringent and ECS3 is covered, an ECC3 label can be added to the current certificate by a certified assessment center.

During the assessment, the following minimum tasks and criteria must be checked objectively according the standards by a certified assessor.

Training and assessing must be separated: the assessor may not be familiar with the candidate.

Pre-requisite to ECC3 assessment: ECC2

ECC3 assessment tasks:

Theoretical test:

- Written or oral

Practical Test:	
	- Recommended min. guide bar size 38cm, at least one tree over effective guide bar length in diameter at felling height. Max. time allowed 2hr30min
	- Candidate has to <u>sign RA, shows ID</u> and wears appropriate PPE for tree felling.
	- Candidate has to identify hazards relevant to the site & trees to be worked on; makes a Risk Assessment (RA), work- and emergency-planning
	- Candidate has to check chainsaw for condition/sharpness etc and pre-use safety.
	- Candidate has to check the legal & site environmental requirements in accordance with national standards.
	- Candidate has to remove low branches.
	- Candidate has to fell a minimum of 2 trees in a safe & ergonomic way - Candidate to fell an upright tree and either a backward, forward or side-weighted tree as chosen by the assessor (One tree over 38cm and one tree over 56cm at felling height). A winch may be used to assist the felling if felling aids not considered sufficient.
	- Candidate has to cut a sink to determine felling direction on upright, forward or backward weighted trees.
	- Candidate has to make the main felling cut/s using a safe and effective felling method (e.g. 'Danish' / 'saved corner' cut; a bore and radial cut, a 'boring cut' technique leaving rear hold; or any other cut appropriate to the aspect of the tree).
	- Candidate has to remove branches & crosscut stems in a safe & ergonomic way.
	- Candidate has to remove the top of the tree in accordance with site specifications.
	- Candidate has to take down a hung-up tree in a safe & ergonomic way with a winch <u>if tree got hung-up during felling</u> . <u>If a tree is not hung-up, a safe winch system must be set up for assisted felling</u> of a tree to prove the candidate's skills and correct choice of components: (winch can be hand or machine operated but must be adequate for the size of tree. all components, including anchor points, must be fit for purpose and compatible with the system used.)

**Critical faults or a combination of relevant faults against the good practice of these standards will lead to not passing the assessment.
The assessor has the right and duty to stop the assessment if direct safety is compromised.**

ECC3 critical assessment criteria:

	Theoretical test:
	- If multiple choice: recommended minimum score to succeed: 70% (depending on the national scoring system)
	Practical Test:

CRITICAL (C): IF ONE OF THE FOLLOWING critical POINTS IS NOT FULFILLED, THE CANDIDATE CAN NOT PASS ECC level 3:	
none	- the candidate wears appropriate PPE for tree felling
none	- the candidate has the guide bar on opposite side of stem or out of line of head/neck and body when removing low branches
none	- the candidate has the saw body not above shoulder height
none	- the candidate checks site for specific safety conditions (including third parties) before the main felling cut started & shout verbal warning: no unauthorized persons within two tree lengths or directly below on steep slopes
none	- the candidate retains a hinge appropriate to the tree diameter, aspect and condition
none	- the candidate fully uses a prepared escape route as soon as the tree begins to fall
RELEVANT (R): IF, AFTER ONE WARNING, MORE THAN THE MAXIMUM NUMBER OF RELEVANT ERRORS ON THE TOPICS BELOW ARE MADE, THEN THE CANDIDATE CAN NOT PASS ECC level 3:	
8 Max. number of errors allowed	- the candidate has a personal /Squad First Aid Kit – on work site
	- the candidate makes a Risk Assessment
	- the candidate checks function of chain brake, left hand guard and throttle lock
	- the candidate checks protection of fauna, flora, wildlife, waterways, site specifications etc, regards pollution/damage
	- the candidate inspects the trees for signs of rot or decay, loose branches & accurate evaluation of weight distribution
	- the candidate selects and prepares escape routes
	- the candidate makes the sink cuts meet accurately (not undercut). Sink facing in the chosen direction of fall
	- the candidate chooses a correct felling method appropriate to the particular aspect of the tree
	- the candidate's final position is in safe position relative to aspect of tree
	- the candidate has appropriate aid tools as required to fell tree and sets up a safe winch system: all components, including anchor points, must be fit for purpose and compatible with the system used
	- the candidate has clearly established communication with winch operator (if applicable)
	- the candidate applies chain brake if reaching across bar and when negotiating obstacles
	- the candidate looks up and checks for loose branches, tops etc.
	- the candidate is on safe position to side of tree if tree got hung-up
	- the candidate avoids working in danger areas when taking down a hung-up tree
	- the candidate removes supporting remnants of hinge carefully
	- the candidate prepares new escape routes as appropriate
	- the candidate avoids cutting towards legs or body
- the candidate avoids using the kick-back zone on tip of guide bar	
- the candidate works from top side of the tree on side slopes	
- the candidate works only from compression side of branches under severe 'side' tension	
- the candidate does not work under overhanging limbs	