Tree Climbing Safety



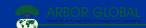
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Tree Climbing

Tree climbing/rope access permits skilled workers to safely and efficiently access elevated portions of trees that may not be otherwise accessible to conduct required work



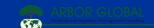


Tree Climbing

Tree climbing is physical and potentially hazardous

- Requires skilled, well-trained workers:
 - Understand and conform with OSHA and ANSI Z133.1
 - Ability to work safely and effectively in the tree
 - Industry safety practices
 - Inspect all equipment, the tree and site before climbing
 - Proper plan all work before tree entry and as work progresses
 - Conduct all work according to technically correct standards and practices





Tree Climbing Safety

Too often, unqualified individuals use ropes to climb or

Experienced workers not trained or ignore safety practices

- Significantly increases risk to worker and public
- Results in injuries and sometimes fatalities
- Damages trees





Tree Climbing Accidents

Most common fall causes:

- Disconnect fall protection
- Cut fall protection
- No use of fall protection
- Failure of tie-in point





Tree Climbing Safety

Always follow safety requirements:

- Applicable laws and regulations (OSHA)
- ANSI Z133.1 standards
- Manufacturer's tool and equipment instructions



Inspection of Gear

Safety depends on proper equipment in good working condition - Personal Protective Equipment (PPE)

- Protective Clothing
- Head Protection
- Eye Protection
- Hearing Protection
- Leg Protection/Chaps
- Boots
- Gloves





Inspection of Gear

Fall protection equipment:

Inspect all equipment according to manufacturer's instructions

• By eye and feel



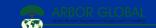


Equipment Inspection

"Field Modification"

- Modifications in structure, attachments or use not permitted Unless
- Certified in writing by the manufacturer or nationally recognized testing laboratory, to be in conformity with ANSI A92.2-1969 and as safe as before modification





Fall protection and secures logs and equipment

- Synthetic fiber
- Minimum breaking strength of 5,400 lbs
- Minimum diameter of ½", but not less than 7/16"
 - Manufactured for tree climbing









Inspect for damage, defects and excessive wear:

- Retire if > 25% braided & > 10% 3-strand
 - Cuts
 - Abrasion
 - Pulls
 - Glossy/glazed 2X damage observed









Retire if observed

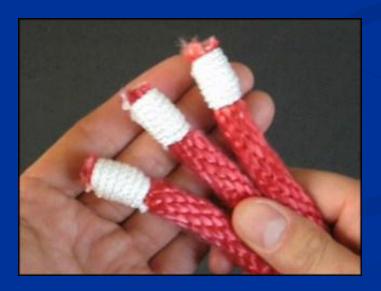
- Discoloration- brittle/stiff
- Inconsistent diameter flat or bumps
- Inconsistent texture/stiffness dirt embedded.





- Rope ends finished to prevent unraveling
- Stored and transport to prevent damage
 - Sharp tools
 - Chemicals









Arborist Saddle/Harness Inspection

- Must be specifically designed for tree climbing
- Inspect for damage, defects and excessive wear:
 - Retire if significant damage
 - Cuts in material
 - Stitching broken
 - Metal cracked or damaged
 - Grommets damaged/missing.











Carabiner Inspection

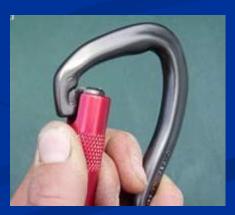
- Self-closing and self-locking
- 5,000 lbs (22.24kN) minimum tensile strength
- At least 2 consecutive motions to prepare gate to open
- Inspect for damage, defects and excessive wear:
 - Retire if significant damage
 - Missing or altered parts
 - Nicks, cracks or breaks
 - Deformation/bends
 - Excessive wear
 - Corrosion or pits
 - Function
 - Opens and closes easily
 - Safety lock operates.













Snap Inspection

- Self-closing and self-locking
- 5,000 lbs (22.24kN) minimum tensile strength
- Inspect for damage, defects and excessive wear:
 - Retire if significant damage
 - Missing or altered parts
 - Nicks, cracks or breaks
 - Deformation/bends
 - Excessive wear
 - Corrosion or pits
 - Function
 - Opens and closes easily
 - Safety lock operates.









Work Position Lanyard Inspection

- Meets all standards for rope, snaps and carabiners
- Inspect for damage, defects and excessive wear:
 - Retire if significant damage
 - Rope inspection process and standards
 - Snap/carabiner inspection process and standards.











Prusik Loops & Split Tails

Must meet minimum strength standard as climbing lines Inspect for damage, defects and excessive wear:

- Retire if significant damage
 - Rope inspection process and standards.











Always use fall protection

- When > 6 feet off ground, secure fall protection
- Guide: do not lift feet off ground without fall protection







Never use fall protection equipment for other purposes

- Lowering wood
- Pulling loads
- Permitted to raise and lower tools







Second person with emergency procedures training shall be present

- Above 12 feet off ground
- Within voice or visual range





3-point contact while climbing

- Feet, rope, hands
- Hands and feet should be on separate limbs, if possible





3-point support while working

- Feet, rope, hands
- Maintain weight on rope(s)
- Maintain stability and control
 - Especially while cutting







Avoid long falls or uncontrolled swings

- Do not permit slack in climbing line to loop below feet
 - Permits > 5' fall
- Do not permit climbing line > 45 degree angle





Final tie-in as high and central as safe and practical

- Secure lanyard or redirects if extended to avoid swing
- Minimize uncontrolled swing if slip





Select strong, properly structured tie-in points

- Rope around primary stem, not lateral branch
- Support stem is at least 4 inches diameter
- Ensure no structural defects at tie-in point









Tie-in Selection

- Wide crotch for easy rope movement
- Avoid tie-in that permits swing into hazards (example = power lines)









Figure 8 at the end of the climbing line

- When at heights $> \frac{1}{2}$ length of climbing line
- When using Blakes, tautline or other open climbing hitch





Split-tails

- Terminated with eye-splice or knot
- Remain secure under loading and unloading
- If without captive eye
 - Cinch in place to prevent carabiner opening or side-load









Always maintain at least 1 tie-in point at all times

Always secure a second tie-in before disconnect primary fall protection

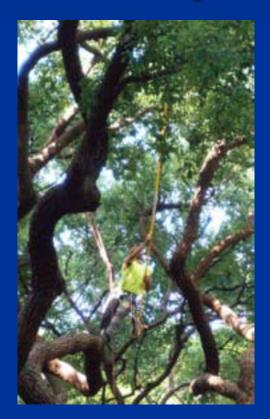






Always maintain at least 2 tie-in points when cutting

- Required to possess at least 1 extra means to secure while working
- Tie-ins at separate locations





False crotch may be used if natural crotch not available/suitable

- Ensure false crotch secure
- Use proper knots, secured
- Only use climbing ropes/straps





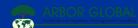
Chain saw

- Must use chain saw lanyard
 - Long enough for saw to position below feet
- Operator stable and secure when cutting
- Chain brake on when not cutting
- 2 tie-in points whenever cutting, in case one is accidentally cut









Rigging rope confusion

- Potential to confuse with fall protection lines
 - Rigging ropes clearly marked or different color.







Use only qualified personnel Always conduct all inspections Consistently apply correct practices



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