

**STANDARD OPERATING PROCEDURES
FALL PROTECTION for ELEVATED
TOWER WORK**

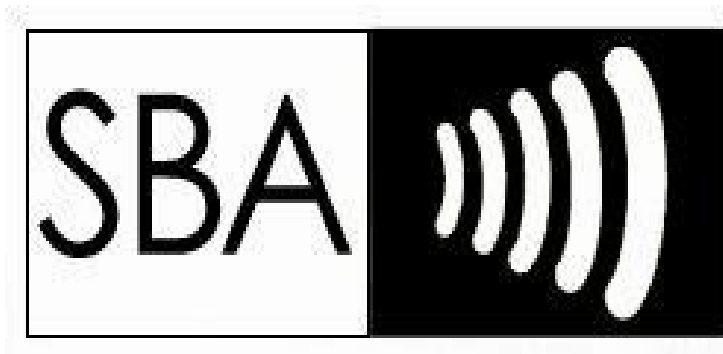




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1. SCOPE AND APPLICATION

This procedure is intended to inform all personnel working in elevated positions of the skills and techniques necessary to safely install and rig towers. No one should attempt to install any tower or tower component without the necessary skills and experience. This procedure is applicable to all employees and is a recommended guidance to subcontractors of SBA Telecommunications, Inc. (Collectively, "SBA") who performs elevated work where a fall hazard of 6 feet or more exists. All equipment used for fall protection shall comply with ANSI Z359.1 and Subpart M (Fall Protection Standard).

2. PRE-WORK ERECTION CRITERIA

- 2.1. Review tower erection drawings and installation manuals.
- 2.2. Utilizing the Pre-Work Assessment Survey, identify any potential hazards and control measures to be followed for all job tasks including crane operations.
- 2.3. Attempt to eliminate fall hazards associated with the task by assembling the tower sections and antenna mounts on the ground.
- 2.4. Inspect all tools, machinery and rigging brought to the site to ensure it is in a safe and reliable condition.
- 2.5. Select the most appropriate means of accessing the tower.
- 2.6. Ensure that tower activities are not performed during severe weather conditions. (ice, heavy winds, lightning etc.)
- 2.7. Confirm the condition of the climbing pegs, safety climb device and other structural connections to ensure it's safe condition.

3. ERECTION OF TOWERS

General Construction Requirements

- 3.1. Assemble tower sections on the ground to minimize potential fall hazards to employees.
- 3.2. Install all accessories (pegs, step bolts or ladder sections) while still on the ground.
- 3.3. Be sure to check the material grade on structural bolts
- 3.4. Plan for the use, removal and installation of temporary vertical lifelines used for fall protection. In most cases, the ground crew members may attach lifelines (rope) prior to lifting the sections into place.
- 3.5. Install the permanent safety climb system as soon as possible.
- 3.6. Use tag lines when lifting tower components by crane or other means.
- 3.7. Antenna mounts must be installed on the ground to minimize fall hazards in the air.
- 3.8. Any temporary or permanent attachments made to the tower structure, shall not interfere with the climbing systems on the tower. (safety climb device, ladders, and step bolts)
- 3.9. When stacking monopole or self-supporting towers each section going up shall have a 50' fall arrest rope for each person on the structure that is secured to an appropriate anchorage point. In addition a continuous rope shall go from ground level to the top of the structure. Each worker on the pole shall be continuously attached to the tower with one of the 50' ropes or the full-length rope.



4. MONOPOLES

- 4.1. Slip joint assemblies require the proper amount of overlap. Review the tower manufacturer's drawings to determine the allowable overlap values.
- 4.2. Inspection of the internal area of the slip joint and mating surfaces shall be conducted prior to the erection of the tower sections. This will allow for a proper fit at the slip joints of the monopole section.

5. GUYED TOWERS

- 5.1. Guyed towers are not self-supporting at any height; use of temporary steel guys may be required.
- 5.2. When it is impractical to use a crane, use a winch and/or gin pole for installation of the tower sections.
- 5.3. Guy wires shall be free of kinks.
- 5.4. Guy wires shall be grounded by mechanical means.

6. SELF-SUPPORTING TOWERS

- 6.1. Caution must be taken when erecting pre-assembled horizontal sections from the assembly area to the vertical position. A second crane may be required depending on the size of the section.
- 6.2. Wave-guides shall not be used as personal fall arrest anchorage points.
- 6.3. Personnel shall not use wave-guides as climbing devices.

7. EXISTING STRUCTURES

7.1. Accessing Towers

- 7.1.1. Where the structure has an existing ladder and safety climb device then employees will access the work locations using the ladder and safety climb.
- 7.1.2. When the structure has no existing ladder or safety climb device the following steps will be taken:
- 7.1.3. The first climber will climb the structure using the leapfrog procedure (double-leg lanyard). When the climber reaches the work location he/she will rig a 5/8" lifeline for fall protection. Once rigged employees may access the tower utilizing the lifeline in conjunction with a rope grab device. Note: Only one employee shall be on the lifeline at a time.

7.2. Support Arms/Booms

- 7.2.1. Evaluate the boom including anticipated load, potential work surface, and anchorage point.
- 7.2.2. First use alternative means (aerial lifts, personnel platforms) to access the boom.
- 7.2.3. If alternative means are not feasible use one of the following systems:
 - Personal fall arrest systems with anchorage point established on the tower structure and not on the boom or arm.
 - Controlled Descent. Refer to the controlled descent procedure.