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Instructions for Safe Climbing on AluPro Masts

Contents

1. General Information
2. Safe Mast Climbing
3. Equipment Installation
4. General Notes

1. General Information

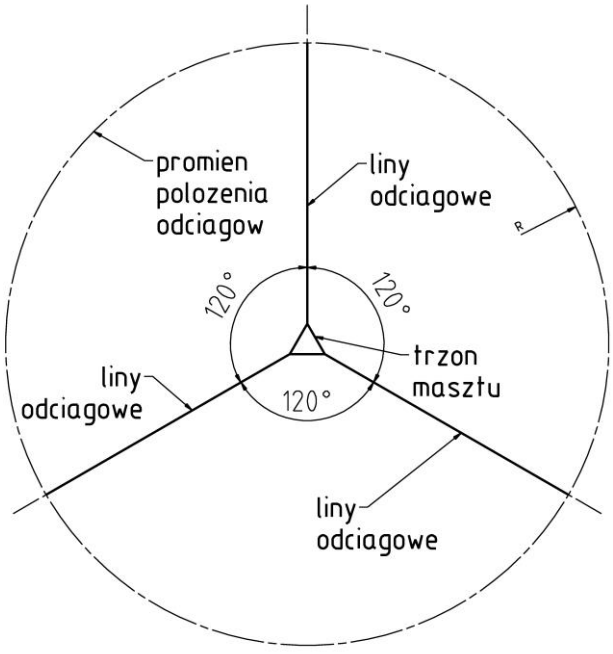
a. Lattice Structure

AluPro structures are spatial trusses with either triangular or square cross-sections. The structural elements are typically made of thin-walled round aluminum tubes (alloys AW6060T6, AW6061T6, AW6063T6, AW6005T6, and AW6082T6). The trusses are usually welded into 4-meter segments that are flange-connected. Typical AluPro masts are triangular trusses with widths of 250mm, 500mm, 750mm, and 1000mm.

b. Mast Geometry

Typical mast geometry involves guy lines in three directions at 120° intervals.

TOP VIEW



An alternative mast geometry uses guy lines in four directions at angular spacings of 120°, 60°, 120°, and 60° (used for installations on narrow buildings). TOP VIEW

c. Guy Lines
Galvanized steel guy lines with either a steel or hemp core are used, with diameters ranging from 4.0mm to 10.0mm. Each end of the guy line is terminated with a thimble and three clamps arranged alternately. Aluminum compression clamps are permitted at the upper end of the guy line. The guy lines are tensioned using a turnbuckle placed between the "lower" end of the line and the anchoring point or an external tensioner used only during installation/servicing.

2. Safe Mast Climbing

Do not climb the mast in wind speeds exceeding 10m/s (36km/h)!

a. Pre-climb Checklist:

- Visually inspect the overall condition of the structure for damage or defects.
- Check the tightening of anchoring elements.
- Check and adjust the tension of the guy lines if necessary.

b. Technician Equipment:

- Harness for working at height (either for supported or suspended work)
- Lanyard with two hooks or carabiners for easy and safe attachment to the structure
- Footwear with hard soles
- Helmet suitable for working at height (chin strap included)

c. Climbing and Descending the Mast:

- While climbing, always switch hooks/carabiners so that at least one is attached to the mast at all times.
- For masts equipped with an SKC Stop fall protection system, attach the harness to the trolley and climb freely.
- During ascent, verify the condition of the guy lines at the mast and the tightening of segment flanges. Replace any corroded or damaged elements with new ones.
- Once at the working height, attach the lanyard to the mast to allow supported work.
- Descend in the same manner as climbing (keeping at least one hook or carabiner attached to the mast).

3. Equipment Installation

- Small devices such as panel antennas, small sector antennas, grid antennas, and omnidirectional WiFi antennas can be mounted directly to the mast structure.
- Larger devices, such as microwave links, parabolic antennas, large sector antennas, and shortwave antennas, should be mounted on suitable brackets available from AluPro (standard or custom-made).
- Use an anti-twist frame for the mast (AluPro mast accessories) if antennas requiring high torsional rigidity (microwave links and parabolic antennas) are to be installed.

4. General Notes

- One technician is allowed on an M250 mast, while a maximum of two technicians can be on M500, M750, and M1000 masts. The allowable weight is 90kg for M250, 160kg for M500 and M750, and 200kg for M1000.
- Consider the weight of installed or being-installed equipment when calculating the total load on the mast.
- The maximum antenna area installed on the mast must not exceed the value specified in the design (structural strength calculations). The so-called windward area is considered, i.e., the area in the direction where it is the largest. The mass of antennas is not considered. If non-radio devices of considerable weight are to be installed, consult the mast manufacturer.
- **Note:** In the case of mast installation in a corrosive environment (e.g., coastal areas or near chimneys), additional anti-corrosion protection is required (anodizing or painting).