SAIA SCAFFOLD & ACCESS INDUSTRY ASSOCIATION

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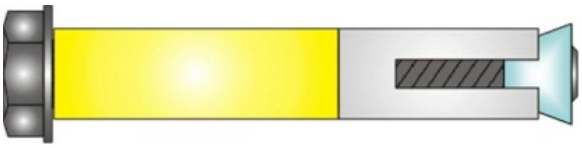
MAST CLIMBERS | FUNDAMENTALS OF SAFE USE

TYING TO THE STRUCTURE: ADVICE FOR ERECTORS/DISMANTLERS

A mast climber can provide high lifting capacity, speed and flexibility, and the ability to extend hundreds of feet in the air. It is therefore vital to ensure that the method of tying the unit to the structure is properly planned and executed. Here are some important points to remember:



1. **Consult** the manufacturer's manual for maximum tie distance and tie forces. Remember that tie forces are calculated by the manufacturer based on distance between the ties and the distance between the ties and the structure, the platform configuration, the load on the platform, wind speed restrictions, and various other factors. Tie forces require to be assessed for the exact configuration and other influencing factors.

2. **Make sure** that a qualified person approves and details anchor locations and that you know what the anchors are going in to. Check the strength (psi) of the concrete, ascertain the presence and position of rebar and post tension cables. Check with the general contractor or building owner that your intended anchor positions will not cause any other problems. Never tie into timber or brick without the manufacturer's/or structural engineer's authorization. Always check for ring beams or in-laid floor panels.

3. **Carefully select** your anchors based on all the criteria. Remember that most anchors have different load bearing characteristics when they are under load from two directions (e.g., an anchor under tension load may have a different load capability when under tension and shear).

4. **Make sure** that the material into which the anchors will be inserted is identical for each tie position (e.g., anchoring to ring beam on the first two or three floors then anchoring into balcony slabs thereafter).

5. **It is critical** that the tie brackets and braces are correctly installed. Pay special attention to torque settings, tie brace angles and, if changes have to be made, they must be authorized by a competent or qualified person, and the details must be recorded.

6. **Anchor installation** is critical. Anchor holes must be drilled to the correct depth, and the holes should be cleaned out. Make sure the exact drill size is used as specified by the anchor manufacturer.

7. **Make sure** that the minimum distance between each anchor, as defined by the anchor manufacturer, is maintained.

8. **Ensure** that the minimum distance between the slab edge and the anchors, as defined by the anchor manufacturer, is maintained.

9. **Ensure** that each anchor is tightened to the correct torque setting, as specified by the anchor manufacturer. If in doubt about the anchor performance, install a 'test' anchor into the first available anchor point (e.g., first floor slab) and conduct a 'pull test'. NEVER leave an anchor installation until it is complete.

10. **A visual check** should be made DAILY on the integrity of the anchor system during first ascent.

Through the OSHA and Scaffold & Access Industry Association (SAIA) Alliance, the SAIA developed this Tip Sheet for informational purposes only. It does not necessarily reflect the official views of OSHA or the U.S. Department of Labor. March 2011.