



**BUILDING CODE MANUAL
COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUILDING AND SAFETY DIVISION
Based on the 2011 LACBC**

**#31
1603.1.8
Article 1
06-28-11
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OPEN-FRAME TOWERS SUBJECT TO ICING [ABOVE 5000 FEET]

Weather conditions at elevations above 5000 feet in Los Angeles County are such that ice frequently forms and encrusts open framework structures thereby adding loads to the tower and footings and increasing the area of the surfaces exposed to wind forces. As such, the antennae towers, derricks, open frame structures, unenclosed buildings and similar constructions (particularly with steel framing) located in areas subject to icing shall be designed to meet all applicable code provisions and the following.

- 1 Two inches of radial ice [4 inches overall] shall be assumed on all open frame elements and individual members.
- 2 The increased dimensions shall be used in computing exposed areas subject to wind forces.
- 3 The weight of the ice shall be considered as additional gravity dead load contributing to stresses in the beams, columns, braces, and framing members.
- 4 The weight of the ice shall be considered as additional gravity dead load to be supported by the foundation system.
- 5 The ice density shall not be considered less than 56 pcf in calculations.
- 6 The design shall also be investigated for stress and overturning resistance for wind loading with or without ice encrustation.
- 7 Adequate foundations and anchorage shall be provided to resist two times the calculated wind load overturning moment.

Wind loads in general are referred to Section 1609, Chapter 16 of the Building Code. In addition, Chapters 2, 6, and 10 of ASCE 7-05, shall also be used for "Combination of Loads", "Wind Loads" and "Ice Loads"

Section 3108 of the Building Code requires open-frame radio and television towers to be designed based on TIA-222 (Structural Standards for Steel Antenna Towers and Antenna Supporting Structures).

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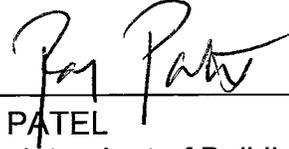
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