

TOPIC: Installation of Rooftop Equipment – UBC/16/#4

CODE: Structural Specialty Code: 1998 Edition

REVISED: March 1, 1999 _____

REFERENCE: Section 1615 & 1632 – Structural Specialty Code

SUBJECT: Rooftop Equipment Using Friction to Retain in Place

QUESTION: What methods of resisting lateral loads for rooftop equipment are

acceptable by the Bureau?

RESPONSE: There are two main services for lateral loads in equipment placed

On roof tops: wind and seismic. Seismic loads are directly

proportional to the mass of the piece of equipment. The seismic section of the code states that seismic anchorage for rooftop equipment weighing less than 400 pounds need not be designed. However, the load caused by wind on the same piece of rooftop equipment could be as much as twenty times larger than the seismic load. Because of this, all permanent rooftop equipment must be restricted from flying off of a roof during severe wind events.

The Bureau accepts the following design methods of resisting lateral loads for rooftop equipment:

- A. Rooftop equipment weighing more than 400 pounds must be securely anchored to the roof and/or wall structures. The anchorage must be durable enough to resist the elements.
- B. Rooftop equipment weighing less than 400 pounds must also be securely anchored to resist code specified loads. While its seismic anchorage need not be designed, anchorage to resist wind loads must be designed. Wind loads may be resisted by a positive, durable anchorage system or by a system which relies on friction.

UBC/16/#4
Rooftop Equipment Using Friction to Retain in Place
Page 2 of 2
March 1, 1999

Those that rely on friction must have lateral resistive capability of 1-1/2 times the code required lateral wind forces. Any simultaneous uplift forces must be included in the design. Any ballast used in the design must be securely attached to the equipment so that it is not easily removed.

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