



**Mid-Cycle Code Amendment
December 7, 2011**

**2010 Oregon Structural Specialty Code
Section 412.4.5, Fire Suppression for Aircraft Hangars
*Effective Date: January 1, 2012***

BACKGROUND:

HISTORY:

Fire suppression provisions for aircraft hangars have been outlined in Section 412 of the Oregon Structural Specialty Code (OSSC) since the transition to the International model codes in 2004. This section requires the design of fire suppression for hangars to follow the provisions in NFPA 409. During the adoption proceedings for the 2007 code cycle the aircraft industry came forward requesting an exception to the NFPA 409 standards that would allow exceptions to the foam suppression requirements. The foam used in the fire suppression systems is caustic and causes severe damage to aircraft in the event of discharge.

The exception that was requested and consequently added into the code allowed for a fire suppression system using only water but with a higher design density than is required for a standard NFPA 13 wet system. The aircraft access door and tail height of the planes were restricted to 28 feet in height which effectively limits the volume of fuel that could be stored in the aircraft. In addition, the hangars were also restricted to uses not including major maintenance or overhaul.

The exception was modified because it contains undefined terms leading to inconsistent application as written. The previous exception included the terms “major maintenance and overhaul” as a condition of exemption from the foam requirements. Without specific definitions of these terms, permit applicants are often left pleading their case as to why the exception applies to their project causing construction delays and having significant implications for the project costs.

Additionally, the purpose of the foam is to address large fuel loads and the hazard associated with large loss fuel fires. Group I hangars with no limitation on the size of the fire area storing fueled aircraft present a significant hazard even with access door size restrictions.

The language adopted in this amendment provides a clearly defined path to construct hangars to be used for maintenance and/or storage of aircraft without foam up to specifically identified thresholds. The thresholds in this amendment, while possibly more restrictive than current code, do accommodate the needs of the aviation industry while ensuring a reasonable degree of safety as well.

This code change has been prepared as insert pages for the 2010 OSSC. Pages are formatted so that when inserted, the amendments will face the page containing the existing code language.

*Text formatting; ~~strike-through~~ denotes text that has been deleted,
Underline/bold denotes text that has been added.*

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412.4.5 Fire suppression. Aircraft hangars shall be provided with a fire suppression system designed in accordance with NFPA 409, based upon the classification for the hangar given in Table 412.4.6.

Exceptions:

1. When a fixed base operator has separate repair facilities on site, Group II hangars operated by a fixed base operator used for storage of transient aircraft only shall have a fire suppression system, but the system is exempt from foam requirements.
- ~~2. Group I hangars as defined in NFPA 409, which exceed 40,000 square feet (3716 m²) but have an aircraft access door height less than 28 feet (8534 mm), and do not have provisions for housing aircraft with a tail height over 28 feet (8534 mm), and without major maintenance or overhaul are exempt from foam suppression requirements if they have an automatic sprinkler protection with a density of 0.25 gal/min. (0.016 L/s).~~
2. Aircraft Hangars that have an aircraft access door height less than 28 feet (8534mm), and do not have provisions for housing aircraft with a tail height over 28 feet (8534 mm), are exempt from foam requirements provided the building complies with all of the following criteria:
 - 2.1. The building is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.
 - 2.2. The building is provided with an automatic sprinkler system throughout with a design density of 0.25 gal/min. (0.016 L/s).
 - 2.3. The total fuel capacity of all aircraft located within a single fire area does not exceed 5,000 gallons (18 927 L).
 - 2.4. No single fire area exceeds 65,000 square feet (3716 m²).
 - 2.5. The gross building area does not exceed 75,000 square feet (4288 m²).