

# Extension Cord Use in T-Hangars

The answer to the question concerning approved uses of extension cords in airplane hangers comes down to two parts:

1. When are they allowed?
2. What kind is acceptable?

## 1. When?

### 2007 Florida Fire Prevention Code

#### NFPA 1 Uniform Fire Code.

##### *11.1.5 Extension cords shall not be used as a substitute for permanent wiring.*

What this tells us is that an extension cord is approved for temporary use only. In other words, an extension cord shall be plugged directly into an approved receptacle and serve only one portable appliance while that appliance is in temporary use. Any extension cord that is found to be powering any device or appliance in an unattended hanger is a violation.

It was the permanent use of an unattended extension cord that caused the hanger fire in 2004. What many people do not understand is that the protection provided by a circuit breaker is meant only to protect the building's wiring from the breaker to the receptacle, not what is plugged into that receptacle. An overcurrent condition can exist in an extension cord, either immediately or developing over time, which will cause the insulation of the extension cord to fail without tripping the circuit breaker. This condition is what provided the ignition source in 2004.

So the question then becomes: Does the permanent use of an extension cord create a danger in every situation? Maybe, maybe not. It is clearly a code violation and as such cannot be overlooked by those who are tasked with enforcing the Fire Prevention Code.

The question then becomes: "If the extension cords are being used properly, what kinds of cords are allowed?"

## 2. What Kind?

### 2007 Florida Fire Prevention Code

#### NFPA 1 Uniform Fire Code.

##### 21.1 Hangers

##### *The construction and protection of aircraft hangers from fire shall comply with this section; NFPA 409, Standard on Aircraft Hangers and NFPA 101 Life Safety Code.*

Both NFPA 409 and NFPA 101 direct us to NFPA 70 the National Electrical Code, specifically Article 513 Aircraft Hangers.

Assuming that the extension cord is going to be used to temporarily power a single piece of portable utilization equipment, then the flexible cords must be suitable for the type of service and approved for extra hard usage. If the extension cord is going to be used in close proximity to the airplane then the manufacturer of the cord would have to show in the product's UL listing that it meets the requirements of the National Electrical Code, (NFPA 70) Article 513 Aircraft Hangers for Portable Equipment for use in a Class I, Division 2 or Zone 2 locations. "Article 513.3 (C)(1)The area within 1.5 m (5 ft) horizontally from aircraft power plants or aircraft fuel tanks shall be classified as a Class I, Division 2 or Zone 2 location that shall extend upward from the floor to a level 1.5 m (5 ft) above the surface of wings and of engine enclosures."

If used outside this zone, then less stringent applications will apply. In other than Class I locations, Section 513.7 (E) does still require that "Receptacles and attachment plugs shall be of a locking type that will not readily disconnect."

## Information on Electrical Cord

- Rainproof rated for indoor and outdoor use provides safety assurance for any electrically powered job
- Construction and industrial grade with molded u-ground plug and connector
- 18" – 12 gauge heavy duty cord
- GFCI safety assurance, OSHA compliant, highly visible "safety" yellow color
- LED power "On" indicator
- 15 amp, 125 volt rated

The below photo is an example of the approved extension cord. It can only accept one item plugged into the device. Multiple female receptacles on the end of the cord are not approved. Extension cords with multiple plugs and are not acceptable according to NFPA 70.



Date: \_\_\_\_\_

Signature: \_\_\_\_\_

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