

AVIATION HANGAR



FLOORING SYSTEM GUIDE



When it comes to the construction and maintenance of aircraft hangars, one crucial aspect often overlooked is the choice of flooring systems. The flooring in an aircraft hangar plays a significant role in ensuring the safety, functionality, and longevity of the facility. With the demanding requirements of aircraft maintenance, storage, and operations, it is vital to select the right flooring system that can withstand heavy loads, resist chemical spills, and provide a non-slip surface.

Epoxy / Urethane Flooring

Epoxy flooring systems are another popular choice for aircraft hangars due to their durability and chemical resistance. When installed with a urethane top-coat, epoxy coatings provide a seamless, chemical resistant surface that is easy to clean and maintain. Properly engineered systems should be highly resistant to chemicals, including jet fuel, oils, hydraulic fluids, and cleaning agents commonly used in aircraft maintenance. A relatively smooth finish facilitates easy movement of equipment and prevents the accumulation of dirt or debris. Moreover, epoxy coatings can be customized with safety features like anti-slip additives or colored lines for designated areas.



UV Protection

One crucial consideration is UV stability. Hangars are often exposed to sunlight, and prolonged exposure to UV rays can cause flooring materials to fade, deteriorate, or become brittle over time. UV stability is essential for maintaining the appearance, durability, and performance of the flooring system in an aircraft hangar. While certain epoxy coatings will tend to discolor over time, high performance polyurethane and polyaspartics topcoats are UV stable and will resist color changes resulting from UV exposure.

Polyurethane Concrete Flooring

In some cases, hangars handling larger airplanes may require more robust resinous systems. For heavier-duty hangars, owners will often select a system that incorporates a polyurethane concrete base. Also referred to as Urethane Cement, these flooring systems combine the strength and durability of concrete fortified with high performance urethane polymer binder technology.

These systems provide for enhanced compressive strength while also offering self-leveling properties to promote a smooth floor. These systems are then coated with epoxy and/or urethane top-coats. The result is a UV stable finish with the resilience to withstand heavy point-loads and provide excellent resistance to abrasion & chemical attack. Urethane cement flooring is an excellent choice for aircraft hangars that require a self-leveled finish with superior strength.



Key Things to Consider When Choosing Aircraft Hangar Flooring

Selecting the right flooring for an aircraft hangar is a critical decision that can significantly impact the safety, efficiency, and longevity of the facility. Hangar floors must be able to withstand heavy loads, resist chemical spills, provide a non-slip surface, and meet various other requirements specific to the aviation industry.

Load-Bearing Capacity

Aircraft hangar floors must be designed to support the weight of aircraft, equipment, and machinery. Consider the maximum weight that the flooring system will need to bear and ensure that it meets or exceeds the required load-bearing capacity. Different types of flooring systems have varying load-bearing capabilities, so consult with structural engineers or flooring specialists to determine the most suitable option for your hangar. Pay close attention to actual point-load figures. Also referred to as “concentrated load”, point load is where tires and other heavy-equipment comes into contact with the floor itself.



Chemical Resistance

Aircraft maintenance involves the use of various chemicals, including fuels, lubricants, hydraulic fluids, and cleaning agents. A common chemical found in aviation settings is Skydrol B. Skydrol can leak from aircraft landing gear and when it does leak, it is typically quite hot. Historically, Skydrol has caused damage to all sorts of flooring systems. In addition to Skydrol, the flooring should have excellent chemical resistance to prevent damage from spills or leaks. Consider flooring materials that are resistant to corrosion, staining, and degradation caused by chemicals commonly used in the aviation industry. This will ensure that the flooring remains in good condition and minimizes the risk of accidents or structural damage.

Durability and Longevity

Aircraft hangar flooring is subject to heavy traffic, constant movement of equipment, and exposure to harsh conditions. It is crucial to choose a flooring system that is highly durable and can withstand these challenges over an extended period. Look for materials and coatings that have a proven track record of durability, resistance to abrasion, and long-term performance. Investing in a high-quality and long-lasting flooring system will reduce maintenance costs and downtime in the future.



Safety Features

Safety should be a top priority when selecting aircraft hangar flooring. Look for flooring systems that provide a non-slip surface, even when wet or oily, to prevent slips and falls. Consider using coatings or additives that enhance traction and reduce the risk of accidents. Additionally, clearly marked safety lines, designated walkways, and anti-static properties should be considered to ensure a safe working environment for personnel.

Maintenance and Clean-ability

Efficient and cost-effective maintenance is essential for any flooring system. Consider the ease of cleaning, maintenance requirements, and the availability of cleaning products suitable for the chosen flooring material. Some flooring systems may require specific cleaning procedures or specialized equipment. Evaluate the long-term maintenance costs and the impact on operational efficiency to make an informed decision.

Environmental Considerations

Take into account any environmental considerations when choosing aircraft hangar flooring. Consider the sustainability of the materials used in the flooring system and their impact on the environment. In addition, please remember how long-term performance ties into the overall sustainability of a system. Any floor that needs to be replaced in the future prior to its intended lifespan will cause unnecessary waste and expense.



Choosing the right flooring system for an aircraft hangar involves careful consideration of load-bearing capacity, chemical resistance, durability, safety features, maintenance requirements, and environmental considerations. By evaluating these key factors and consulting with experts in the field, you can select a flooring system that meets the specific needs of your hangar, ensuring a safe, efficient, and long-lasting facility for aircraft operations and maintenance.

Have a question you'd like to ask the team? Please contact us at:

Resinwerks

Main: 720-484-5160

Email: info@resinwerks.com



Resinwerks
7205 Gilpin Way #200
Denver CO 80229
www.resinwerks.com