TECHNICAL DATA SHEET

LABFLOOR™ 4E HANGAR

4-Coat Epoxy Floor System for Airplane Hangar

LABSYSTEM
LABSURFACE FLOORING SYSTEM

Description

LABFLOOR 4E HANGAR is a high-performance, easy to maintain, solid color, 4-coat flooring system installed at 25–31 mils. It is built with high performance LABPOX® epoxy resins which includes Pinhole Mitigation Technology. The system consists of LABPOX® PRIMER, 2 coats of LABPOX® 30/40 UV pre-tinted (Grey or Super Opaque White) and protected with LABFENDER™ high wear urethane for better overall durability.

LABFLOOR 4E HANGAR floor system combines advanced epoxy and polyurethane technologies that delivers an easy to maintain, smooth surface, with excellent chemical and abrasion resistance. Its superior UV stability ensures long-term color integrity, while its exceptional scratch protection safeguards the surface against wear and tear.

Uses

+ Plane hangars
+ General aircraft maintenance areas
+ Traffic aisles
+ Loading docks
+ Aircraft assembly plants
+ Light to medium duty production areas.
+ Pharmaceutical laboratories, production rooms and offices.
+ Growing facilities
+ Hospitals, laboratories and healthcare facilities.
+ Mechanical rooms
+ Laundry rooms

LABFLOOR 4E HANGAR Advantages

+ **LABFENDER protective topcoat provides a UV Resistant Floor** - Delivers enduring aesthetic quality
+ **Superior Opacity**: LABPOX® 40 UV Super Opaque White offers 3x the opacity of standard white epoxies
+ **Pinhole mitigation technology** (reduces pinholes by up to 98%)
+ **LABFENDER protective topcoat increases by up to 60 times the resistance against transfers of plasticizers**[1]
+ **Durability & Scratch Resistance**
+ **Chemical Resistance**, including – Skydrol – Kerosene - Jet Fuel - Aviation Gas - hydraulic fluids - more
+ **Long working time** (60 minutes)
+ **Low viscosity** – Easy seamless installation

Other Advantages

+ Seamless surface, easy to clean / low maintenance
+ Impermeable and waterproof surface
+ High abrasion and impact resistance
+ Low odour / low VOC.
+ Satin aesthetic finish

[1] Labsurface's tests were performed at a range of 80-90°C (176-194°F). At those temperature levels the LABFENDER™ lasts up to 60x longer than any 1K or 2K products / technology that were tested with tires in laboratory by our R&D team.

Products Properties

	PRIMER **LABPOX® PRIMER**	BASE COAT #1 **LABPOX® 40 UV** Super Opaque White or **LABPOX® 30** Gray	BASE COAT #2 **LABPOX® 40 UV** Super Opaque White or **LABPOX® 30** Gray	TOPCOAT **LABFENDER™**
Packaging	**3-Gallon Kit** 2 x A (1 Gal) + 1 x B (1 Gal) **15-Gallon Kit** 2 x A (5 Gal) + 1 x B (5 Gal)	**3-Gallon Kit** 2 x A (1 Gal) + 1 x B (1 Gal) **3-Gallon / 2-Bucket Kit** 1 x A (2 Gal) + 1 x B (1 Gal) **15-Gallon Kit** 2 x A (5 Gal) + 1 x B (5 Gal)	**3-Gallon Kit** 2 x A (1 Gal) + 1 x B (1 Gal) **3-Gallon / 2-Bucket Kit** 1 x A (2 Gal) + 1 x B (1 Gal) **15-Gallon Kit** 2 x A (5 Gal) + 1 x B (5 Gal)	**1-Gallon Kit** 1 x A (0.8 Gal) + 1 x B (0.2 Gal) + 1 x C (3 lb)
Thickness	6-8 mils 200-267 sq. ft./gal	8-10 mils 160-200 sq. ft./gal	8-10 mils 160-200 sq. ft./gal	3 mils 535 sq. ft./gal
Ratio	2A:1B	2A:1B	2A:1B	4A:1B:1C
Color	Clear	White or Gray	White or Gray	Clear
Shelf Life	One (1) year, in original unopened factory pails under normal storage conditions			
Pot Life	15 min	50 min	50 min	3 h
Application Temperature	Min 16°C / 61°F Max 30°C / 86°F	Min 16°C / 61°F Max 30°C / 86°F	Min 16°C / 61°F Max 30°C / 86°F	Min 10°C / 50°F Max 30°C / 86°F

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Curing time

22°C / 72°F and 50% Rel. Hum.

	PRIMER **LABPOX® PRIMER**	BASE COAT #1 **LABPOX® 40 UV** Super Opaque White or **LABPOX® 30** Gray	BASE COAT #2 **LABPOX® 40 UV** Super Opaque White or **LABPOX® 30** Gray	TOPCOAT **LABFENDER™**
Working time	25 min	55 min	55-60 min	60 min
Tack Free	2 h 30	9 h	9 h	3-4 h
Recoat	2 h 30 - 24 h	9 - 24 h	9 - 24 h	N/A
Dry Through	6 h	13 h	13 h	10 - 12 h
Light/Foot Traffic	24 h	24 - 48 h	24 - 48 h	12 h
Heavy Traffic				24 h
Full Cure	1 week	1 week	1 week	1 week

SYSTEM TECHNICAL PROPERTIES

at 22°C / 72°F and 50% Rel. Hum.

Data's reflected below are representative of the complete LABFLOOR™ 4E HANGAR System and not based on different products best results used in the system.

	WHITE	GRAY
Shore D (7 days) ASTM D2240	80	82
Tensile strength ASTM D2370	5300 psi	7800 psi
Compressive strength ASTM D695	10200 psi	13200 psi
Abrasion ASTM D4060	20 mg loss	20 mg loss
Coefficient of Friction ASTM E303	1.3	1.3

Product properties are averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

General Instructions

SURFACE PREPARATION

Concrete should be clean, dry and free of grease, oil, paint, curing agents or any contaminants that may inhibit proper adhesion. Concrete should be cured at least 28 days before applying the coating system. If the concrete slab has been installed within 28 days, use LABPOX® MVB FAST as a primer (refer to the LABPOX® MVB FAST technical data sheet for additional details).

Proper testing procedures should be practiced with regards to soil acidity and moisture vapor transmission. Take a pH reading to ensure concrete is neutral (a reading between 5 and 9 is acceptable). Use a Tramex® CME / CMExpert to measure the moisture content of the concrete slab. Moisture content must be below 4% before applying the product. It is necessary to take several measurements at various places on the slab. If the reading is higher than 4%, steps will be required to neutralize the soil moisture. The first thing to do is to make sure that the floor is completely dry before application. Floors with higher results should be primed using LABPOX® MVB FAST moisture mitigation.

Surface must be shot blasted or diamond grinded in accordance with the most current ICRI 310.2R guideline to obtain a Concrete Surface Profile (CSP) between 2 and 3. Ensure the surface is free of contaminants, and the pores are open to allow the product to penetrate. Vacuum carefully entire floor in both directions until maximum dust and any other loose debris have been removed from the floor.

On coated surfaces, past the 24h recoat window, the surface should be sanded to a dull appearance/look with proper equipment using 80 grit or coarser sandpaper. A mechanical bond to a sanded surface is required and the pores of the existing coating must be opened for better adhesion. Vacuum dust and properly wipe the surface with alcohol or solvent prior applying the next product. The alcohol or solvent must be completely evaporated before applying the product. This preparation is necessary to ensure proper adhesion. Conduct adhesion tests if there is a doubt about surface preparation.

MIXING

Before final mixing, pre-mix part A at low speed using a Jiffy® or an Exomixer® mixer blade. Special attention must be paid to colored versions of the products since pigments may have separated from the rest of the formulation during storage. Mixing should be done until colors are uniform.

Use the same batch number when working with pre-tinted products, In the event that different batch numbers have to be use for a same job, we recommend pre-mixing all part A's individually, then mix together part A's from the different batch numbers for two minutes until homogenous color.

Add correct proportion of part B to part A and mix at slow speed (300-450 rpm) using a Jiffy® or an Exomixer® mixer blade. The

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mixing container must be clean and free of any outside particles. Mix thoroughly for a minimum of three minutes, until a completely homogeneous mixture is obtained. Make sure to scrape sides and bottom of mixing container so no unmixed material remains. Once properly mixed, resins should show uniform color and consistency. Mix only the necessary quantity to be used according to the specified pot life / working time. Refer to specific product TDS for more details.

APPLICATION

Apply only when air and slab temperature is between 16°C / 61°F - 30°C / 86°F and the relative humidity of less than 85%. If a heated floor is installed, ensure that the system is turned off 2-4 hours (depending on type of radiant floor) before application and for the full duration of the cure. The product has been designed to adhere to concrete surfaces.

It is crucial to prevent sweat or water droplets from coming into contact with the product while mixing and installing it. This precaution is necessary to avoid the formation of circles and/or fisheyes. Additionally, wall-mounted Air Wick type devices and aerosols should be avoided during both the installation and drying processes, as they can also cause circles or fisheyes.

Respect curing time before proceeding to next step. Walking prematurely on the surface (especially with spiked shoes) could damage it. Let cure enough to prevent indents or marks on the floor.

System Installation Procedure

1 PRIME COAT
LABPOX PRIMER

SURFACE PREPARATION

+ General instructions

MIXING

+ Ratio 2A:1B
+ General instructions

WORKING TIME

+ 25 minutes

APPLICATION

General instructions, plus the following:

+ LABPOX® PRIMER has been designed to adhere to concrete surfaces. Apply a thin coat of 6-8 mils (200-267 sq.ft./gal) with a squeegee without back rolling to seal the concrete surface properly. This will also help reduce the creation of pinholes. If there is appearance of pinholes during the application, allow sufficient time to go back and either burst the pinholes by rolling back and forth or with another squeegee pass. If there are still pinholes after applying the first coat, sand and plug the pinholes with epoxy gel prior applying the second coat.
+ Coverage rates can vary depending on the concrete's porosity. Respect curing time before proceeding to next step. Walking prematurely on the surface (specially with spiked shoes) could damage it. Let cure.

2 BASE COAT #1
LABPOX 40 UV or LABPOX 30

WHITE FLOOR: use LABPOX® 40 UV Super Opaque White
GRAY FLOOR: use LABPOX® 30 Gray

SURFACE PREPARATION

+ No additional preparation needed if within the LABPOX® PRIMER 24h recoat window
+ Correct pinholes or other surface defects using the EPOXY CRACK FILLER.

MIXING

+ Ratio 2A:1B
+ General instructions

WORKING TIME

+ 55-60 minutes

APPLICATION

General instructions, plus the following:

+ Apply the appropriate LABPOX® product (based on selected color) over the primed surface using a notched squeegee at a thickness of 8–10 mils (160–200 sq. ft./gal), then back roll to ensure a uniform film across the entire surface.

3 BASE COAT #2
LABPOX 40 UV or LABPOX 30

WHITE FLOOR: use LABPOX® 40 UV Super Opaque White
GRAY FLOOR: use LABPOX® 30 Gray

SURFACE PREPARATION

+ No additional preparation needed if within the LABPOX® 30 or 40 UV 24h recoat window

MIXING

+ Ratio 2A:1B
+ General instructions

WORKING TIME

+ 55-60 minutes

APPLICATION

General instructions, plus the following:

+ Apply the appropriate LABPOX® product (based on selected color) over the first base coat with a notched squeegee at a rate of 8-10 mils (160-200 sq.ft./gal) and back roll to provide a uniform thickness across entire surface.

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4 TOPCOAT
LABFENDER
WITH ALUMINUM OXIDE 240

SURFACE PREPARATION

+ No additional preparation needed if within the LABPOX® 40 UV 24h recoat window.
+ Surface must be dry and free of any debris

MIXING

+ Ratio 4A:1B:1C

General instructions, plus the following:

+ After mixing part A and B for three minutes, add 3lb of LABTEC ALUMINUM OXIDE slowly to the mix and mix for an additional 2-3 minutes until homogeneous.

WORKING TIME

+ 60 minutes

APPLICATION

+ Refer to LABFENDER™ TDS for complete details, equipment recommendations and installation tips.
+ Install LABFENDER™ at 3 mils using dip and roll method and backroll to provide a uniform thickness across entire surface.
+ Use a microfiber roller and backroll until desired finish is achieved.

Refer to individual product data sheets for further details. Labsurface recommends that a test area be applied to confirm specific application rates required to produce the desired final appearance.

Limitations

WORKING ENVIRONMENT

1. Application should only take place when both air and floor temperatures are between 16°C / 61°F and 30°C / 86°F.
2. Ensure relative humidity remains below 80% for at least 24 hours before and after the application.
3. Application above 30°C / 86°F should be avoided to prevent accelerated curing and reduced working time
4. Higher temperatures will accelerate the curing process, shortening working time significantly.
5. Lower temperatures will slow curing, extending the working time, but avoid excessive cold as it may impede proper curing.
6. Turn off ventilation during application because airflow can prematurely cure the product and affect the final finish.
7. The use of direct-fired, unvented heat sources during application is discouraged as they may emit byproducts that negatively affect the curing process, potentially causing issues like loss of adhesion or surface imperfections.
8. In the event that dew point conditions lead to condensation persisting above the concrete surface, and for which the grinding process fails to eliminate this condensation, it is crucial to thoroughly dry the surface before installation. Neglecting this step may result t in shortened working times and/or issues with adhesion.
9. Protect from dampness, condensation and water contact during the initial 24-hour cure period.

SUBSTRATE REQUIREMENTS

10. Moisture content of the concrete floor must be <4 % when the system is applied. If over 4%, use LABPOX® MVB FAST as a primer (step 1) instead of LABPOX® PRIMER.
11. The substrate must be completely dry before application.
12. Surface must be prepared with adequate equipment to ensure proper adhesion.
13. Tests must be performed to validate adhesion.

PRODUCT

14. Store product at room temperature.
15. Follow recommended application rates to ensure proper system performance and aesthetics.
16. Use the recommended Pigments Pods compatible with its compatible products
17. Do not dilute any Labsurface products with any solvents. Adding solvents can cause application problems such as roll marks or irregular finishes.
18. Do not step with spike shoes where finish roll has been performed as it could leave undesired marks on the finished floor.

PLASTICIZER RESISTANCE

19. LABFENDER™ increases resistance to plasticizers found in rubber, particularly in car tires, up to 60 times1. Hot tires and other rubber material containing high levels of plasticizers or specific plasticizer types may cause irreversible staining of the coating. This phenomenon is irreversible and can cause staining of the coated area.
20. It is recommended to allow tires to cool down before parking in areas coated with LABFENDER™ to avoid this issue.
21. Transfer of plasticizers can also occur when a car is parked for a prolonged period of time without moving. Labsurface recommend protecting the floor by adding pieces of cardboard, wood or Lexan underneath each tire when parking a vehicle for longer periods of time.

SERVICE CONDITIONS AND CLEANING CONSIDERATIONS

22. Epoxy based systems are not UV stable.
23. Epoxy based systems are not suitable for use on exterior surfaces.
24. Do not clean the finished surface during the week following installation.
25. To prevent surface damage, pressure washing and power washing should be used with caution.

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26. Using hot water can cause irreversible damage. Hot water should not exceed 49°C / 120°F when cleaning polymer coatings. Ideal cleaning temperatures range between 30°C / 86°F and 43°C / 110°F.

CHEMICAL SENSITIVITY

27. Exposure to certain chemicals in the Part A or Part B of resinous coatings products could cause allergic reactions during the application or handling process.
28. Once the product has fully cured and crosslinked, these chemicals become inert and should not cause allergic reactions.
29. Raw materials used by Labsurface do not differ significantly from comparable products manufactured on the market.

PRODUCT TESTING AND QUALITY CONTROL

30. Labsurface emphasizes that users are responsible for testing the product to ensure it meets their specific needs and application conditions.
31. Labsurface conducts continuous testing and may occasionally modify formulations to improve product performance.
32. Labsurface cannot guarantee results since Labsurface has no control over surface preparation, operating conditions and application procedures. Clients are solely responsible to test Labsurface's products to determine if they perform as expected.
33. To meet our strict requirements, we are continuously testing our coatings and on occasion, formulations may be modified to improve certain properties within each coating.
34. Information and data included in this reference document may not be up to date as of the date of reference.

Contact Labsurface for further information regarding the limitations of this product. Refer to the most recent Material Safety Data Sheets prior using these products.

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