

ROBERT "TONY" HANNAMAN  
 COLORADO SPRINGS AIR PARK  
 905 AVIATION WAY  
 COLORADO SPRINGS, CO 80916

DRAFT

This draft case history documents the hangar floor installation in June 2008.

The preparation/coating procedures used were:

- 1.) Acid etch/detergent clean/power scrub/diamond grind/power sand.
- 2.) Crack fill/repair floor imperfections (E31-1204/E31-1202).
- 3.) Apply E31-1203 epoxy primer.
- 4.) Apply 1st color topcoat (U31-1201) with non-skid aggregate.
- 5.) Apply 2nd color urethane topcoat (U31-1201).

**REDFORD Corporation**  
 1075 Kingwood Drive • Kingwood, Texas 77339 • (281) 358-4100

**Linear Urethane U31-1201**  
 Aircraft hangars, industrial concrete floors

**Epoxy Emulsion E31-1203**  
 Epoxy primer

**Crack Filler E31-1204**  
 Crack repair

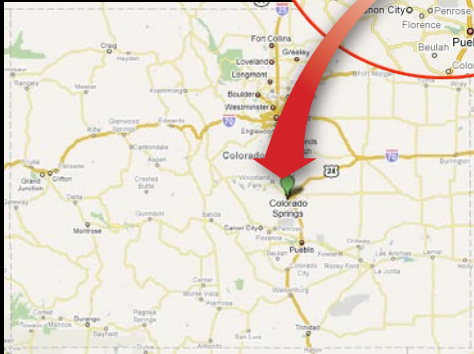
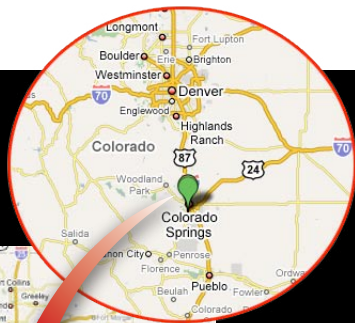
**Epoxy Coating E31-1202**  
 Epoxy primer

**Linear Urethane U31-1201**  
 Aircraft hangars, industrial concrete floors

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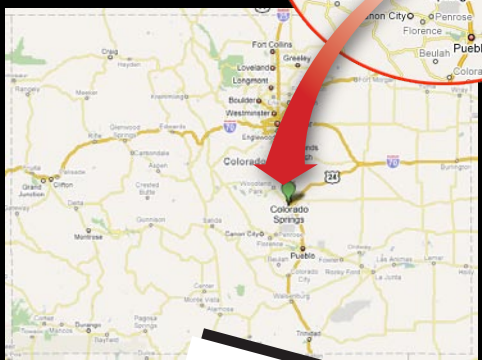
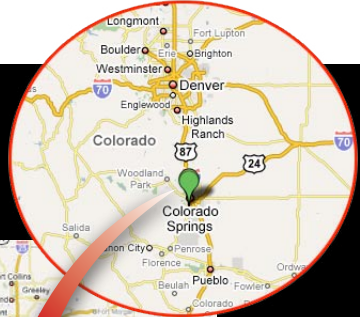
PRIVATE HANGAR



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**REDFORD Corporation**  
 Linear (Aliphatic) Urethane  
**U31-1201**

**Recommended Uses:**  
 Aircraft hangars, industrial concrete floors

**Solids by weight:**  
 Clear formula - 64% / 2  
 Colors (based on 49% / 2)

**VOC:**  
 Part A clear - 1.41 lbs/gal  
 Part A color - 1.41 lbs/gal  
 Part B - 2.2 lbs/gal

**Theoretical coverage per mixed gallon:**  
 900 sq ft @ 1 mil  
 900 sq ft @ 2 mil

**Colors:**  
 Clear, light gray, dark gray, red, green, blue, brown, and custom colors

**Finish:**  
 High gloss, satin

**Recommended film thickness:**  
 1 to 3 mils wet

**Mix Ratio:**  
 2:1 by volume

**Shelf life:**  
 One year

**Packaging information:**  
 5 gallon kit - 2 gal Part A, 1 gal Part B  
 Part A color - 8.25 lb per gal  
 Part B - 9.1 lb per gal  
 Weight net approx. 44.5 lbs total kit

**Part E life:**  
 1 to 2 years, longer at lower temperatures

**Chemical resistance:**

Weak acid	Acetone	Solvents
Strong acid	Alcohol	Gasoline
Alkali	Water	Oil
Organic solvents	Mineral spirits	Paints
Hydrocarbons	Greases	Adhesives
Alkaline salts	Aluminum	Stainless steel
Aluminum	Steel	Concrete
Galvanized steel	Brass	Copper
Stainless steel	Carbon steel	Aluminum
Aluminum	Steel	Concrete

**Aluminum Resistance:**  
 Take Abrast (3.7 Wheel #80) 100, 500 cycles (avg test) - 25 mg

**Impact Resistance:**  
 Greater than 10 ft. (ft.) - A. Remov. 100  
 B. Dist. 100

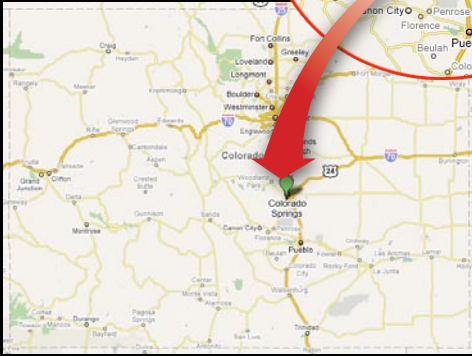
**Hardness:**  
 Shore D 64

**Flexibility:**  
 No crack on 18" bend

**Cure Schedule:**  
 Tank Part - 1 to 6 hours  
 Room - 6 to 10 hours  
 Light cure - 24 hours  
 Full cure - 3 to 4 days  
 Do not use cases for temperatures above 70 F.



Final topcoat of U31-1201 applied: Aircraft moved in September 2008.



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After Mr. Hannaman's hangar installation, hangar owners in the **Colorado Springs Air Park** and through their **ASSOCIATION** and the **DEVELOPER (Rob Martin)**, they contracted for seven (7) additional hangar floors.

Photographs below show those seven (7) hangars in the preparation and coating process:

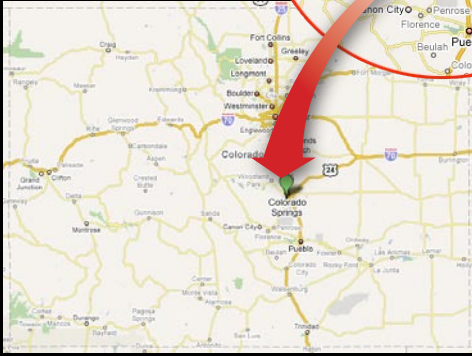
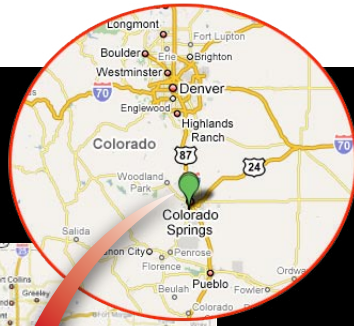
1. Acid etch/detergent clean/power scrub/diamond grind/power sand.
2. Crack fill/repair floor imperfections (E31-1204/E31-1202).
3. Apply E31-1203 epoxy primer.
4. Apply 1st color topcoat (U31-1201).
5. Apply 2nd color urethane topcoat (U31-1201). The topcoats to be white.
6. Clean up/depart.



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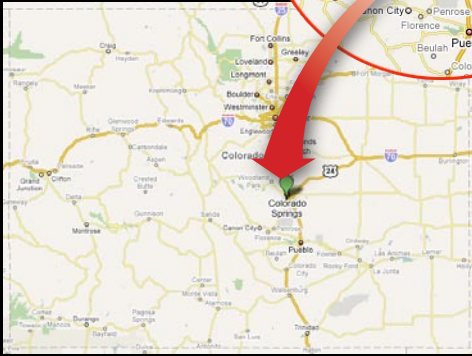
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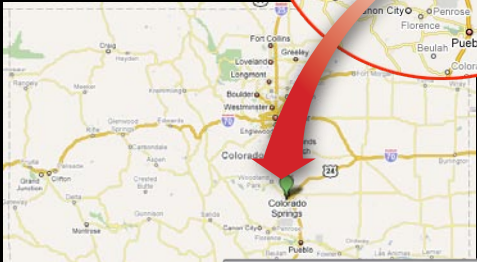
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**Did this project pose any unique problems?** Yes, the control joints were caulked prior to our arrival (most of them) with a poly urea caulk that our epoxy/urethane system developed poor adhesion to (the caulk "telescoped" through the epoxy/urethane system showing ridges). All of this caulk was started without our knowledge and prior to our arrival. On arrival, we did comment, "we did not think there would be a problem coating the poly urea caulk."

**Solution:** We had to grind and sand down the poly urea caulk to provide adhesion for the epoxy primer and to create a smooth transition on the floor (because the high gloss polyurethane exaggerates everything). Again, we had to sand and grind down many times exposing the poly urea caulk which "fish-eyed" through the U31-1201 topcoats (all of this is shown in the photographs below). Besides the grinding/sanding of the poly urea caulk, we had to apply extra coats of E31-1202/U31-1201, all at considerable extra expense and time. **The main point**, we are not blaming anyone: we will chalk this up to experience.

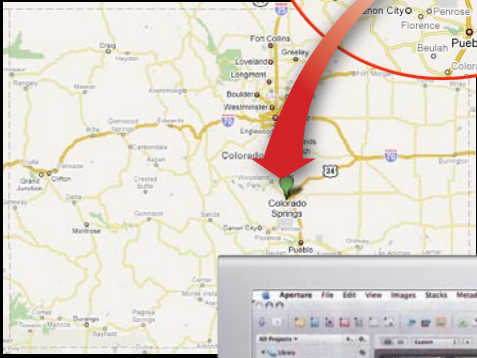




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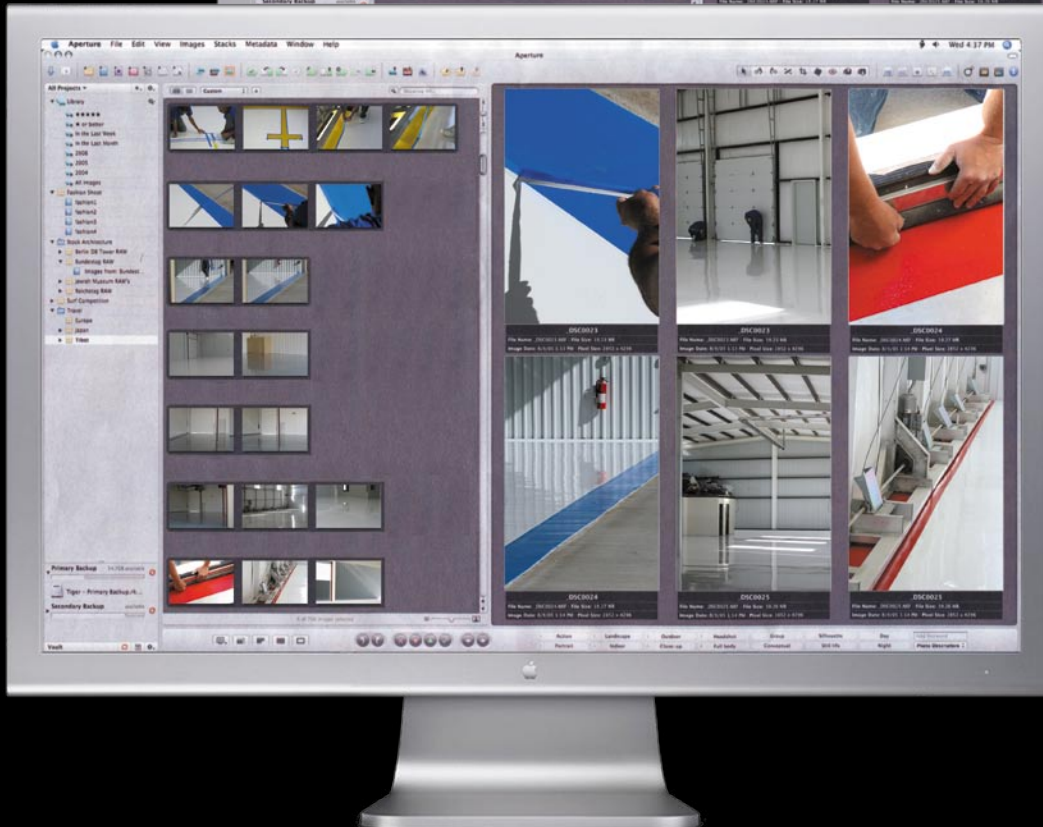
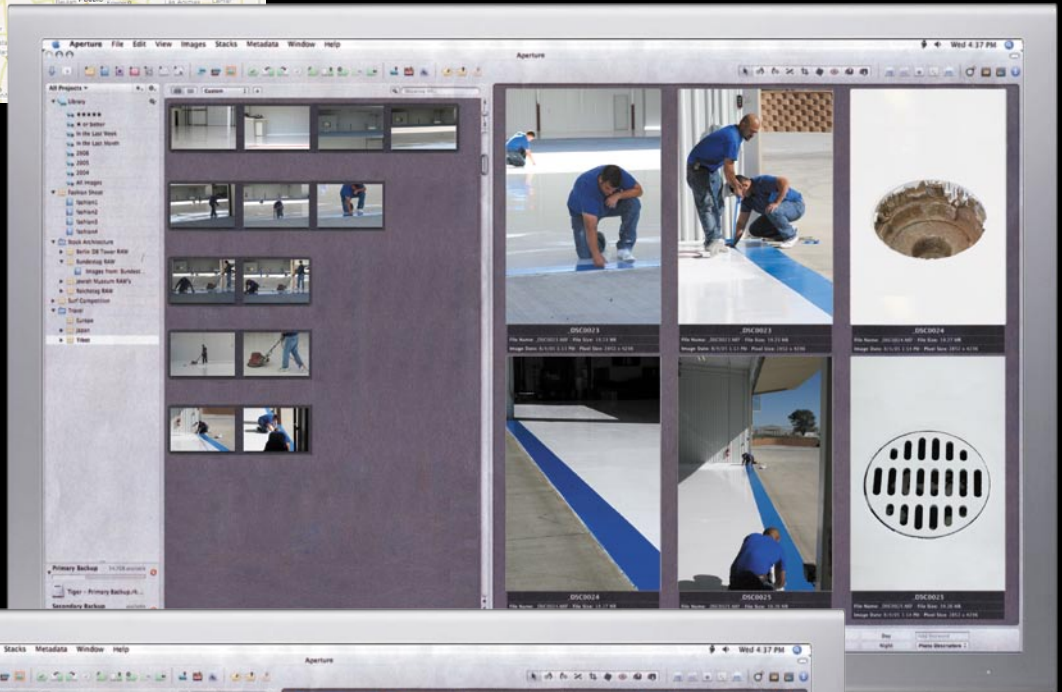
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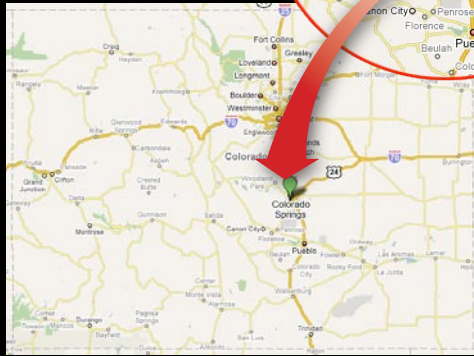




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