




**Dow Chemical Company**  
8400 Garfield Rd.  
Freeland, MI 48623



 combines the power of science and technology with the “Human Element” to passionately innovate what is essential to human progress. The Company connects chemistry and innovation with the principles of sustainability to help address many of the world’s most challenging problems such as the need for clean water, renewable energy generation and conservation, and increasing agricultural productivity. **Dow** diversified industry-leading portfolio of specialty chemicals, advanced materials, agrosiences and plastics businesses delivers a broad range of technology-based products and solutions to customers in approximately 160 countries and in high growth sectors such as electronics, water, energy, coatings and agriculture.




In 2009, **Dow** had annual sales of \$45 billion and employed approximately 52,000 people worldwide. The Company’s more than 5,000 products are manufactured at 214 sites in 37 countries across the globe.

To accomplish this vast, world wide business, **Dow** operates one of the largest, well run flight departments in the world.



Last coated ten (10) years ago, this photograph was taken at the project start in August 2010.

**Challenges and Obstacles To The Recoating Of The  Hangar Floor:** The physical punishment of heavy aircraft tires rolling over the hangar door threshold had broken the lip of the slab, necessitating a repair utilizing a solventless (100% solids) epoxy resin and considerable time with a diamond grinder. Additionally, re-bar had corroded/“swollen” and opened the surface of the concrete. Additionally, large amounts of fluids contaminated the existing coating in the chemical storage area. Finally, years of traffic have taken toll on the integrity of the surface, and as a consequence, we made over 1,500 spot repairs on the previously coated hangar floor prior to two (2) applications of **U31-1201** high performance urethane.



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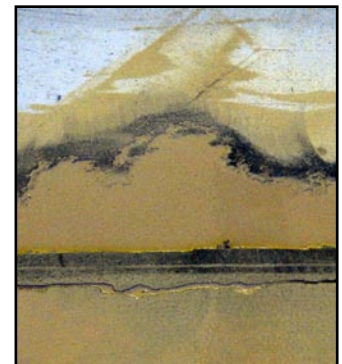
**DOW CHEMICAL COMPANY** Hangar Floor Case History Freeland, MI



Close up of initial floor preparation / Diamond grinding spalled/cracked areas of the hangar floor / reading for spot priming with **E31-1203** / **E31-1202** / **E31-1204**



Coating preparation complete (sanding and detergent cleaning) / first application of **E31-1202** 100% solids epoxy applied (for concrete restoration / repair of the spalled, cracked areas of the concrete)





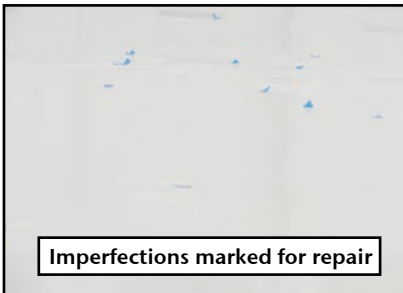
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**DOW CHEMICAL COMPANY** Hangar Floor Case History **Freeland, MI**



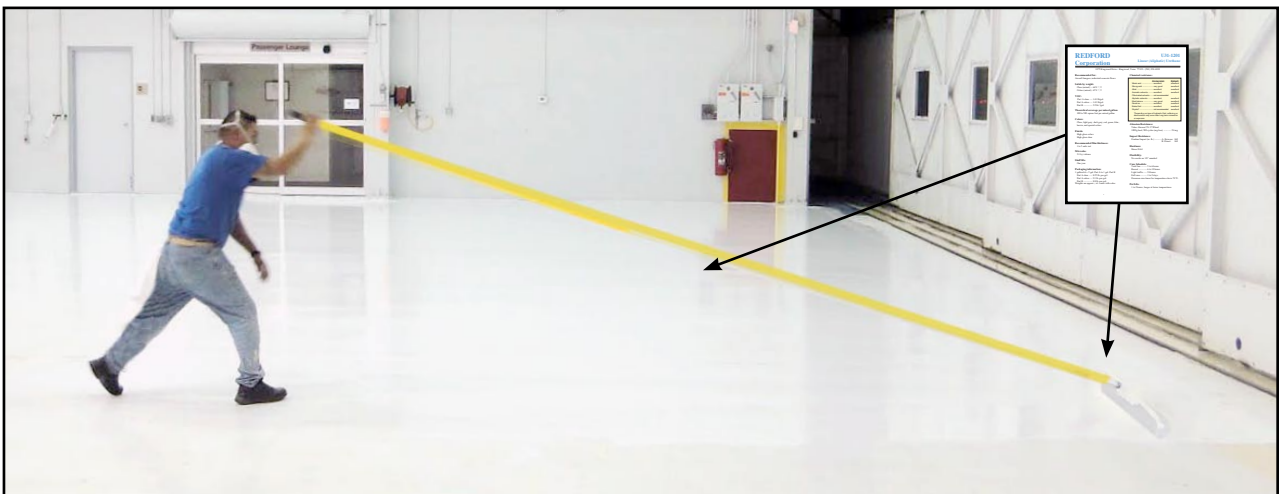
Hangar floor cleaned / sanded / screened / solvent (acetone) wiped



Imperfections marked for repair



Spot repairs complete



First U31-1201 topcoat / high performance urethane being applied



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**Medium gray U31-1201 walkway starting to be taped off / installed**

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

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

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

**Solids by weight:**  
Clear (mixed) ... 64% +/- 2  
Colors (mixed) ... 67% +/- 2

**VOC:**  
Part A clear ... 3.43 lb/gal.  
Part A colors ... 3.41 lb/gal.  
Part B ... 2.2 lb/gal

**Theoretical coverage per mixed gallon:**  
300 to 500 square feet per mixed gallon

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

**Finish:**  
High gloss clear

**Recommended film thickness:**  
3 to 5 mils wet

**Mix ratio:**  
2:1 by volume

**Shelf life:**  
One year

**Packaging information:**  
3 gallon kit = 2 gal. Part A to 1 gal. Part B  
Part A clear ... 8.25 lb. per gal.  
Part A colors ... 9.1 lb. per gal.  
Part B ... 8.8 lb. per gal.  
Weights are approx.; wt. varies with color.

**Chemical resistance:**

	Immersion	Splash
Weak acid	excellent	excellent
Strong acid	very good	excellent
Alkal	excellent	excellent
Aromatic solvents	excellent	excellent
Chlorinated solvents	not recommended	excellent
Aliphatic solvents	excellent	excellent
Most ketone	very good	excellent
Gasoline	excellent	excellent
Brake fluid	excellent	excellent
Oil/grease*	not recommended	excellent

\*Depending on type of hydraulic fluid, softening or discoloration may occur after long term immersion or exposure.

**Abrasion Resistance:**  
Taber Abraser CS-17 Wheel  
1000g load, 500 cycles (mg loss) ..... 24 mg

**Impact Resistance:**  
Gardner Impact (in. lb.) ..... A. Reverse: 160  
B. Direct: 160

**Hardness:**  
Shore D-64

**Flexibility:**  
No cracks on 18" mandrel

**Cure Schedule:**  
Walk free ..... 5 to 6 hours  
Recoat ..... 6 to 10 hours  
Light traffic ..... 24 hours  
Full cure ..... 3 to 5 days  
Decrease cure times for temperature above 70 °F.

**Pot Life:**  
1 to 2 hours, longer at lower temperatures.

**U31-1201 Linear Aliphatic Urethane**

**Hangar door "pockets" starting to be cleaned / prepared for coating**



**Hangar door "pockets" after preparation and recoating started - Dark gray U31-1201**



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**Dow**  
**Dow Hangar 5**

**REDFORD Corporation**  
**DISTINCTIVE HANGAR FLOORING SYSTEMS**

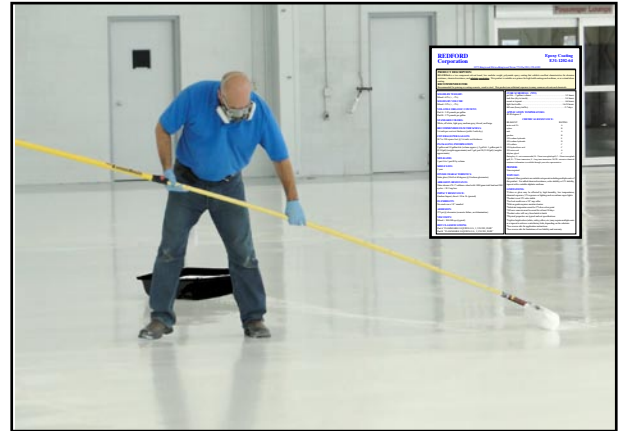
<p><b>SURFACE SAMPLES</b></p> <p>U31-1201—Light Gray (Heavy non-skid)</p> <p>U31-1201—Light Gray (Medium non-skid)</p> <p>U31-1201—Light Gray (Light non-skid)</p>	<p><b>POLYMER COATINGS COLOR CHART</b></p> <table border="1"> <tr><td>BLACK</td><td>RED</td></tr> <tr><td>CHAR GRAY</td><td>BROWN</td></tr> <tr><td>DK GRAY</td><td>TAN</td></tr> <tr><td>MED GRAY</td><td>BEIGE</td></tr> <tr><td>LT GRAY</td><td>LT BLUE</td></tr> <tr><td>OFF WHITE</td><td>BLUE</td></tr> <tr><td>WHITE</td><td>GREEN</td></tr> </table> <p>• Coatings also available in Clear. • Custom and safety colors are available upon request.</p> <p><small>REDFORD Corporation • 1075 Kingswood Drive Suite 206 • Kingwood, Texas 77339 (281) 308-4100 (Voice) • (281) 308-4643 (Fax)</small></p>	BLACK	RED	CHAR GRAY	BROWN	DK GRAY	TAN	MED GRAY	BEIGE	LT GRAY	LT BLUE	OFF WHITE	BLUE	WHITE	GREEN
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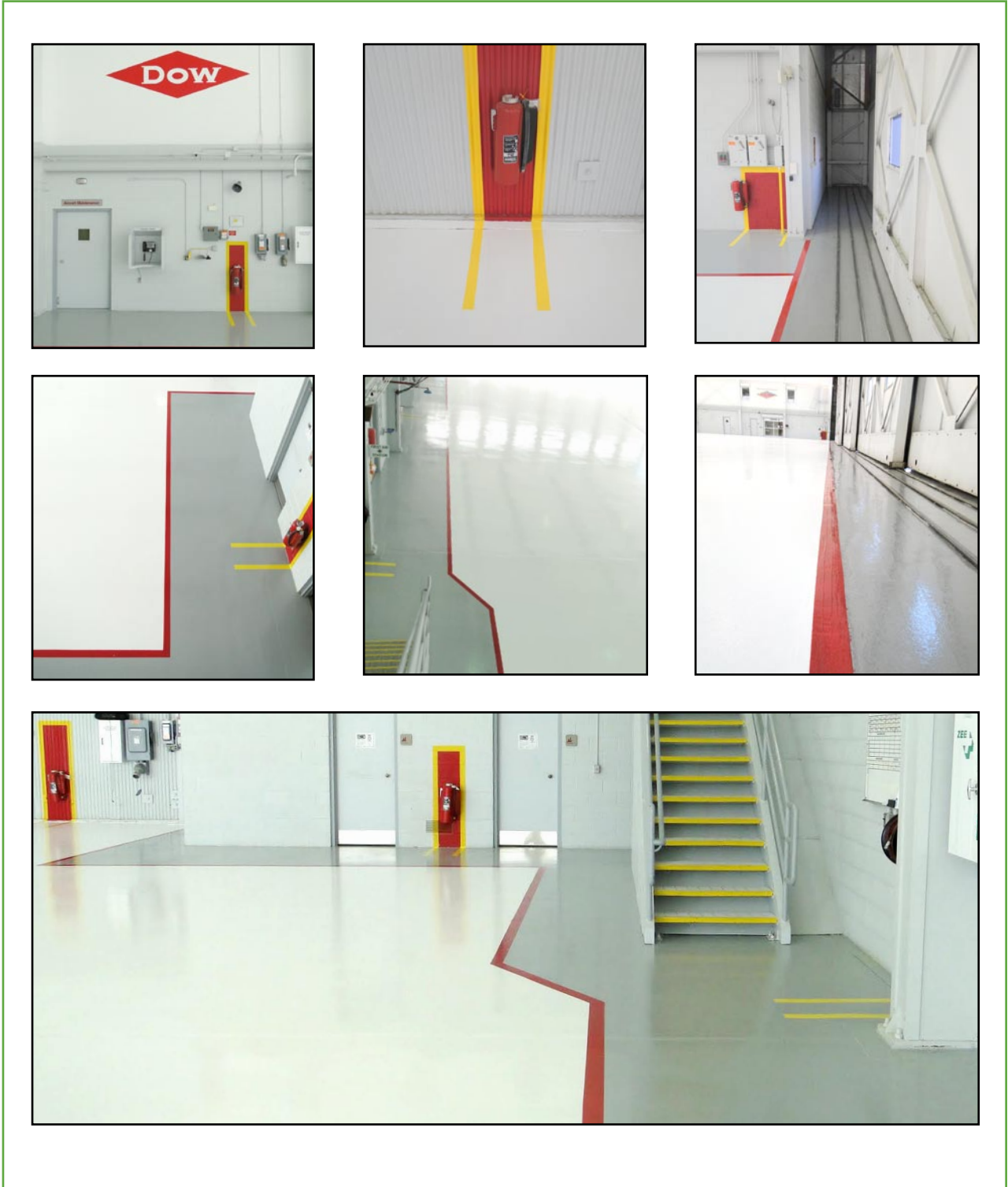




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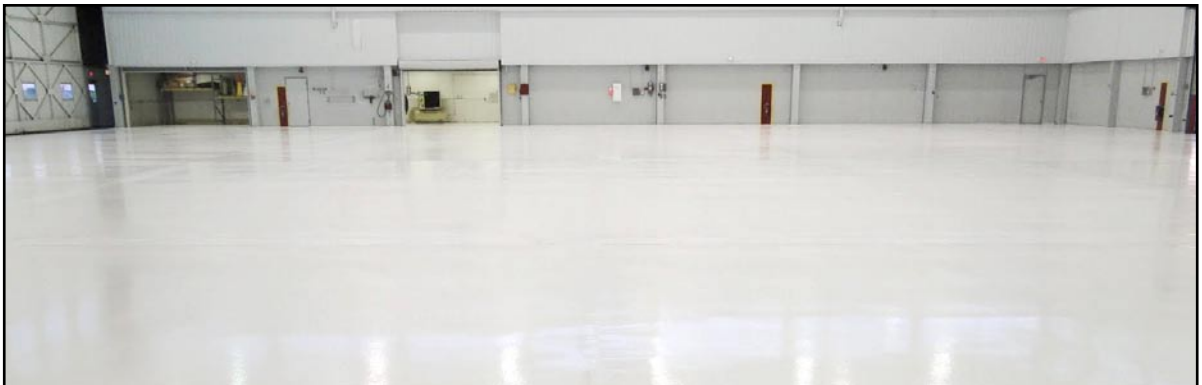




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Finished hangar floor



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