

## FluoroThane AD

FluoroThane® AD is a 2-step, ~20 micron, air-dry, superhydrophobic coating that is easily applied by spraying or rolling. When coated with FluoroThane, water forms beads and rolls-off the surface. This prevents water-film formation and reduces ice build-up.



### **Appearance and Performance:**

The coated surface is frosty in appearance due to nanoparticles on the surface. Super-hydrophobic performance is retained under most conditions and for extended periods of time. The system is used for anti-wetting, anti-icing and anti-corrosion applications.

### **Durability:**

FluoroThane™ repels rain, ice and snow for up to 5 years. The FluoroThane™ coated surface may be washed with a hose spray, but handling or rubbing it, will reduce performance.

### **Coverage:**

Apply by spraying or rolling. However, spray application provides the best and most consistent results. Coverage will vary by thickness of coating applied. Coverage of 500 ml (x2) of AD is approximately 10 square meters.

### **Directions:**

The temperature of the surface to be sprayed should be between 45°F and 95°F. Keep containers at room temperature prior to use. All surfaces need to be dry and free from wax, grease and polishes for good adhesion.

First shake the can of PRIMER vigorously for 30 seconds. Hold the spray-gun vertically 8-10 inches from the surface. Depress the trigger button fully. Move the spray-gun evenly across the surface covering 6-10 inches per second. Apply half overlapping strokes 3-4 inches apart. Shake the reservoir for a few seconds every 60 seconds. Allow the PRIMER to dry for 10 minutes or more before applying the TOP-COAT.

In the USA the TOP-COAT is provided ready for spraying. For projects outside the continental united states, add acetone to the “dry-powder” TOP-COAT. Add 666 grams of acetone to 1000 ml bottles or 2636 grams of acetone to gallon cans and shake the container vigorously for 30 seconds. Hold the spray-gun vertically 8-10 inches from surface. Depress the button fully. Move the spray-gun evenly across the surface covering 6-10 inches per second. Apply half overlapping strokes 3-4 inches apart. Shake the reservoir for a few seconds every 60 seconds. Allow the coating to dry for over 24 hours before exposing to rain. For best long-term performance avoid touching the coated surface.

### **UV resistance:**

FluoroThane shows complete resistance to 280 to 380 nm UV exposure that could be expected during 5 years at equatorial installations. Surface analysis after prolonged exposure showed no evidence of damage, erosion or water penetration.

### **Temperature Cycle Testing:**

FluoroThane is uncompromised by rapid temperature cycling (-45°F to 85°F 100X) and can be expected

to perform well in both cold and hot environments.

**Salt Fog and Chlorine Exposure:**

FluoroThane is functionally uncompromised by the extremely corrosive chlorine atmosphere and can be expected to perform well in many other corrosive environments. FluoroThane showed complete or substantial resistance to high salt and high humidity environments that are expected for marine or coastal installations. No visible corrosion of metal substrate after 1,000 hours of salt fog.

**Performance:**

FluoroThane™ exhibited no significant loss of contact angle after 240 hours and 2400 inches of rain. In subsequent tests, FluoroThane™ had 145° contact angles after exposure to extreme rain at 60 inches per hour for one hour. The coating and substrate remain dry under 1 foot of water for one month.

**History:**

FluoroThane AD has been available for commercial applications since 2009. This includes large applications such as radomes, 5G modems and anemometers (measuring wind speed) worldwide.

**Substrates:**

Recommended for metal, glass, fabric, plastic, rubber, foam, and gelcoat.

**Limitations:**

Excessive abrasion will reduce performance. Organic solvents will reduce performance.



**Purchasing and Shipping**

FluoroThane samples are offered at [www.CYTONIX.com](http://www.CYTONIX.com) or by calling Cytonix at 301-470-6267. The PRIMER for FluoroThane AD is water-based and can be easily shipped worldwide. The TOP-COAT is shipped “dry” (solvent-free) and is also easy to ship.

Color	Standard frosty white
Solids percent	~10%
Flammable solvents	Primer: no, Top-Coat: Yes
Storage temperature	20-30°C
Shelf life	1 year
Weatherability	1 - 5 years (varies based on environmental conditions)
Dielectric constant	3 at 100 MHz
Electrical resistivity	~2 tera ohms
Rapid aging, UV and rain chamber; exposure time versus water contact angle	-- 1 year (7 days in chamber): 144° -- 5 years (25 days in chamber): 143° -- 10 years (48 days in chamber): 143°
Taber abrasion	Super-hydrophobic after 10 cycles with CS10 wheel

**Copyright Cytonix LLC**

The information in this document is believed to be correct on the date of issue. Judgments of the suitability of the information for the purchaser’s purposes are the purchaser’s responsibility. Although reasonable care has been taken in the preparation of this information, Cytonix extends no warranties, makes no representations, and assumes no responsibility as to the suitability of the information for the purchaser’s application. VS20190721

8000 Virginia Manor Rd, #130  
Beltsville, MD 20705, USA  
[www.cytonix.com](http://www.cytonix.com)  
[emailbox@cytonix.com](mailto:emailbox@cytonix.com)  
301.470.6267