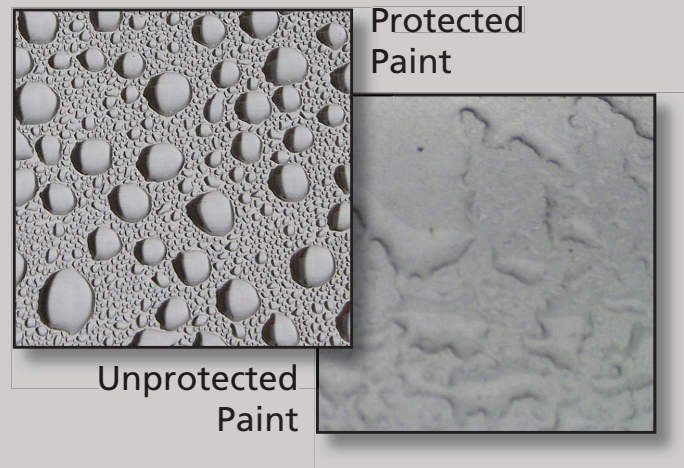


# Toughguard® Protection...



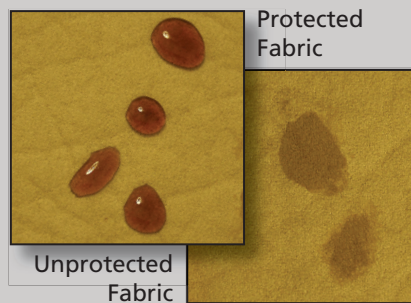
- Preserving your aircraft's appearance
- Reducing maintenance time and cost
- Protecting your investment

Toughguard uses nano-technology to bond with the paint and create a perfectly smooth surface, resisting the dirt accumulation that occurs in the 'hills and valleys' our eyes cannot see in painted surfaces. If allowed to accumulate in the surface imperfections, water and dirt will collect and 'sheet' and the paint's gloss will decrease. Waxes wash away within one month; Toughguard does not. Toughguard allows water to bead and dirt to wash away completely without accumulating – insuring a better, longer lasting shine.

Unprotected Leather/Vinyl (LEFT)



(RIGHT) Protected Leather/Vinyl



Protected Fabric

Unprotected Fabric

*Toughguard is designed to prevent cosmetic damage due to chemical interaction of environmental agents such as oxidation from UV rays, tree sap, acid rain, bugbird droppings, and water spots. This does not mean that your aircraft will never encounter these elements – but their effects will be minimized or eliminated. It is always best to wash/remove environmental elements as soon after they occur on your aircraft as possible. With Toughguard and some care, you can prevent these elements from becoming permanent reminders on your aircraft.*

## TOUGHGUARD®

ULTIMATE PROTECTION SYSTEMS



### TOUGHGUARD®

ULTIMATE PROTECTION SYSTEMS  
AUTO • MARINE • AIR | PAINT • VINYL • LEATHER • FABRIC

PO Box 1981 | Beaverton, OR 97075  
800 988 2710 | [www.toughguard.com](http://www.toughguard.com)

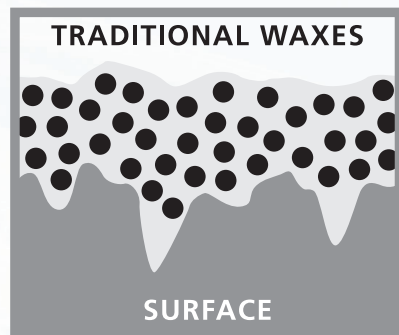
# Aircraft



## Key Benefits...

Why Toughguard is better than waxes or polishes...

The heat from the sun (solar convection) melts the wax that lays on surfaces. Because waxes are hard and viscous, they plate over the surface and do not penetrate into the pores. Waxes have very little resistance to detergents and are easily washed off with each wash. When left out in the sun, the exposed surfaces quickly heat up. The wax melts and, while in a molten state, dust, industrial fallout, exhaust fumes and any other pollutants floating in the air and water are absorbed into molten wax. Waxes must be constantly applied to maintain a good protection.



Why Toughguard is better than silicone based products...

Silicones are made with 'ease of application' in mind. While they are easy to apply, silicones penetrate into the pores of the surface and eventually into the metal of the aircraft's body. This ultimately suffocates the treated surface, preventing its ability to expand and contract as it reacts to changes in surface temperature. As the silicones penetrate or drift further into the surface, they leave the surface exposed to elements just as waxes do when they melt or are washed off with a detergent. Depending upon the season, waxes will endure in the summer months for 3 to 7 weeks whereas silicone will hold the protection for approximately 3 to 5 months, depending on the quality of the silicone based product.

# TOUGHGUARD®

ULTIMATE PROTECTION SYSTEMS

## What sets Toughguard® apart:

The actual bonding of the Toughguard to the paint eliminates the need to reapply a protection product repeatedly. Toughguard bonds to and breathes with the paint. It is not a topical application like wax which melts or washes off shortly after the initial application.

The Toughguard system utilizes nano technology, expanding into the pores of the paint to provide a very smooth surface which helps minimize the build up of dirt on the surface and provide a deeper, longer lasting shine.

TOUGHGUARD blends elements to provide a chemically stable protectant that resists environmental, organic and inorganic chemical attacks to the painted surface.

## Aircraft Certifications...

Boeing D6-17487 Revision N  
Exterior and General Cleaners and Liquid Waxes  
Polishes and Polishing Compounds  
Fully Conforms

McDonald Douglas Aircraft Company  
Customer Service Document CSD#1  
Type V: Materials and Procedures for  
Polishing Aluminum Surfaces  
Fully Conforms

AMS 1650B  
Polish, Aircraft Metal  
Type 1: Liquid  
Conforms with Section 3.2.3 through 3.2.9



Raytheon tested and approved for military use and aircraft certified. In 2001, after a 12 month evaluation of over 30 paint protectant products, Raytheon specified Toughguard® as the best product available and is now used to protect the Aegis Radar System on the Arleigh Burke Class Naval Destroyers.