



# BronzeShield™

A Durable, Selectively Removable Clearcoat for the Protection of Bronze

## FIELD TRIAL REPORT

### WAX/REMOVERS

*Testing was conducted in Ohio on an aged (1905) outdoor bronze undergoing routine maintenance. After cleaning the corroded crust with a hot-water power washer, one coat of BronzeShield™ approximately 2 mils thick was applied with an airless commercial spray gun to various locations on the statue to test appearance and removability.*

#### 1) Surface penetration and color:

BronzeShield™ penetrated the corroded crust and formed a stable protective film. After hardening, it preserved the color of the underlying surface; it does not go as deep as wax does, but it does not darken the surface as much as wax, allowing the patina to show through.

#### 2) Surface appearance:

BronzeShield™ in the as-provided sample (field trial) formula is semi-glossy. We were successful in achieving a desired

satin appearance with the application of paste wax over the top of BronzeShield™. In this case, BronzeShield™ worked well as a protective underlayer with a finishing sacrificial layer of wax. We are working on a low-gloss formulation for those who prefer not to wax, or favor a particularly matte finish.





3) Removability:

Note: temperature was circa 40°F.

Recommended working temperature is above 50°F.

The removability was tested in cold outdoor temperatures (40°F) using three removers and a 2500 psi hot water power washer.

Using the 2500 psi hot water power washer without applying any remover first did not remove or damage BronzeShield™.

1. BronzeShield™ Remover gel
2. Smart Strip paste (Dumond Chemicals)
3. Peel Away paste (Dumond Chemicals)

The removers were left on the coated surface for approximately two hours.



1. **BronzeShield™ Remover gel** needed more dwell time on the cold surface than that allowed. (Possibly due to the cold temperatures.) The integrity of the BronzeShield™ coating was

compromised as it should have been, but the coating was only partially removed with the first pass with the power washer.

To remove the coating completely, it needed another pass with the power washer, or a reapplication of remover with additional dwell time. As a result, we are reformulating the remover in a thicker paste form to improve adhesion on cold and vertical surfaces.

2. **Smart Strip**, a moist, thick paste with similar properties to the BronzeShield™ Remover, also successfully compromised the coating. BronzeShield™ was completely removed with one pass of the power washer.



3. **Peel Away Heavy-Duty Paint Remover**, a dry alkaline paste, did not remove or damage the BronzeShield™ coating in the dwell time

allowed, opening the possibility to be used to clean or remove graffiti, dirt or paint without the need to recoat BronzeShield™.





## *About BronzeShield™*

BronzeShield™ is a modified polyester-urethane clear coat formulated using a patent-pending (U.S. Patent No. 11/628,602) cross-linked polymer base designed to protect outdoor sculptures susceptible to deterioration caused by atmospheric corrosion.

BronzeShield™ is both protective and removable while maintaining rigorous environmental standards well below stringent California low-VOC laws.

A zero-VOC non-toxic remover was also formulated to selectively remove the clear BronzeShield™ without damaging the bronze surface or patina.

This combination coating-remover eliminates the need for harmful solvents (e.g. Toluene or Xylenes) or aggressive physical/mechanical means (e.g. sandblasting or wire brushing).

## *Lab testing summary*

See *BronzeShield™ Technical Report December 2012*.

For additional product safety and health information, Material Safety Data Sheets, or Field Trial Reports, please visit our website:

*[www.elinorcorp.com/bronzeshield](http://www.elinorcorp.com/bronzeshield)*

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