



NANOSHIELD™

Windshield Protection

Technical and Performance Overview

Technology Overview

Technical Strategy

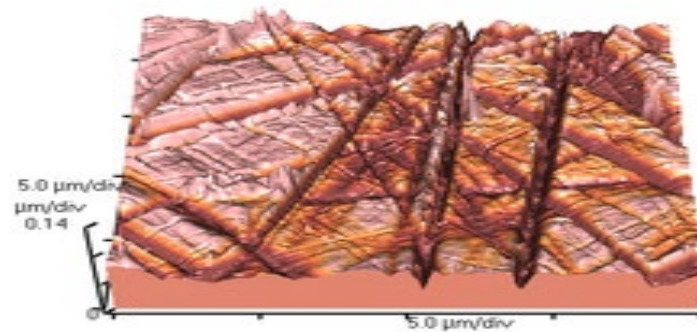
Optimize C-Bond nanoShield™ solution to enable stronger windshield glass products while improving visibility during inclement weather:

Toughness

- Improve resistance to glass breakage due to impact
- Improve resistance to glass breakage due to pressure
- Increase durability
- ***Reduce repair & replacement costs***

Visibility

- Improve visibility during rain with hydrophobic



5 μm ~ 1/5000 of an inch

Chemistry

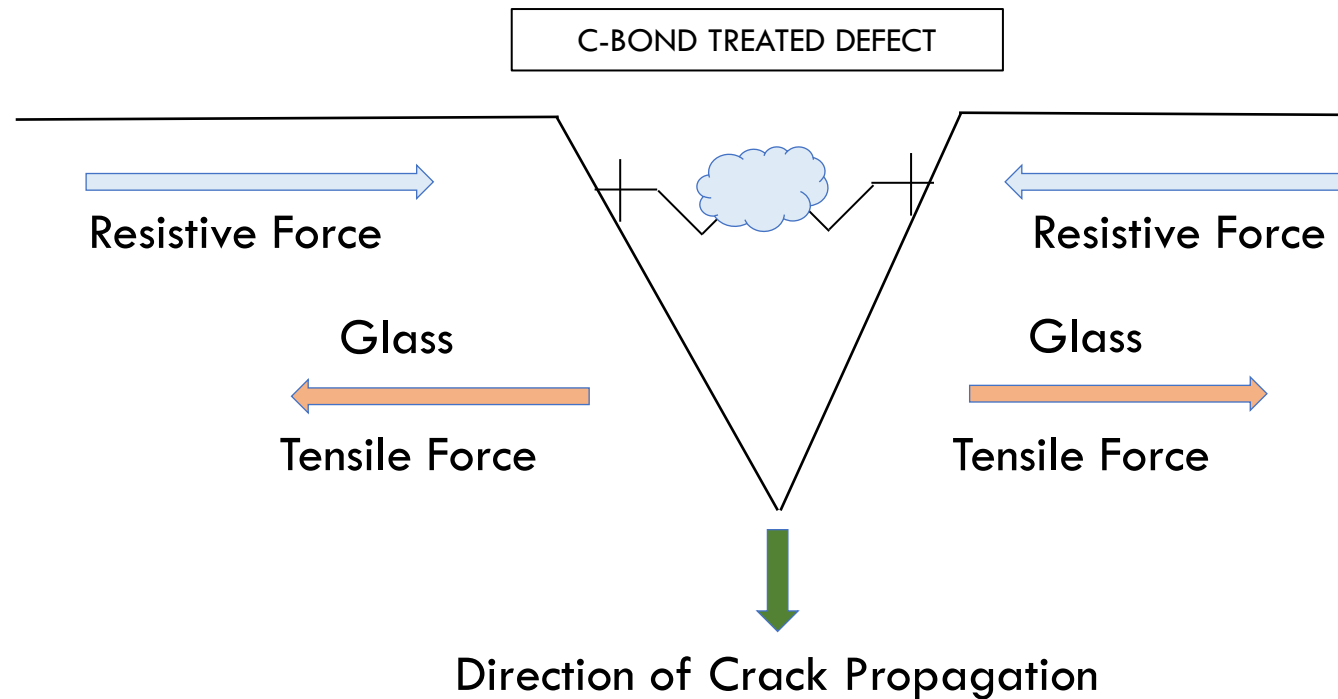
nanoShield™ strengthens glass by bonding with the natural surface flaws in the glass to provide additional resistance to chip & crack formation due to impact, and crack propagation under stress.

nanoShield™ Technology is based on several key components:

- 1) A Silane Coupling Agent;
- 2) An Acrylate Epoxy Adhesive, and;
- 3) A Self-Assembling Mechanism.
- 4) Hydrophobic

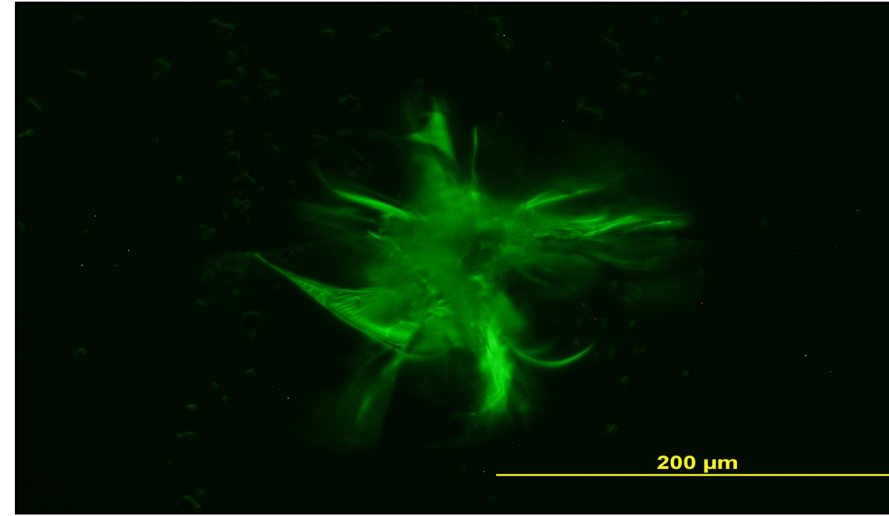
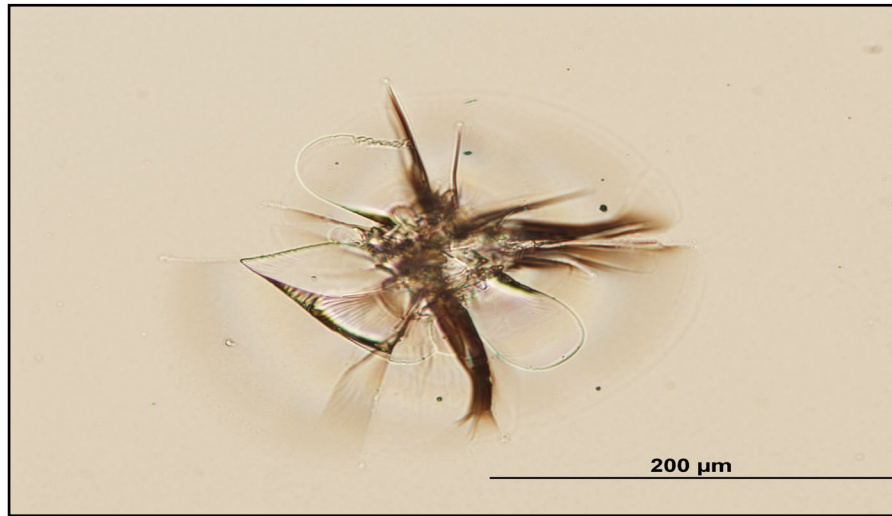
How Does nanoShield™ Work?

nanoShield™ is designed to target and covalently bond inside microscopic imperfections significantly increasing the strength and function of the glass.



Repairing Glass Imperfections

Fluorescent Dye Used To Illustrate nanoShield™ “Micro-Crack” Interaction and Repair



nanoShield™ is not indicated anywhere on the surface except within the crack.

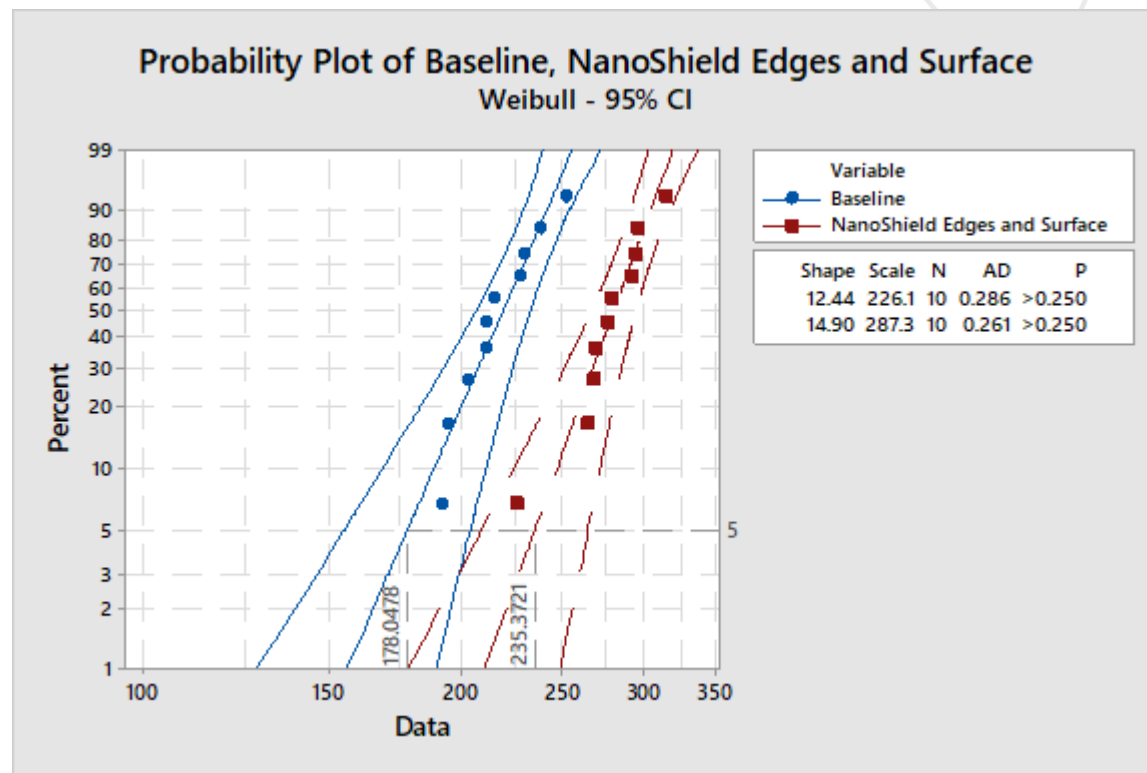
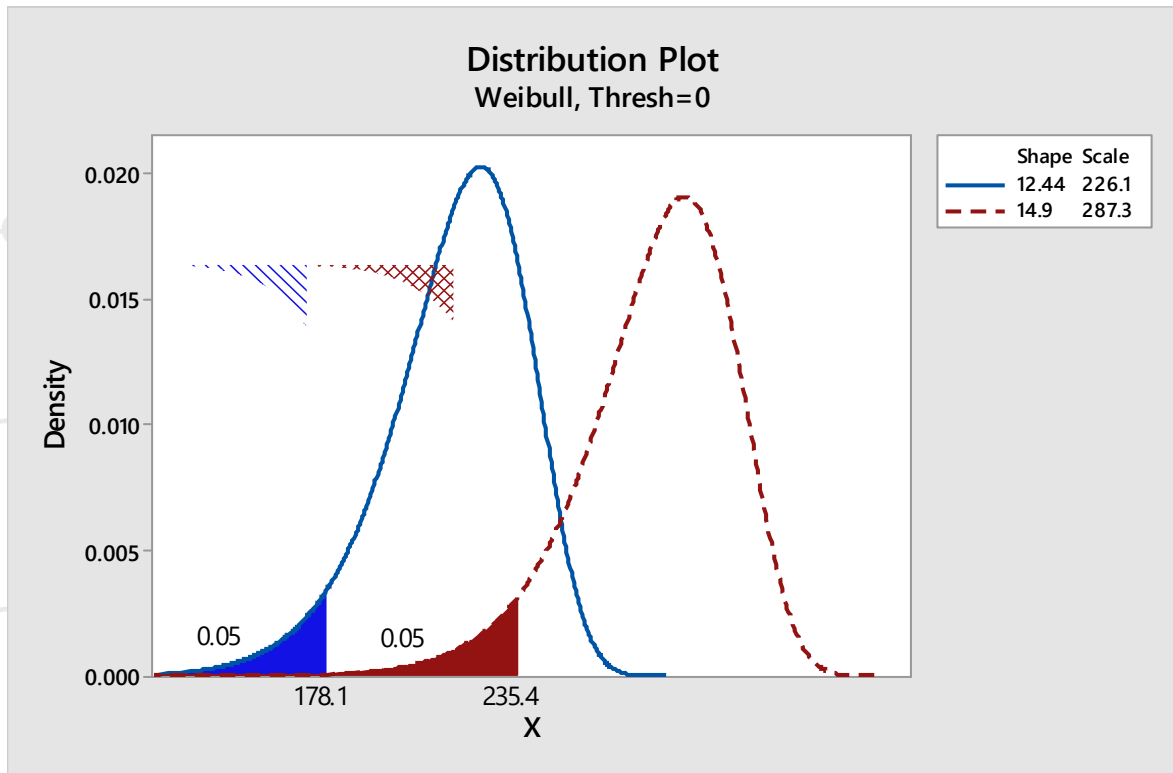
Flexural Strength (Edge) Testing

ASTM C158

Flexural Edge Strength Testing

Results Verify That nanoShield™ Increases Laminated Glass Windshield Flexural Strength

Test Conditions: Three Point Bend Test To Assess Edge Defects For Frameless Windshields



28% Increase In Average Flexural Edge Strength
Statistically Significant Improvement

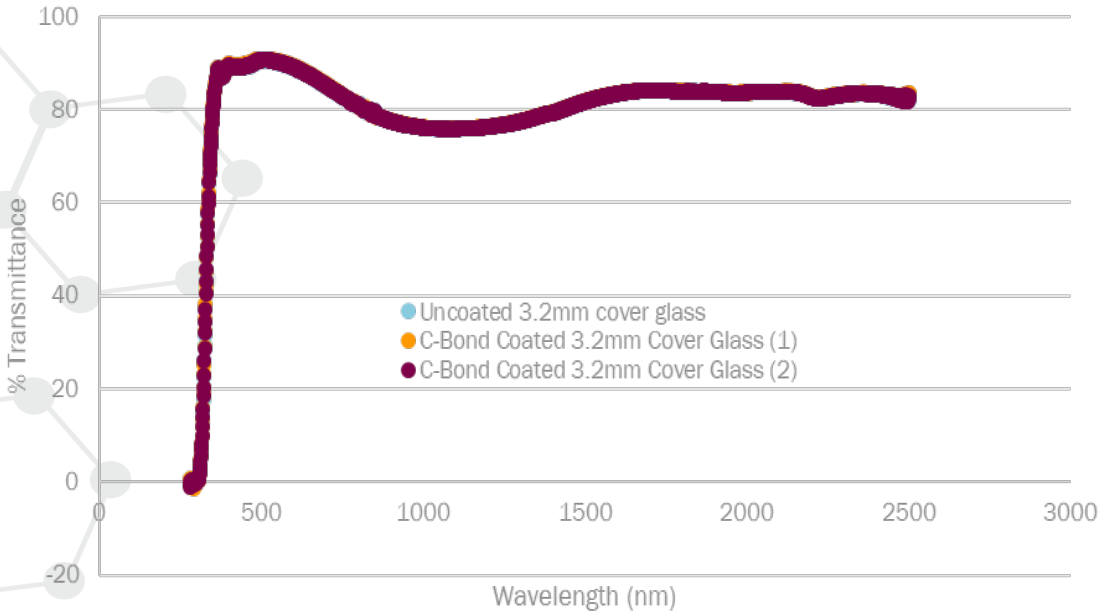
Transmittance and Reflectance Testing

Transmission and Reflective Durability Testing

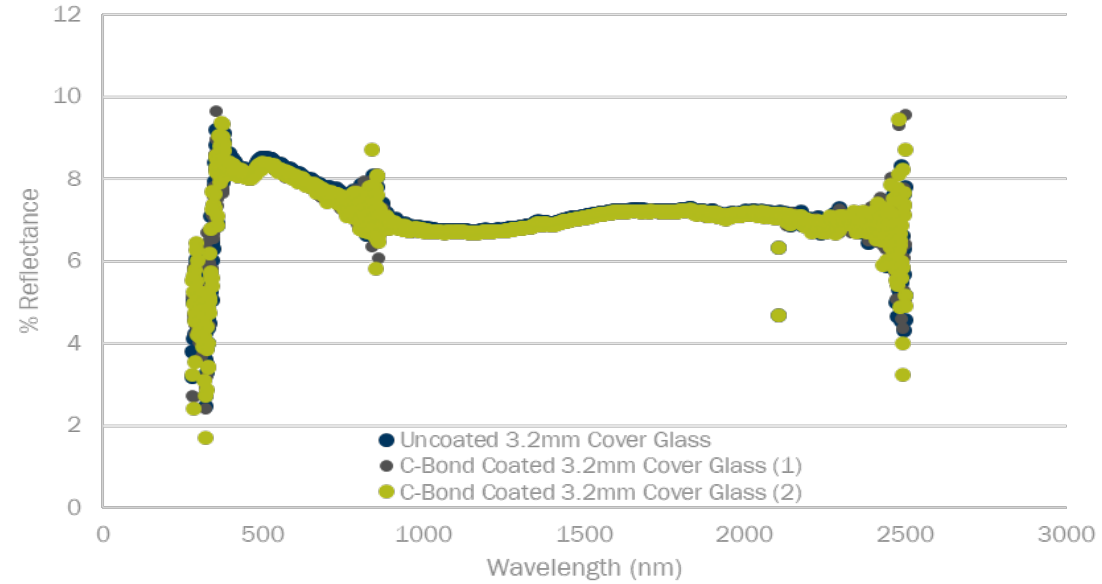
Results Verify that nanoShield™ Has No Effect On Optical Properties

Test Conditions: Spectral Measurements

%T as a function of Wavelength



%R as a function of Wavelength



No Significant Change In Transmission and Reflection

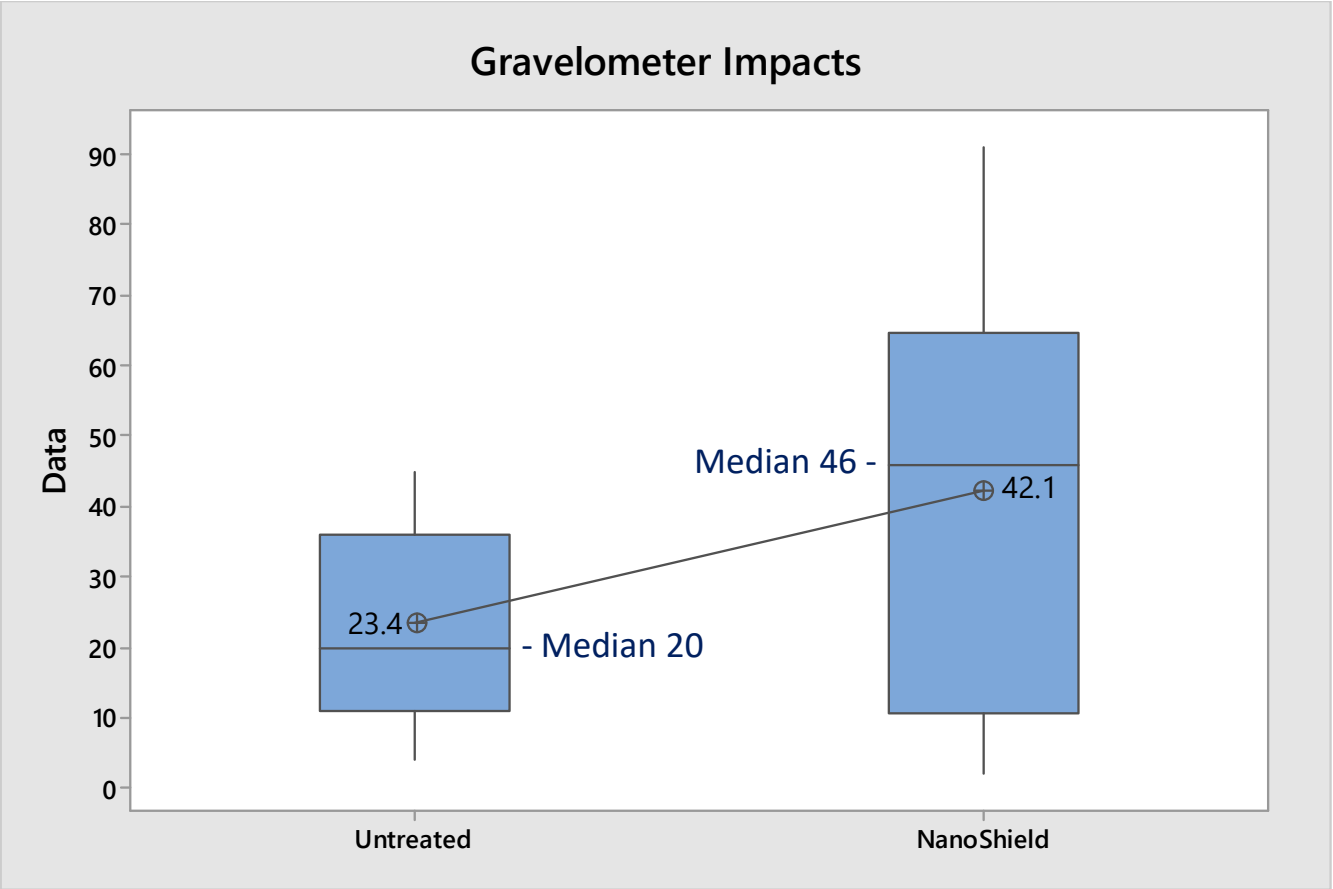
The background features a stack of books, with the spines and pages visible, though they are out of focus. A prominent red horizontal band is overlaid across the center of the image. The text 'Additional Studies' is centered within this red band in a white, bold, sans-serif font.

Additional Studies

Gravelometer Testing

(SAE J400 Modified)

Results Provide Definitive Evidence That nanoShield™ Increases Chip Resistance



- **80% Improvement Average Impact Threshold**
- **130% Improvement Median (Middle Data Point) Impact Threshold**

Statistically Significant Improvements

Maintenance & Results

nanoShield™ Annual Maintenance

Normal wear and tear of the windshield continues and new stress cracks and surface micro-fractures occur from:

- Impact due to road debris
- Stresses applied to the glass by a flexing vehicle body
- Other environmental factors due to weather, etc.

Solution:

To maintain enduring performance **C-Bond recommends re-application of nanoShield™ once a year** to continue protection against chipping, cracking and breakage of the windshield.

nanoShield™ Pilot Program Results

Pilot Program with Leading Global Car Rental Firm Across Several Thousand Vehicles Shows 82% Reduction in Windshield Repair & Replacement Costs*

	C-Bond Pilot Cost	Untreated Actual Cost
June	\$ 2,638	\$87,087
July	\$ 8,817	\$ 111,215
August	\$ 7,633	\$ 121,808
September	\$ 8,556	\$ 111,844
October	\$ 8,569	\$ 233,313
November	\$ 3,065	\$ 118,645
Cumulative (Jun-Nov)	\$ 39,278.00	\$ 783,912
Cost per Vehicle	\$ 11.81	\$ 72.53
Total Savings per Vehicle		\$ 60.71

*3,300 Treated Fleet Vehicles vs 10,800 Untreated Fleet Vehicles.

nanoShield™ Pilot Net Cost-Savings Benefit*

Untreated Windshield Repair/Replacement Cost	\$783,912
nanoShield Treated Windshield Repair/Replacement Cost	- \$39,278
<u>Application Cost</u>	<u>- \$49,500</u>
TOTAL SAVINGS	\$695,134

\$695,134 of pure profit[†] every 6 months for this region!

[†] Potentially more than \$1.5M SAVINGS/PROFIT PER YEAR when all 14,100 vehicles are treated.

How much of a sales increase would be needed to generate the same amount of profit?

*3,300 Fleet Vehicles vs 10,800 Untreated Fleet Vehicles, from previous slide.