



## KEEPING WINDOWS, FACADES & BALUSTRADES SPARKLING!

***Glass is absolutely essential for light and visibility. With its strength, insulation qualities and beauty, there is no other material more widely used in residential and commercial construction – or in transportation – than is glass.***

***Yet, whatever its form and many benefits, the natural surface of glass is hydrophilic, non-conductive and microscopically irregular. It attracts and holds water and water-borne soil on its surface. It also permits electrical charges to remain on the surface and attract dust and dirt. Moreover, its microscopic pores trap a myriad of reactive chemicals, particulate matter and atmospheric contaminants that ultimately lead to weathering, staining, erosion and soiling.***

***Can windows, facades & balustrades ever be self-cleaning? Not until it rains distilled water! Let's look at the facts!***

**The Impact of Water on Glass:** Rain and coastal spray from lakes and oceans contain enough dissolved gases, carbonic acid, chlorides, sulfates, nitrates, ammonia and salts to make it chemically active when allowed to evaporate on the glass surface. These residual chemicals and minerals combine and bond to the microscopic pores of glass, where they buildup as water-insoluble, inorganic lime scale, rust and mineral deposits to obscure the clarity of glass and present the greatest cleaning challenge.

**A Surface-Destroying Vicious Cycle:** To remove water-insoluble soil, cleaning professionals have turned to stronger and stronger cleaning aids; including powerful acids and alkalis, penetrating solvents, heavy duty detergents and a broad range of abrasive cleansers. The inevitable result of using such harsh cleaning aids is a surface destroying vicious cycle: ***The stronger the cleaning action, the more it opens the microscopic pores of the surface. The more open and vulnerable the pores, the deeper the new soil penetrates and the greater its adhesion and build-up...and the stronger the cleaning action required to remove the soil...with greater and greater destruction of the surface finish.*** Although microscopic at first, this cycle ultimately leads to glass that is visibly rough, exhibits the loss of clarity and becomes infinitely more prone to soiling.

**Better Glass?:** Manufacturers of glass have responded to this downward wear cycle with better glass formulation, production processes and polishing techniques that have improved the density and durability of glass. Although technically significant, these improvements have failed to keep pace with the ongoing impact of the water and soil - and the increasingly more powerful cleaning agents - to which their surfaces are subjected. Some glass manufacturers have turned to "hard coating" their glass – using titanium dioxide, fluorocarbons, an array of silicas and other photocatalytic techniques to make glass permanently "self-cleaning."

Unfortunately, such coatings only exhibit marginal initial improvement in chemical and physical resistance compared to unmodified glass offered by the same manufacturer. In use test after use test, and notwithstanding the exaggerated claims being made for them, absolutely no difference could be found between treated and untreated specimens; even when end-users observe the prohibition against the use of tap water, razor blades, steel wool, abrasive cleansers or solvents when washing glass.



**Unelko Corporation:** For over thirty years, Unelko has been a leading manufacturer of water repellents, surface treatments and protective coatings. Their primary focus has been on the **preservation, enhancement and “preventive cleaning”** of surfaces – ranging from glass, porcelain and ceramics to marble, granite and laminates and concrete, masonry and limestone – whose users could never sufficiently control the environments to which their products were exposed or the manner in which they were maintained. From this ongoing study of the nature and chemistry of water, water residue and everyday soil, **Unelko has demonstrated that the adhesion and build-up of water insoluble soil can only be prevented by making surfaces water and soil repellent.**

**THE INVISIBLE SHIELD®:** This amazing tried & proven “wipe-on” (solvent extended) chemistry applies and bonds an absolutely invisible (nano-scale) water, soil & stain repellent polymer coating to glass, porcelain and ceramic substrates. The coating is unaffected by any soap, solvent or detergent that will not etch or damage an untreated version of the same surface. It will protect glass by dramatically reducing the penetration, adhesion & buildup of hard water minerals...for easier next-time cleaning!

**“Permanence” Versus “Renewability”:** Until the invention of “self-cleaning” glass that will permanently resist the ravages of water, soil and the aggressive cleaners needed to clean an unprotected surface, it is false and misleading to suggest that any polish, coating or integrated finish will ever be “permanent” or last for a specified number of years irrespective of the exposure to which the surface is subjected. Since such claims are totally unrealistic, it remains that **RENEWABLE** water and soil repellent coatings are the only viable technique for the preservation and enhancement of glass windows, facades and balustrades.

**MIRACLE SCRUB®:** No matter how many new glass windows, facades and balustrades are manufactured and sold each year, it is safe to say that at least 500 times that number are actually in use...and are being soiled and water-spotted on a daily basis...and require surface protection to prevent etching and frosting by hard-water minerals. Before such in-use glass is successfully treated with INVISIBLE SHIELD, these windows must be cleansed of all buildup. That’s why Unelko designed and formulated MIRACLE SCRUB; a cream cleanser that will deep clean glass without scratching the surface.

**REPEL™ Glass Cleaner:** And to “touch up” the INVISIBLE SHIELD and clean glass of non-bonded soil and water spots on a daily, weekly or monthly basis, Unelko Corporation now offers its newly-patented REPEL surface care technology that is **non-flammable, non-combustible, VOC-free, non-corrosive, non-toxic and non-irritating to eyes or skin.** This amazing product cleans and simultaneously shields/rejuvenates glass with invisible nano-scale water, soil & stain repellent barrier coatings that reduce the penetration, adhesion and buildup of re-soiling for dramatically easier next-time cleaning!

**Just like Teflon® coated pots & pans did not change the way people cooked or the taste of the food, INVISIBLE SHIELD, MIRACLE SCUB and REPEL just made it infinitely easier to clean glass shower doors and enclosures to keep them sparkling...like new!**