



THE REALITY OF NANO-FILM COATINGS FOR GLASS & OTHER HARD SURFACES

Notwithstanding the world's current enchantment with "nano technology", to apply that mantle to "invisible" (non-pigmented) coatings for glass, porcelain, ceramics, plastics, laminates, polished or painted metals, marble, granite and sealed/varnished wood borders on the inane! **Since none of these coatings can be seen as discrete films even by an atomic force microscope or by X-ray spectrometry**, there is no real world difference between a coating that has a "nano" thickness of a billionth of a meter, an "angstrom" thickness of one hundred millionth of a centimeter or a "micron" thicknesses of a millionth of a meter.

To put coating thickness into perspective, non-pigmented clear coats and pigmented paints are typically bonded to a surface in thicknesses ranging from 1 to 4 or more microns. Stated differently, if the thickness of a "nano" or an "angstrom" coating were represented by the height of a building measured in the number of floors (typically 3 meters in height), a 1 to 10 story "nano or angstrom" building would be equal to more than a 100 million story "micron" building.

Similarly, whether such "invisible" coatings are polymeric or monomeric in structure as formulated for application – and whether they yield films that are monomolecular or multi-molecular in nature – is only important in terms of their performance, i.e., the degree to which they impart water, soil & stain repellency to the treated surface...and the degree to which they are resistant to removal by everyday soaps, solvents and detergents.

What also stretches credulity to the limit is the suggestion by some marketers-manufacturers of "invisible" coatings that performance and durability are somehow related to whether the coatings are applied to the surface using "high tech" open or enclosed-chamber spraying systems or vapor deposit equipment as opposed to ordinary "wipe on – polish in" techniques. It is ironic that those manufacturers of coatings that claim superior performance & durability superiority of their products requiring complex on-line spraying and washing equipment for application – and those claiming the superiority in performance & durability of products using still more complex vapor deposit processes and equipment – all end up furnishing "**after care kits**" containing virtually the same chemistry of the Unelko "wipe on – polish in" transparent polymer coatings that were invented over 35 years ago and which are still being used today throughout the world by original equipment manufacturers, fabricators, installers and end-users alike.

Why the "after care?" Because **all** ultra thin-film coatings are gradually diminished by abrasion ...and require periodic renewal to maintain their peak water, soil & stain repellent performance. Moreover, it is unrealistic for end-users to remove windows, sinks, tubs, showers and toilets in order to send them back to the factory or their installers for renewal of the protective coating... and to re-install the units...and periodically repeat that process ad infinitum. Thus, the so-called "**high-tech**" **on-line application techniques** – and the significantly higher per square meter costs of the formulations, the equipments and the application processes – **are infinitely more costly – BUT NO BETTER** – than the coating technologies designed for "wipe on – polish in" application by both "on-line" manufacturers and **the end-users of their products**.

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