DFI®

DIAMON-FUSION INTERNATIONAL

Easy Cleaning Solution

Tekcoglas Design

With the increasing market demand for quality decorative glass with exquisite design, Tekcoglas Design Pte Ltd is established in 2006 to extend our products and services in the South East Asia region.

In Tekcoglas Design Ptd Ltd, It's our aim to partner with industrial partners to provide clients with top quality products which will be unmatched in the market for their designs and value. We believe that our wide range of products, whether it is Sculptured to Artistic Glass; Chemical Etching to Laminating Glass, will achieve the most unique and creative effect.

In addition, we can help to prolong the life, and quality of glass and mirror surfaces, while also reducing the maintenance frequency with our new advance Nanotechnology application,
Diamon-Fusion International® (DFI).

Diamon-Fusion® International

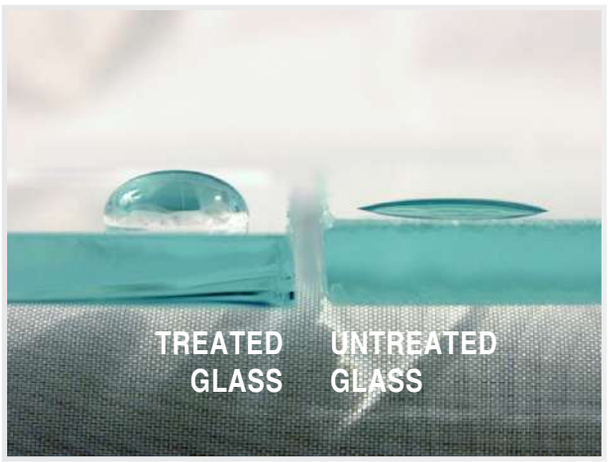
DFI provides hydrophobic protective coatings for glass and other silica surfaces which can save building owners thousands of dollars in costly restoration, replacement glass or construction damage. By using a good hydrophobic coating for your building, these silica surfaces will be easier to maintain, enhance the beauty and provide long term sustainability.

- Glass can become damaged over time due to hard water, concrete leaching, scratching, air conditioning condensation, acid rain and many other environmental elements.

- Treating the glass with Diamon-Fusion® coating ensures longevity and reduces maintenance costs and frequency of cleanings.

- Enhances the appearance of the building, giving building owners an advantage in the highly-competitive commercial real estate leasing environment.

- Diamon-Fusion® is scratch and graffiti resistant and adds more than 20% more brilliance or shine to glass.



DFI's hydrophobic protective coatings provide exceptional cost saving benefits to a building owner by requiring:

- Less Frequent Cleanings
- Less Surface Staining
- Less Corrosion and Etching
- No More Harsh Chemical Cleaners that Damage the Environment
- Reduced Damage from Scratches and Pits
- Reduced Construction and Clean-Up Damage

Save thousands of dollars in restoration from environmental damage by specifying a good hydrophobic coating during the planning phase.

DFI is a proud member of AIA , USGBC and SGBC

How does the chemical bonding work?

DIAMON-FUSION INTERNATIONAL

Here's what makes Patented Diamon-Fusion® Nanotechnology BETTER than the competition!

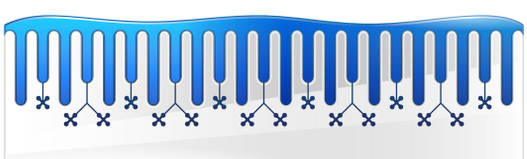
Specially formulated vapors reacts with the moisture(m) on the surface and the silica(s) in the substrate to be treated.

This graphic represent a "magnified" cross section of untreated glass prior to any protective coating.

Untreated Glass with microscopic ridges and valleys.

This graphic is the same cross section after the first step of Diamon-Fusion® is applied.

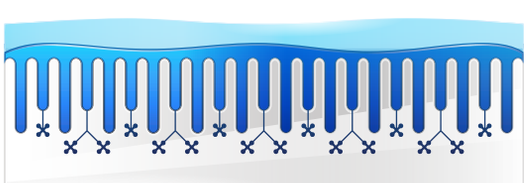
Treated Glass After the 1st step of the process with microscopic ridges and valleys filled in.



The reaction causes a "cross-linked" and "branched" silicone film to be grown from below the surface out; filing in the microscopic indentations and creating a "covalent" bond with the glass.

The graphic shows the complete Diamon-Fusion® patented "cross-linked, branched and capped" silicone film with its superior durability.

Treated Glass After the 2nd "capping" step of the process.

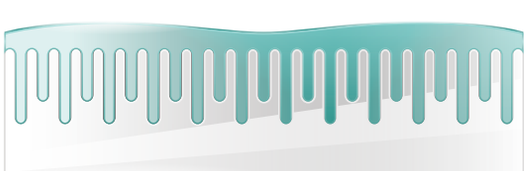


A 2nd specifically formulated chemical solution is introduced to the surface to "cap" the entire chain. This dramatically increases the hydrophobicity and durability, leaving, chemically speaking, no points of attachment for contaminants and creating a truly repellent surface.

Diamon-Fusion's covalent bonds are approximately ten times stronger than hydrogen bridge bonds and much more plentiful.

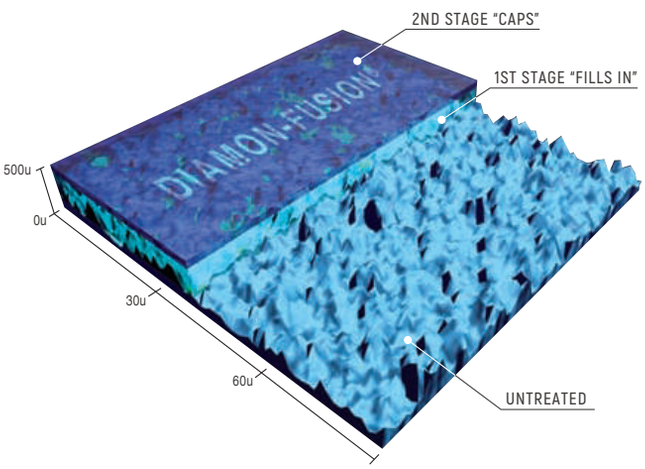
This graphic demonstrates competitive protective coatings that lay on top of the surface with far less durability than Diamon-Fusion®.

This graphic represents glass after most of our competitors complete treatment.



Most of our competitors treatments have Hydrogen Bridge Bonds that do not occur below the surface.

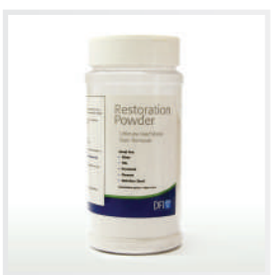
Solution:
DFI Nanotechnology



Treated in DFI's Exclusive Chemical Vapor Deposition Chambers. Maximum Glass Size: 3660x2440mm.

Nano chemistry reactions form covalent bonds making an ultra-thin, super-smooth protective layer of optically clear, highly durable material -- a nanostructured device, making the surface easier to clean and more resistant to weathering.

DFI Nanotechnology Products



Restoration Powder
Ultimate hard water stain remover

Glass Rescue
Glass restoration chemical

Clear - Fusion Pro
1 - step nanotechnology treatment to seal glass

Diamon-Fusion 1 & 2
2 - step nanotechnology treatment to seal glass

Revitalizer
Maintenance chemical to maintain Diamon-Fusion

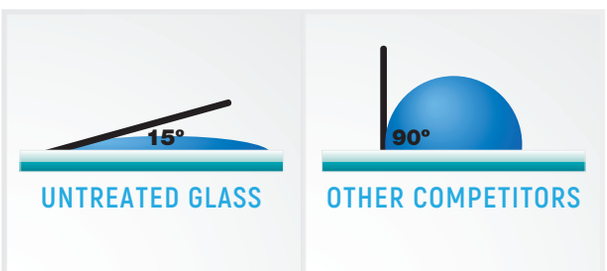
Diamon-Fusion 3 Stage Process
The three stages from cleaning to maintenance for a brilliant finish.

Cleaning	Glass Rescue	Restoration Powder
Application	Clear - Fusion Pro	Diamon - Fusion 1 & 2
Maintenance	Revitalizer	

What are the Benefits?

1 Highly Water Repellent (Hydrophobic)

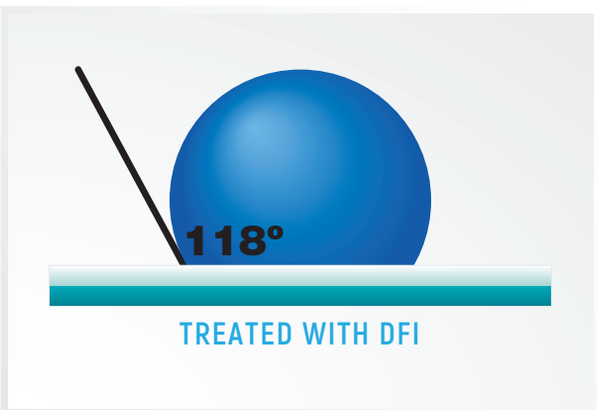
Results in less frequent cleanings and a reduction in mold and bacteria.



If the contact angle between water drops and glass surfaces increase, the water repellence of the surface will increase and will become easier to clean.

Contact Angle Measurements

The contact angle of DFI treated glass surface is about 8 times greater than untreated ones.



After 384 hours of accelerated aging, the contact angle was still 68 degrees which is 4-5 times better than normal glass.

2 Scratch Resistant

LOAD REQUIRED TO DAMAGED SURFACE

Untreated Glass	0.37
Treated Glass with Glass Indenter Wet	4.00

***It would take more than 10 times the load (4.0 vs .37 lbs.) to cause damage on the treated vs untreated sample.**

50X magnification.
Scratches by glass stylus on glass (weighted at 329g). The damage is much more severe on the untreated sample than on the DFI treated sample.

3 Anti - Staining

Prevents contaminants from entering into the glass.

Product Benefits:

- Reduces facade cleaning cost by at **least 60 percent.**
- Contributes points to **Leed Certification** (U.S green building Council).
- Prevents Permanent staining.
- Keep glass Looking NEW and BEAUTIFUL.

4 Durable

UV RADIATION TEST ASTM G53 MODIFIED

Exposure	672 Hours
Result	Treated glass surface did not show evidence of coating degradation such as yellowing, chipping, hazing, loss of adhesion, or loss of abrasion resistance.

SALT SPRAY TEST ASTM B117

Exposure	504 hours
Result	Treated glass surface did not fade, peel, haze, chip, or yellow. Glass surface remained more water repellent than untreated glass surface.

Specifications of DFI

Details of Coating:

A Two-Step covalent bond Nanotechnology coating (short form: Coating) improves and protects the surfaces of glass.

Surface treated with coating become:

1. Highly water repellent (Hydrophobic); less water on the surface results in:
    a. Less frequent cleanings
    b. A reduction of mold & bacteria
2. Stain and graffiti resistant
3. Oil repellent (Oleophohic)
4. Scratch resistant
5. Impact resistant
6. Resistant to leaching of calcium and sodium (etching caused by hard water).
7. At least 1,000 times more electrical resistant (additional eletrical insulation).
8. At least 20% more brilliance (shine in glass surfaces).
9. Environmentally friendly

Test reports by independent laboratory:

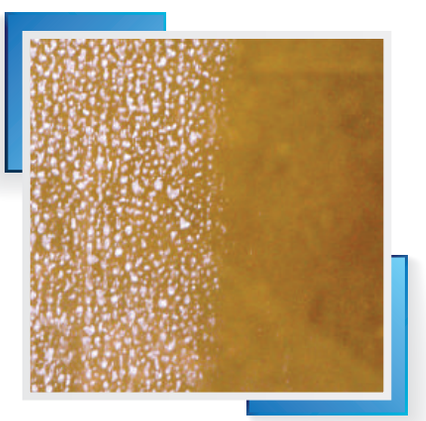
1. 1.ASTM C 813, Standard test method for Hydrophobic Contamination on Glass by Contact Angle Measurement and Resistance to Abrasion wear over time.
2. UV-radiation test, ASTM G 53 modified.
3. Contact angle measurements.
4. Coefficient of friction with wet glass indenter.
5. Load required to damage glass.
6. Proof that the chemical bond is covalent.
7. Xenon Test.
8. Sunlight Simulation Test.
9. Salt spray test, ASTM B 117.

Proof application can be done in an Environmentally Friendly Manner.

Advantages of Using DFI

GREEN Conscious

- Generates **Zero Emissions** off-gassing after application.
- Reduces Household Chemical Use by **Up to 50%**



Easy-to-Clean

- Reduction in **Mold and Bacteria**
- **Stain** Resistance
- **Scratch** Resistance
- **Impact** Resistance

Cost-Effective

- Clean less: Reduce Labor by **Hundreds of Hours**
- Reduce **Maintenance Cost**
- Long-Lasting

More Brilliant

- Increase in Surface Brilliance by at **Least 20%**

Diamon-Fusion®
Nanotechnology Installation

DFI's patented nanotechnology can be easily installed by trained professionals on new and existing surfaces in homes, businesses, vehicles and many other surfaces. DFI's Nano chemistry can be applied to most surfaces containing silica (silicon dioxide) such as glass, ceramic tile, porcelain, granite and quartz. The chemical reaction bonds to form an ultra-thin protective layer of optically clear material which makes the surface significantly easier to clean and resistant to weathering.

The bond created in the patented process is a covalent bond. A covalent bond means that the coating actually shares electrons with molecules in the glass itself, thus becoming part of the glass. Covalent bonds are approximately 10-times stronger than hydrogen-bridge bonds, which are commonly used in most other water repellent coatings.

Interior Shower Doors

HAVE YOU CONSIDERED SAVING YOUR CLIENT TIME, ENERGY AND MONEY BY ADDING DFI'S HYDROPHOBIC PROTECTIVE COATINGS TO THE INTERIOR SHOWER DOORS AND BATHROOM SURFACES?

Whether reducing housekeeping costs for your hotel owner or making the lives of a group of condo owners easier and more beautiful, Diamon-Fusion® is as great inside your building as it is outside.

Building owners and architects have discovered DFI's protective coatings are great for protecting silica-based surfaces because of these benefits:

- **Eliminates the need for harsh chemicals.**
- **Reduced cleaning labor**
- **Reduced cleaning cycles**
- **Environmentally friendly**
- **At least 20% more surface brilliance**
- **Maintains the original beauty of the surfaces longer**
- **A more hygienic environment reducing mold and bacteria**
- **Resistance to leaching of calcium and sodium from hard water**
- **Virtually liminates the need for shower stall replacement**

$30B Apparel Manufacturer Beaverton, OR

New Glass Protection Project

- After nearly two decades, the exterior glass at the world headquarters in Oregon became extremely damaged due to concrete leaching and inclement weather.

- After several failed attempts by the apparel company to fix the glass, DFI was hired to restore the damaged glass, in lieu of an extremely costly replacement.

- DFI restored the glass with DFI Restoration Products, adding the patented Diamon-Fusion protective coating for future coverage.

- The client contracted with DFI to perform restoration services on several other buildings through the campus and an off-site jet hanger.

- To date, DFI has treated more than 80,000 square feet of glass.

Tiffany Building, Manhattan, NY

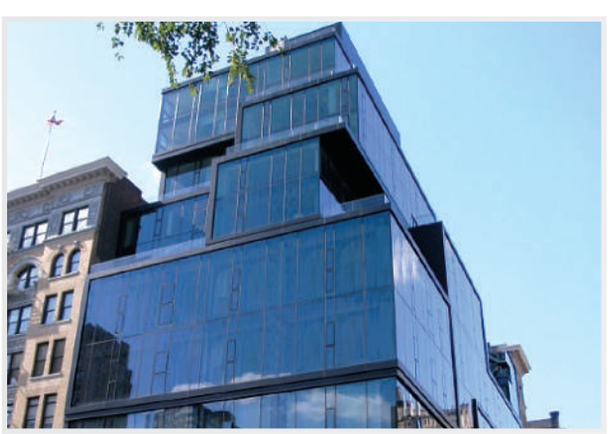
New Glass Protection Project

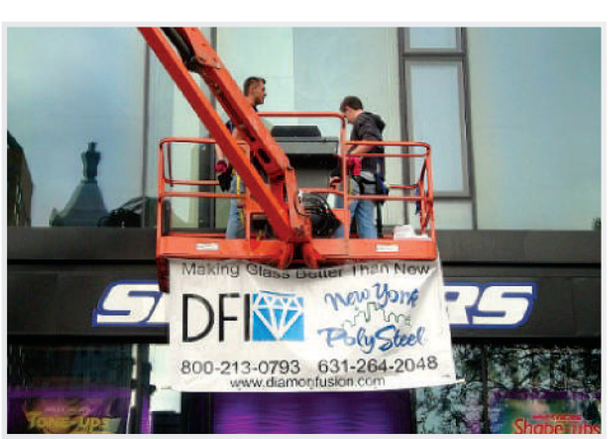
- Brack Capital Real Estate invested in replacement glass for its famous building and found they were in desperate need of DFI's high-quality coating to protect and visually enhance the location.

- DFI professionals applied the award-winning Diamon-Fusion® coating to the intricate glass design features within the exterior structure.

- The client was so impressed with the outcome; additional work was requested outside the original scope of the bid, including a large skylight and granite exterior building skirt.

- The windows have not required cleaning for more than three years, post application.





Dura-Max Mirror Pro™ is a copper free and corrosion resistant mirror, incorporated with ecological glass certified by SIRIM QAS International. To ensure the best quality at all times, Dura-Max Mirror Pro™ is likewise affirmed by the SGS Singapore and TUV SUD PSB Singapore safety standards.

SIRIM QAS International | SGS Singapore | TÜV SÜD PSB Singapore | Singapore Green Buidling Council

Key Features

- Manufactured in Indonesia with specially selected float glass using environmentally friendly processes.
- Dura-Max Mirror Pro™ is a Copper & Lead free mirror.
- Ammonia effluent was reduced by 90% as a result of the elimination of the copper coating.
- Dura-Max Mirror Pro™ is treated with Epoxy Coating, to ensure better water resistance.
  Suitable for high humidity surrounding.

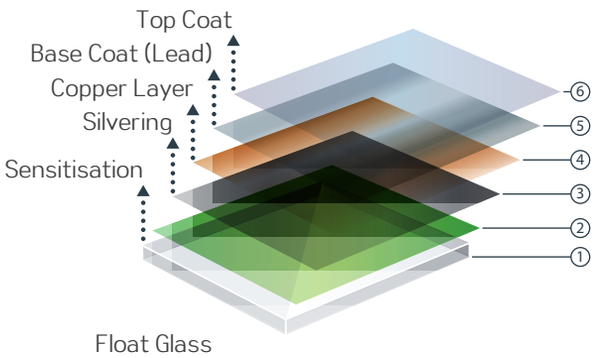
Functions

- Unparalleled resistance to corrosion and aging: more durable than any conventional mirror.
- Enhanced resistance such as acid to harsh cleaning products: more resistant than any conventional mirror.
- Apply with safely version: a polypropylene film is applied to the back of the mirror to prevent injury. If the glass breaks, the fragments adhere to the plastic film and do not break up.

Comparision

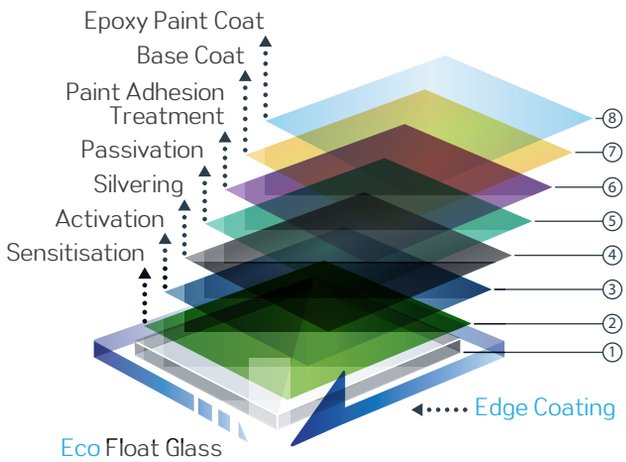
between Traditional Mirror & Dura-Max Mirror Pro™

Traditional Mirror



Traditional Mirror Manufacturing Process

DURA-MAX MIRROR™ PRO



Dura-Max Mirror Pro™ Manufacturing Process

Edge Coating: Dura-Max Mirror Pro™ not only protects the surfaces of the mirror, but also the side edges with protective shield coating to avoid further corrosion damage.

Our Range

Durax-Max Mirror Pro™ Range	Thickness (mm)	Maximum Size (mm)	Available in *Safety Version*	Available in *DFI*	Available in *Acid Etched*
Clear	5 & 6	2130x3660 & 2440x3660	Yes	Optional	Optional
Bronze	5 & 6	2130x3660 & 2440x3660	Yes	Optional	Optional
Grey	5 & 6	2130x3660 & 2440x3660	Yes	Optional	Optional
Low Iron	5 & 6	2130x3660 & 2440x3660	Yes	Optional	Optional

For *Safely Version* : *(upon request)*

A polypropylene film is applied to the back of the mirror as a safety measure. If there should arise an occurrence of the glass breakage, the fragments adhere to the plastic film and do not break up, preventing injury.

For *DFI Diamon-Fusion* : *(upon request)*

A Nano coating treatment applies onto the surface of the glass or mirrors making it more water and oil repellent. The less water and oils adhere to the surface, the less stains will deposit in the content. Therefore, it's easier to clean and maintain.

Warranty

When you invest in a mirror from Durax-Max Mirror Pro,™ you're getting a high-performing, long-lasting product expertly constructed mirror with the best materials available. With full coverage from the time of supply and installation, our mirror limited warranty is the best in the industry.

- This warranty is limited by the cost of the purchased product and Durax-Max Mirror Pro™ or its affiliates will not assume any responsibility beyond the cost of original merchandise.
- Durax-Max Mirror Pro™ warranty does not cover glass re-modification/alteration through a third party or outside merchants.
- Durax-Max Mirror Pro™ is not liable for glass breakage, damage, failure due to misuse; or to acts of nature including fire, flood or earthquake.
- The warranty does not cover damage caused through faulty design of your residence or business, careless handling, alteration, misuse or misapplication.

The Proof of Confidence

"United States Patent"
DFI Has Patents And Patents Pending In Over 120 Countries.

2009 Crystal Achievement Awards
of Glass Magazine
"Most innovative protective glazing product"

Kitchen and Bath Business Magazine
"Innovative Product of the Year"

Singapore Green Building
Product Certificate
"For The Product - Glazing Mirror" 2018

Singapore Green Building
Product Certificate
"For The Product - Hydrophobic Coating" 2018

Limited Warranty For Diamon-Fusion®
Patented Nanotechnology On Architectural Facade Glass.

DFI®
DIAMON-FUSION
SINGAPORE
DFISOLUTIONS.SG

Tekcoglas Design
9008 Tampines Street 93 #01-57/59 Singapore 528843
T : +65 6789 2066 F : +65 6789 2033
sales@tekcoglas.com
dfisolutions.sg