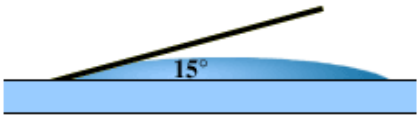
DIAMON-FUSION INTERNATIONAL

DIAMON-FUSION® TEST RESULTS

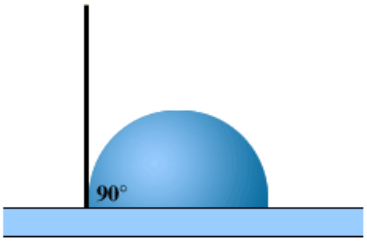
The following are test results from the Institute for Glass Science and Engineering at Alfred University, New York, an independent testing laboratory. Below is a summary of the most important findings.

The tests state that our improved process has a remarkably low coefficient of friction. When glass is wet, it is by far the "most dangerous period" with regards to the potential for damage. The report says that "we believe the (main) usefulness of your coating lies in its maintenance of a low friction coating over the life of the glass". Below is a formula that details the results of the coefficient of friction tests.

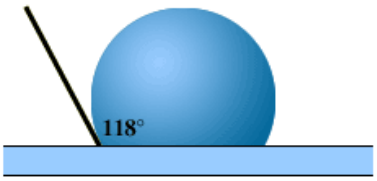
Contact Angle



Untreated Glass



Treated with
Diamon-Fusion (DF1- Step #1)



Treated with
Diamon-Fusion (DF2- Step #2)

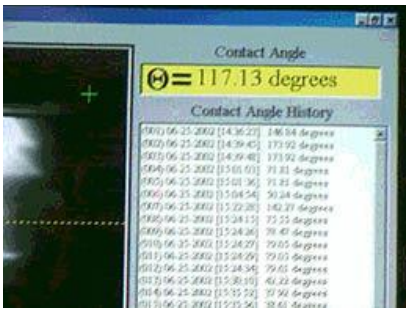
Contact angle:
Contact angle is the scientific method of measuring the water repellency of a surface. The higher the number, the higher the water repellency of the surface.

Material	Angle
Contact Angle Untreated Glass	14°
Improved Diamon-Fusion®	106°
Our main competitor	91°

The 2nd step of DFI's nanotechnology creates the 'capping' in the chain of atoms, which changes the molecular composition of the treated surface.

Note: Since these tests were performed, DFI's patented process has been improved and its contact angle has been measured at up to 118°, in addition to all other benefits that the nanocoating provides.

Material	μ
Untreated Glass	0.82
Improved Diamon-Fusion®	0.13



Coefficient of Friction: (with Glass indentor wet)

To make the test results for coefficient of friction useful, we have used a formula that translates the data into the force required to cause damage to the surface. Assume that a load of 10 lbs. has been placed on the rider under static conditions, and that this is the lowest load that caused cracking (no dragging). Using the formula we can now calculate the load that would cause cracking to occur when the rider is dragged across the sample.

Load required to damage surface:

Material	Load (lbs)
Untreated Glass	0.37
Improved Diamon-Fusion®	4.00

Note that when comparing wet vs. wet friction calculations indicate that it would take more than 10 times the load (4.0 lbs. vs. 0.37 lbs.) to cause damage on your treated sample vs. the untreated.

In other words, the weight of a debris particle required to crack a piece of glass that has been treated with Diamon-Fusion® would need to be ten times heavier than the weight required to crack an untreated piece of glass.