DIAMON-FUSION INTERNATIONAL

Impact Resistance Test

I. Overview

This test was performed by DFI to demonstrate Diamon-Fusion®'s impact resistance in connection with the Institute for Glass Science and Engineering at Alfred University, New York test results on Diamon-Fusion®'s patented film coating for glass. The Institute for Glass Science and Engineering at Alfred University, New York test results showed an extremely low coefficient of friction. The idea of this empirical test was to give some additional credence to the Institute for Glass Science and Engineering at Alfred University, New York results which showed that 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 greater than the weight required to crack an untreated piece of glass. It is important to understand that the test is not scientific as the velocity of the pellets propelled by varied air pressures from an air rifle or BB gun will clearly be much more substantial or significant than any particle that may be 'flying in the air' by virtue of normal weather conditions or any external factor of the environment.

II. Description of Test

A piece of 5/16" Clear Laminated Glass was treated on the left side only (half area) while the right side (other half) was taped off (both sides) with chemically resistant tape, then the tape was removed except for a small line to show where it begins and ends. The glass was placed on the ground, in an empty field, leaning against a tree at an angle that simulated an average car windshield. The entire area of the glass was shot 20 times, alternating sides, with an air powered BB gun where BB's are propelled by air pressure from approximately 40 feet away.

III. Test Results (SEE PHOTO BELOW)

Shots on **treated** glass: exactly 9 out of 10 shots bounced off with no damage and the only shot that captured an area of the treated surface is considered to be a 'repairable' break by most windshield repair companies.

Shots on **untreated** glass: exactly 9 out of 10 shots made an 'unrepairable' damage and virtually cracked the glass (complete glass replacement is needed under the damage of any of those shots) while the 10th shot made a repairable damage.

IV. Comments

The results clearly show that while the treated side may be damaged, the great majority (9/10) of the shots bounced off. The untreated side, on the other hand, broke almost every time (9/10) with the majority of the breaks not being 'repairable'. It is important to point out that due to the type of gun used (daisy air cartridge style BB gun), the pressure on the first shots is much higher than the pressure on the last shots from each air cartridge. Although the pressure factor of the shots is an uncontrolled variable that makes this test not 'exact' from a scientific standpoint, along with the wind direction factor, the test's validity stands very solid from a direct comparison of treated vs. untreated glass standpoint and Diamon-Fusion®'s resistance to small impacts that may easily be found in most 'real life' situations such as small particles flying in the air while driving a car, which will come, in most cases, not only at a much lower speed (at time of impact) that an air-powered gun, such as the one used in this test, but also at a much lesser force.

V. Disclaimer

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