



Graffitigard

Protection from Etching

Background

A method employed by graffiti vandals or “taggers” is the use of etching compounds. These over the counter items usually contain hydrofluoric, ammonium bifluoride and/or sulfuric acids. These etching compounds can be mixed with shoe polish and applied to glass where they will react with the surface within minutes. The use of polyester film as a sacrificial barrier has been found to be very useful in preventing damage by physical and chemical attack.

Test Matrix

100 and 175 micron Graffitigard films (our thinnest & thickest Graffitigard) was tested for their protective capabilities against readily available etching materials. Armour Etch® glass etching cream and Etch Bath® glass dipping solution were applied to 100 and 175 micron Graffitigard on ordinary 3mm annealed clear float glass. The test panels were placed in a horizontal position (worse case) and the etch compounds were left in contact with the film for 24, 48 and 72 hours. The results from the exposures are listed in Table 1.

Film	24 Hours	48 Hours	72 Hours
Bare glass	Severe (5 minutes)	N/A	N/A
100 micron Graffitigard Etch Cream	No damage	No damage	Slight glass marring
100 micron Graffitigard Etch Solution	No damage	No damage	No damage
175 micron Graffitigard Etch Cream	No damage	No damage	No damage
175 micron Graffitigard Etch Solution	No damage	No damage	No damage

Conclusion

Neither the Etch Cream, nor the Etch Bath, caused glass damage during the extended test duration with the 175 micron Graffitigard. The Etch Cream caused a slight “haze” on the glass surface with the 100 micron Graffitigard but only after 72 hours. The latter would not be expected in a realistic window configuration for the reasons enumerated below.

The Etch Cream was applied as a very thick coating. Therefore, the acid did not completely dry-out during the entire test duration. In actual use, the coating is assumed to be somewhat thinner, thus less likely to cause damage. In a real-world scenario, the glass would more than likely be cleaned within 48 hours, probably quicker if not a weekend. Additionally, the experiment was carried out in a horizontal orientation. More commonly, windows and glazing is vertical thus allowing for runoff. Additionally, the effect of exterior environmental factors, solar heat, wind, etc... would cause these etchants to dissipate faster; decreasing the actual duration the etchant is in contact with the glass. Worth noting, the Etch Bath material is extremely low in viscosity and does not wet out the film’s surface well. The liquid etch would run off vertically installed glass rather quickly.

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