

# Fabricating Debris Issues

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**When tempered glass gets scratched because of "fabricating debris", issues of profit, liability and customer satisfaction emerge.**

Because the vast majority of scratched tempered glass is due to the condition known as "fabricating debris", window cleaners now urge all builders to manage the problem as a manufacturing defect. Builders in turn require suppliers to only provide tempered glass which will not be damaged when cleaned with a properly used scraper.

Metal scrapers, which do not scratch glass when used properly, have long been the standard and most practical method for removal of debris such as paint, adhesives, or stickers from uncoated glass, not only during construction cleaning, but throughout the useful life of the window.

However, if fabricating debris is present, it can be dislodged and trapped by a scraper during window cleaning. The result will be scratches caused by the abrasive fabricating debris itself, not by the scraper.

The term "fabricating debris" refers to an abrasive surface condition consisting of microscopic defects including glass fines which become fused to glass as it rolls through some tempering ovens. This article refers to a problem affecting some tempered glass. Another type of heat treated glass known as "heat strengthened" may also be affected by this problem.

To assure that the problem is being managed by a builder, many window cleaners require a fabricating debris damage liability waiver in all contracts which states that the window cleaner will not be held liable for any damage attributable to the presence of abrasive fabricating debris on heat treated glass.

To the naked eye, scratches due to fabricating debris may resemble scratches due to improper use of scrapers, but with the aid of a magnifying device, such as a portable microscope or a photographer's loupe, some of the



scratches will look like comets. The comet's "head" is fabricating debris, broken and trapped by a scraper, creating a "tail". When a "comet scratch" can be located, the cause is obvious: When tempered glass gets scratched because of "fabricating debris", issues of profit, liability and customer satisfaction emerge.



**Left -Magnified image of fabricating debris defect before scraping.**



**Right -Defect and scratch after scraping. Note the unique "fingerprint" of the ink mark used to set up these shots.**

It's important to realize that fabricating debris is only a maintenance or quality control issue for some glass temperers. Only a fraction of all tempered glass actually can not be scraped due to this defect.

Fabricating debris may be rare in some areas, but fairly common in others. It is a permanent condition which unfortunately is not eliminated if defective surfaces are protected during construction.

It is often possible for window cleaners to locate fabricating debris for the purpose of demonstrating the effects to customers, but window cleaners should not assume responsibility for detecting all fabricating debris in a construction environment. Builders should inspect their tempered glass upon delivery and seek replacement if necessary.

Fabricating debris is usually invisible to the naked eye, but when it is present on tempered glass, it can usually be felt, and a distinct gritty sound can be heard when a scraper is moved very lightly (so as not to cause damage) over a clean surface.

Liability waivers are also being recommended for maintenance contracts involving significant scraper use, whenever the surface quality of tempered glass is doubtful or unknown.

If it is somehow determined that glass cannot be scraped, the owner must realize that vigilance will be required of them, for the life of the window, to somehow assure that scraper use is never called for, or that only alternative cleaning methods are used. These restoration methods typically will be much more labor intensive, possibly hazardous to workers and/or harmful to seals and surrounding surfaces.

Window cleaners can't resolve this issue on their own. Builders wishing to avoid replacing scratched glass for customers or restoration issues should address issues of heat treated glass surface quality with window suppliers—and sign those waivers.