

Greetings from Denver. First, my bona fides: I was an insulation contractor some decades back, and we sold made to measure replacement windows for a company whose founder was in his 70's and had a world of experience with residential as well as commercial and industrial windows. This was in western Michigan.

For the last 20+ years I have owned a residential window cleaning business in Denver. We are in hundreds of homes a year, and in many cases, we have been cleaning the windows for more than one owner, spanning 10 years and more at the same residence. Some of our clients are in 100 + year old homes with leaded glass, others in brand new tract homes, custom homes, and still others with replacement windows of every description. So we see what the sun and our variable climate does to windows over an extended period of time. Temperatures range from 25 below to over 100 degrees F. Humidity 0 to 100% within days or less. Lots of sun at our altitude. Winds to 90 mph in the foothills.

On any side of the house, casement windows are the easiest for us or you, to clean. Glass on any side of the house that is recessed gets dirty faster, and stays dirtier. The wind isn't able to remove the dirt, so it just collects. The dirt then collects, or more properly, holds moisture, which will actually etch the glass if not removed. Glass behind screens actually gets dirtier, and stays dirty until cleaned. So there goes your solar gain. Some fixed glass is recessed for sake of style I suppose. Again, these are the dirtiest windows on the house excepting the basement window well windows.

Recessed glass with broad sills, or a shadowbox effect also provide an attractive habitat for spiders, insects and roosting and nesting birds.

Recessed windows trap water along with the dirt. The water remains on the sills and eventually ruins the paint and the sills. Here we see entire neighborhoods that need the south and west facing window sills, meeting rails, and horizontal mullions painted years before the siding needs painting. The combination of sun and rain is brutal on paint and wood. Given a choice, I would not own a non sheltered, wood window or exterior door, clad or not.

Sure, clad windows look nice at first. Then the aluminum cladding starts lifting off. The vinyl cladding or trim starts deforming, sometimes in the first year. Dark colored vinyl is especially vulnerable to warping, while white, older vinyl is more brittle. The new formulations are said to be an improvement.

The fixed name brand composite (wood fiber and resin) frames that I have seen are ok, but the single hung windows that we have seen have lousy weather striping. Standing on the outside, you can move the sash sideways with just the pressure of one or two fingers, and in spite of cleaning the windows three times a year, the sills are always dirty or even sandy.

Given the budget, I would buy fiberglass windows, at least for the south and west sides of the house. Then, since I have seen the effects of sunlight on fiberglass over long periods of time, (think old motor homes, or Chinook fiberglass campers) I would paint the fiberglass windows! Easier to paint them now, then in 20 years when I am older, and the windows are beat up from the sun. I may not want to climb ladders when I am 70 or 80 or?

We don't always have a choice of the windows we live with. But we can remove the exterior screens and leave them off during the heating months. And then put the screens back on for the summer months to shade the glass.

And we can close and LOCK the windows that are not needed at the moment for ventilation. In 98% of the homes we are in, there is at least one window open (maybe "only" a crack) at any time, heating or air conditioning season wasting energy and \$\$\$ big time.

French (divided lites, either true divided lites, or fake) let less light in the home. True divided lite seals fail quicker and get dirtier faster. Painted grids or mullions need repainting, plastic ones warp. Anodized aluminum ones are glued on with double stick tape, doomed to fail in the sun given enough time.

OT. Cleaned the sadly neglected windows on a five year old town home in Dec. Horribly dirty, as the house was on a busy street with high traffic density. Crowded buildings blocked the wind, so the dirt really piled up. Walls were shaded, so moisture lingered. Aluminum clad wood windows with true divided lites. AKA, french windows. On some of the windows, the glass practically rattled, seemed like a lot of the lites were held only in spots, or only on one side of the glass. Mysteriously cracked a lite, cost over \$500 to replace the sash. May have been defective, impossible to say. Labor to replace only the broken lite would have been more than the replacement cost, as ALL of the interior wood mullions, and exterior aluminum mullions would have to have been removed and reassembled, and the wood patched and repainted! Without breaking any of the sealed lites!!! I'm still debating EVER cleaning the windows again. Nice client, risky windows. Never had such an experience before, hope never again.

Given time, the sash balances of single and double hung windows fail and need replacing. The upper sash balances of a double hung window, particularly the larger, heavier sizes will fail first. Sometimes in only a year or two. This means the meeting rails miss align. Soon water and sun warping make closing or locking the window difficult or even impossible! So your windows leak air and dirt and \$\$\$.

If you consistently keep the double hung windows closed and locked when not actually needing the ventilation, you will preserve for a time the proper functioning of the sash balance and meeting rails.

Keep your sprinklers or other water source such as gutters adjusted so water is kept away from your windows. Put trim over the tops of the windows to keep the rain water that washes down the side of your house from flowing over the glass. This will help prevent the glass from etching or at least keep it cleaner. This is especially important with brick, concrete, stucco, or similar construction. The water dissolves the minerals out of the cement, and deposits the minerals on the glass. Combined with the moisture, will actually etch the glass over time.

Slant your window sills. Especially cement or stucco. Water that splashes off the mineral sill, will land on the glass and etch the glass. The glass will stay cleaner with slanted sills. Wood sills of course become damaged by standing water, so that is another reason to slant even wood sills.

The locks and fittings on many windows are made of plastic. Might as well get some extra parts now while they are still being made. That way you can repair them when, not if, they break. Learn how your windows operate. Don't abuse them, the parts will last longer.

If you are designing or building, please give some thought to maintenance. Someone, even you, shouldn't need to risk their life to clean your windows! Commercial building owners are being sued for failure to provide safe access or secure devices for proper building maintenance. Trying to clean the outside of clerestory (chicken coop we always called them!) windows while sliding off a steep metal roof is no fun, even with a harness. Put some handles on, (and change the slope of the roof?)

Under no circumstances allow any stucco or cement work to be done anywhere on or near your home with out physically covering the glass. Concrete, Stucco, and synthetic stucco CAN NOT be removed without scratching the glass.

Inspect your windows at delivery for scuffing and scratching. Also inspect for improperly assembled sealed units. We have run into sealed units with some of the lites assembled with the solar coating installed on the wrong side! Or a very obvious hand print in the middle, and on the INSIDE of sealed units! Or aluminum scuffing on the glass from aluminum ladders, window trim or framing during transport in the contractor's pickup. Keep the glass covered at all times until all the construction work, painting, drywalling, railing welding, etc is completing finished.

An increasingly common problem plaguing the industry is for glass factories to make the glass in a dirty environment. This leads to microscopic size glass fines to be melted onto the surface of the glass. Some times you can feel it with your bare hand. ANY attempt to scrape paint from such glass WILL result in scratched glass. NO EXCEPTIONS. So insist on your contractors or yourself covering your glass during construction.

The very best windows are not helped by shoddy installation. I've seen some nice windows ruined by shoddy workmanship and the use of inferior trim materials.

There are many benefits to clean windows. Our clients tell us that clean windows provide a psychological boost, a sense of well being, and very likely a performance and productivity boost. Properly maintained, your glass can last 100's of years.

And of course clean windows will provide more solar gain than dirty windows, and a higher resale value for you when that time comes.

If you like this report, if you find it useful, if it has changed your life, you can paypal me the 2 cents! ;>)

If it wasn't useful, you didn't like it, it didn't change your life, don't blame me, for "what do I know, I'm just a window cleaner"! ;>)

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