

Everything You Need To Know About Replacement Windows

An unbiased, no nonsense consumer's guide written by a window professional to assist you in making a well informed decision about replacement windows.

Table of Contents

- 1. Introduction 2**
- 2. Why replace your windows? 3**
- 3. What are windows made of and what choice is best for me? 4**
- 4. How do I know I am purchasing an energy efficient window? 9**
- 5. What type of glass should I choose? 12**
- 6. Three methods of replacing windows, which one is best for me? 13**
- 7. Warranties – what do they really mean and how to read them? 15**
- 8. How much should replacement windows cost? 16**
- 9. How to choose the right window contractor 16**
- 10. Buyer beware 17**
- 11. What to do next 18**

Introduction

If you are searching for replacement windows for your home, I would like to show you an easy way to evaluate your replacement purchase with fewer hassles, no high pressure sales techniques and in less time than you could expect from traditional window companies.

Hello, my name is Dennis Dunn, General Manager for the Replacement Division at Quality Window and Door. We are unique to the window replacement industry because we believe that one window cannot fit all needs, wants, styles and budgets. We sincerely believe that our number one job is to educate you and help you make a well informed decision on the purchase of your new windows. That is why we represent multiple non proprietary product lines and can provide an unbiased opinion of most window and door products.

In a recent homeowner survey we found that most people are confused by all of the technical lingo provided about replacement windows and really don't know what is best for them. I would like to share with you how you can be sure that you evaluate replacement windows objectively without the pressure of a sales person who claims to have one and only one product that is the best money can buy. This free report will educate you and help you make a well informed decision.

This 18 page report is packed full of facts about windows and will give you all of the information you need to prepare yourself for your replacement purchase. Don't even think about buying replacement windows until you have read this report. It was developed to give you important information about replacement windows that most people do not even consider before buying and what most companies don't even know about or want you to know.

In today's market more and more window companies are training their reps on sales techniques that involve high pressure that coerce the homeowner into buying products that really don't fit their needs, wants, style or budget. Smoke and mirror presentation techniques are used to convince them that this is the one and only product for them. The reps are polished in their presentation but lack experience and education when it comes to alternative products, design choices and replacement techniques. They don't have the homeowner's best interest at heart; they are more interested in how much commission they can earn.

In today's busy world we realize that your time is at a premium. If you are just starting to think about replacement windows or are ready to hire a contractor, this report will give you all of the information you need to make a well informed decision. Let us help you save a lot of time and aggravation by reading this entire report.

2. Why replace your windows?

There are multiple reasons why people replace their windows. In a recent survey conducted by Window and Door Magazine the top 10 reasons are:

1. **Energy efficiency** - The weakest link in the building envelope for energy loss in a home will always be the windows. You can realistically expect to save 15-20% or more on your utility bills with replacement windows. Older homes with windows that have single pane glass will obviously realize the most savings. With the price of energy continuing to rise, your savings will continue to compound. Newer homes with inexpensive windows can also be a huge energy drain. As they get older the cheaper parts wear out and begin to lose their effectiveness in keeping out the cold and the heat. Think about new replacement windows like a new car that gets great gas mileage. The higher the price of gas the more money you save.
2. **Easy to Clean** – With the amount of airborne particles in the air today, dirty windows are commonplace. Dirty windows drastically reduce the amount of visible light transmittance. The ability to clean your windows is more important than ever. Many new features have been developed to assist in the cleaning process. Most double hung windows feature easy tilt in sashes which allow cleaning of the exterior glass from the interior of your home. Some casement windows crank out and over to allow cleaning for the inside. Others are offering exterior glass coatings that keep windows cleaner, longer.
3. **Maintenance free** – Most manufacturers today offer an exterior window that requires little or no maintenance. Other than cleaning and inspection of the caulk joints on an annual basis, you should enjoy many years of worry free maintenance to your windows and trim. Windows made of vinyl, fiberglass, composite material, aluminum clad wood, vinyl clad wood or all aluminum will provide you with varying degrees of low maintenance. Most will eliminate the need to paint on a regular basis which will save on your painting bills.
4. **Aesthetics** – New windows can provide a new or updated look. They also can match your original home and blend in architecturally while providing energy saving benefits. Many manufacturers feature multiple color choices for the exterior and hardwood interiors for that special look. Grid options or style of window give you the opportunity to totally change the look on the outside. There are so many new options for color, hardware, grids, and interiors now available that you can truly personalize your windows to match your individual tastes.
5. **Comfort** – The elimination of cold drafts and convection in the winter and hot spots in the house during the hot summer months is another great benefit of new windows. Everyone wants their house to be comfortable. New energy efficient

windows with reflective properties help keep radiant heat inside in the winter and outside in the summer.

6. **Noise reduction** – Double and triple pane glass, Low E coatings, Argon, Krypton gas, and modern weather stripping all contribute to a quieter home when you have your windows replaced. For those high traffic or city areas, laminated glass can dramatically reduce sound transmission through your windows.
7. **Safety** – Today’s modern windows have easy to use features that provide an escape route in case of fire. Ease of operation, easy tilt latches and the ability to totally remove sashes can provide you with peace of mind in case of fire. Tempered or safety glass provides protection in high traffic and high hazard areas where there is danger of falling through the glass or glass breakage. For the ultimate in security protection, laminated glass can prevent or reduce the chance of break-ins and eliminate the need for security bars.
8. **Durability** – High quality windows are built with the latest advances in technology. You can expect to get many years of trouble free performance, low maintenance and energy savings with quality replacement windows. Many manufacturers are now offering limited lifetime warranties.
9. **Re-sale value** – New windows enhance your homes value and are one of many value rating points for appraisers. A 2010 research study from industry experts states that in the South Atlantic Region you can expect to recoup 73-77% of the cost of a midrange window replacement project, depending up window material used.
10. **UV protection** – Natural light from the sun produces ultraviolet rays that are harmful to both humans and home furnishings. Increased incidence of skin cancer and eye problems can be directly related to the sun. Fading of carpet, furniture, floors, and drapes is commonplace with old windows. With new glass technology, many of these problems can be drastically reduced without dramatically affecting the amount of visible light transmittance.

3. What are windows made of and what choice is best for me?

Wood Windows

Wood windows have been used for centuries and despite the coming of metals and synthetics, wood remains the traditionalist’s choice. Wood windows deliver exceptional thermal performance due to their inherent insulating qualities. Warmth and the natural beauty of wood make them a popular choice. Historic neighborhoods often require replacement windows made of wood that closely resemble the old style window being replaced. Many architects prefer wood products to maintain the look and feel of traditional architecture. Wood windows with state of the art weather stripping and

operating hardware are a vast improvement over drafty, poorly operating windows found in older homes.

Unfortunately quality wood windows are among the higher priced products. If you are selecting wood replacement windows, be sure to choose a reputable manufacturer that uses preservative treated wood in the construction of their products. All lumber should be treated after it is cut to ensure long lasting beauty and performance. Quality primer, finish coats and caulk should be used to ensure that your windows will stand up against the elements. Yearly inspections should be done on all exterior surfaces and caulk joints to ensure years of long lasting beauty and trouble free operation.

Energy Efficiency: Very Good
Price: High
Maintenance: High
Durability: Fair
Strength: Good
Color Selection: Very Good

Wood Clad Windows

Wood clad windows should be considered if wood windows are desired but maintenance is a major concern. Cladding is typically an aluminum or vinyl protective cover that shields the wood exterior from weather but leaves the natural wood exposed on the inside.

There are 3 types of wood clad windows to consider.

1. Extruded aluminum clad windows use a very durable cladding in the manufacturing process. The aluminum is extruded by pushing it through a die and forming one piece of shaped metal. This piece of aluminum is typically the thickness of a quarter. The factory paint finish is then evenly applied to the entire extrusion. It is then attached and sealed to the wood window sash and frame. In many manufacturing processes this becomes an integral part of the window and adds structural strength to the frame and sash.

Energy Efficiency: Very Good
Price: High
Maintenance: Very Good
Durability: Very Good
Strength: Very Good
Color Selection: Very Good

2. Roll formed aluminum clad windows use a very different process. Roll formed aluminum is processed or rolled into a thin aluminum sheet then paint is applied to this entire sheet. It is cut then bent and wrapped around a sash or frame. It typically is the thickness of a soda can. It can be prone to denting and usually does not improve the structural strength of the window. Some window manufacturers use a combination of a roll formed sash with an extruded aluminum frame. Window and siding contractors use

roll formed aluminum or coil stock to cover exterior trim to make it maintenance free. Roofers use it for flashing material.

Energy Efficiency: *Very Good*
Price: *High*
Maintenance: *Very Good*
Durability: *Good*
Strength: *Good*
Color Selection: *Very Good*

3. Vinyl clad windows use a combination of vinyl and wood. The vinyl is extruded and attached to the window sash and frame. Some manufacturers use vinyl covered frames with painted wood sashes. Other manufacturers make a complete vinyl window and laminate the interior with thin layers of wood. Typically vinyl clad windows are the least durable because vinyl has no inherent strength and over time is broken down by the sun's rays. Vinyl's low thermal conduction properties may provide a slightly higher energy efficiency rating over aluminum.

Energy Efficiency: *Very Good*
Price: *High*
Maintenance: *Very Good*
Durability: *Good*
Strength: *Good*
Color Selection: *Average*

Vinyl Windows

It wasn't too long ago that vinyl windows were considered a less than ideal choice for window replacement. Vinyl is a petroleum based product that is adversely affected by the sun's ultraviolet rays. Advances in design plus improvements in formulations of vinyl have greatly improved the quality of the product and now are a viable alternative to wood. Vinyl's low thermal conduction properties make it nearly ideal for use in windows. Like aluminum windows, vinyl is extruded, but because vinyl is not rigid, several internal hollow chambers are often added to provide strength. These chambers also trap air, increasing the energy performance and improve the sound deadening qualities of the window. Overall the thicker the vinyl and more internal chambers, the stronger and more energy efficient the vinyl window will be. The design of the extrusion is critical to the energy performance and structural strength of the product.

There are two manufacturing processes for vinyl windows, mechanically fastened and fusion heat welded. Mechanically fastened windows are almost a thing of the past and can be of very low quality. The frames and sashes are screwed together at the corners. They are susceptible to leakage and do not provide structural strength. Heat fusion welded windows actually meld the vinyl at all corners, providing excellent strength and weather proofing properties. Manufacturers that use four point welders that fuse all 4 corners simultaneously are the ideal choice because they ensure that the frame and sash will be square.

Not all vinyl windows are created equal. The type of vinyl used in the window has a direct effect on the performance and longevity of the product. Vinyl windows are made out of a compound known as PVC or polyvinyl chloride. PVC can be difficult to extrude or push through dies that form the parts and pieces for the window. In order to aid in the extrusion process plasticizers are added to make the compound more pliable. While plasticizers aid in the extrusion process, they have some adverse side effects as well. Plasticizers can make the vinyl very dense and brittle, making the window susceptible to cracking and twisting when exposed to ultra violet rays. The development of uPVC or unplasticized-polyvinyl chloride has greatly improved the manufacturing process. With this compound, no plasticizers are added. Instead, other additives are mixed with the compound to provide protection from weathering, impact strength, and aid in the extrusion process of the material. The final product is stronger, longer lasting, and will fight the effects of ultra violet rays.

Energy Efficiency: Very Good
Price: Moderate
Maintenance: Very Good
Durability: Good
Strength: Average
Color Selection: Average

Cellular PVC Windows

Cellular PVC windows are fairly new to the window replacement market. Cellular PVC is a solid, extruded material that has the working characteristics of wood, and is used for interior trim, exterior trim, and paneling as well as windows and doors, blinds, and furniture. Cellular PVC is created by Celuka, a foaming extrusion process that creates tiny air bubbles within the shape, resulting in a density less than half that of regular PVC. The material is then cooled to form a smooth, hard skin that doesn't absorb paint or bleed. Cellular PVC has very high tensile strength and resistance to movement caused by thermal expansion and contraction. Cellular PVC is medium white and can be painted with light acrylic paints. Because profiles can be welded like vinyl and milled like wood, they can be produced to look like a wood window. Cellular PVC avoids many potential problems of wood, such as rot, split, water absorption, peeling paint, and termites. It can be left unfinished, or with a color-matched permanent finish.

Energy Efficiency: Very Good
Price: High
Maintenance: Very Good
Durability: Good
Strength: Good
Color Selection: Good

Aluminum Windows

Aluminum Windows were very popular when energy prices were not a concern. Today aluminum windows are used more in commercial buildings because of their structural strength, which allows very large glass sizes to be used. Design of the aluminum extrusion is critical to energy performance and the structural and operational

characteristics of the window product. Aluminum can be manufactured to very close tolerances. This, along with the durability and strength, can insure that an aluminum window will provide many years of reliable operation.

Aluminum is a very good conductor of heat (1000 times more than wood and vinyl) and cold. However they can be designed with a much smaller profile than wood or vinyl. This can minimize heat frame loss and yield a larger glass vision area.

Thermally improved aluminum windows can deliver strength and durability of solid aluminum but with a reduction in heat loss through the frame. A standard aluminum frame will allow heat to travel freely from the warm inner side of the frame to the cold exterior side. This heat loss can be reduced by a thermal break which separates or splits the inside frame from the outside frame with non conductive material. A thermal break can substantially improve the window performance.

Energy Efficiency: Average
Price: Moderate
Maintenance: Very Good
Durability: Very Good
Strength: Very Good
Color Selection: Good

Fiberglass and Composite Windows

Fiberglass Windows are relatively new to the market and can provide a combination of benefits. Fiberglass is structural strong, expands and contracts very little with the temperature changes, and is a good insulator. Fiberglass frames are much stronger than vinyl and therefore can be made with a lower profile like aluminum but with better thermal efficiency. Several varieties of fiberglass windows have recently become available as some manufacturers have entered the composite market. They are combining a wood interior with a composite exterior. Rather than providing a fiberglass cladding over wood, the main frame of the window is all fiberglass, providing structural strength and the finished exterior of the window. Typically today fiberglass windows have been priced above vinyl and equal to the cost of high-end wood windows. As more new window products come on the market today, the issue of availability and price will determine which segment of the housing market will accept or demand fiberglass products.

Composite Windows- Any of the frame material types mentioned above may be combined to make hybrid windows. For instance, interior wood strips are sometimes attached to an aluminum frame to combine the exterior weathering, strength and weight properties of aluminum with a natural wood interior finish. Although these products own a very small share of the current market, new products combining vinyl with fiberglass, wood or other materials are appearing as manufacturing processes evolve and improve.

Energy Efficiency: Very Good
Price: High
Maintenance: Good
Durability: Good
Strength: Very Good
Color Selection: Good

4. How do I know I am purchasing an energy efficient window?

Many States have adopted an energy efficiency rating system for windows developed by National Fenestration Rating Council (NFRC). Energy Star certified products also can provide you with an unbiased rating of the performance of windows and doors.

About NFRC

NFRC is a non-profit organization that administers the only uniform, independent rating and labeling system for the energy performance of windows, doors, skylights, and attachment products. Their goal is to provide fair, accurate, and reliable energy performance ratings so that:

- **Architects, builders, code officials, contractors, homeowners,** and others can compare different products and make informed product choices.
- **Building officials, state government employees,** and others involved in code development and enforcement can determine if products meet local codes.
- **Government- and utility-run energy efficiency programs** can establish performance requirements and standards.
- **Manufacturers** have a fair and level playing field to compare products and an accurate method of showing the energy benefits of new designs or technology.

The History of NFRC

Ultimately, NFRC was formed in response to the energy crises of the 1970s.

To address concerns about energy consumption, the fenestration industry developed a host of new energy efficient technologies: low-e coatings, low-conductance spacers, gas fills, etc.

Unfortunately, in advertising these new technologies some manufacturers made outlandish claims about the performance of their products. Consumers complained, and the federal government began to investigate allegations of unscrupulous practices in the industry.

By the late 1980s, key industry stakeholders began to realize that something had to be done to prevent widespread confusion, federal intervention, and perhaps costly litigation. They came together in Vancouver, British Columbia in 1989 and founded NFRC to provide independent verification of product performance.

The NFRC Label

The **National Fenestration Rating Council (NFRC)** energy performance label can help you determine how well a product will perform the functions of helping to cool your building in the summer, warm your building in the winter, keep out wind, and resist condensation. By using the information contained on the label, builders and consumers can reliably compare one product with another, and make informed decisions about the windows, doors, and skylights they buy. NFRC adopted a new energy performance label in 2005. It lists the manufacturer, describes the product, provides a source for additional information, and includes ratings for one or more energy performance characteristics.

 National Fenestration Rating Council® CERTIFIED	World's Best Window Co. Millennium 2000+ Vinyl-Clad Wood Frame Double Glazing • Argon Fill • Low E Product Type: Vertical Slider
ENERGY PERFORMANCE RATINGS	
U-Factor (U.S./I-P) 0.35	Solar Heat Gain Coefficient 0.32
ADDITIONAL PERFORMANCE RATINGS	
Visible Transmittance 0.51	Air Leakage (U.S./I-P) 0.2
Condensation Resistance 51	—
<small>Manufacturer stipulates that these ratings conform to applicable NFRC procedures for determining whole product performance. NFRC ratings are determined for a fixed set of environmental conditions and a specific product size. NFRC does not recommend any product and does not warrant the suitability of any product for any specific use. Consult manufacturer's literature for other product performance information. www.nfrc.org</small>	

The information contained on the label is also available in the NFRC's online [Certified Products Directory](#).

U-Factor

U-factor measures how well a product prevents heat from escaping. The rate of heat loss is indicated in terms of the U-factor (U-value) of a window assembly. U-Factor ratings generally fall between 0.20 and 1.20. The insulating value is indicated by the R-value which is the inverse of the U-value. The lower the U-value, the greater a window's resistance to heat flow and the better its insulating value.

Solar Heat Gain Coefficient

Solar Heat Gain Coefficient (SHGC) measures how well a product blocks heat caused by sunlight. The SHGC is the fraction of incident solar radiation admitted through a window, both directly transmitted, and absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's solar heat gain coefficient, the less solar heat it transmits

Visible Transmittance

Visible Transmittance (VT) measures how much light comes through a product. The visible transmittance is an optical property that indicates the amount of visible light transmitted. VT is expressed as a number between 0 and 1. The higher the VT, the more light is transmitted.

Air Leakage*

Air Leakage (AL) is indicated by an air leakage rating expressed as the equivalent cubic feet of air passing through a square foot of window area (cfm/sq ft). Heat loss and gain occur by infiltration through cracks in the window assembly. The lower the AL, the less air will pass through cracks in the window assembly.

Condensation Resistance*

Condensation Resistance (CR) measures the ability of a product to resist the formation of condensation on the interior surface of that product. The higher the CR rating, the better that product is at resisting condensation formation. While this rating cannot predict condensation, it can provide a credible method of comparing the potential of various products for condensation formation. CR is expressed as a number between 0 and 100.

** This rating is optional and manufacturers can choose not to include it.*

History of ENERGY STAR

ENERGY STAR is a dynamic government/industry partnership that offers businesses and consumers energy-efficient solutions, making it easy to save money while protecting the environment for future generations.

In 1992 the US Environmental Protection Agency (EPA) introduced ENERGY STAR as a voluntary labeling program designed to identify and promote energy-efficient products to reduce greenhouse gas emissions. Computers and monitors were the first labeled products. Through 1995, EPA expanded the label to additional office equipment products and residential heating and cooling equipment. In 1996, EPA partnered with the US Department of Energy for particular product categories. The ENERGY STAR label is now on major appliances, office equipment, lighting, home electronics, and more. EPA has also extended the label to cover new homes and commercial and industrial buildings.

Through its partnerships with more than 8,000 private and public sector organizations, ENERGY STAR delivers the technical information and tools that organizations and consumers need to choose energy-efficient solutions and best management practices. ENERGY STAR has successfully delivered energy and cost savings across the country, saving businesses, organizations, and consumers about \$10 billion in 2004 alone. Over the past decade, ENERGY STAR has been a driving force behind the more widespread use of such technological innovations as LED traffic lights, efficient fluorescent lighting, power management systems for office equipment, and low standby energy use.

Recently, energy prices have become a hot news topic and a major concern for consumers. ENERGY STAR provides solutions. ENERGY STAR provides a trustworthy label on over 40 product categories (and thousands of models) for the home and office. These products deliver the same or better performance as comparable models while using less energy and saving money. ENERGY STAR also provides easy-to-use home and building assessment tools so that homeowners and building managers can start down the path to greater efficiency and cost savings.

5. What type of glass should I choose?

Many glass options are available today that can greatly affect your comfort, protection of the interior of your home, security, and safety, all which should be considered before making a window purchase.

Low emissivity (low-E) in simple terms is a microscopic metallic coating applied to the inner surface of insulated glass that reflects energy back to its source. It is designed to reflect invisible long wave radiation, thereby improving the thermal performance of the window as measured by the U-factor. It can help keep your house cool in the summer and warm in the winter. Low-E coatings improve the window U-factor by reflecting long wave radiation, rather than absorbing and conducting the heat out through the glass. Low-E also helps to reduce fading of carpet, floors, paintings, and furniture by reducing the amount of UV rays that enter the home.

You can easily demonstrate the effect of a low emissivity material yourself, by taking a piece of aluminum foil and placing the shiny side about an inch above the back of your hand. You'll instantly feel long-wave radiation reflected back to your hand as it warms. Low-E glass coatings work in the same manner, only they're transparent!

Tempered Glass is hardened glass. Almost any glass product may be tempered. The glass is cut to the required size and is then put through a heating process. After the process is complete, the glass becomes approximately four times harder than regular glass. When the glass product is tempered it is considered a safety glass. If the tempered glass should happen to break, it shatters into small pellets, which shouldn't cause any serious injury. Tempered glass is used in side and rear windows of motor vehicles and all glass door products. New building codes require many other areas in the home to have safety glass. Consult your window professional to ensure that you are conforming to these codes.

Laminated Glass is a multifunctional glazing material that can be used in a variety of applications. It is manufactured by permanently bonding two or more lites of glass with layers of polyvinyl butyral (PVB) interlayer, under heat and pressure, to create a single construction. It has many uses and applications.

Sound Control Shielding a building's environment from increasing noise levels, especially near airports and busy highways, is a critical factor in the specification of glazing materials for both new and renovated structures. Laminated glass is a proven, effective solution for acoustical protection.

Light & Solar Control Laminated architectural glass may be designed to reduce solar energy transmittance, control glare and screen out ultraviolet (UV) radiation. Transmitted solar energy is reduced by the use of tinted or coated glass, colored interlayers, or combinations of each that absorb part of the solar radiation in the ultraviolet, visible and near-infrared ranges. The absorbed energy is converted to heat, and a large portion is dissipated to the exterior.

Safety & Burglary Resistant Laminated safety glass is a multifunctional glazing material that when impacted, typically breaks safely and remains an integral part of the opening. Impulse burglaries are resisted by the tough plastic interlayer.

Decorative Laminated glass allows great flexibility for decorative glass. Many different effects can be created by deliberately adding other substances to the laminate.

Hurricane and Storm Glass-The stringent code requirements of Florida and other coastal regions require that the building envelope be maintained during a hurricane. All elements of the building shell must resist the effects of windborne debris as well as sustained turbulent winds lasting several hours. Extensive research, following Hurricane Andrew in 1992, showed that a breach of the envelope led to internal pressurization of the building. This effectively doubled the forces on major structural elements such as walls and roofs, leading to catastrophic failure.

6. Three different methods of replacing windows

1. **Sash replacement** (double hung windows only) - sashes (the parts of the window that go up and down) and the jamb liners (tracks that the sashes ride up and down on) are removed from the window. New energy efficient jamb liners and sashes are inserted into the existing window frame.

Energy Efficiency: Because this method relies on your existing window frames being plumb, level and square, it can be the least energy efficient way to replace windows. If your windows are fairly square it can be a very effective. Manufacturers will only guarantee the energy ratings of the glass itself, not the entire window.

Disruption to your home: There is minimal disruption with this method. The interior window stops are removed to install this type of replacement window. Only the parts and pieces of the existing window are being replaced. The existing interior and exterior trim remain.

Ease of Installation: Fairly easy to install for an experienced mechanic. Can be time consuming if existing window frames are not square. Much shimming involved and installation of after market weather stripping is typically required. Must measure for screens separately. Can be difficult to provide tight fitting screens.

When to use: This method should only be used when you desire to maintain the original look and feel of the old windows, and you do not want to incur additional expense and disruption to your home of a full frame tear out. It is typically done with wood windows but is also available in wood clad. It can only be done with double hung windows and picture windows. Typically is not done with an all vinyl product.

Cost-Moderate to high priced depending upon window options. Typically costs about the same as a wood clad pocket replacement window.

2. **Insert replacement**-or pocket fit window. Sashes and jamb liners are removed and a new window with its own frame is installed within the existing frame.

Energy Efficiency: Because the window has new sashes and frame it will provide excellent energy efficiency. The manufacturer can provide and guarantee the efficiency of the product. Cannot guarantee that air leakage will not occur around existing window frame.

Disruption to your home: There is minimal disruption with this method. The interior window stops are removed to install this type of replacement window. Only the parts and pieces of the existing window are being replaced. The existing interior and exterior trim remain. Can be installed from the exterior without removing any interior stops.

Ease of Installation: Easiest way to install for an experienced mechanic. Eliminates concerns for windows that are not plumb level or square because it has its own frame. Typically the exterior trim of the existing window is covered or wrapped in matching aluminum to seal the old exterior trim and make it low maintenance.

When to use: This method should be used when you desire maximum energy efficiency, minimal disruption to your home and minimal labor cost. This is the common method for installing vinyl windows. Can be used with double hung, casement, picture and awning windows.

Cost-Moderate to high priced replacement because labor cost is minimal but windows are custom sized.

3. **Full frame replacement**-Interior trim, exterior trim and entire window is removed and a new window with its own frame is installed within the framed wall opening. New insulation is installed around the perimeter of the window.

Energy Efficiency: Because this method removes the entire window and frame and insulation can be installed around the perimeter, it provides maximum energy efficiency.

Disruption to your home: There is major disruption with this method. All parts of the window are removed along with interior and exterior trim. May require repairs to interior surfaces. May require additional painting to adjacent walls.

Ease of Installation: Most difficult installation method and major time involved. All window components, exterior and interior trim are replaced. Requires an experienced mechanic for installation and trim work.

When to use: This method should be used when you desire to maintain the original look and feel of the old windows and you want maximum efficiency. You also want to replace or change your interior moldings. Typically not done using vinyl windows. Done when old frames are

rotting out and or a desire to replace interior trim. Typically done with wood and clad windows. Can be done with all styles of windows.

Cost-High priced replacement because of high labor and material costs.

7. Warranties- what do they really mean and how to read them?

Generally, there are two types of warranties. “Implied Warranties” based on state law which are unwritten promises that say consumers are entitled to get what they have paid for. “Express Warranties” are promises actually stated to the consumer. They could be written, for example in a contract or in an advertisement, or they could be oral, such as a sales representative’s statement to a buyer about how a window will not leak for 10 years.

The Moss Warranty Act is the federal law governing written warranties on consumer products and is overseen by the Federal Trade Commission. The act only applies to warranties on goods, and only applies to consumer sales.

Warranty coverage should be described in a single, easy to read document. It should explain what is and is not covered by the warranty, how long it lasts, and how a claim is made.

The warranty must be titled “full” or “limited.” A “full warranty must meet 5 requirements: it must be fully transferable to later owners of the purchased goods; service calls must be made without any charge to the consumer; if the contractor cannot repair the problem, consumers can choose to get their money back or obtain a complete replacement of the damaged part; to make a claim, the consumer merely has to notify the contractor of the problem and request warranty coverage; and the full warranty must not limit any implied warranties the consumer may be entitled to under state law.

If the warranty is not “full” then by default it must be “limited.” Limited warranties will always have restrictions. You also may have some parts of a warranty under a full warranty and other parts under a limited warranty.

Warranties are typically written by the attorneys of the manufacturers to protect the manufacturer, not the consumer. Beware of lifetime warranties. If they are too good to be true then usually they are. Often time’s new or unknown manufacturers offer warranties that they cannot fulfill, in order to compete in the marketplace. Do not purchase a product just because you think it has a great warranty. Typically reputable manufacturers will offer competing or similar warranties that are commonplace in the industry.

This article is for informational purposes only and should not be construed as legal advice. If you have a warranty issue you should consult with your attorney.

8. How much should window replacements cost?

Replacement window prices vary from company to company, product to product. Some may appear to be ridiculously low; others outrageously high. The following information will help you establish a budget for your project.

Vinyl pocket replacement

Replace 10 existing 3-by-5-foot double-hung windows with insulated vinyl replacement windows (pocket fit application in a wood frame). Wrap existing exterior trim as required to match. Do not disturb existing interior trim or exterior trim.

\$5000-\$8000 average cost depending upon window manufacturer, options and installation conditions*

Wood Clad pocket replacement

Replace 10 existing 3-by-5-foot double-hung windows with insulated wood clad replacement windows (pocket fit application in a wood frame). Wrap existing exterior trim as required to match. Do not disturb existing interior trim or exterior trim.

\$8000 -\$12000 average cost depending upon window manufacturer, options and installation conditions*

Wood Clad full tear out

Replace 10 existing 3-by-5-foot double-hung windows with insulated wood clad replacement windows (full frame tear out). Install new interior and exterior trim.

\$12000-\$18000 average cost depending upon window manufacturer, options and installation conditions*

*For informational purposes only, not guaranteed. Consult with your window professional for pricing that is specific to your project.

9. How to choose the right window contractor

Your success in finding a reliable, honest and dependable company will ultimately predict your happiness or disappointment in your project. The following checklist should help eliminate most of the problem contractors and help ensure your success rate:

- ✓ Home improvement license
- ✓ Liability, auto and workmen's compensation insurance
- ✓ Numerous customer references
- ✓ An established commercial place of business, preferably with a showroom
- ✓ In business for at least 5 years
- ✓ Proof of financial stability
- ✓ Written warranties for product and workmanship

- ✓ Written standards for installation
- ✓ Factory trained or authorized installers
- ✓ In house service department
- ✓ Able to provide financing for your project

10. Buyer Beware

Buy 2 get one free...40% guaranteed energy savings....double lifetime warranty....if you buy tonight I can reduce the cost by \$\$\$\$...Save \$150 per window... free energy audit...Save 30% with our biggest sale of the year!...\$100 per window instant factory rebate...

In today's advertising world we are constantly bombarded with window replacement sales that sound like great deals. For the first time purchaser these "sales" are very enticing but more often than not turn out to be too good to be true. They learn the hard way.

Beware of unethical sales and marketing practices; inflated list prices, first night price drops, bogus sales, 3 hour in-home presentations and refusal to leave the house when asked. Much of the industry still use these outdated advertising and sales methodologies that can be illegal.

Last year Penguin Windows, based in Seattle Washington was charged by the State's Attorney General with fraudulent advertising. The lawsuit said that Penguin's ads, which claimed that its windows would save homeowners at least 40 percent on their heating and cooling bills, are false and Penguin had no reasonable basis to support them.

The case was settled out of court. Penguin did not admit guilt but agreed to terms prohibiting it from:

- Making misrepresentations to gain entry to the home
- Failing to substantiate advertising claims
- Interfering with cancellation rights
- Continuing in-home sales presentations after a customer has clearly stated that he or she wants it to end

In a letter sent this year the Washington State's Attorney General's office warned more than 30 home remodelers around the state to be truthful in their marketing and avoid high pressure sales pitches.

"We want the home remodeling industry to do a makeover on their bad sales practices. The law is clear as glass. If you intend to sell windows you can't get your foot in the door by telling consumers your going to do something else and you can't make up discounts and rebates to trick consumers into thinking they are getting a

deal,” said Assistant Attorney General Jack Zurlini of the Consumer Protection Division.

The Federal Trade Commission recently has begun a series of private investigations into window manufacturers focusing on energy savings and pledges.

11. What to do next?

Prepare your list of questions about your project. Contact a professional window replacement company and ask upfront questions about their sales process. Arrange for a no obligation free estimate at your home or schedule an appointment to visit their showroom. A typical in-home appointment should last about an hour. Rate the company on all areas of the process, not just the products they carry. Determine what is most important to you. Price, Quality, Service... it is impossible to get all three.

I hope this guide serves its purpose in providing an educational and informative report on replacing your windows. It is my sincere intention to educate every potential candidate I come in contact with for replacement windows so they may make a well informed decision. If you wish to take advantage of the services from one of the most reputable companies in the area please contact me at 1-800-595-9991 or go to www.windowscontactor.com and request a free estimate. My pledge to you is to take the inflated prices and high pressure sales tactics out of the window replacement business. I will educate you so you can make a choice and a well informed decision.

*Dennis Dunn
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