



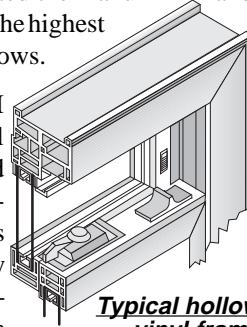
Jim Dulley

Thank you for your interest in writing to me about selecting replacement windows for your home. The higher-quality vinyl windows are excellent choices for almost any home. I have insulated Vinyl Max windows in my own home.

There are literally hundreds of small local manufacturers of vinyl windows. Some are good and some are not. When you listen

to their salesperson, they will make their windows sound like the very best in the world. On the following pages, I have listed the manufacturers of what I consider are the highest quality vinyl replacement windows.

Most of the windows that I have listed are of relatively equal energy efficiency. For very cold climates, the optional foam insulation-filled vinyl frames (this is the type that I have in my home) resist condensation better than hollow frames. These



Typical hollow vinyl frame

are made by Champion, Great Lakes, Kensington (Serious), Thermal Industries and Vinyl Max. The "Legend Series" by Windsor has a solid cellular vinyl frame. It is very similar to real painted wood, without all the regular maintenance. The solid frame is also very rigid and durable. I have personally visited the Champion and VinylMax factories and their products are excellent quality.

The type of glass has the greatest impact on the efficiency, amount of condensation, summer heat gain/glare and furniture fading. At the very minimum, select double pane low-e windows with argon gas in the gap. The argon gas increases the insulation level and greatly reduces outdoor noise transmission through the glass. It is a noticeable improvement. Virtually all the manufacturers that I have listed can install the above type of glass in their replacement vinyl window frames.

The chart to the left shows some heat/glare control properties that are applicable for hot climates. On page 4, I have included a chart showing the insulation R-values of various common glass options. "Soft coat" low-e is better than "hard coat", so ask the salesperson which they plan to install. For severely cold climates, Hurd (Heat Mirror 88) and Weathershield (Value R-10) offer the most efficient glass. It is also very expensive, so make sure you really need it.

Jim

Typical Summer Heat and Glare Control Properties with Vinyl Windows

# Panes of Glass and Glazing Type	Visible Transmittance		Solar Heat Gain Coefficient	
	Glass Only	Total Window	Glass Only	Total Window
Single, clear	0.90	0.66	0.86	0.66
Single, bronze tint	0.68	0.50	0.73	0.56
Single, green tint	0.82	0.60	0.71	0.55
Single, clear, solar control retrofit film	0.25	0.18	0.40	0.33
Double, clear, 1/2" between panes, air in gap	0.81	0.59	0.76	0.59
Double, bronze tint outer pane, 1/2", air	0.62	0.45	0.62	0.49
Double, green tint outer pane, 1/2", air	0.75	0.54	0.60	0.47
Double, clear, low-e (e = 0.20)*, 1/2", air	0.76	0.55	0.65	0.51
Double, Southern, low-e (e=0.10), on tint, 1/2", air	0.45	0.33	0.35	0.29
Triple, clear, low-e (e = 0.10) on two panes, 3/8" to 1/2", argon gas	0.68	0.50	0.49	0.39

Visible Transmittance refers to the amount of light (and glare) that comes in through the window (a lower number means less glare). Solar heat gain coefficient refers to how much of the sun's heat comes in through the window (a lower number blocks more heat). * e is the emittance of the low-e coated surface. e=.20 is for hard coat, e=.10 is for soft coat. Values are for a 3-foot-by-5-foot horizontal slider window with vinyl frames and aluminum spacers. Solar heat gain coefficients vary somewhat with window size. Source: U.S. Department of Energy

Selected Manufacturers of Efficient Vinyl Windows

ACADIA WINDOWS & DOORS, 930 Todds La., Baltimore, MD 21237 - (800) 638-6084 www.acadiawindows.com

styles - awning • bay • bow • casement • double hung • hopper • horizontal slider • picture • single hung • fixed units — arch, half round, quarter round, elliptical, transom, square, octagon, geometric shapes

colors - beige • white

glass options - 1" double glazing is standard • Low E • argon gas fill • triple insulated glass • bronze or gray tint

features - Optional brass handles are available. Diamond, French or colonial grids available. There is a limited lifetime warranty on the vinyl extrusions. The real woodgrain veneer on the interior surface is paintable or stainable and will not delaminate from the windows. Bays and bows have a built-in cable system for strength; can eliminate need for exterior knee braces.

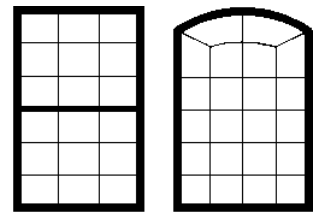
CERTAINTEED CORP., PO Box 860, Valley Forge, PA 19482 - (800) 782-8777 www.certainteed.com

styles - awning • bay • bow • casement • double hung • garden • horizontal slider • picture • single hung • fixed units — arch, eyebrow, elliptical, half round, full round, quarter round, gothic arch, half gothic, oval, half oval, octagon, transom

colors - tan • white

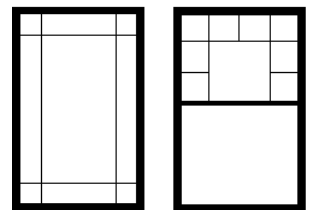
glass options - 5/8" or 7/8" double glazing with low conductance spacer • "Thermafect" is a Low E glass with two microscopic layers of silver, blocks 84% of ultraviolet radiation • tinted or obscure glass • argon gas fill • tempered

features - Operable arch-shaped windows available. "Devon" windows are manufactured from "Certavin", an exclusive vinyl resin formulation that can stand up to a lifetime of harsh exposure without corroding, peeling, chipping or flaking. Hidden tabs attach them securely to sash with no gaps, easy to remove for cleaning. Flush mounted tilt latches keep the view clean and uncluttered. Available with grids between glass. Bays/ bows have a birch head and seat board that is insulated with a foam core. There is a limited lifetime warranty against manufacturing defects for the original owner.



Colonial

Cathedral



Prairie

Victorian

Examples of Available Grid Styles by Certainteed

CHAMPION WINDOWS, 12121 Champion Way, Cincinnati, OH 45241 - (800) 875-5575 (513) 346-4600 www.championwindow.com
styles - bay • bow • casement • double-hung • garden • horizontal sliding • picture
colors - white • pvc coated aluminum exterior
glass options - double-pane argon gas filled insulated glass with low-e coating
features - All windows come with a lifetime warranty on material, labor, glass breakage and seal failure. Frames are foam filled for increased insulation. Decorative grilles are available in four styles — colonial, contemporary, French or Tudor. Each window is custom manufactured to fit your opening, so every size is available.

CRESTLINE WINDOWS & DOORS (Peachtree), PO Box 800, Mosinee, WI 54455 - (800) 826-5509 www.crestlinewindows.com
styles - awning • bay • bow • casement • double hung • horizontal slider • picture • single hung • fixed units — arch, half round, quarter round, full round, octagon, transom, geometric shapes
colors - almond • white
glass options - 3/4" insulated glass is standard • 3/4" SmartR (northern) or SunPLUS4 (southern) is argon-filled insulated glass • gray or bronze tinted • obscure • high-altitude insulated
features - Colonial grilles or custom patterned grilles can be added to the airspace between the panes. The grilles in the airspace match vinyl color. The casement window has a single-throw, multi-point lock for security. There is lifetime coverage on the casement and awning operating hardware. There is lifetime coverage on the vinyl mainframe and sash; 20-years on insulated glass seal failure. Applied pine or oak wood head and seat boards are included with the bows and bays. The bays are available with casements or double hungs on either side of a picture window or the center unit can be an operating window.

GORELL ENTERPRISES, 1380 Wayne Ave., Indiana, PA 15701 - (800) 946-7355 (724) 465-1800 www.gorell.com
styles - awning • bay • bow • casement • double hung • picture • garden • horizontal slider • fixed units • half circle, quarter circle, ellipse, geometric shapes
colors - almond • satin white • optional golden oak and darkwood interior finishes
glass options - Thermal Master III — triple-pane glass system includes Low E coating on two glass pane surfaces and krypton gas fill between the panes • Energy Master III — triple-pane system includes Low E coating on two glass pane surfaces and argon gas fill between the panes • Climate Master — insulating glass system with Low E coating and argon gas • AC Master — insulating glass system (warm climates) with Low E coating and argon gas • decorative glass designs — V-grooved, leaded, obscure, etched or stained
features - A millwork design on the interior master frame gives the appearance of handcrafted molding. Several of the windows have foam-filled extrusions to increase the insulating performance by reducing conduction within the multiple chambers of the frame. The tilt and slide windows have special hardware that allows the sashes to pivot in for easy cleaning and to provide full ventilation.

GREAT LAKES WINDOWS, PO Box 1896, Toledo, OH 43603 - (800) 666-0000 (419) 666-5555 www.greatlakeswindow.com
styles - awning • bay • bow • casement • French casement — center post eliminated giving full view • double hung • garden horizontal slider
colors - camel • earthtone • white • colonial cherry woodgrain • golden oak woodgrain • natural oak woodgrain
glass options - Intercept warm-edge insulated glass is standard • Hi-R + Plus with argon gas has soft-coat Low E glass and steel spacer channel system • Easy-Clean glass nonstick coating protects glass from excessive dirt, stains and grime, reduces cleaning frequency • Designer glass panels — hand-cut leaded glass inlays surrounded by genuine brass, lead or antique pewtertone caming, mounted between two continuous sheets of annealed or safety-tempered insulated glass, available in 12 styles and 10 accent colors — ruby red, aqua marine, deep lavender, emerald green, royal blue, lapis blue, sunrise orange, sunflower yellow, champagne pink, mist grey • beveled-leaded glass • v-groove hand-cut glass
features - The vinyl extrusions are filled with R-Core insulation, same polyurethane used in insulated steel and refrigerator doors, for a high R factor of 13. Woodgrain interiors available are golden oak, natural oak and colonial cherry. The bay, bow and garden windows are available with 1 1/4" thick head and seat boards in oak or furniture-grade birch. An optional polyurethane insulated seat can be added. The seat and jambs can be stained or painted to suit your home. Optional cable support installation systems can be added to the bay and bow windows. Colonial, diamond or prairie grids are available between the panes.

HURD MILLWORK CO., 575 South Whelen Ave., Medford, WI 54451 - (800) 223-4873 (715) 748-2011 www.hurd.com
styles - awning • casement • double hung • horizontal sliding • single hung • fixed units — half round, quarter round, elliptical, eyebrow, round, radius, geometric shapes
colors - almond • white
glass options - double-pane insulated is standard • double-pane insulated with low-e
features - Lifetime limited warranty on the glass options and a 10-year warranty on the components. The warranty is transferable if you decide to sell your home. A divided light look is available — between the glass or removable interior wood grilles. Both sashes tilt in on the double hung window for easy cleaning.

KENSINGTON (SERIOUS) WINDOWS, 1250 Elko Dr., Sunnyvale, CA 94089 - (800) 797-8159 www.seriouswindows.com
styles - awning • bay • bow • casement • cottage • double hung • garden • horizontal sliding • tilt and slide • fixed units — half round, quarter round, round, elliptical, octagon, oval, geometric shapes
colors - tan • white • woodgrain laminate interior
glass options - 7/8" insulated glass is standard • Formula A is soft coat Low E with argon gas, blocks 80% of ultra violet light • Heat Mirror • tempered • tinted or obscure • designer glass — decorative bevel-leaded glass patterns with standard silver or optional gold or black caming, custom cut grooved glass and muntins.
features - An optional polyurethane foam can be injected into the hollow area of the window frame to increase the insulation level to R-25, excluding the glass. The woodgrain interior is a laminate that bonds itself to the vinyl window with heat and pressure, backed with a limited lifetime warranty. Muntins are available. The tilt and slide windows have special hardware that allow the windows to slide open easily to any position. The full tilt position allows you to open the entire window for complete ventilation, emergency exiting or for easy cleaning.

KOLBE VINYL WINDOWS, 1211 Depot St., Manawa, WI 54949 - (920) 596-2501 www.kolbe-kolbe.com

styles - awning • bay • bow • casement • double hung • garden • horizontal slider • picture • fixed units — arch, half round, quarter round, elliptical, transom, geometric shapes

colors - beige • white

glass options - 7/8" dual-seal insulated glass is standard • H^oK glazing is Low E insulating glass with argon fill with a warm-edge, stainless steel spacer bar system • LoE Sun-145 for warm climates for solar control • bronze or gray tint • tempered • laminated

features - "Inspiration" series has optional divided lite grilles inside the insulating glass unit or Simulite. Simulite gives the appearance of true divided lites — grille bars are adhered to the interior and exterior of the insulating glass with an aluminum spacer bar between the glass panels. Options for grilles in the airspace are contoured or pencil brass grilles; flat grilles are standard. The designs available include — colonial (traditional rectangular), diamond and prairie-style grille patterns. Choose from historic 7/8" or 1 1/8" wide muntin K-bars. Casements have multi-point locking system. Special hinges on the casement and awning windows allow them to be opened farther for cleaning. For added safety, the hinges can be locked into position during cleaning. Limited lifetime warranty on frame parts, sash parts and hardware.

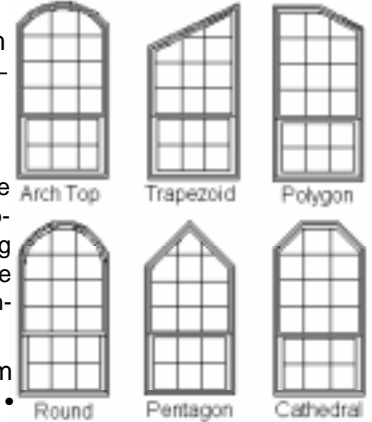
PHILIPS PRODUCTS, 3221 Magnum, Elkhart, IN 46516 - (574) 296-0000 www.philipsproducts.com

styles - awning • casement • double hung • horizontal slider • picture • single hung • fixed units — arch, half round, quarter round, full round, octagon, oval, radius, geometric shapes

colors - tan • white

glass options - 3/4" insulating glass is standard • Low E • argon gas fill • triple glaze

features - The windows are available with sculptured grids that are placed between the panes. There are operable single hung windows with specialty shapes — arch top, round top, polygon top, trapezoid top, pentagon top or cathedral top. See the illustration to the right of the various single-hung units available. There is a limited lifetime warranty on the windows and a 10-year warranty on the glass seal. An easy-to-use mull system allows windows to be joined with each other to create unusual and interesting combinations.



**Specialty Shape
Single-hung Windows
from Philips**

SIMONTON WINDOWS, PO Box 1646, Parkersburg, WV 26102 - (800) 746-6686 www.simonton.com

styles - awning • bay • bow • casement • double hung • garden • hopper • horizontal slider • picture • single-hung • fixed units — half round, quarter round, round, elliptical, gothic, geometric shapes

colors - tan • white • honey oak woodgrain interior • amber oak woodgrain interior

glass options - Super Sensor glass package combines Low E and argon-filled glass, a Super Spacer and KeepSafe laminated glass (two panes of glass bonded to a durable plastic interlayer — preventing glass fallout on the inside of the home, provides outside noise reduction and added UV ray protection) • 1" insulated glass • customized Low E for northern and southern regions • tempered • bronze or gray tint • Azurlite • obscure • laminated • SunClean

features - Woodgrain honey oak or amber oak interior finish is available for several of the styles of windows. There are several different grid options to choose — colonial in flat, sculptured or brass bars, colonial shadow in a bevel-cut glass look, diamond grids in flat or brass bars. The horizontal sliders have a triple-walled roller track to keep the track level and an additional center support wall keeps the sash operating smoothly. The casement windows have a multi-point locking system with one handle. The bay and bows have head and seat boards available in 1 1/4" thick oak or birch veneer. Extra pieces of matching woodgrain veneer are provided to cover the interior jamb boards. All seat boards are insulated with 1 1/2" thick insulation. Many of the windows have a special "Air Lock" — a streamline air latch that allows partial ventilation without opening the sash completely.

THERMAL INDUSTRIES, 301 Brushton Ave., Pittsburgh, PA 15221 - (800) 245-1540 www.thermalindustries.com

styles - awning • bay • bow • casement • double hung • e-z slider • garden • hopper • horizontal slider • picture • V-bay • fixed units — half round, round, octagon, elliptical, geometric shapes

colors - brown • earthtone • white

glass options - insulating glass is standard • Peak Performance — soft coat Low E with argon gas fill • Super Peak Performance — triple layer of soft coat Low E, double layer krypton gas and triple thermal break spacer-edge construction • obscure • laminated • tinted • "DreamGlas" — decorative glass available as etched, decra-led, brass coming or jewel cut designs

features - Optional EPS foam can be placed around the frame and inside the sash for increased R-values. The "DreamWood" series has a stain-ready Ponderosa pine wood interior and a fusion-welded vinyl exterior. The V-bay is two windows joined in a V-shape to create a unique nook. The E-Z slider has a center swing-cam safety lock system that allows each sliding sash to pivot open for easy cleaning. Casements have a dual-action multi-point locking system. A folding handle that gives more clearance for window shades, etc. is available. Internal muntin bars available — colonial wood grille, diamond, prairie or geo designs. "Natural WoodGrain", a simulated pine or oak woodgrain laminate, is an option if you are looking for a cost-effective, maintenance-free window that provides the look of natural wood. It is treated like wood; it can be painted to accentuate existing room decor, stained to match wood trim or coated with polyurethane to maintain its natural look.

VINYL MAX, 2921 McBride Ct., Hamilton, OH 45011 - (800) 847-3736 (513) 772-2247 www.vinylmax.com

styles - awning • bay • bow • casement • double hung • garden • horizontal slider • picture • single hung • fixed units — arch, half round, quarter round, full round, oval, elliptical, eyebrow, transom, octagon, geometric shapes

colors - bronze • desert sand • white • natural oakgrain laminate interior on white exterior

glass options - 7/8" or 3/4" double pane insulated glass • Low E • argon gas fill • tempered • bronze or gray tint • obscure • triple-glaze • krypton gas filled

features - Optional green foam filling (same material used to insulate refrigerators) can be injected into the hollow cavities of the vinyl framing material. Awning and casements have an optional multi-point lock operated by a single lever for added security. The bay, bow and garden windows have an oak interior. Colonial, Georgian, diamond or brass grids are available. The windows have a lifetime limited warranty. The warm edge spacer helps reduce condensation while providing comfort. These windows are available with PPG Solarban 60 glass which blocks 60% of the solar heat during the summer.

WEATHER SHIELD MFG. CO., PO Box 309, Medford, WI 54451 - (800) 222-2995 www.weathershield.com

styles - awning • basement • bay • bow • casement • French casement — center post eliminated giving full view • double hung • garden bay • horizontal slider • picture • single hung • fixed units — half round, quarter round, octagon, geometric shapes

colors - tan • white • western adobe • Hartford green

glass options - Value R-10 — three panes glass, two Low E coated surfaces and krypton gas between both airspaces • Insul Low E with argon — two panes of glass, one Low E surface, one argon gas-filled airspace • Insul Low E — two panes of glass, one Low E surface • Insul — single airspace • specialty glazing — spandrel, tinted, rain, evergreen, obscure, tempered

features - There are operable arch-shaped windows available as single hung or casement styles. Simulated divided lites give the illusion of individually glazed panes of glass. Airspace grilles are sealed between the glass for easy washing and cleaning. The hardware comes in a choice of white or goldtone to match the windows. Bright brass is optional. A seacoast hardware package is available for coastal applications. Hardware has a lifetime warranty. An interior jamb extension is available in pine or oak, with an accessory clip that easily installs onto the interior of your window to match interior wood trim.

Vinyl Window Insulating R-values	
# Panes and Glazing Type	R-Value
Single	1.00
Double, 1/2", air	2.08
Double, e = 0.20*, 1/2",air	2.56
Double, e = 0.10*, 1/2",air	2.71
Double, e = 0.10*, 1/2" argon gas	2.94
Triple, e = 0.10 on two panes*, 1/2", argon gas	4.35
Quad, e = 0.10 on two panes*, 1/4", krypton gas	4.76

* e is the emissivity of the low-e coated surface. e=.20 is for hard coat, e=.10 is for soft coat. Values are for 3-foot-by-5-foot windows. R-Values vary somewhat with window size. Air, argon or krypton refers to the gas in the gap. Source: U.S. Department of Energy

WINDSOR WINDOW CO., 900 South 19th St., W. Des Moines, IA 50265 - (800) 218-6186 www.windsorwindows.com

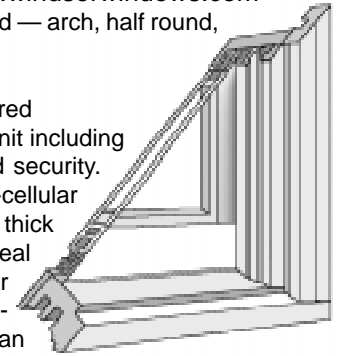
styles - awning • bay • bow • casement • double hung • horizontal slider • picture • single hung • fixed — arch, half round, quarter round, full round, elliptical, octagon, radius, transom, geometric shapes

colors - almond • white • custom available

glass options - 3/4" double pane insulated glass • Low E • argon gas fill • obscure • tinted • tempered

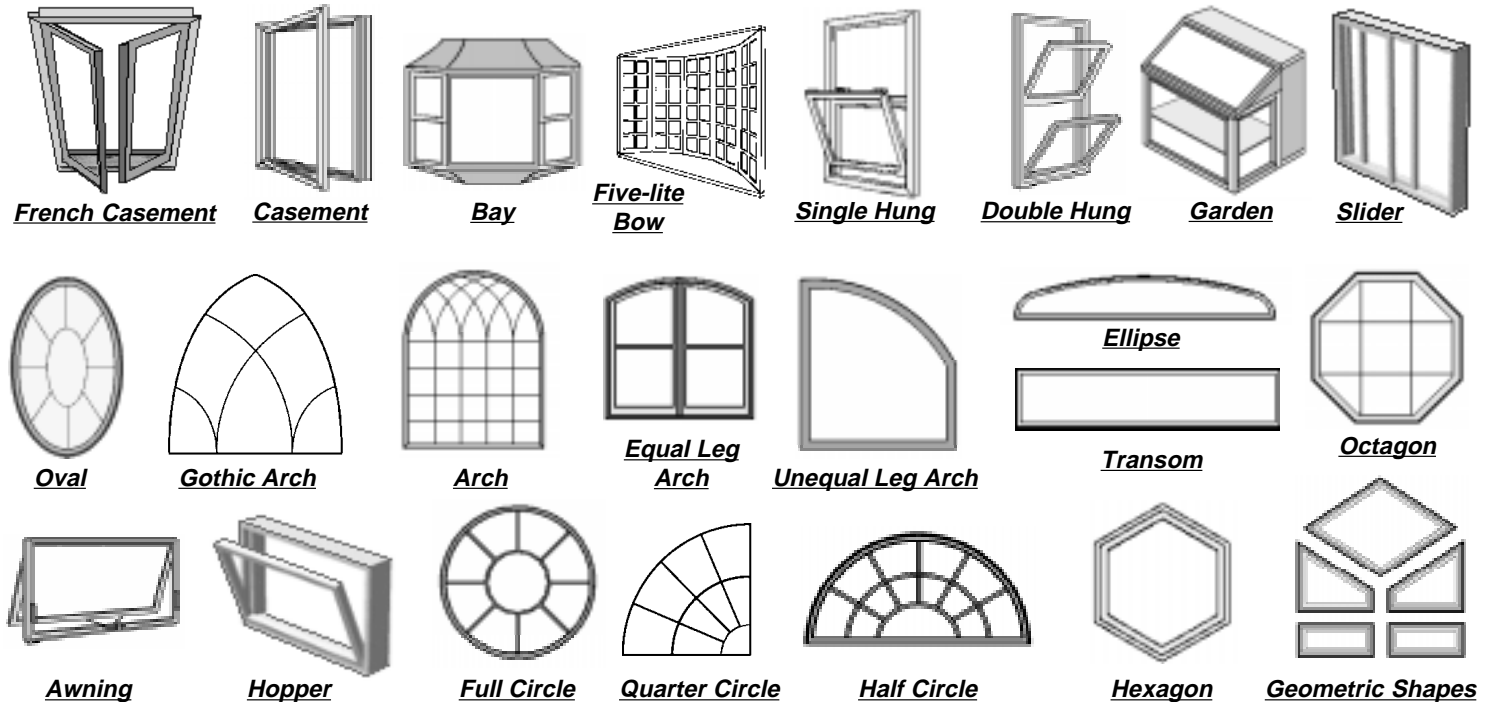
features - The "Next Dimensions" series is a vinyl window with a lifetime warranty on the entire unit including the glass and its seals. Casements have multipoint, tamper-resistant locking system for added security.

Choose natural pine, oak or white vinyl-wrapped jamb extensions. The "Legend" series is an all-cellular PVC foam window frame which is not hollow. The sash frame is hollow vinyl that uses a unique thick wall, no interior rib design. The interior surface is real wood. The exterior has the look and feel of real wood; it can be painted. There is less contraction and expansion than wood. It is a good choice for high moisture and coastal areas. There is a 25-year warranty against warping, blistering and rotting; 20-year warranty on glass; 7-year warranty on paint. The insulation level is slightly better than real wood. Available in double hung operating units and radius and rectangle double hung picture units. The windows are available with 13/16" aluminum inner grille or 7/8" and 1 1/4" wood perimeter grilles, stick grilles or simulated divided lites. Standard and custom designed grille patterns are available.



Legend cellular vinyl by Windsor Windows

Common Styles of Windows



Visit www.dulley.com for a listing of all 194 Dulley Update Bulletins available to order by mail for email delivery.