HISTORICAL PROJECT – WINDOW REPLACEMENT

Home Owner – Barry Pell

133 Sutherland Rd

RENEWAL BY ANDERSEN – Brighton, MA

Existing Exterior: Front

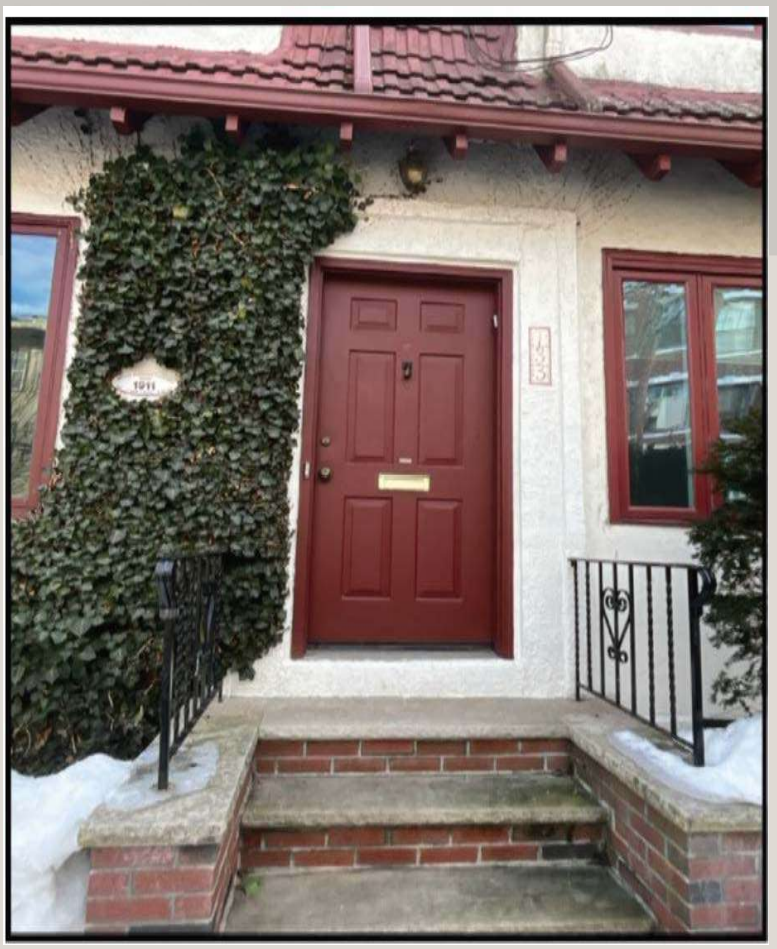
Proposed Exterior: Front

Proposed Exterior: Front

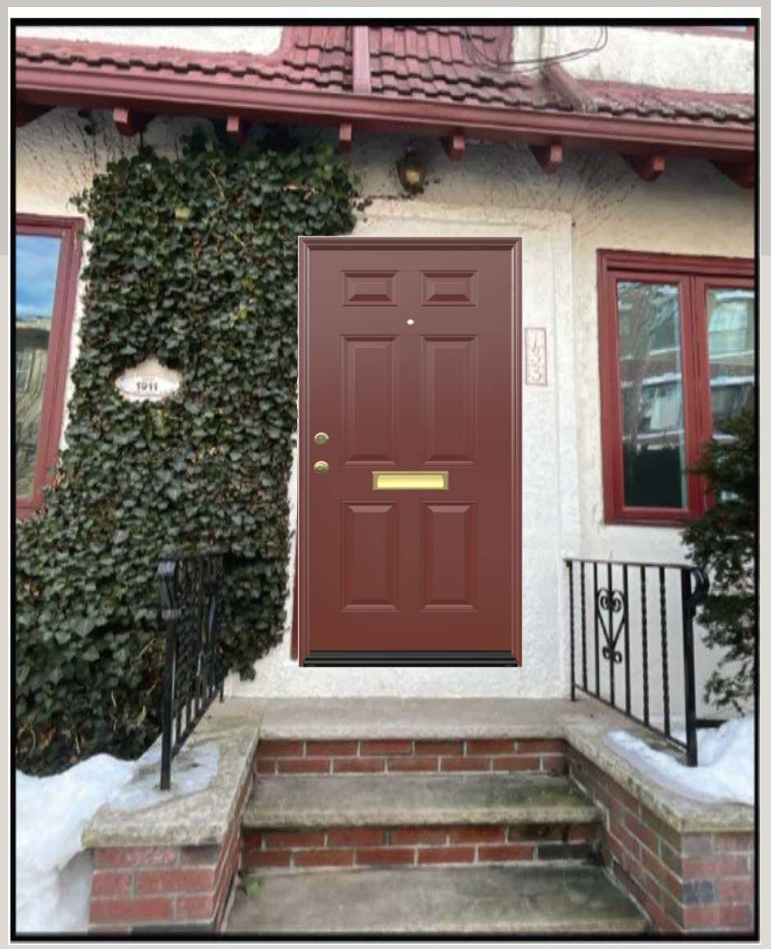
101 **Waiting Room**
79-1/2" W 60" H
Window, Casement - Triple

Window: Acclaim™ Casement Triple, 1:2:1, Left Vent / Stat / Right Vent, Base Frame, Exterior Red Rock, Interior White **Performance Calculator:** PG Rating: 35 | DP Rating: + 35 / - 35 **Glass:** All Sash: High Performance SmartSun Glass, No Pattern **Hardware:** White **Screen:** TruScene, Full Screen **Grille Style:** No Grille **Grille Pattern:** All Sash: No Grille **Misc:** Standard, Replacement of window frame and sash, includes casing from standard options. **Construction:** Full Frame Window Application (Includes inside, outside casing, stool, apron, sill nose and 2 drip caps) (1), LSWP Windows (1), Ladder and Plank - setup (1), Window Blinds (1) **Material:** 1/2" Backer Rod (1), Foam Can (0.15), Ice & Water 4" (0.2), Ice & Water 9" (0.2), LSWP Materials (1), Standard Wind Finn (3), RBA Red Rock Caulk (2), White paintable DAP (0.1), Fibrex BM - Red Rock (3), Primed 2 1/2" colonial casing - 8' (4), Primed 1x4 - 8' (4)

Existing Exterior: Front



Proposed Exterior: Front



Proposed Exterior: Front

Inswing Entry Door

Ensemble™ Single

Standard

Right

37 9/16" W x 81 3/4" H

36" Nominal Panel Width

80" Nominal Panel Height

Sill Type: Standard

Door Panel: 6-Panel

Surface Texture: Smooth

Exterior Color

Exterior Frame Color: Red Rock

Exterior Panel Color: Red Rock

Interior Color

Interior Frame Color: White

Interior Panel Color: White

102 **Room 1**
37-9/16" W 81-3/4" H
Entry Door, Entry Door

Inswing Entry Door: Ensemble™ Single; Standard; Right; 37 9/16" W x 81 3/4" H; 36" Nominal Panel Width; 80" Nominal Panel Height; Sill Type: Standard; Door Panel: 6-Panel; Surface Texture: Smooth **Exterior Color:** Exterior Frame Color: Red Rock; Exterior Panel Color: Red Rock **Interior Color:** Interior Frame Color: White; Interior Panel Color: White **Sill Options:** Sill Color: Dark Bronze Anodized **Hardware:** Hardware Configuration: Cross-Bored Lock Sets; Lock Types: Double Bore; Exterior Hardware Finish: Yale Antique Brass; Exterior Hardware Set: Horizon; Exterior Deadbolt: Yale Single Cylinder Deadbolt; Interior Hardware Finish: Yale Antique Brass; Interior Hardware Set: Horizon; Interior Deadbolt: Yale Single Cylinder Deadbolt; Strike Plate Finish: Antique Brass; Handle Position: Standard; Handle Height: 35 3/4; Deadbolt Position: Standard; Deadbolt Spread: 5 1/2; Hinge Finish: Antique Brass; Hinge Type: Adjustable Hinge; Hardware Backset: 2 3/4 **Option and Accessory:** Peep Sight Finish: Polished Brass; Peep Sight Application: Common Height; Peep Sight Panel: Active Panel Only; Mail Slot Finish: Polished Brass; Mail Slot Location: Active Panel Only; Mail Slot Height: 32 11/16 **Jamb and Trim:** Jamb Depth: 4-9/16 **Misc:** Notes, Peep hole to aprox at 57 1/2" from botton of door like location today **Construction:** Entry Door (Includes 1 layer each inside/outside casing, toe kick, 2 drip caps) (1), LSWP Hinged Door (1), Field install Ensemble door peep hole at custom height (1) **Material:** 1/2" Backer Rod (1), Foam Can (0.15), Ice & Water 4" (0.2), Ice & Water 9" (0.2), LSWP Materials (1), Standard Wind Finn (2), RBA Red Rock Caulk (2), White paintable DAP (0.1), Fibrex BM - Red Rock (3), Primed 2 1/2" colonial casing - 8' (3), Primed 1x4 - 8' (1)

WHY THEY NEED REPLACED

The homeowner is looking to update and replace (1) Casement Window and (1) Entry Door.

The homeowner is looking to replace the existing front window with Andersen Wood composite with red rock exterior and an entry door with an Ensemble wood exterior red rock. The window and door are hard to open and close, drafty and not energy efficient.

The homeowner would like to update the window and entry door to modern standards, the ease of operation and increase the window and door energy efficiency while maintaining the traditional look of the home.

Our goal is to keep to the original look of the window and door while updating the design so that the homeowners can use this room with more comfort and ease.

EXISTING DOOR MATERIAL: The existing door is wood and in bad shape lots of gaps and cracks in door not energy efficient , extremely drafty and wants to replace to be more efficient .

PROPOSED DOOR MATERIAL: New door will be fiberglass with Red Rock color very close match, and will be far more efficient for the home owner which is what their goal is

Our Product – Fibrex Material

Click on "Fibrex Material" to watch How Fibrex is Made

Fibrex 20 Year Durability Study

Click on "Durability Study" to watch 20 Year Durability Test

Signature SERVICE

RENEWAL BY ANDERSEN

Replace Old Expectations

We believe your Renewal by Andersen® experience is about more than just windows. It's about caring for you and your home, every step of the way.

We own our entire process, from start to finish. What does that mean for you? It means we listen. It means we measure, we build, and we install. And it means we promise to stand by our product, today, tomorrow, and years into the future.

A Heritage That Looks to the Future

For more than a century, Andersen® products and patents have revolutionized the window and door industry. We pair that legacy of quality and innovation with a skilled team of specialists who are dedicated to making sure your window replacement is the best home improvement project you've ever done.

From Our Family to Yours

Your home is unique. It shouldn't be treated like every other house on the block. This is the place where you and your family are making memories and celebrating moments, both big and small. We want to make sure your new windows suit your home life.

You only want to replace your windows one time, so who you choose to do your project is important. When you work with Renewal by Andersen, you know you'll get an exclusive product that is durable, customizable, and beautiful. And you know we'll take care of you – and your home – from start to finish, and beyond.

the best ***PEOPLE***

a superior ***PROCESS***

an exclusive ***PRODUCT***

From consultation to installation, Renewal by Andersen offers one-company accountability backed by a legacy of excellence. We're proud to work with the best people, offer a superior, start-to-finish replacement process, and provide you with exclusive, industry-leading products. **THAT'S RENEWAL BY ANDERSEN SIGNATURE SERVICE.**

Preserving the historic architecture visually!

PERFORMANCE RATINGS AND TEST DATA

NFRC Total Unit Performance

Renewal by Andersen® Product	High Performance Glass Type		U-Factor (BTU/(hr ft2 oF))		SHGC		VT
			Air	HP Gas Blend	Air	HP Gas Blend	
Casement & Fixed	Clear	Without Grilles	0.42	0.41	0.51	0.51	.82
		Full Divided Light Grilles	0.43	0.41	0.46	0.46	
	Low-E4®	Without Grilles	0.31	0.28	0.28	0.27	.72
		Full Divided Light Grilles	0.32	0.29	0.26	0.25	
	Low-E4® Sun	Without Grilles	0.32	0.29	0.17	0.17	.40
		Full Divided Light Grilles	0.33	0.30	0.16	0.15	
	Low-E4® SmartSun™	Without Grilles	0.31	0.28	0.19	0.18	.65
		Full Divided Light Grilles	0.32	0.29	0.17	0.17	
	Low-E4® SmartSun with HeatLock™	Without Grilles	0.26	0.24	0.18	0.18	.63
		Full Divided Light Grilles	0.26	0.24	0.17	0.16	

NFRC DATA - THERMAL PANEL GROUP 1

NFRC TOTAL UNIT PERFORMANCE

Thermal Panel Group 1	Glass Type		1/4 Light					1/2 Light					3/4 Light					Full Light				
			U-Factor (BTU/(hr ft2 oF))[1]		Solar Heat Gain Coefficient (SHGC)[2]		VT[3]	U-Factor (BTU/(hr ft2 oF))[1]		Solar Heat Gain Coefficient (SHGC)[2]		VT[3]	U-Factor (BTU/(hr ft2 oF))[1]		Solar Heat Gain Coefficient (SHGC)[2]		VT[3]	U-Factor (BTU/(hr ft2 oF))[1]		Solar Heat Gain Coefficient (SHGC)[2]		VT[3]
			Air	HP Gas Blend	Air	HP Gas Blend		Air	HP Gas Blend	Air	HP Gas Blend		Air	HP Gas Blend	Air	HP Gas Blend		Air	HP Gas Blend	Air	HP Gas Blend	
	Clear	No Grilles	.22	n/a	.10	n/a	.10	.27	n/a	.19	n/a	.19	.30	n/a	.25	n/a	.26	.35	n/a	.34	n/a	.35
		FDL Grilles	.22	n/a	.09	n/a	.09	.27	n/a	.17	n/a	.17	.30	n/a	.22	n/a	.23	.35	n/a	.30	n/a	.31
	Low-E4®	No Grilles	.20	.19	.06	.06	.09	.23	.22	.11	.10	.17	.25	.23	.14	.14	.23	.28	.26	.18	.18	.31
		FDL Grilles	.20	.19	.05	.05	.08	.23	.22	.09	.09	.15	.25	.23	.12	.12	.20	.28	.26	.16	.16	.27
	Low-E4® Sun	No Grilles	.20	.19	.04	.04	.05	.23	.22	.07	.07	.09	.25	.24	.09	.09	.13	.28	.26	.12	.11	.17
		FDL Grilles	.20	.19	.04	.04	.04	.23	.22	.06	.06	.08	.25	.24	.08	.08	.11	.28	.26	.10	.10	.15
	Low-E4® SmartSun™	No Grilles	.19	.19	.04	.04	.08	.22	.21	.07	.07	.15	.25	.23	.09	.09	.21	.27	.25	.12	.12	.28
		FDL Grilles	.19	.19	.04	.04	.07	.22	.21	.06	.06	.13	.25	.23	.08	.08	.18	.27	.25	.11	.11	.24
	Low-E4® SmartSun with HeatLock™	No Grilles	.19	.18	.04	.04	.08	.21	.20	.07	.07	.15	.22	.21	.09	.09	.20	.24	.23	.12	.12	.27
		FDL Grilles	.19	.18	.04	.04	.07	.21	.20	.06	.06	.13	.22	.21	.08	.08	.17	.24	.23	.11	.11	.24
	Enhanced Triple Pane	No Grilles	.18	.18	.05	.05	.08	.20	.19	.10	.10	.15	.22	.20	.13	.13	.20	.23	.22	.17	.17	.27
	Enhanced Triple Pane with SmartSun™	No Grilles	.18	.18	.04	.04	.07	.20	.19	.07	.07	.13	.22	.20	.09	.09	.18	.23	.21	.11	.11	.24
	Obscure with Low-E4® SmartSun™	No Grilles	.19	.19	.04	.04	.08	.22	.21	.07	.07	.15	.25	.23	.09	.09	.21	.27	.25	.12	.12	.28
	Art Glass[4]	No Grilles	.20	n/a	.09	n/a	.09	.24	n/a	.17	n/a	.17	.27	n/a	.22	n/a	.23	.30	n/a	.30	n/a	.31
	Art Glass - Minnetonka	No Grilles	.21	n/a	.09	n/a	.09	.25	n/a	.16	n/a	.17	.27	n/a	.22	n/a	.23	.31	n/a	.29	n/a	.31
	Cross Reed	No Grilles	.20	n/a	.09	n/a	.09	.24	n/a	.17	n/a	.18	.27	n/a	.23	n/a	.24	.31	n/a	.30	n/a	.32

Thermal Panel Group 1	Opaque		
	U-Factor (BTU/(hr ft2 oF))[1]	Solar Heat Gain Coefficient (SHGC)[2]	VT[3]
	.15	.01	n/a

Low-E4® SmartSun™, "Low-E4®, "Low-E4® Sun" and HeatLock® are Andersen trademarks for "Low-E" glass.

1) U-Factor defines the amount of heat loss through the total unit in BTU/hr/ft², °F. The lower the value, the less heat is lost through the entire product. Window values represent non-tempered glass. Use of tempered glass can increase U-Factor ratings. See andersenwindows.com/nfrc for specific performance values.

2) Solar Heat Gain Coefficient (SHGC) defines the fraction of solar radiation admitted through the glass both directly transmitted and absorbed and subsequently released inward. The lower the value, the less heat is transmitted through the product.

3) Visible Transmittance (VT) measures how much light comes through a product (glass and frame). The higher the value, from 0 to 1, the more daylight the product lets in over the product's total unit area. Visible Light Transmittance is measured over the 380 to 760 nanometer portion of the solar spectrum.

4) NFRC values in the "art glass" column represent the NFRC values for Vermillion, Mille Lacs, St. Croix, Waconia, Nakomis, and Rainier art glass families. NFRC values for Minnetonka art glass and cross reed glass are represented in the following columns.

- NFRC ratings are based on modeling by a third-party agency as validated by an independent test lab in compliance with NFRC program and procedural requirements.
- This data is accurate as of April 2023. Due to ongoing product changes, updated test results, or new industry standards or requirements, this data may change over time. Ratings are for sizes specified by NFRC for testing and certification. Ratings may vary depending on use of tempered glass, different grille options, glass with capillary breather tubes for high altitudes, etc. "Low-E4®, "Low-E4® SmartSun™" and "Low-E4® Sun"
- All NFRC data representing units with grilles is modeled for 3/4" FDL grilles. Other grille options can impact the actual NFRC values of a unit.

Order Summary

dba: RENEWAL BY ANDERSEN OF BOSTON

Legal Name: Renewal by Andersen LLC | License # HIC# 170810
30 Forbes Road | Northborough, MA 01532
Phone: (508)351-2200 | Fax: (508)986-7072 |
rbabostonfileaudit@andersencorp.com
Measure Tech: Alan Dawson, (978)601-4490

Barry Pell
133 Sutherland Road
Brighton, MA 02135
Year Built: 1905
H: (617)987-5561
C: (617)232-9664

JOB PHOTOS

Image 1

Image 2

Image 3

Image 4

Image 5

Image 6

Image 7

Image 8

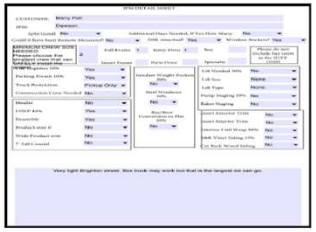


Image 9

ENSEMBLE®
— ENTRY DOORS —

EXCLUSIVELY FROM RENEWAL by ANDERSEN

SPECIFICATION and TECHNICAL MANUAL

CHAPTER 3

PANELS and HARDWARE

PANEL OVERVIEW

The Ensemble™ entry door utilizes fiberglass door panels. These door panels are constructed with an internal LVL and PVC composite skeleton, then faced with a high-strength fiberglass sheet molding compound (SMC). The panel is filled with foam and edged with a weather resistant composite material. Panels are customizable with a variety of glass, color, hardware, and texture options.

ADVANTAGES

Fiberglass entry door panels are a popular choice for residential applications. They provide a multitude of realistic wood looks while possessing characteristics that make them very low maintenance. The fiberglass panels are stable in a wide range of climates, thermally superior to steel, and resistant to dents, cracks, and corrosion.

BEAUTY

Our fiberglass panels emulate the grain texture of wood doors with oak, mahogany, and teak species, and are also available as a smooth panel. These panels are available with a variety of stain and paint colors. Additionally, our panels offer an array of door glass options, including decorative art glass, patterned glass, and high-performance Low-E glass. Each door is custom made to the size and style specifications giving the homeowner ample choice in how they want to maximize the curb appeal of their home with a new expertly crafted and installed entry door.

LONGEVITY

Fiberglass doors are far more stable than wood or steel doors and will resist dents, splits, and rot. Our composite edges help protect the structural materials from moisture and termite intrusion, making them capable of withstanding the wear and tear of any climate. They can be cleaned with mild soap and water and can be professionally refinished allowing the door to evolve with the taste of the homeowner. See the Care & Maintenance Manual for finishing information.

MAINTENANCE

Our fiberglass doors are extremely low maintenance as they resist denting and scratching. Our formulated paint coatings are developed to withstand the effects of harsh ultraviolet sunlight providing years of lasting color.

ENERGY EFFICIENCY

The construction of our panels with a polyurethane foam fill and a wide array of glass options maximizes the performance of the entry door, providing comfort in any climate.

SECURITY

The reinforced construction of our fiberglass panels provides a robust structure to anchor the hinges and locking components. Additionally, large wood lock blocks reinforce the handle sets and locking hardware, adding strength and peace of mind.

PANEL FEATURES

PANEL CONSTRUCTION OVERVIEW

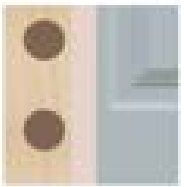
Panels are offered in three common heights and six common widths. These sizes were determined to be the most widely used in the entry door space. Panel cut downs are also available in most popular panel configurations and allow for custom sizing within a select range.

FOAM PANEL FILL

The interior core of the panel is injected with a fast curing polyurethane foam fill that has superior thermal performance to wood or steel construction.

LOCK BLOCKS

The locking assembly of the door is supported by an additional wood lock block. The lock blocks are routed to support either mortise or cross bore hardware assemblies.

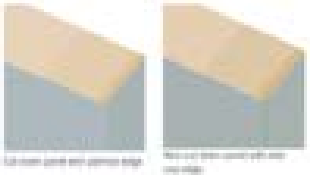


LVL PANEL STILES

Panels are structurally supported by laminated veneered lumber (LVL) that runs the height of the panel. The LVL panel stiles have been designed to support structural loading requirements and minimize the warping or settling of the door panel in the frame.

PANEL STILE CAPS

Panel stile caps protect the LVL stiles of the door and finish the sides of the panel with the same attention to beauty and performance as the panel faces. They are made from a rot-resistant composite material and painted or stained to match or complement the door panel finish. Custom width panels have an extended composite material cap at the ends of the panel to allow for cut down without exposing the LVL Stiles.



SILL SWEEP ATTACHMENT

The sill sweep channel is routed into the composite bottom rail of the panel and supports the rigid attachment of the low-drag, face-sealing sill sweep. Low threshold sills utilize a gap seal.

COMPOSITE RAILS

The top and bottom edges of the door panels are constructed with a composite edge. This edge allows for height customization while protecting the LVL material, helping prevent rot and moisture intrusion.

FIBERGLASS SKIN

Each panel design is molded under heat and pressure from a high strength fiberglass sheet molding compound (SMC), creating a strong, durable surface.

PANELS - LIGHT SURROUND PROFILES

LIGHT SURROUND PROFILES

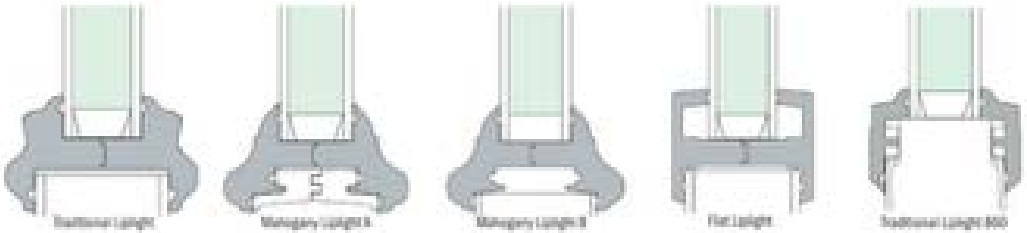
Light surrounds are the door panel components that secure the light of glass into the opening of the door panel. Renewal by Andersen's light surrounds are molded from durable and stable material(s) and painted or stained to match the panel. Light surrounds geometry varies by panel to complement the panel style and provide required structural attachment of the glass to the panel to ensure robust structural performance. **Light surround geometry is non configurable.** The attachment of the light surrounds involves a combination of sealant, fasteners and plugs providing a robust, weathertight seal for the glass.

• For a full list of light surrounds by panel please see the panel sizes and details tables.

LIPLIGHT PROFILES

Liplight profile light surrounds provide a classic look that complement the architectural elements of the panel.

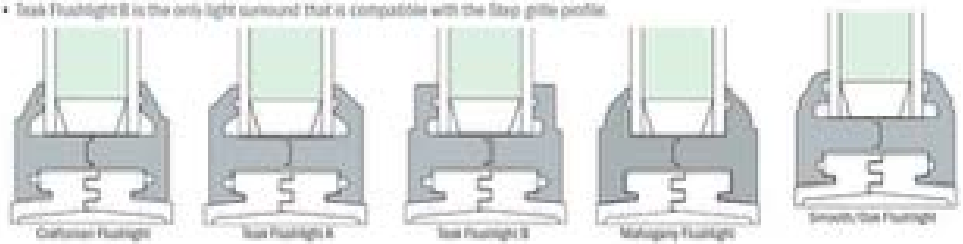
- The traditional liplight is the only light surrounds family that is compatible with full divided light (FDL) or simulated divided light (SDL) grilles (except for step grilles which are only available on Teak Flushlight II profiles).
- All liplight profiles are compatible with GBG grilles when glass size is large enough.



FLUSHLIGHT PROFILES

Flushlight profile light surrounds provide a clean and contemporary look when framing the glass.

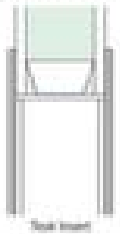
- Not compatible with full divided light (FDL) or most simulated divided light (SDL) grille options.
- All Flushlight profiles are compatible with GBG grilles when glass size is large enough.
- Teak Flushlight II is the only light surround that is compatible with the Step grille profile.



INSERT PROFILE

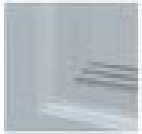
Insert profiles are available on some specialty light panels and provide a sleek and modern finish in your entry door.

- Not compatible with full divided light (FDL) or simulated divided light (SDL) grille options.



PANELS - GEOMETRY

PANEL GEOMETRY



Panel geometry refers to the panel embossments that make up the architectural elements of the panel design. These details run the perimeter of any panel embossment.

- **Panel geometry is non-configurable** and has little impact on the performance of the door. Panel geometries are designed to complement the architectural style of the home.
- **For a full list of panel geometries by panel please see the panel sizes and details tables.**

Mahogany-8 Geometry

Builder Geometry

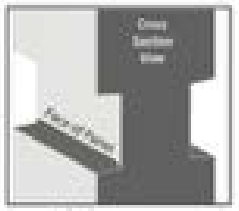
Smooth Premium Geometry

Mahogany Plank Geometry

Oak Premium Geometry

Teak Geometry

Mahogany Craftsman Geometry



Smooth Craftsman

Mahogany Geometry

CUSTOM-WIDTH PANEL GEOMETRY

Some custom width panels will have different panel geometry than their non-customizable counterpart. Six panel, 1/2 light two-panel, and 3/4 light two-panel will all default to builder geometry when a custom width panel is desired.

Panel	Affected Texture	Change in Geometries
six panel	smooth, oak	premium → builder
1/2 light two-panel	smooth, oak	premium → builder
3/4 light two-panel	smooth	premium → builder

PANELS - CUT DOWNS AND CONSTRUCTION

PANEL CUT DOWN RULES

Height Cut Down:
From 1/8" to 3-1/2"
All material will be cut from the bottom of the door panel.

From 3-5/8" to 5-1/2"
3-1/2" will be removed from the bottom of the panel with the remaining removed from the top of the panel.

Width Cut Down:
Panels with available custom width option. The first 1/2 is cut from the hinge side of the panel and the second 1/2 from the hardware side. Additional cut downs are made in 1/8" increments from alternating sides. Hardware is positioned after cut down.

STANDARD PANEL SIZES

Panels are offered in three standard heights and six standard widths. The available standard sizes are:

30x80, 30x80, 32x80, 34x80, 36x80, 36x84, 36x96 and 42x96.

Panel cut downs are also available in most panel configurations and allow for custom sizing within a select range. Not every panel is available in every size. See 'Panel Sizes and Details' for size availability.

CUT DOWN FOR INTEGRAL SIDELIGHT FRAMES

For an integral frame configurations with direct-set (fixed glass) or panel-set sidelights, custom widths are achieved by reducing sidelight width first. Once the minimum cut down on the sidelights has been reached the active panel, if available,, will be cut down to achieve additional custom widths.

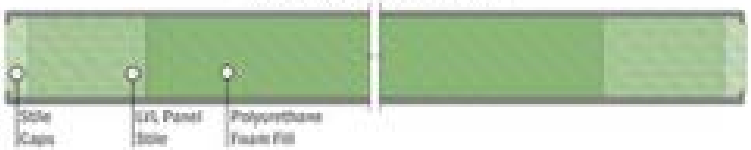
INTERNAL PANEL CONSTRUCTION DETAILS

Panel construction varies slightly to optimize each panel's thermal performance, structural performance, durability, and custom sizing. Below are the variations that will be used in panel constructions.

TOP AND BOTTOM EDGE CONSTRUCTION

The top and bottom of panels have a composite PVC top and bottom rail. If the panel is cut down by more than 1/8", a new composite PVC bottom rail is installed to the bottom of the panel during manufacturing.

STANDARD WIDTH PANEL



Non-customizable width panels have a small composite end cap to protect the LVL from exposure to weather elements and insects. All panels are reinforced with LVL to provide required structural integrity. 8' tall panels have a double LVL stile.

CUSTOM WIDTH PANEL

Custom width panels have an extended composite material end cap at the ends of the panel to allow for cut down without exposing the LVL stiles.

Once cut down, custom width panels will have a flat edge on the cut down side(s). This edge is finished and painted to match the panel color or stain.

ENSEMBLE®
— ENTRY DOORS —

EXCLUSIVELY FROM RENEWAL by ANDERSEN

SPECIFICATION and TECHNICAL MANUAL

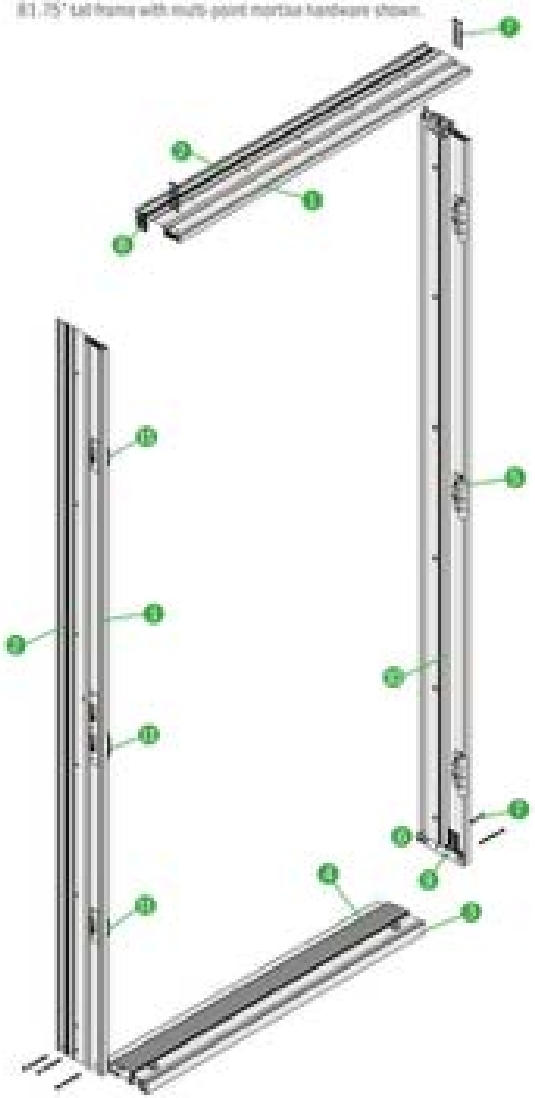
CHAPTER 2

ENTRY DOOR FRAME

SINGLE-DOOR FRAME EXPLODED VIEW

SINGLE FRAME EXPLODED VIEW

81.75" tall frame with multi-point mortise hardware shown.



SINGLE FRAME COMPONENTS

1. Interior Fibrex Jamb Component
2. Exterior Fiberglass Jamb Component
3. Fibrex Impact Composite Interior Sill Component
4. Aluminum Exterior Sill Component
5. Hinge
6. Sill Compression Gasket
7. Screws
8. Corner Key
9. Dust Plug
10. Frame Weatherstrip
11. Strike Plates

FRAME FEATURES

DUAL COMPOSITE FRAME SYSTEM

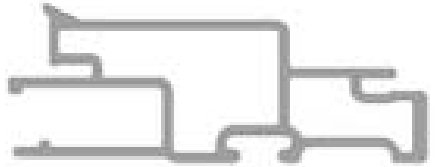
The Ensemble™ entry door includes a totally reimagined frame unlike any other in the replacement industry. It includes many exclusive features that can provide superior performance, durability and customization that will enable the perfect fit into existing openings. Our dual composite frame joins an interior Fibrex material composite and a fiberglass exterior, which are structurally bonded together. The resulting frame is strong, stable in all climates, durable, rot resistant, and very low maintenance.

FIBREX MATERIAL INTERIOR FRAME COMPONENT

The interior component of the entry door's frame is made from our stable, strong, aesthetically pleasing, proprietary Fibrex material that will match the look and feel of Renewal by Andersen windows. Refer to "Chapter 1 - Overview" for color options.

FIBERGLASS EXTERIOR FRAME COMPONENT

The exterior component of the Ensemble™ entry door frame is manufactured from a fiberglass pultrusion. Refer to "Chapter 1 - Overview" for color options.



PRIMARY FRAME WEATHERSTRIP

The primary frame weatherstrip is used for active and passive panels. The attachment leg of the weatherstrip is a rigid polymer with a mineral fill to provide a more thermally stable and durable weatherstrip. The weatherstrip itself is made of foam urethane elastomer with a polyethylene liner. It is black in color. Stationary and sidelight panels have a different weatherstrip system that follows the same strategy.

WEATHERSTRIP ANCHORS

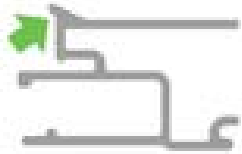
The primary frame weatherstrip used on active and passive panel frames is secured at each end with patent pending stainless steel anchors. These anchors will help prevent weatherstrip migration away from the ends, shrinking, and gap formation. The result is a weatherstrip system will be stable over a long period of time.

ACCESSORY KERF

The exterior of the entry door frame features an accessory kerf that aligns with the universal specialty windows. The outer sides of entry door frames also contain geometric features that are identical to those found on the Renewal by Andersen universal family of windows, making it compatible with most window exterior trim systems.

INTEGRATED UV SHIELD AND GLASS LIP

The exterior of the frame features a dual-purpose frame lip. The lip nests the weatherstrip and helps protect it from UV damage. In the case of direct set glass, the glass lip acts as a datum to position the glass appropriately and provide adequate depth for the structural sealant which bonds the glass to the frame. An additional benefit of the UV shield is the visual consistency it adds across various frame applications.



FRAME FEATURES

CAST-IN-PLACE (CIP) CORNERS

Mitered corners in the frame are reinforced by a quick-curing liquid polyurethane injection, guided by corner keys into the fiberglass. The frame joint is then reinforced by screws through the Fibrex material component of the frame. Quick curing and strong, the CIP corners are in all upper corners of a frame and all four corners of a transom. This process provides a strong, durable, and weathertight frame assembly.


CIP Frame Joint


Corner Key

FILL AND MILL (FAM) TECHNOLOGY

In a patent pending process, the lower ends of the fiberglass jamb components are filled with a quick-curing polyurethane liquid. Once cured, the frame components can be milled with extreme precision providing ideal surfaces to seal mating parts in place. The fill and mill technology is also used in the ends of the intermediate jamb to optimize anchoring and structural load bearing.


Sill Compression Gasket


Fill and Mill Frame Corner

DUST PLUG

Used on active panels, the dust plug is a patent pending water funneling device composed of a high-density polypropylene pile, soft touch polypropylene fin, and TPE foam bulb. The dust plug helps maintain the high air and water performance of the entry door system. The dust plug is mounted into a routed pocket in the side jamb. This keeps the dust plug protected to prevent scraping or damage during operation.

INTERMEDIATE JAMB

Intermediate jambs are used in integral combinations and are attached to the main frame at both the head jamb and sill. They are first cut to length and each end is injected with innovative fill and mill technology to create a solid joining surface that is strong and weathertight. It is then milled to match the head jamb and sill profiles and fastened to both using four mechanical fasteners at each joint. This process gives it maximal structural and weather performance while creating a clean and aesthetically pleasing look. A sealing gasket/grommet is used in tandem with screws at the sill for a long-term weathertight seal.

Intermediate jambs are constructed using the same dual-composite design used for the head and side jambs.

DRAINAGE SILL

The aluminum sill features a unique water management system to deliver the superior water performance of the frame. Factory-routed holes are applied at variable intervals along the top and side of the sill as well as through the internal cavities. The interior-most hole is covered by an innovative drain cover that sits close to flush with the sill and, in the event water gets past the weatherstrip, allows water to drain to the exterior of the home while keeping insects and debris out. The front face of the sill is covered with a weep hole cover that allows water to drain while keeping insects from entering the internal cavities of the sill.


Weep Hole Cover


Drain Cover

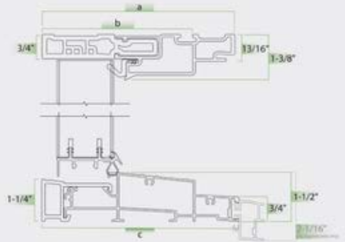
SILL LOAD TRANSFER BRACKET

Installations greater than 52" wide with DP50 or higher structural rating, and units vertically joined, require a robust sill load transfer bracket system to reduce deflection under structural loading.


Sill Load Transfer Bracket

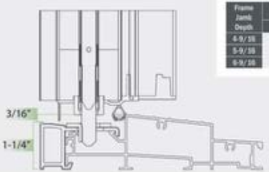
DETAILED SPECIFICATIONS

ENTRY DOOR FRAME & SILL - ALL STANDARD SILL CONFIGURATIONS



AP/PA DOORS ASTRAGAL CLEARANCE

Finished floor height will vary based on unit installation. Make sure adequate clearance between finished floor and door panel to allow for floor accessories such as rugs.



VARIABLE JAMB DEPTH DIMENSIONS

The following table lists the value of each dimension for each of the three configured frame's jamb depths. For dimension b, see the exterior trim pages above for exact dimensions.

Frame Jamb Depth	Dimension		
	a	b	c
4-9/16	5-7/8"	see trim pages	6"
5-9/16	6-7/8"	see trim pages	7"
6-9/16	7-7/8"	see trim pages	8"

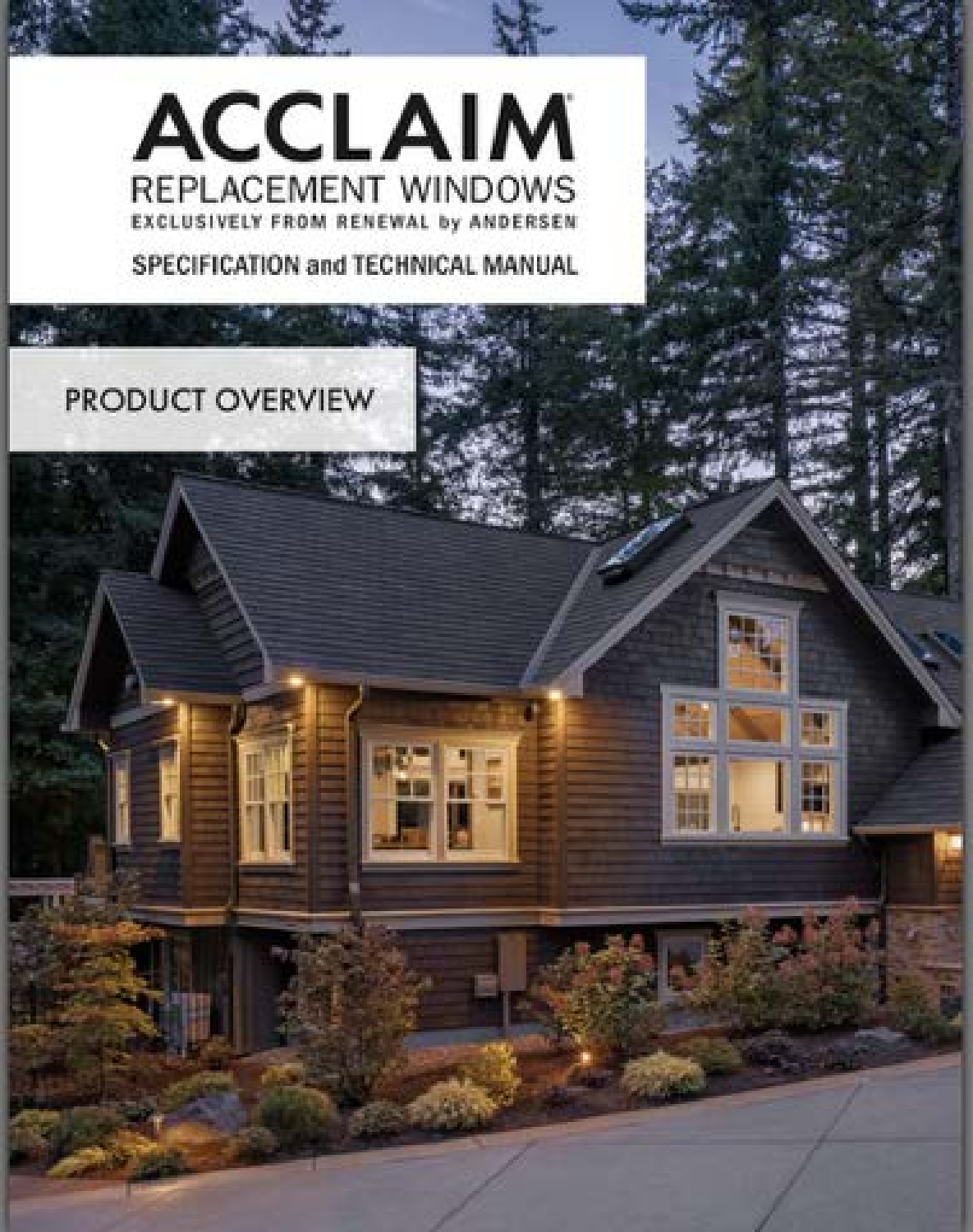
ACCLAIM®

REPLACEMENT WINDOWS

EXCLUSIVELY FROM RENEWAL by ANDERSEN

SPECIFICATION and TECHNICAL MANUAL

PRODUCT OVERVIEW



FIBREX® MATERIAL

Renewal by Andersen® windows are made of our exclusive Fibrex® material. Developed by Andersen, it is a composite blend of reclaimed and new vinyl and wood that provides excellent strength, durability and low maintenance. Window materials are exposed to many atmospheric elements such as wind, water, and temperature extremes. The following data demonstrates the performance of Fibrex compared to other materials.

Fibrex Material Composition

The composition of Fibrex material is a proprietary blend that may change based on the application requirements and design intent. Generally, Fibrex material is a composite blend of reclaimed, pre-consumer, and new vinyl and wood developed by Andersen that provides excellent strength, durability, and low maintenance.

Stiffness

Modulus is the scientific term for a material's stiffness. The higher the number, the stiffer the material. The average modulus for Fibrex material is twice the average for vinyl, making it a far more stable and rigid material for windows. And though wood's average stiffness is higher, it is far less predictable than Fibrex material since wood possesses natural variations such as grain, knots, pitch pockets, and moisture content. All of which means we can make our window frames and sash narrower than competitive windows made from other materials, gaining more glass area and light from the same size opening.

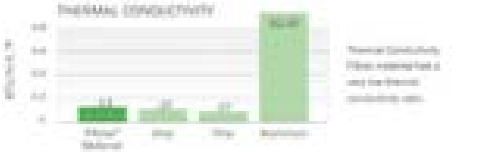
The graph below demonstrates the superiority of Fibrex material over other materials.

Decay Resistance

Fibrex material is resistant to rot and decay. Our special composite formulation surrounds and coats each wood fiber in the manufacturing process, providing resistance to rot. And windows made of Fibrex material are warranted not to flake, rust, blister, peel, crack, pit or corrode.

Thermal Conductivity

Fibrex material has excellent insulating properties. Unlike aluminum, Fibrex material will resist the effects of cold and heat. Insulating efficiency is measured by the amount of heat transferred or conducted through a material. A lower value means less transfer and greater insulating efficiency.



*See the Limited Warranty for Renewal by Andersen Products and Services.

FIBREX MATERIAL

Thermal Expansion

Thermal expansion is the degree to which a given material expands and contracts with changes in temperature. Pine has a very low thermal expansion rate. With a rate of 1.57, Fibrex material, like aluminum, expands and contracts very little. Vinyl, however, with a thermal expansion rate of 3.42, may expand and contract markedly which can cause seal failure over time.Darkening the color of a material can also increase its surface temperature and make the material more likely to expand. The introduction of dark color can greatly affect vinyl. In testing expansion rates, the smaller value indicates the least change to the material.

Painting and Staining

Painting guidelines for Fibrex material are available in the *Product Installation Manual and Care and Maintenance Guide* or Andersen's Help Center at andersenwindows.com.

Fibrex Material Colors & Capping Options

Capstock is applied over the Fibrex material to provide a variety of colors in light and dark hues. These cappings consist of various materials and application processes to achieve durability and color retention characteristics.

PVC: Light colors (White, Sandtone, Canvas) are blended from a proprietary PVC formulation and applied in the Fibrex extrusion process, thermally bonding them to the Fibrex material.

Acrylic: Dark colors (Terratone, Black, Dark Bronze, Red Rock, Forest Green & Cocoa Bean) are blended from a proprietary Acrylic formulation and applied in the Fibrex extrusion process, thermally bonding them to the Fibrex material.

Wraps: This technology involves a micro-texture thermal polymer which is applied onto the interior of the window components. This thermal formulation has a satin-, low-gloss finish that performs well, yet offers the elegance of a dark interior without high homeowner maintenance. The interior wraps are used for Dark Bronze and Black interiors.

Veneers: This technology involves a thin layer of real wood veneer which is applied onto the interior of the window components. Several species of interior wood veneers are available. They can be painted or stained to match existing decor. Painting and staining guidelines for wood interiors are available in the *Product Installation Manual and Care and Maintenance Guide*.

GLASS COMPONENTS

The way in which glass is made will affect its appearance, as well as the the energy efficiency in the home. The window, as a whole, is defined and tested based on the components and characteristics of glass.

Slight optical variations in tempered glass should not be considered low quality glass. Tempered glass will be labeled.

Glass Construction

The glass used in windows today is manufactured from a process first created in England by the Pilkington brothers. Sand, soda ash cullet (reclaimed raw glass), and lime are blended and heated to a molten state in a large furnace. The mixture is then poured over molten tin, and because glass is lighter it floats above the tin, thus the name float glass. Float glass has a very high optical quality and can be made to varying thickness and strength to withstand stresses of wind, heat and cold.

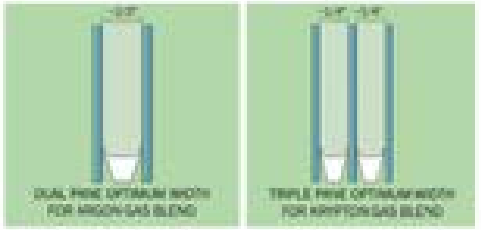
Tempered safety glass is created in a process called tempering. The float glass sheet is heated to a soft but not molten state, then quickly and evenly cooled while retaining a smooth flat surface. Slight optical variations may occur during the cooling stage. Tempered safety glass is primarily used to meet safety building code requirements. When tempered glass is broken, it shatters into small pieces, reducing the chance of injury from large jagged shards.

Another safety glass, laminated glass, is created by sandwiching a laminated interlayer between two pieces of glass. Similar to the glass used in automobile windshields, laminated glass remains intact when broken.

Insulated Glass

Insulated glass is more than one pane (light) of glass separated by a space and assembled into one unit. A spacer separates each light of glass. It's a common misconception that the wider the insulating space, the better the insulating value.

The key to an effective insulating space is to optimize the width of the space and minimize gas movement within the space. Wider spaces can create convection currents that allow heat transfer and lower insulating values.

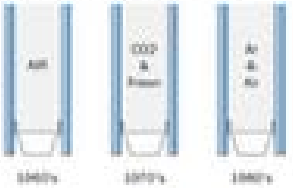


Wider than optimum insulation spaces can create convection currents that allow heat transfer and lead to poorer insulating values.

Argon and Krypton Gas Fill

Air was used between two or more glass panes to insulate the glass space until the 1970s when carbon dioxide (CO_2) and Freon (F) were introduced. Denser than air, they provided better insulation but were sensitive to seal failure.

In the 1980s, Argon (Ar) and Krypton (Kr) were proven to provide more efficient insulation. For the optimum application of both gas blends, Renewal by Andersen® dual pane options are filled with argon gas blend while a krypton gas blend is used in our Triple Pane options. This is due to how the gas behaves within the confines of the airspace between each light. While an argon gas blend performs better in the relatively wider space of double pane, krypton gas blend performs best in the smaller spaces of triple pane glass.



GLASS COMPONENTS

Glass Spacer

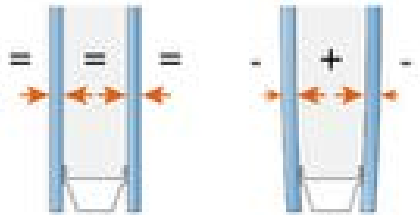
Glass spacer technology has created materials and designs that are more energy efficient. Stainless steel, aluminum and plastics are often used today.

Historically, spacers have been made of aluminum because it is easy to manufacture and bend. Aluminum, however, can promote energy conductivity around the edge of the glass, creating heat loss and reducing the window's insulating capability.

Our low-conductivity spacers are made of stainless steel, which is more durable and provides a more stable seal. Stainless steel is stronger than aluminum, requiring less material. It resists heat transfer four to five times better than aluminum spacers which are used by many other manufacturers.

High-Altitude Considerations

The altitude at which a product will be installed and the size of the glass determine whether or not a unit will include a gas fill. When insulating glass is filled with gas and sealed, it is sealed at the atmospheric level of the manufacturing facility. As the glass in the window is moved to higher altitudes, the pressure in the insulating space becomes greater than the outside pressure, bowing the glass outward. This can cause optical imperfections and, in severe cases, glass breakage. For some altitudes, a breather tube must be integrated into the window construction.



@ 1000 ft @ + 5000 ft

Capillary Breather Tubes

Capillary breather tubes are available for glass and may be required for high-altitude installations. Capillary breather tubes equalize the pressure between the insulating space and the outside surfaces of the glass. It is important to note that capillary breather tubes will decrease the thermal performance of the unit.

Please refer to the "Altitude Limits" tables in the Technical Data section to identify which glass sizes may retain a gas blend fill and which glass sizes will require capillary breather tubes.

Capillary Breather Tubes for Triple Pane Glass

Capillary breather tubes are not available for products with triple pane glass.

Low-Emissivity Coating

Also called "Low-E" coatings, low emissivity coatings that make the window glass more energy efficient by returning heat energy to its source. Low-E coatings are integrated into window glass in two ways:

Suspended Systems - The first types of low emissivity coating developed are still in use. The Low-E coating is applied to a piece of acrylic which is then hung or suspended within the insulating space of the glass. Although the system appears acceptable, the two chambers caused by the suspended acrylic causes pressure differences that can make the acrylic stretch and bag, resulting in optical distortion. The acrylic itself causes visual clarity problems.

Soft Coat Systems - Also called sputter coating, this method is done by applying the emissivity coating to the glass in a vacuum chamber. This offers the highest controlled environment to obtain superior optical clarity. This system can also be easily tailored to meet special customer requirements, as well as providing multiple layers of the coating for superior insulating performance.

GLASS CHARACTERISTICS

There are important performance characteristics of glass that can be measured: solar heat gain, visible light transmittance, and fading. Glass performance should not be confused with total window performance (see Technical Data manual).

Solar Heat Gain

Solar heat gain is the amount of heat that passes through glass. Shown numerically as a decimal, it represents the percentage of heat that enters the room. The lower the solar heat gain, the less stress on air conditioner use.

* Value not specific to any Renewal by Andersen® glass offerings

Visible Light Transmittance

Visible light transmittance describes the clarity of the glass or the percentage of visible light coming through the glass. The higher the percentage, the clearer the glass. Renewal by Andersen's Low-E coating is considered to be spectrally selective, which means it filters out even more of the heat and fading than common Low-E coatings.

There are three types of light that greatly affect the home environment. They are ultraviolet, visible light and near-infrared. The following outlines the characteristics of each type of light.

To evaluate the benefits of various glass coatings, it's helpful to compare the transmission of light across this spectrum.

Clear glass is just that, clear. It transmits much of the visible light along with much of the heat and fade-inducing rays.

Low-E coatings limit the transmission of some of the heat as well as some of the UV rays while transmitting much of the visible light.

SmartSun™ glass filters out even more of the UV rays and controls heat gain while transmitting almost as much visible light as our non-tinted standard high performance glass.

HeatLock® technology maximizes visible light transmission and significantly improves U-Factor.

Glass Type	TVW	TDW
Clear Glass	58%	41%
High-Performance®	38%	25%
High-Performance Sun®	18%	14%
High-Performance SmartSun™	5%	21%
High-Performance® SmartSun™ with Heatlock®	5%	20%
PassiveSun®	29%	-

Due to the different levels of visible transmittance, different coatings have different appearances when viewed from the home.

Transmission Ultraviolet Energy (TUV)

The transmission of short-wave energy in the 300-380 nanometer portion of the solar spectrum. The energy can cause fabric fading.

Transmission Damage Function (TDW)

The transmission of UV and visible light energy in the 300-600 nanometer portion of the solar spectrum. The value includes both the UV and visible light energy that can cause fabric fading. The rating has also been referred to as the Krochmann Damage Function. This rating better predicts fading potential than UV transmission alone.

The lower the Transmission Damage Function rating, the less transmission of short-wave energy through the glass that can potentially cause fabric fading. Fabric type is also a key component of fading potential.

Condensation

Different glass coatings may affect how much condensation forms under similar conditions. For more information on condensation visit Andersen's Help Center at andersenwindows.com.

reference to the

ACCLAIM

REPLACEMENT WINDOWS

EXCLUSIVELY FROM RENEWAL by ANDERSEN

SPECIFICATION and TECHNICAL MANUAL

CASEMENT, AWNING and FIXED WINDOWS

ADVANTAGES & APPLICATIONS

The Renewal by Andersen® Casement Window consists of one, two or three sash in a single frame. The sash can be hinged on the right or left side of the frame and pivots to the exterior. A single sash lock lever activates multiple lock points to enhance security. The locking action pulls the sash tightly to the frame, compressing the weatherstrip for a tight seal.

The Renewal by Andersen® Awning Window consists of one sash in a single frame. It is hinged at the top of the frame and pivots out and slightly upward from the bottom when venting. Sash locks mounted on both sides of the frame securely tighten the sash to the frame. Casement and Awning sash opening is controlled by a roto gear operator on the sill. Insect screens for both types of units are installed on the interior where it will not interfere with sash operation.

The Renewal by Andersen® Fixed Window consists of a single sash in a single frame and does not operate. The sash is fixed in place with concealed clips that are accessible from the interior for disengagement as needed for installation, replacement or service.

Casement Window – Exterior View

Awning Window – Interior View

ADVANTAGES:

- Provides ventilation throughout the entire sash area.
- Maximum ventilation of any window type.
- Casement sash, when open, "catches" the breeze from multiple directions.
- Awning sash can be partially open during inclement weather.
- Multiple weatherstrips provide a weathertight seal when sash is closed and locked.
- Innovative Fibrex® material is more rigid than vinyl, allowing for more clear glass area.
- Fibrex material with low-maintenance capstock provides a rich, low-luster finish to sash and frame - similar to painted wood.
- Smooth radius surfaces on frame and sash are pleasing to the eye and easier to clean.
- Mortise and tenon appearance on the interior and exterior sash and frame corners provide a traditional hand-crafted look.

APPLICATIONS:

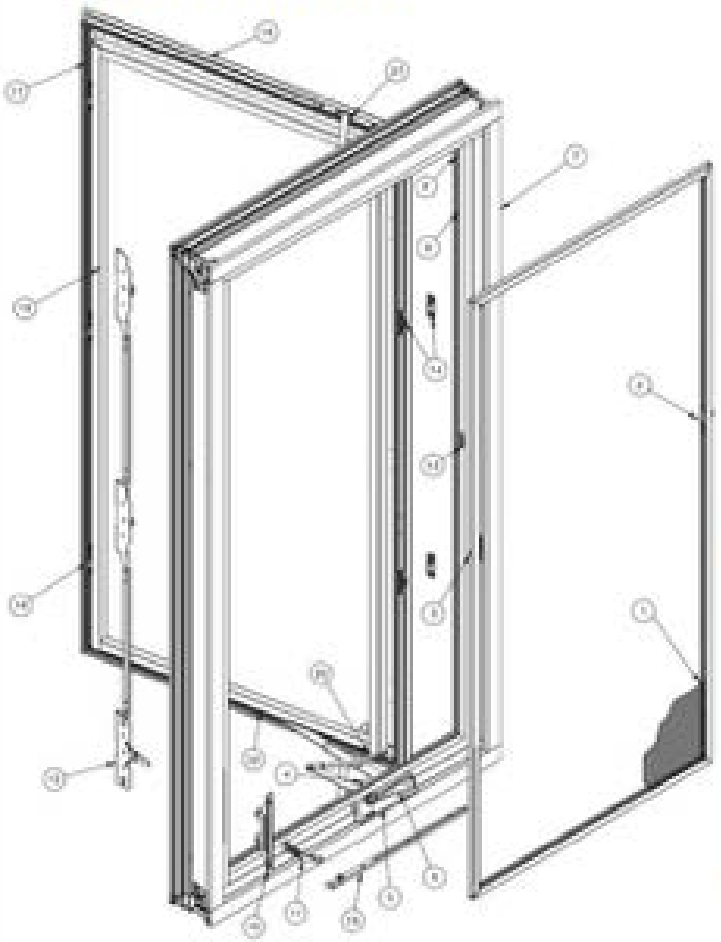
- Widely used when replacing other window styles.
- Awning windows are an excellent choice in clerestory applications.
- Awning windows are effectively used high on a wall for privacy or when wall space is desired for furniture or cabinetry.
- Offers dramatic design accents when combined with fixed windows.
- Recommended for use over countertops and other obstructed areas because operation is controlled by turning a handle—an easier motion than lifting or sliding sash.
- Not recommended in areas where the projecting sash could obstruct an exterior walkway, patio or deck.
- Visually compatible with other Renewal by Andersen universal frame products.
- Corrosion-resistant hardware is available for use in harsh and corrosive environments such as heavy industrial or coastal areas.
- Fixed windows are the first choice when large viewing and daylight areas are desired and ventilation is not required.
- Fixed windows are used extensively as stationary windows next to vent casement and awning windows.
- Fixed windows are visually compatible with Renewal by Andersen® casement and awning products.

CASEMENT - EXPLODED VIEW

The following features contribute to the Casement window's low maintenance, energy efficiency, ease of operation, and pleasing appearance.

Constructed of rigid Fibrex® material which is a unique structural composite of wood fibers and a special thermoplastic polymer. Developed by Andersen, Fibrex® material combines the strength and stability of wood with the low-maintenance features of vinyl. Corner keys used on the frame and sash provide durable, watertight corners. The mortise and tenon joinery of the sash complement the frame. A high-performance silicone sealant provides a watertight seal between the glass and sash.

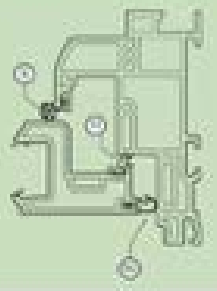
FRAME AND SASH



CASEMENT COMPONENTS

1. Insect screen
2. Universal insect screen latch retainer
3. Insect screen latch
4. Casement dual arm operator
5. Operator cover
6. Operator handle
7. Frame
8. Foam-filled weatherstrip - frame
9. Hole plug
10. Lock bezel
11. Lock handle
12. Lock assembly
13. Insect screen grommet
14. Sash and frame snugger
15. Corrosion-resistant hinge track
16. Bulb weatherstrip - sash
17. Foam filled weatherstrip - sash
18. Casement sash
19. Lock keeper
20. Casement sash bracket (Corrosion-resistant upgrade option)
21. Hinge
22. Operator track

Casement Cross Section



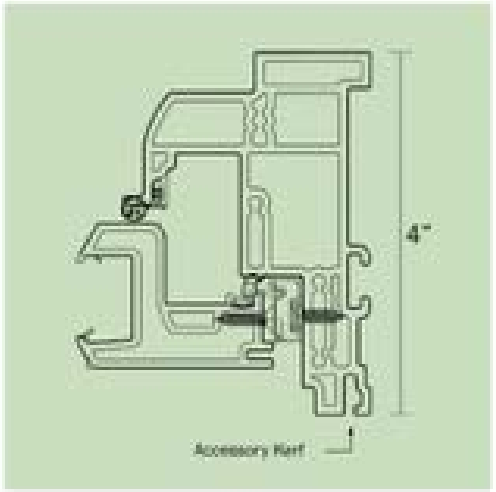
NOTE: Casement window shown with base frame. Part usage is the same or similar to that with the extension jamb frame, casement double, and casement triple windows.

FRAME DETAILS

The Casement, Awning and Fixed units are available with two different frame options. The two frame options are a Base Frame and an Extension Jamb (EJ) Frame. Both frame types are available with factory applied exterior trim options.

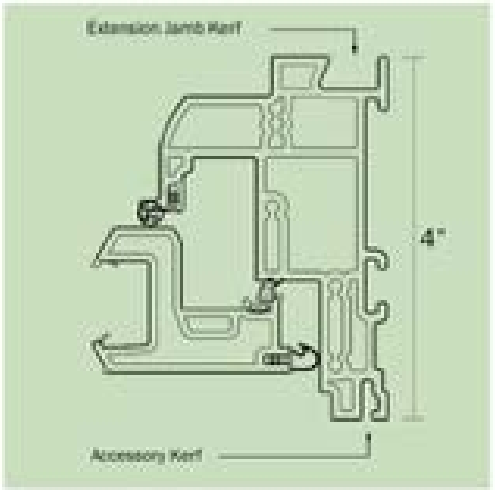
Base Frame

The Base Frame is consistent with the universal frame strategy which exists on all other Renewal by Andersen products. It consists of a 4" frame depth and flat interior surface for use in sealing or trimming the window. The exterior perimeter of the window is provided with an accessory kerf to accept trim components such as L-Trim, F-Trim or coil stock.

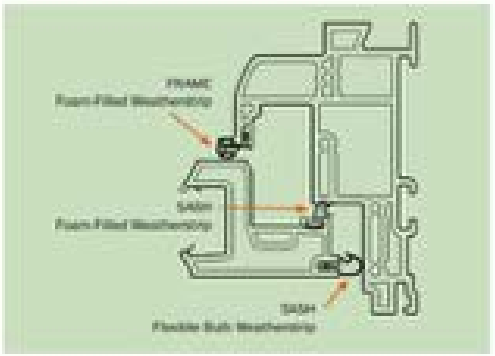


Extension Jamb (EJ) Frame

The Extension Jamb (EJ) frame is consistent with the universal frame strategy which exists on all other Renewal by Andersen® products. It consists of a 4" frame depth and contains an extension jamb (EJ) kerf to accept an extension jamb. The exterior perimeter of the window is provided with an accessory kerf to accept trim components such as L-Trim, F-Trim or coil stock.



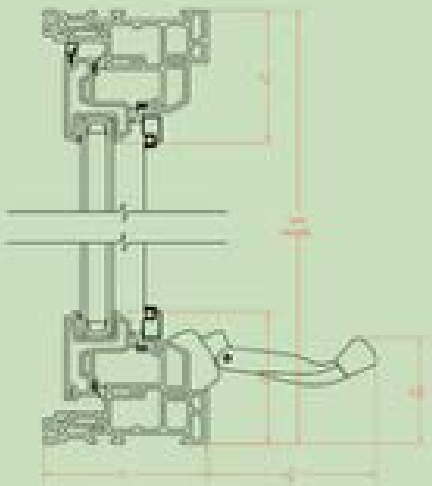
Weatherstrip A three-piece weatherstrip system consisting of a foam-filled weatherstrip applied to the frame, a foam-filled weatherstrip AND a flexible bulb weatherstrip applied to the sash provide a tight and robust seal.



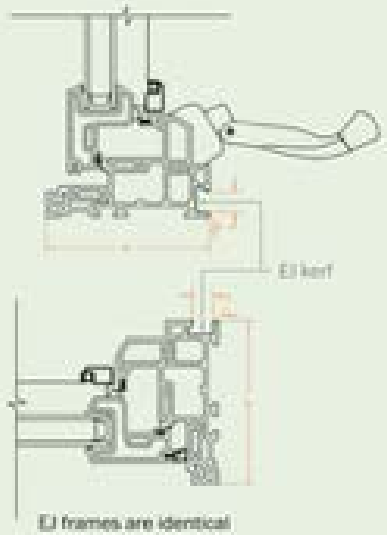
PRODUCT DETAILS

Casement Triple Units

Base Frame



Extension Jamb (EJ) Frame



EJ frames are identical to Base frames with the exception of the EJ kerf.

Base Frame – Triple Unit