



**LAKE  
WASHINGTON**  
WINDOWS & DOORS

*A Name You Can Trust!*







# Who are we?



VPI is 100% focused on and committed to the commercial marketplace.

VPI is a proven, reliable partner in the industry and our quality high performance windows and doors are in thousands of buildings all over the United States.

VPI sets the standard for commercial vinyl windows and doors. Our value stands alone.

Let us know how we can help you!



Engineered for Performance and Designed to  
meet US Laws, Codes and Regulations



- ❑ **Performance & Versatility**
  - ❑ Designed to meet the harsh weather conditions of the Pacific Northwest
  - ❑ Most versatile single frame vinyl window system available in the United States
- ❑ **Multi-family designs require windows that offer:**
  - ❑ Large viewing areas, good lighting, & ventilation
  - ❑ Sound reduction
  - ❑ Accessibility in Type A units
  - ❑ Minimal deflection
  - ❑ Provisions for make-up air
  - ❑ Reliable performance under severe wind driven rain
  - ❑ Interior wash-ability
  - ❑ Fall protection
  - ❑ Thermal performance
  - ❑ Egress







# Measuring performance



- All VPI products are certified in the configuration they're manufactured.
- Superior structural performance on long spans.
- Thermally certified for the whole window not just center of glass.
- Certified US acoustical performance. Test reports available.
- Over 600 field tests per year with an average first-time pass rate of 98%.
- There are two primary causes of window failure that lead to property damage.
  - 1) Deflection: where joinery opens under load.
  - 2) Overwhelming water infiltration.





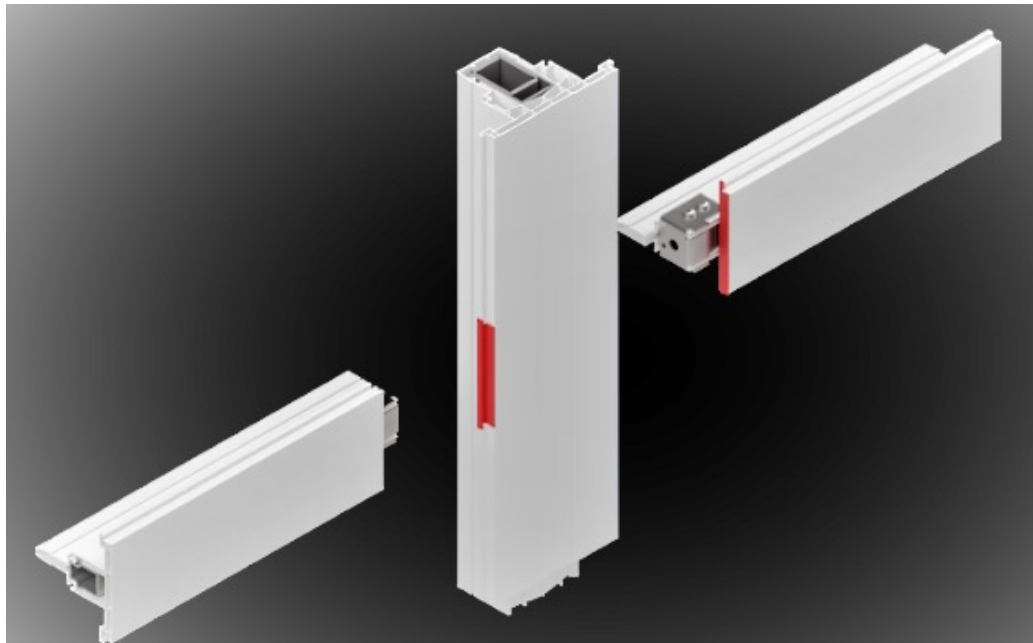


## Engineering makes VPI unique



VPI's Integral steel reinforced frame system allows for larger, more complex configurations, while continuing to achieve superior air, water and structural performance.

No more weak and risky mull joints!







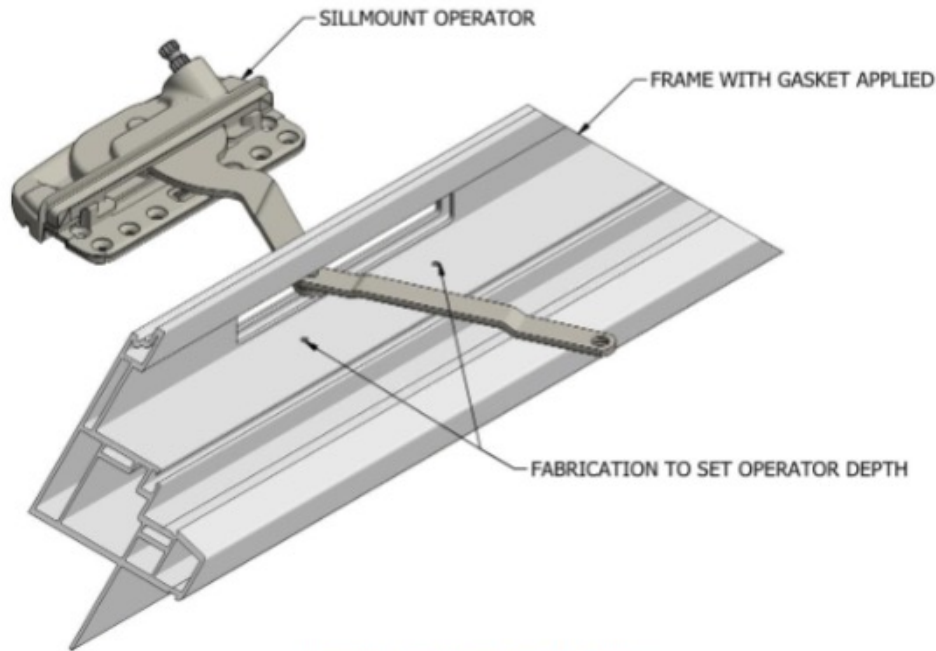
Silicone prevents water intrusion to the interior of the windows/doors



# Gaskets

- Should not be rolled.
- Should be evenly against frame material.

79



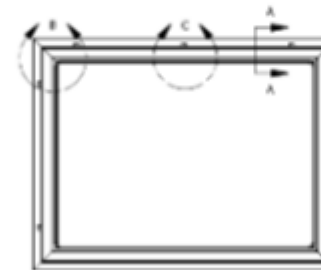
Sillmount Operator Inserted into Fabrication

### 3. In-Line Quality:

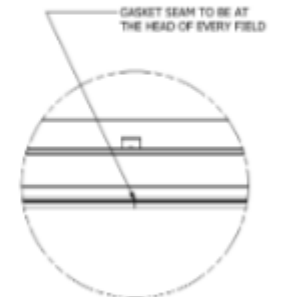
- Visual – No voids are present at the gasket seam.
- Visual – Weatherstrip is seated fully into the groove and silicone was applied into the weatherstrip groove at every corner.



DETAIL B  
SCALE 0.25 : 1



DETAIL B WINDOW FRAME  
SCALE 0.07 : 1

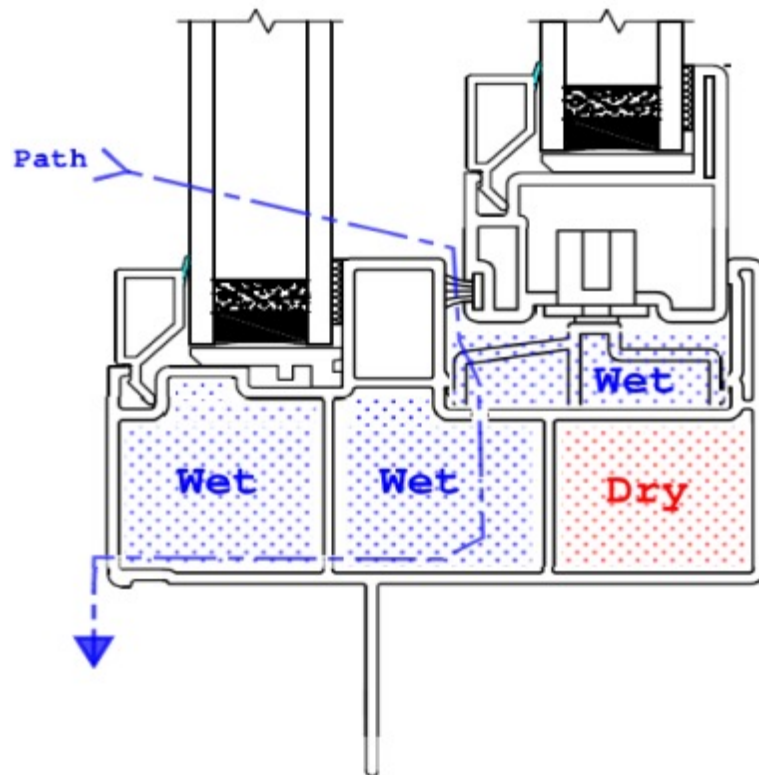


DETAIL C  
SCALE 0.25 : 1

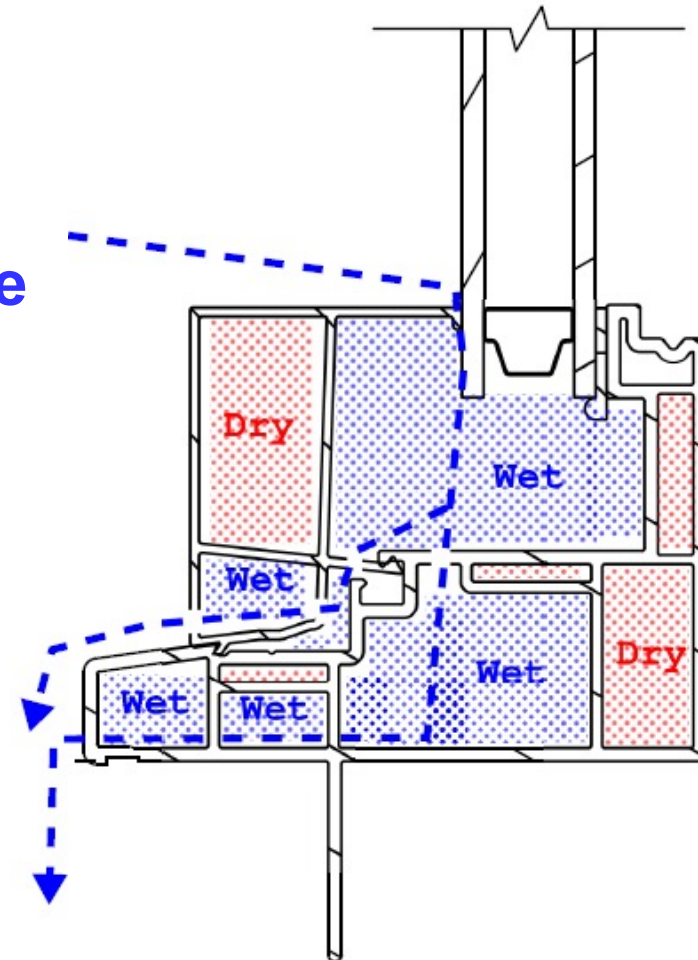




# Pressure Equalized Water Management



H<sub>2</sub>O  
Drainage  
Path





# In the Field Water Tests





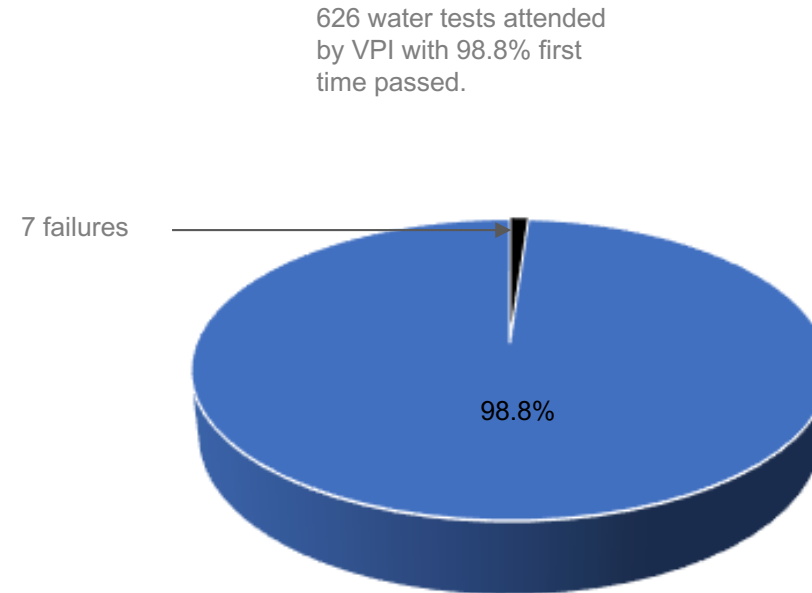
# Proof of Performance



Consistency and reliability are key to piece of mind. VPI attended and documented 626 field water tests in 2019, with 619 first time passes.

Assembly errors/omissions, material defects and hardware malfunctions are exposed during water testing. VPI uses in house water testing as a daily part of our comprehensive Quality Management System.

*We won't delay your project with water test failures and slow remediation.*





# Thermal (NFRC) Performance



Endurance									
Window Type	Glass Thickness	Low-e	Low-e	Argon	Air	IGU OA	U-Factor	SHGC	VT
Horizontal Sliding	3mm/3mm	366		X		3/4"	0.28	0.22	0.51
Horizontal Sliding	3mm/3mm	366			X	3/4"	0.32	0.22	0.51
Horizontal Sliding	3mm/3mm	270		X		3/4"	0.29	0.29	0.55
Horizontal Sliding	3mm/3mm	270			X	3/4"	0.32	0.30	0.55
Single Hung	3mm/3mm	366		X		3/4"	0.28	0.22	0.51
Single Hung	3mm/3mm	366			X	3/4"	0.32	0.22	0.51
Single Hung	3mm/3mm	270		X		3/4"	0.28	0.29	0.55
Single Hung	3mm/3mm	270			X	3/4"	0.32	0.30	0.55
Fixed	3mm/3mm	366		X		3/4"	0.26	0.22	0.53
Fixed	3mm/3mm	366			X	3/4"	0.30	0.23	0.53
Fixed	3mm/3mm	270		X		3/4"	0.26	0.30	0.57
Fixed	3mm/3mm	270			X	3/4"	0.30	0.30	0.57
Fixed	3mm/3mm/3mm	270	180	X		1 1/4"	0.16	0.27	0.50
Casement	3mm/3mm	366		X		3/4"	0.26	0.18	0.42
Casement	3mm/3mm	366			X	3/4"	0.30	0.18	0.42
Casement	3mm/3mm	270		X		3/4"	0.26	0.24	0.45
Casement	3mm/3mm	270			X	3/4"	0.31	0.30	0.45
Casement	3mm/3mm/3mm	270	180	X		1 1/4"	0.18	0.21	0.40
Awning	3mm/3mm	366		X		3/4"	0.26	0.18	0.42
Awning	3mm/3mm	366			X	3/4"	0.30	0.18	0.42
Awning	3mm/3mm	270		X		3/4"	0.27	0.24	0.45
Awning	3mm/3mm	270			X	3/4"	0.31	0.30	0.45
Awning	3mm/3mm/3mm	270	180	X		1 1/4"	0.18	0.21	0.40





# Structural Performance



**Test Specifications:** AAMA/WDMA/CSA 101/1.5.2./A440-11, NAFS  
**Testing Performed by:** Intertech (Architectural Testing)

Perf Class	PG/DP	ASTM E 330 Uniform Struc. Load	Size/Configuration/ Description	ASTM E 283 Air Inf./Exf.	ASTM E 547 H <sub>2</sub> O Penetration Resistance	ASTM E 502-20 Field Water Test Pressure
<b>Product: 511 Casement/Awning/Fixed Combination Windows</b>						
CW	70	105 psf	96" x 66" C-F-C	0.06 cfm/ft <sup>2</sup>	10.5 psf	7 psf
CW	40	50 psf	96" x 86" C-F-C/A-A-A	0.02 cfm/ft <sup>2</sup>	6 psf	4 psf
LC	60	90 psf	96" x 86" C-F-C/A-A-A	0.02 cfm/ft <sup>2</sup>	9 psf	6 psf
CW	40	60 psf	108" x 96" C-F-C/F-F-F	0.01 cfm/ft <sup>2</sup>	6 psf	4 psf
CW	40	60 psf	72" x 96" Fixed	0.01 cfm/ft <sup>2</sup>	6 psf	4 psf
CW	55	82.5 psf	36" x 123" F/C	0.05 cfm/ft <sup>2</sup>	8.25 psf	5.5 psf
LC	45	67.5 psf	108" x 96" F-F-F/C-F-C/F-F-F	0.05 cfm/ft <sup>2</sup>	6.75 psf	4.5 psf
<b>Product: 531 Endurance Horizontal Slider</b>						
LC	50	75 psf	108" x 96" XOX/FFF	0.05 cfm/ft <sup>2</sup>	7.5 psf	5 psf
LC	50	75 psf	71" x 56" XO	0.05 cfm/ft <sup>2</sup>	7.5 psf	5 psf
LC	50	75 psf	120" x 60" XOX	0.06 cfm/ft <sup>2</sup>	7.5 psf	5 psf
LC	40	60 psf	120" x 120" FFF/XOX/FFF	0.07 cfm/ft <sup>2</sup>	6 psf	4 psf
<b>Product: 591 Endurance Vertical Slider (Single Hung)</b>						
CW	30	45 psf	108" x 96" XOX/FFF	0.05 cfm/ft <sup>2</sup>	7.5 psf	5 psf
LC	35	52.5 psf	71" x 56" XO	0.05 cfm/ft <sup>2</sup>	7.5 psf	5 psf
LC	55	82.5 psf	120" x 60" XOX	0.06 cfm/ft <sup>2</sup>	7.5 psf	5 psf
LC	40	60 psf	120" x 120" FFF/XOX/FFF	0.07 cfm/ft <sup>2</sup>	6 psf	4 psf



# Acoustical Performance



## Acoustical performance data

Test Methods

ASTM E 90-04

ASTM E 413-04

ASTM E 1332-90

ASTM E 2235-04

Testing performed by: Western Electro Acoustic Laboratory and Intertech (Architectural Testing)

### 511 Casement/Awning/Fixed combination windows

STC	OITC		Glazing		Report number
29	23		3mm/3mm 3/4" OA		k2039.01-303-11-RO
37	29		3mm/5mm 1" OA		TL 19-224
39	30		6mm/6mm 1 1/4" OA		TL 19-291
39	31		6mm/6mm Lami 1 1/4" OA		TL 19-296
44	33		6mm lami/6mm Lami 1 1/4" OA		TL 19-288
38	29		TG 3mm/3mm/5mm		TL 19-450
40	31		TG 3mm/3mm/6mm Lami		TL 19-297

### 531 Endurance Horizontal Slider

STC	OITC		Glazing		Report number
28	23		3mm/3mm 3/4" OA		77807.01 A
31	26		3mm/5mm 3/4" OA		77807.01 B
36	29		5mm/6mm Lami 1" OA		77807.07 C





# Endurance Series



**ENDURANCE**  
SERIES



**Endurance Window**



# Endurance Series



## *Commercial Mid-Rise Windows*

### ***Strength & Performance***

- Superior product performance developed and tested in the lab, proven in the field
- Commercial grade metal reinforcements interconnected throughout window assembly
- Vinyl frames deliver consistent thermal performance and minimize condensation
- Windows are assembled with continuous frames to avoid risky mulls

### ***Water Resistance***

- Panel level design minimizes water intrusion and air infiltration/ex-filtration
- Fusion welded corners provide environmental comfort and protect against leaks
- Integral nailfin options for ease of installation and water barrier

### ***Design & Security***

- Durable, co-extruded acrylic exterior finishes allow for color diversity
- Available multiple locking points ensure security and compress the triple weather seal for superior air and water resistance
- Easy to operate hardware for egress and fair housing requirements
- Heavily reinforced intersecting "T-Bar" system allows for design freedom with superior structural, air, water, and thermal performance







# Current Color Options - Laminate





# Laminate – How it works





# Color Options



## cool colors PLUS

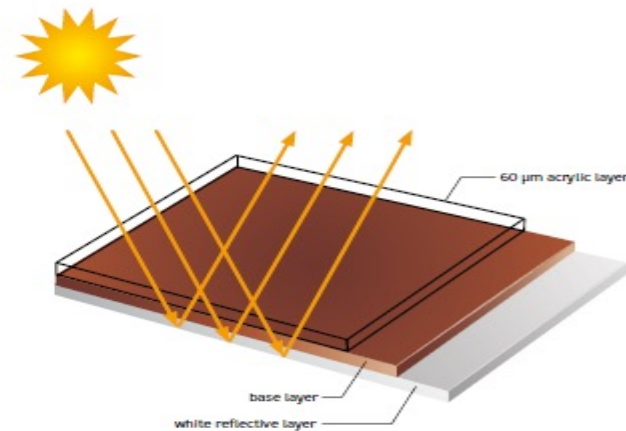
In top Form – in any Climate

### In top Form – in any Climate

All designs of the current techprofil collection are equipped with the patented cool colors technology. It ensures that the profiles heat up much less, even in direct sunlight. A further development of the proven technology is the **cool colors PLUS** film. It is characterized by a 3-layer structure, which makes it even more efficient in reducing heat absorption, especially on dark surfaces.

#### 3 layers

In contrast to conventional cool colors films, the **cool colors PLUS** film consists of three layers.

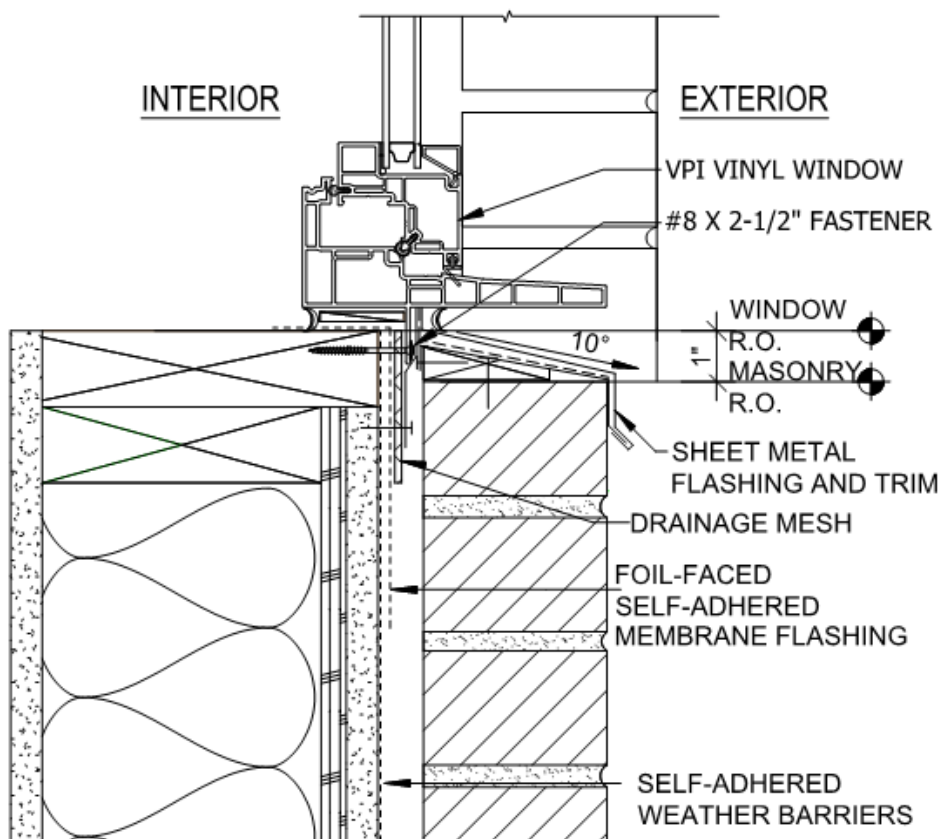


**cool colors**  **PLUS**  
by Hornschuch





# Deep Set Frame



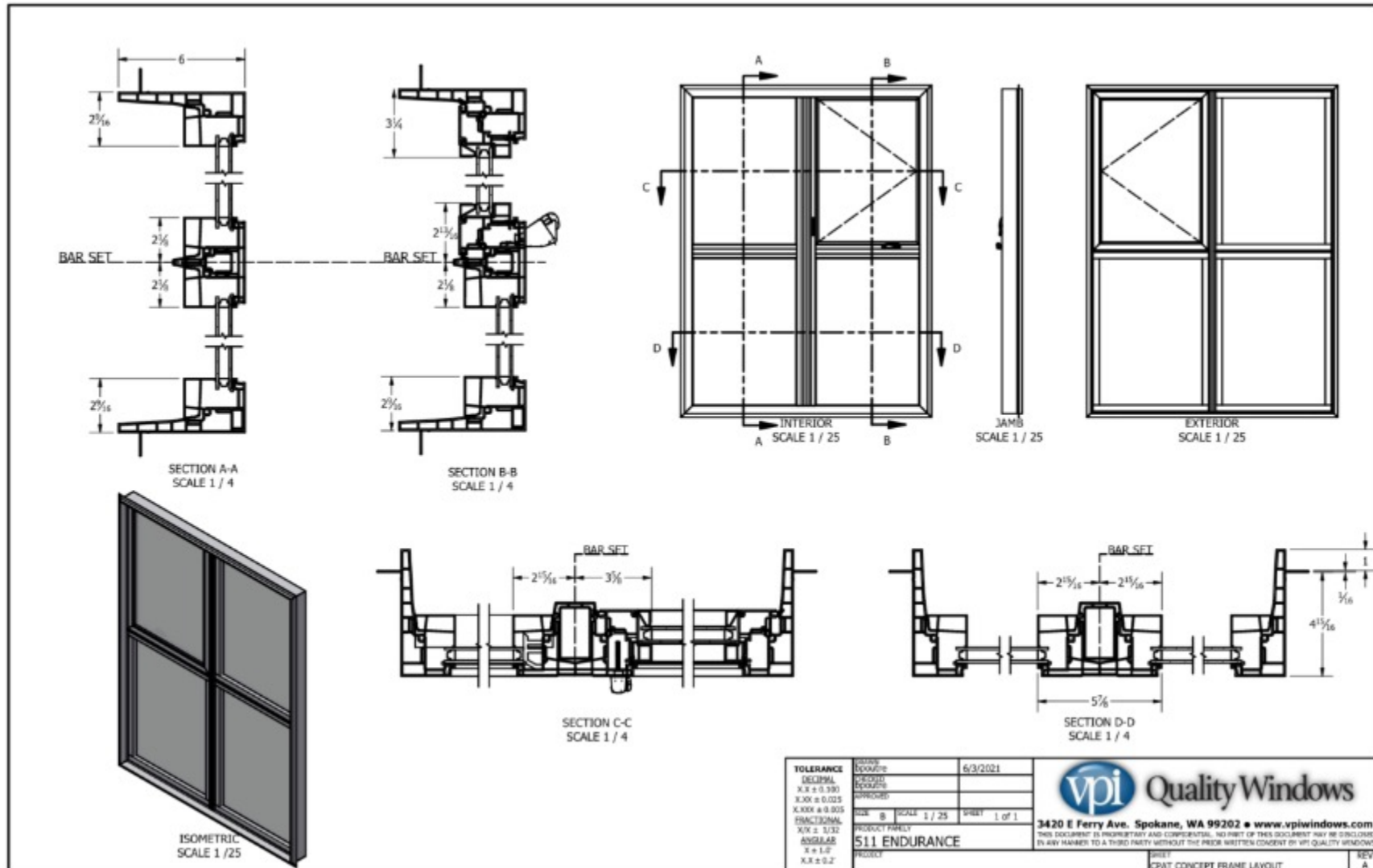
- Three frame options
  - ▣ 1" Backset
  - ▣ 1-3/8" Backset
  - ▣ 3-7/8" Backset
- Casement
- Awning
- Picture
- Sliding & Hung Options

3-7/8" BACK SET WINDOW SILL @ BRICK

3" = 1'

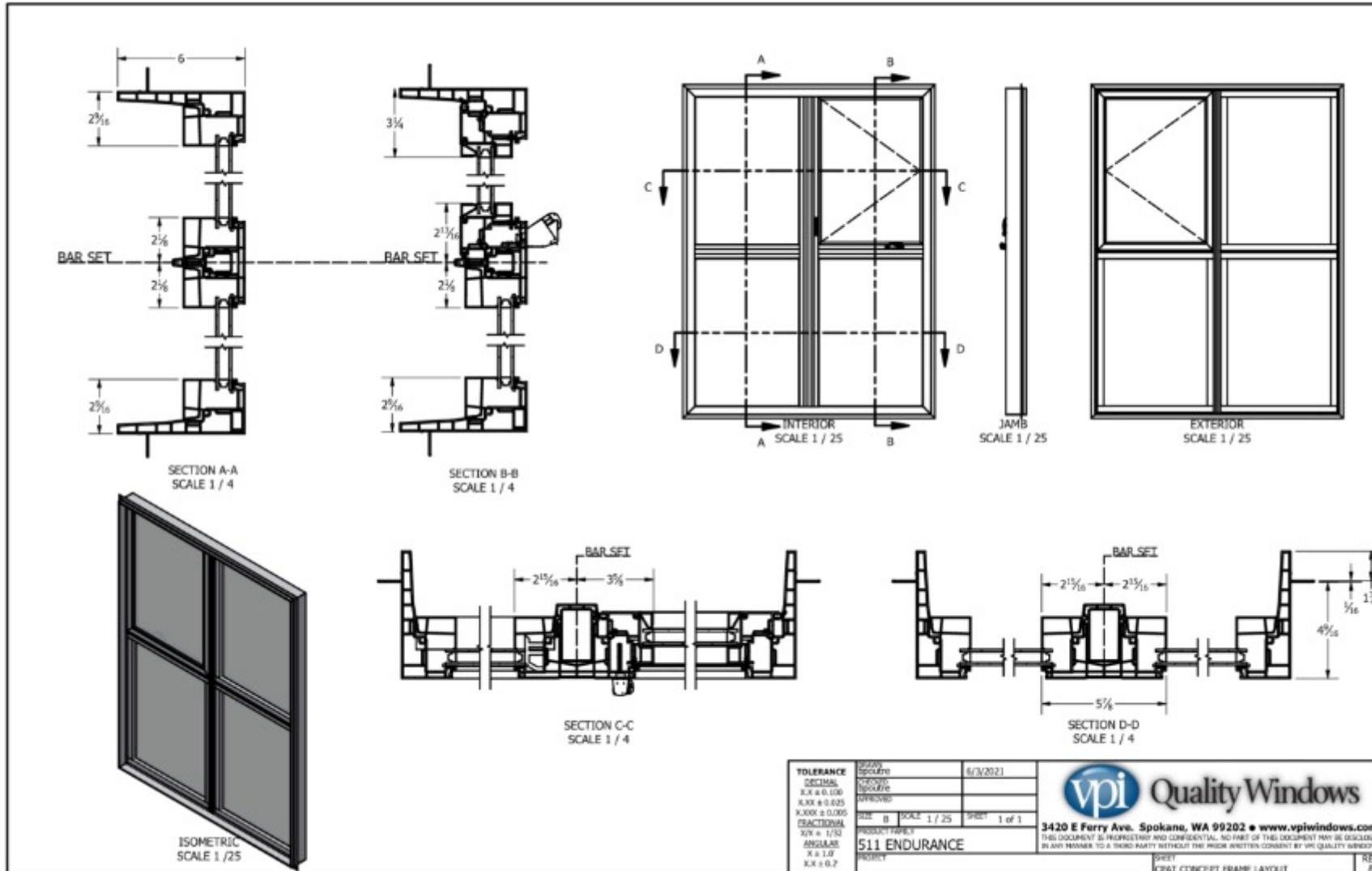


# Deep Frame 1" NF Backset

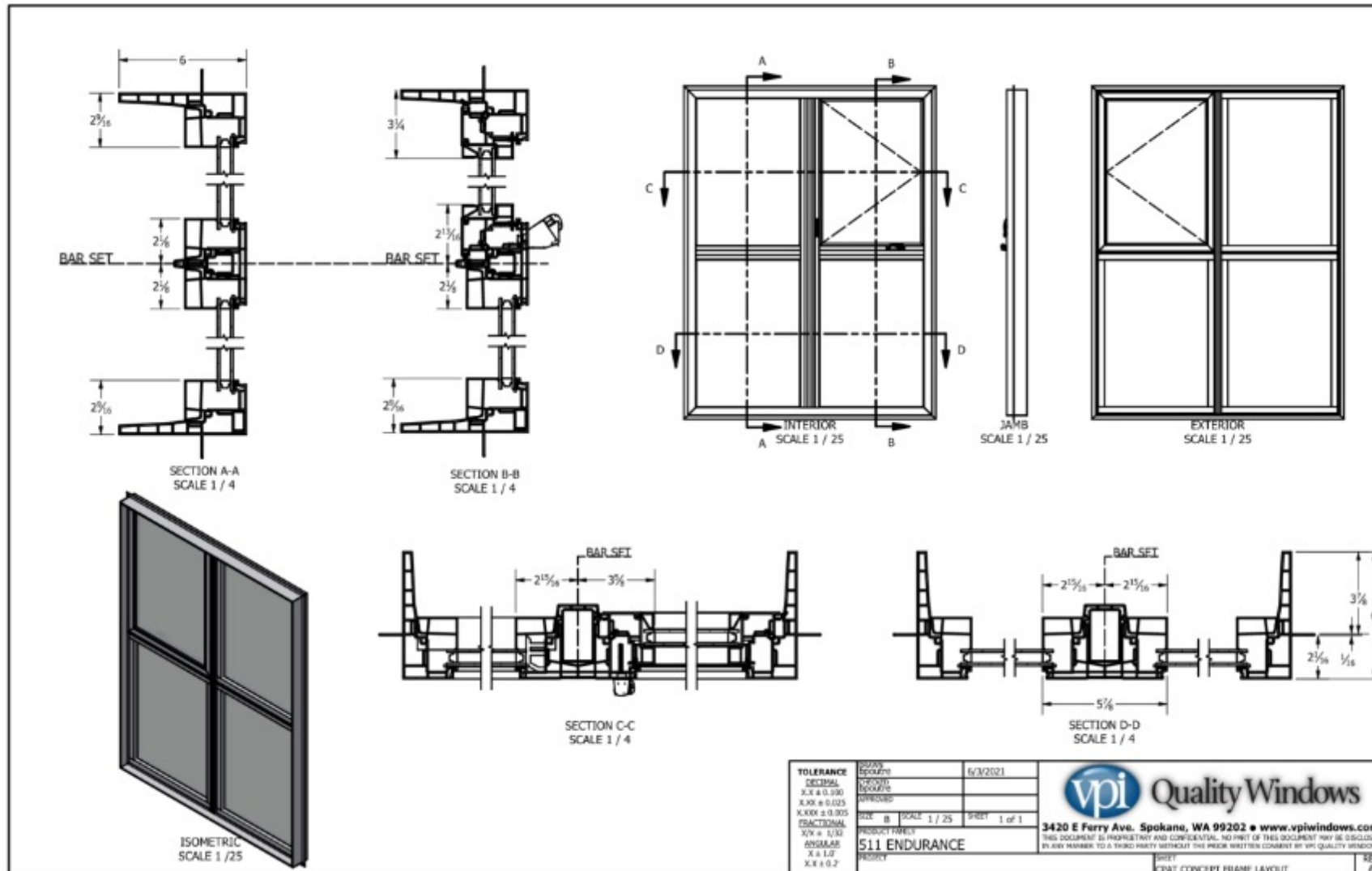
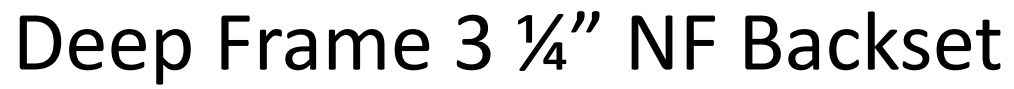




# Deep Frame 1 3/8" NF Backset

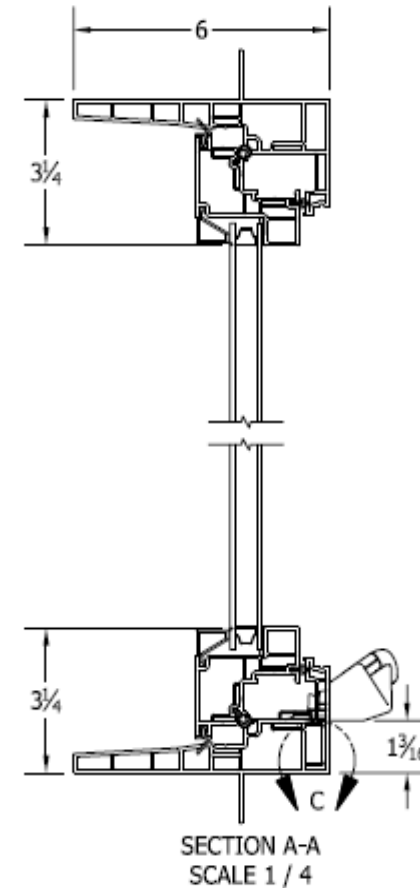
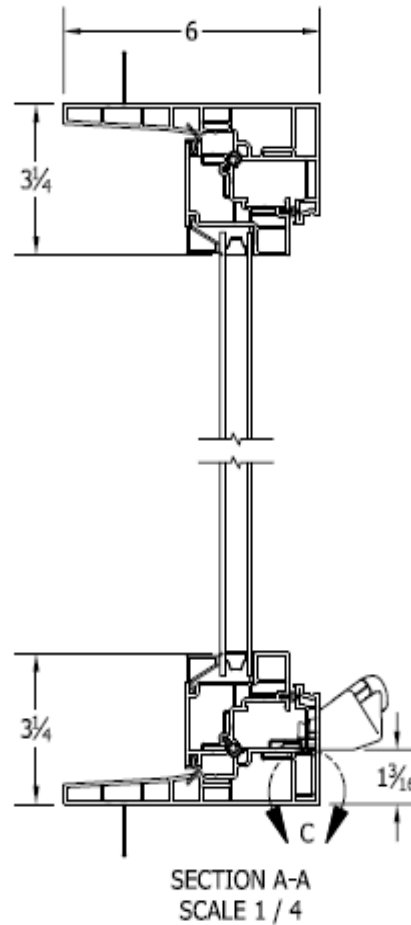
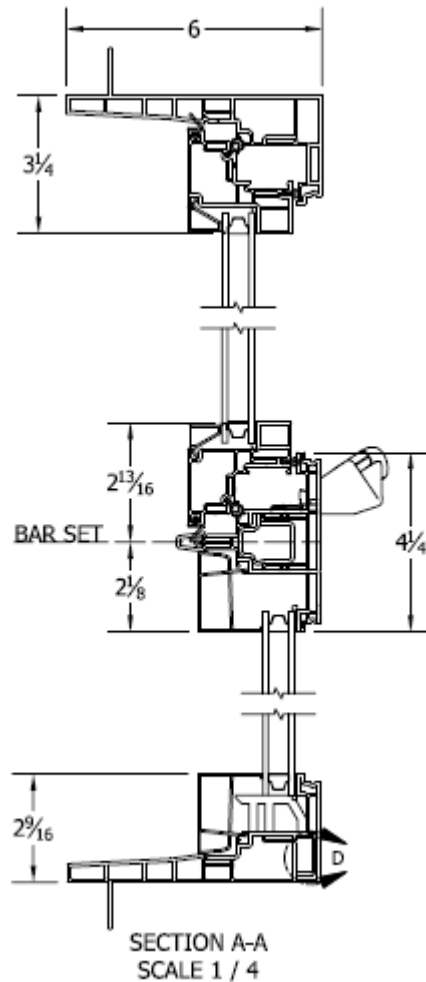








# 511 Endurance Series Deep Set Frame





# 511 Deep Set Frame







# Deep Set Frame 531/591



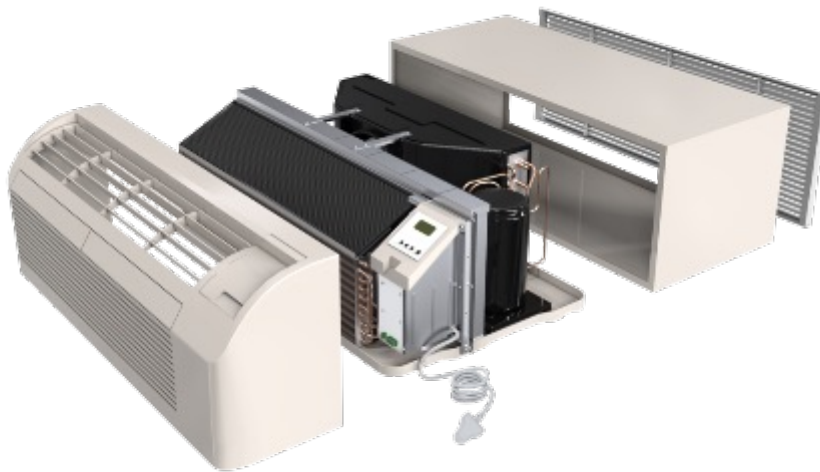




# Additional Solutions

## Integral Louvers

- ❑ These can be incorporated into any panel in lieu of glazing to accommodate PTAC or other HVAC needs.





# Additional Solutions



## Simulated Divided Lites

- ❑ Available in 1" or 2" thicknesses applied to both the interior & exterior.
- ❑ Mill finish grid installed between glass panes







# Additional Solutions



## A C Ports

### User Friendly Application

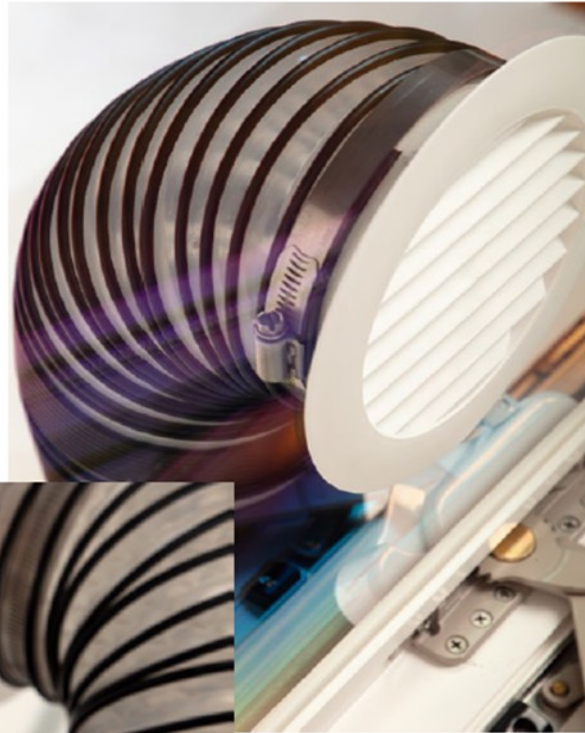
- Port fits into screen pocket
- No special tools or skilled required to install
- No cutting holes into walls

### Energy Efficient Solution

- Removable in non-summer months
- Keeps cool air in and hot air out
- Fits standard 5" AC hoses

### Competitively Priced Solution

- Nominal charge up to 6 SqFt
- Additional charge for sizes >6 SqFt
- Dual port options available





# New Energy Code



- ❑ Washington State Energy Code (Commercial)
  - ❑ Now is .26 U-Value for fixed windows and .28 U-Value for operable
  - ❑ All VPI Products can meet this requirement with dual-glazed glass
  
- ❑ City of Seattle Energy Code
  - ❑ Currently the U-Value is .26 for both fixed and .28 for operable windows
  - ❑ Purposing .20 U-Value for fixed windows and .22 U-Value for operable Windows, on 20% of the glazing area. (High Performance)
  
- ❑ How will this impact your VPI windows & Doors?
  - ❑ Triple Pane
    - ❑ All VPI Products can meet this requirement using Triple-pane glass

Thank You

