

A Window into Passive House Windows During Changing Times



phius con
MILWAUKEE 2025



Ancient Chinese Curse

What We Will Be Discussing?

- What has “***changed***” in 2025 to make things “***interesting* - Trade policy
 - International engagement priorities and relationships
 - National priorities on climate-related policies**
- What does it all mean?
- Predicting future impacts

All with a focus on an important central part of the passive building
– **the windows, doors and glass products**



Pandemics, European War, Unpredented Changes in US Trade Policy with the World

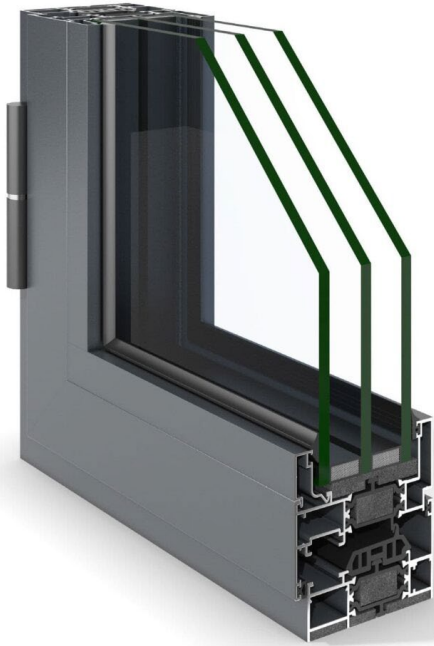


INTERESTING TIMES INDEED



Let's Hit It Hard: International Trade

The Current Supply Situation for High Performance Windows in the United States



Focusing on the
Passive Building Market
as a Proxy for the Entire Segment

Window/Door Manufacturers with Certified Window or Door Data



- 36 Distinct Companies Listed
 - 22 North American Manufacturers
 - 11 US-based
 - 11 Canada-based
 - 14 Importers Listed
- Fairly Significant Steady Growth Overall

PHI



- 200+ Distinct Companies Listed
- 9 North American Manufacturers Listed
 - 2 US-based
 - 7 Canada-based
- Most NA Manufacturers Listed for Both

THIS REPRESENTS SIGNIFICANT CHANGES IN U.S. SUPPLY CHANNELS IN RECENT YEARS

SIGNIFICANT INCREASE IN NORTH AMERICAN SUPPLY

WINDOW DESIGNS ARE FUNDAMENTALLY DIFFERENT. HOW?

U.S. WINDOW DESIGNS (vs EUROPEAN-AND IN SOME CASES-CANADIAN):

- Width frames/glass pockets
- Sliding vs hinged operating styles
- **Methods/standards in thermal performance reporting (vs Europe only)**

NOT WORSE—DIFFERENT—BUT PERCEPTIONS MATTER

IT HAS TAKEN TIME FOR U.S. MANUFACTURERS AND THE MARKET TO ADAPT

Dramatic increase in trade deficits in segment as a result over last 15 years

Phius approach created rapid growth in US/NA manufactured options

Examining **Import Trade Patterns** Focusing on the Regions Where “High Performance Windows” are Marketed into the US



MORE TRIPLE PANE PRODUCTS



SIGNIFICANT VOLUME

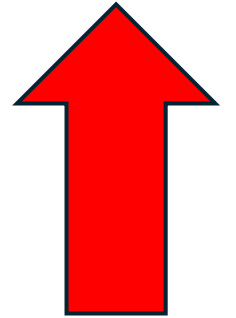
DISRUPTIONS IN TRADE PATTERNS BOTH AFFECT HIGH PERFORMANCE MARKET

... IN DIFFERENT WAYS

Growth in Imports of Windows/Doors from Europe into the US

Windows and Doors - Imports from Europe into United States (\$US)

| | | |
|------|----------------------|--------------|
| 2012 | <i>\$97 million</i> | |
| 2018 | <i>\$242 million</i> | |
| 2024 | <i>\$532 million</i> | +548% |



PVC WINDOWS HAVE GROWN FROM **\$6 MILLION** TO **\$136 MILLION**
(\$86 MILLION FROM POLAND AND LITHUANIA)

WOOD WINDOWS HAVE BARELY CHANGED FROM **\$42 MILLION** TO **\$50 MILLION**

THE BALANCE HAS BEEN METAL FRAMING SYSTEMS (MOSTLY ALUMINUM)

THE US EXPORTED ONLY \$18 MILLION IN ALL CATGORIES TO EUROPE IN 2024

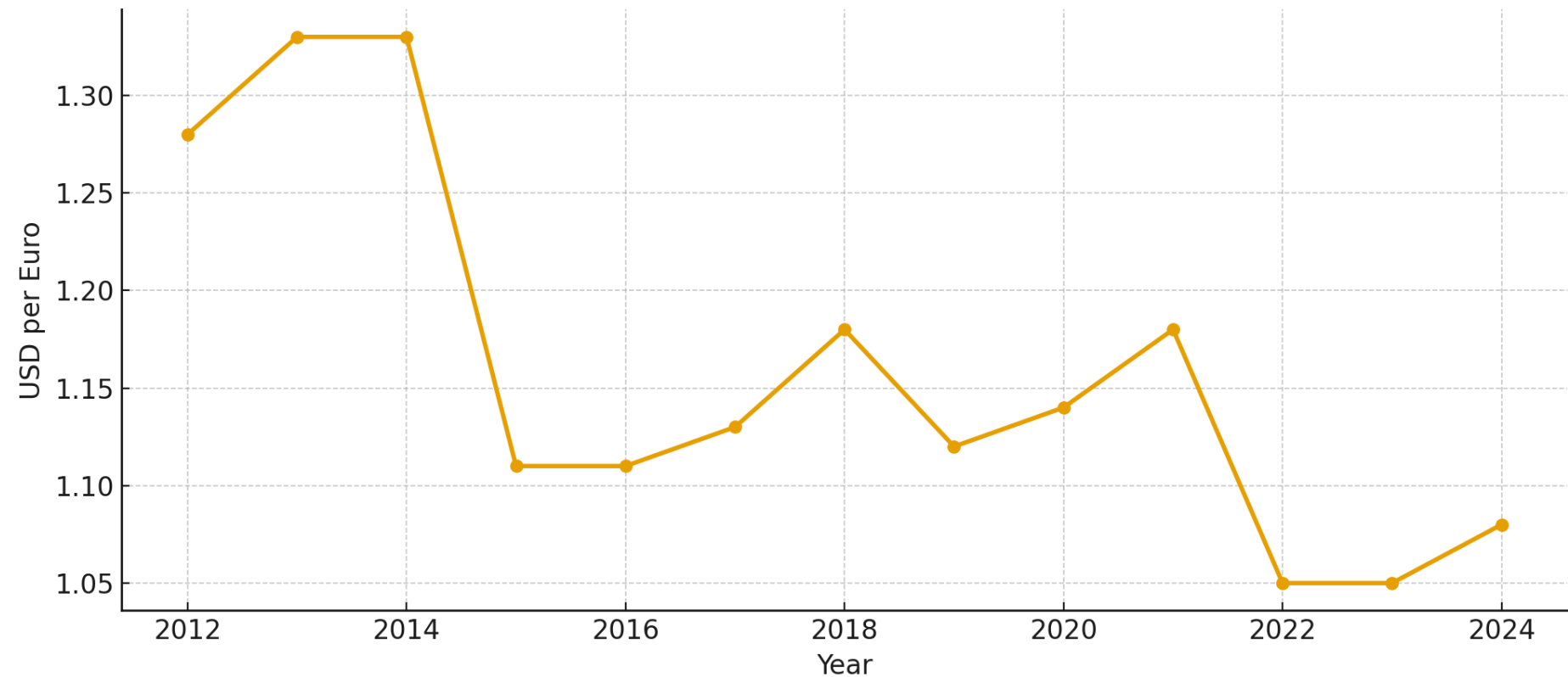
DOWN FROM \$37 MILLION IN 2012



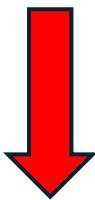
Growth in Imports of Windows from Europe into the United States

US DOLLAR VERSUS EURO

EUR/USD Exchange Rate (Annual Avg, USD per Euro)
2012-2024



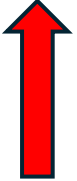
**DOWN DIRECTION
MEANS IMPORTS
BECOME LESS
EXPENSIVE**



Growth in Imports of Windows from Canada into the United States

MUCH DIFFERENT STORY

Windows and Doors - Imports from Canada into United States (\$US)

| | | | |
|------|----------------------|-------------|---|
| 2012 | <i>\$564 million</i> | +51% |  |
| 2018 | <i>\$793 million</i> | | |
| 2024 | <i>\$849 million</i> | | |

PVC WINDOWS HAVE GROWN FROM **\$52 MILLION** TO **\$174 MILLION**

WOOD WINDOWS HAVE **DECLINED** FROM **\$314 MILLION** TO **\$163 MILLION**

ALUMINUM WINDOWS HAVE GROWN FROM **\$87 MILLION** TO **\$180 MILLION**
(BALANCE MOSTLY STEEL DOORS)

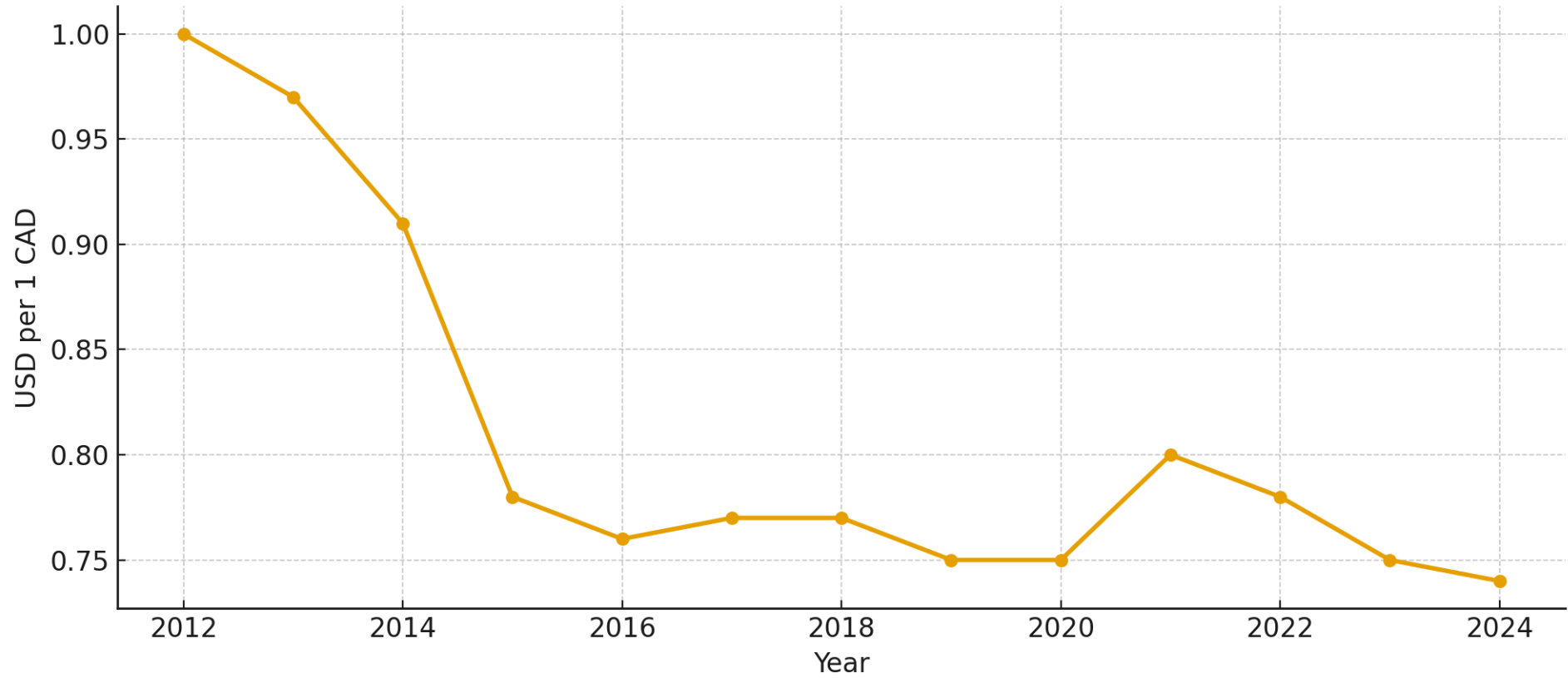
EXCLUDING STEEL, THESE CATEGORIES HAVE ONLY MOVED FROM \$453 MILLION TO \$517 MILLION OR **14%**

\$390 MILLION IN EXPORTS FROM US TO CANADA IN 2024 (\$437 MILLION IN 2012)

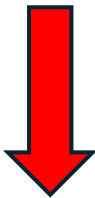
Growth in Imports of Windows from Canada into the United States

US DOLLAR VERSUS CANADIAN DOLLAR

USD per Canadian Dollar (Annual Avg)
2012-2024



**DOWN DIRECTION
MEANS IMPORTS
BECOME LESS
EXPENSIVE**



HOW DOES TRADE WITH ASIA EFFECT WINDOW AND DOOR COSTS ?



*Low priced window imports from China impacting
most price sensitive segments have risen steadily*

\$249 Million in 2018 to \$454 Million in 2024

uPVC and Aluminum Only

Broadly Effects Overall US Market Supply Dynamics and Pricing

What about other important importing countries ?

Columbia? What?

Aluminum fenestration imports:

| | |
|------|---------------|
| 2012 | \$30 million |
| 2024 | \$571 million |

Why?



Free trade agreement between USA and Columbia (CTPA) - May 15, 2012

Imports subject to new duties (but only because of aluminum) for the first time now

One of largest fenestration product importers to USA

IT ISN'T ALL ABOUT WINDOWS



ALL WINDOWS USE THIS

Growth in of Imports of **INSULATED GLASS UNITS** from Europe **and Canada** into the United States

MULTI-CHAMBER INSULATED GLASS UNITS - Imports from Europe into United States (\$US)

| | | | | |
|-------------|---|------|----------------------|--------------|
| EUROPE ONLY |  | 2012 | <i>\$22 million</i> | +491% |
| | | 2018 | <i>\$80 million</i> | |
| | | 2024 | <i>\$104 million</i> | |

EUROPEAN IMPORTS GREW FROM \$3 MILLION TO \$48 MILLION (1500%)

CANADA **IMPORTS** INCREASED FROM \$19 MILLION TO \$56 MILLION, BUT . . .
BUT **EXPORTS** FROM US TO CANADA INCREASED-\$114 MILLION TO \$153 MILLION

ALMOST IDENTICAL TRADE BALANCE WITH CANADA



FLAT GLASS FROM ASIA



IN THE FLAT GLASS CATEGORY, the impact of trade policy can become quite significant so be on the lookout:

China: 246% antidumping penalties on most (but not all) suppliers of tempered glass from 2023 (not all).

But “work arounds” have emerged:

| | <u>2024</u> | <u>2025 (YTD 7/30)</u> |
|-----------------------------------|----------------------|--|
| <i>China</i> | <i>\$289 million</i> | <i>\$169</i> |
| <i>China + Malaysia + Vietnam</i> | <i>\$461 million</i> | <i>\$424 million (\$726 million pace for FY)</i> |

HIGHLY DYNAMIC SITUATION IS EMERGING WITH WORK AROUNDS BEING TARGETED

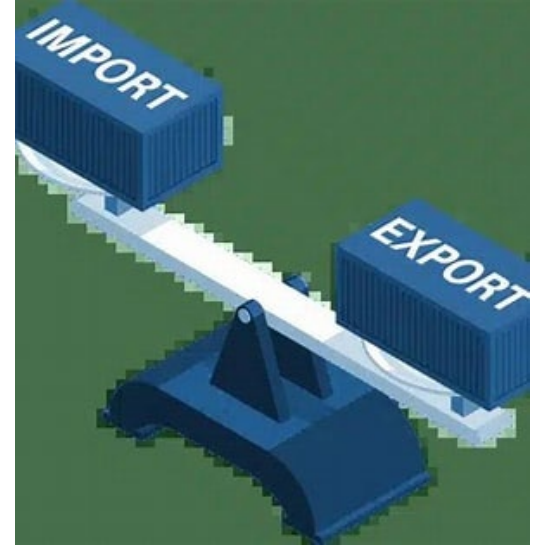
Who cares about flat glass from Asia? It Matters

DOMESTIC PRIMARY FLAT GLASS CONCENTRATED (3 COMPANIES +/- 75%)

LITTLE TRUE “IDLED” PRIMARY CAPACITY EXISTS IN THE U.S.

ADDING PRIMARY CAPACITY CHALLENGING /RARE

GLASS PRICING CAN BE VOLATILE WITH IMPORT/EXPORT DISRUPTIONS



SPECIAL NOTE:

*“Europe’s flat glass industry is facing a deteriorating market. Demand remains weak while **imports of float glass and glazing products from China are rising sharply**, putting pressure on domestic producers. This influx of low-cost imports risks destabilizing Europe’s ability to sustain a competitive and resilient glass sector.”*

Source: European Industry Newsletter, September 2026

What are the Implications? What Does It Mean?

HIGH PERFORMANCE SUPPLY REGIONS (EUROPE and CANADA):

Relevant product categories imports are up almost \$ 1 billion since 2012

Tariffs will apply to all products imported **except non-aluminum USMCA-qualified product) \$\$\$**

OTHER REGIONS:

***Bigger tariffs on product imported from most regions on all products* \$\$\$**

US MANUFACTURERS (AND USMCA-COMPLIANT CANADIAN MANUFACTURERS):

Components directly or indirectly imported face upward price pressure (variable) \$

ALUMINUM WILL HAVE HIGHER AND SIGNIFICANT PRODUCT SEGMENT SPECIFIC TARRIFS/DUTIES

KEEP A CAREFUL EYE ON GLASS PRICES AND ON EXCHANGE RATES

Short and Longer Term Impacts on the High Performance Fenestration Market

SHORT TERM:

CONFUSION. DELAYS. SOME PROJECTS PUT ON HOLD. AWAITING CLARITY.

PULL BACK BY SOME. STRATEGIES SHIFTING IN BOTH DIRECTIONS – VERY DYNAMIC.

DRAMATIC INCREASE IN INVESTIGATION OF NATURE OF SUPPLY SOURCES/MATERIAL ORIGIN

LONGER TERM:

LONGER TERM CAPITAL INVESTMENT WITH NEED FOR MORE CERTAINTY COULD BE IMPACTED

SIGNIFICANT **UPWARD PRICE PRESSURE** FOR IMPORTS ++ ESPECIALLY ALUMINUM IMPORTS

FUNDAMENTAL STRUCTURAL RESET OF SUPPLY CHAINS AND SEEMS TO BE DEVELOPING

IMPORTS IH25 UP SHARPLY; BUT **EXPECTED TO DECLINE SHARPLY** (WATCH CAREFULLY AS CENTRAL)

A final word-on the Chinese word “wei-ji”



Dual Meanings: Danger and Opportunity



Ancient Chinese Curse

I'M NOT CHINESE. THRIVE IN INTERESTING TIMES.

-Charles De Lint

Questions?

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