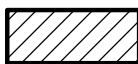




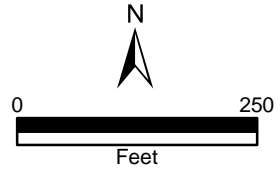
4-D-23-HZ
APPLICATION FOR CERTIFICATE OF APPROPRIATENESS



505 E. Scott Ave. 37917
Old North Knoxville H

Original Print Date: 4/3/2023
 Knoxville/Knox County Planning -- Historic Zoning Commission

Petitioner: Maegan Martin





Staff Report

Knoxville Historic Zoning Commission

File Number: 4-D-23-HZ

Meeting: 4/20/2023
Applicant: Maegan Martin
Owner: Maegan Martin

Property Information

Location: 505 E. Scott Ave. **Parcel ID** 81 L B 028
District: Old North Knoxville H
Zoning: RN-2 (Single-Family Residential Neighborhood)
Description: Queen Anne, c.1889

Two-story residence clad in brick and wood shingles, featuring a steeply-pitched slate hipped roof with multiple turrets, exterior brick chimneys, and a hipped-roof, one-story wrap-around porch.

Description of Work

Level II Major Repair or Replacement

Proposed replacement of fifteen windows on the c.2005 rear addition. Existing windows are double-hung, one-over-one, wood windows. Proposed replacement windows are one-over-one, double-hung Ultrex (a pultruded fiberglass composite project manufactured by Marvin). The provided specs note the muntins and rails are 1-5/8", comparable to the current window.

Applicable Design Guidelines

Old North Knoxville Design Guidelines, adopted by the Knoxville City Council on November 25, 2004.

B. Windows

1. If replacement windows are necessary, they shall be the same overall size as the originals, with the same pane division and same muntin depth, width, and profile. They shall be the same materials as the original windows, which were generally wood.

Comments

N/A

Staff Findings

1. 505 E. Scott Ave is a contributing resource to the ONK National Register Historic District and local overlay. The proposed scope of work will occur on a non-historic, flat-roof rear addition built c.2005.
2. The windows to be replaced are double-hung, one-over-one wood windows. According to a written description provided by the owner, after 18 years, the wood windows have severely deteriorated since installation, due to the quality of non-historic wood window materials and a high degree of sun exposure on the rear addition.

3. ONK's guidelines note that if replacement windows are necessary, they should be the same overall size as the originals, with the same pane division, material, and muntin depth, width, and profile. The applicant is not proposing to replace original windows on the house.
 4. Some alternative materials have been considered by the HZC for windows on non-historic additions or new construction, including aluminum-clad wood. The Ultrex fiberglass product has not been evaluated. Fiberglass's tensile strength allows the muntins and meeting rails to be thinner in profile than vinyl or other composite products, which would require more surface area to support the glass panes.
 5. A letter from the contractor notes the frame width of the window at 1-5/8", which is the same frame width as the current wood double-hung window. To confirm the proposed window replacement meeting all guidelines (same pane division and muntin depth, width, and profile) other than material, the applicant should provide specific measurements of stiles, top and bottom rails, and meeting rail to compare with the wood product.
-

Staff Recommendation

Staff recommends approval of Certificate 4-D-23-HZ, subject to one condition: 1) applicant to provide specifics for window replacements to staff for approval, including details on top and bottom rails, stiles, and meeting rail, to reflect wood window measurements.



DESIGN REVIEW REQUEST

- DOWNTOWN DESIGN (DK)
- HISTORIC ZONING (H)
- INFILL HOUSING (IH)

Maegan Martin

Applicant

~~2/24/2023~~ 3/27/23

4-D-23-HZ

Date Filed

Meeting Date (if applicable)

File Number(s)

CORRESPONDENCE

All correspondence related to this application should be directed to the approved contact listed below.

- Owner
- Contractor
- Engineer
- Architect/Landscape Architect

Maegan Martin

Name

Company

505 E Scott Ave

Knoxville

TN

37917

Address

City

State

Zip

8652562702

maeganc.martin@gmail.com

Phone

Email

CURRENT PROPERTY INFO

Jonathan and Maegan Martin

505 E. Scott Ave

8652562702

Owner Name (if different from applicant)

Owner Address

Owner Phone

505 E. Scott Ave

081LB028

Property Address

Parcel ID

Old North Knoxville

Neighborhood

Zoning

AUTHORIZATION

Lindsay Crockett

Lindsay Crockett

3.28.23

Staff Signature

Please Print

Date

Maegan Martin

Maegan Martin

~~2/24/2023~~ 3/27/23

Applicant Signature

Please Print

Date

REQUEST

DOWNTOWN DESIGN

Level 1:

- Signs Alteration of an existing building/structure

Level 2:

- Addition to an existing building/structure

Level 3:

- Construction of new building/structure Site design, parking, plazas, landscape

See required Downtown Design attachment for more details.

Brief description of work: _____

HISTORIC ZONING

Level 1:

- Signs Routine repair of siding, windows, roof, or other features, in-kind; Installation of gutters, storm windows/doors

Level 2:

- Major repair, removal, or replacement of architectural elements or materials Additions and accessory structures

Level 3:

- Construction of a new primary building

Level 4:

- Relocation of a contributing structure Demolition of a contributing structure

See required Historic Zoning attachment for more details.

Brief description of work: Replacement of 15 windows in an addition that was built in 2005. The current windows are wood and have failed since installation in 2005. We would like to replace the windows with a composite or fiberglass window that has the same look as the wood windows. The new windows will be paintable and will be painted to match the color scheme of the existing original windows.

INFILL HOUSING

Level 1:

- Driveways, parking pads, access point, garages or similar facilities Subdivisions

Level 2:

- Additions visible from the primary street Changes to porches visible from the primary street

Level 3:

- New primary structure
 Site built Modular Multi-Sectional

See required Infill Housing attachment for more details.

Brief description of work: _____

STAFF USE ONLY

ATTACHMENTS

- Downtown Design Checklist
 Historic Zoning Design Checklist
 Infill Housing Design Checklist

ADDITIONAL REQUIREMENTS

- Property Owners / Option Holders

Level 1: \$50 • **Level 2:** \$100 • **Level 3:** \$250 • **Level 4:** \$500

FEE 1:		TOTAL:
100.00		
FEE 2:		
FEE 3:		100.00







Jonathan Martin

505 East Scott Ave

Knoxville , TN 37917

The frame width of a Marvin Infinity double hung window is 1 5/8".

That is the same frame width as your current double hung window.

Because of the strength of the Ultrex material, frame profiles are narrow.

Marvin designed this window so that it has the same look as your double hung window.

This includes the bevels on the frame on the interior and exterior surrounding the glass.

Ed Clark

(865) 748-1106

CRS Exteriors/ www.crsexteriors.com
10527 Kingston Pike, Suite A Knoxville TN 37922

(865) 670-8823



INFINITY[®]

from **MARVIN**

REPLACEMENT WINDOWS

Built for life[®]

ULTREX[®]

PULTRUDED FIBERGLASS



THE PERFECT WINDOW MATERIAL



Built for life®

FROM DAN MARVIN:

“At Infinity® from Marvin® we take pride in producing the highest-quality, longest-lasting windows and doors. The use of Ultrex® fiberglass in our products ensures we meet this expectation and allows us to back it up with a Limited Lifetime Warranty.”

Infinity windows and doors are made with Ultrex®, a patented pultruded fiberglass with acrylic capping. We use Ultrex and our proprietary pultrusion process to manufacture high-performance windows and doors that endure heat, cold, wind, and rain without wearing out.

Though we are dedicated to leading the way in innovation, we never forget the cornerstones of our business. We are highly selective in choosing our business partners – independent, locally-owned installing retailers – to ensure our customers have the best experience possible. We use an efficient manufacturing and delivery system so our products are received when expected. We create products to be easily installed and operable with virtually no maintenance required.

Our values and work ethic are forged by the communities where we’re proud to make our quality products. When you choose Infinity windows and doors, you support a small-town, family-owned and operated company with deep roots in the community. We share profits with our employees; we support our communities; we treat our retailers and customers fairly and with respect.

Infinity windows and doors are truly Built For Life.

The Material You Choose

for your windows and doors
will have impacts far into the future.

Your window and door choice affects your energy efficiency, the security of your home, even the quality of your life. It's not a decision that should be made lightly. Our advice? Study the facts and choose wisely.

VINYL & VINYL/WOOD COMPOSITE (FIBREX®)

Vinyl has a high rate of expansion and contraction compared to glass. This can lead to seal failures and stress cracks. Some vinyl/wood composites are 60% vinyl infused with wood fibers and struggle from similar performance issues as their vinyl counterparts.



ULTREX® PULTRUDED FIBERGLASS

Infinity windows and doors are built with Ultrex, a highly durable, state-of-the-art, pultruded fiberglass material with acrylic capping. This pioneering technology benefits from 20 years of proven performance in the field.



“ Fiberglass windows have a 38% longer useful life expectancy than vinyl. ”

- *“Life cycle assessment of windows for the North American residential market: Case Study”*
by the University of British Columbia, *Scandinavian Journal of Forest Research*, 2008.

Tough. Long-lasting. Unblemished.

Just like the reputation of the Infinity window replacement specialists who install it.



ULTREX FIBERGLASS. IT'S BUILT FOR LIFE.

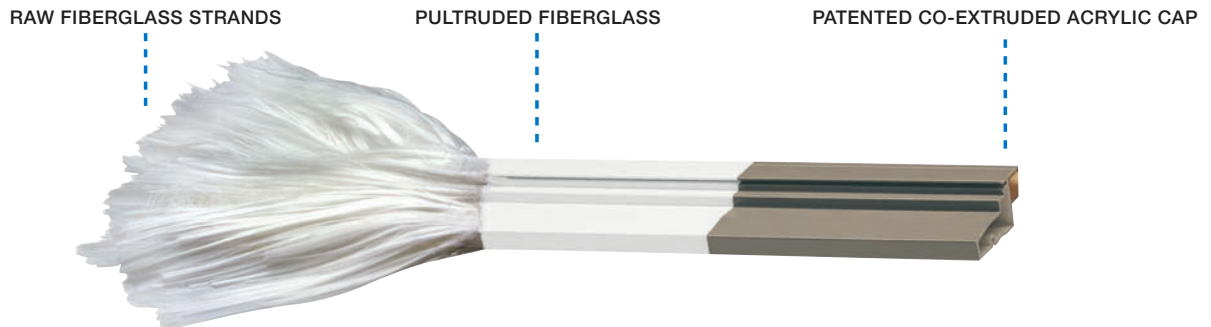


*Fiberglass has an amazing strength-to-weight ratio, which is one of the reasons why it's the material of choice for boats**, bridges, guard rails, and ladders. It's highly durable, doesn't corrode, resists rot, and resists expanding and contracting in temperature swings.*

** In comparison to longitudinal tensile strength. ** Molded fiberglass*

ULTREX® IS A PATENTED MATERIAL PIONEERED BY MARVIN®.

Ultrex is made with thin strands of strong glass cables, saturated with specially compounded resins, pulled through a heated die, capped with a patented acrylic coating, and cut with diamond-edge blades. This material innovation, developed by Marvin brings 25 years of unmatched experience, tooling and component optimization to every Infinity product.



ULTREX. THE PERFECT WINDOW MATERIAL.

Ultrex has virtually all the characteristics you'd want in a material used to make windows and doors. It's super strong, rigid, and has a low thermal expansion rate. It's heat resistant, non-corrosive, and has low conductivity for superior energy efficiency. In addition, Ultrex has a smooth finish that's resistant to dents and cracks, and stays beautiful over time. From easy installation to trouble-free maintenance – with virtually no call backs.

ULTREX. GREAT PERFORMANCE. GREAT EXPERIENCE. GREAT VALUE.

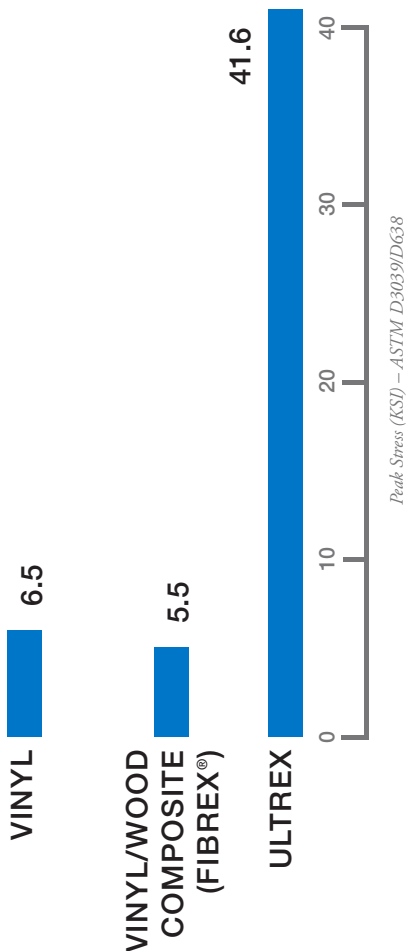
**ULTREX: MANY DIFFERENT COLOR FINISH OPTIONS.
BUT THEY'RE ALL GREEN.**

Ultrex is made from silica sand – a safe and abundant natural resource. The Ultrex manufacturing facilities fully comply with the 1990 Clean Air Act and are designated as a Maximum Achievable Control Technology (MACT) facility as outlined by the EPA.



Strength That Will Never Let You Down.

TENSILE STRENGTH



The tensile strength of Ultrex® means one square inch can support up to 41,000 lbs. So, one elephant? No problem.



*BENEFIT: Ultrex takes the stress,
so you don't have to.*

ULTREX® IS AS STRONG AS STEEL*

And eight times stronger than vinyl. Windows and doors built with Ultrex don't break down under stress. They maintain their operation, energy efficiency, performance and longevity. Ultrex delivers on day one and over the long haul. This strength also means that we're able to reduce the thickness of the frames, which increases the glass surface area of our windows and doors – which yields a bigger view.



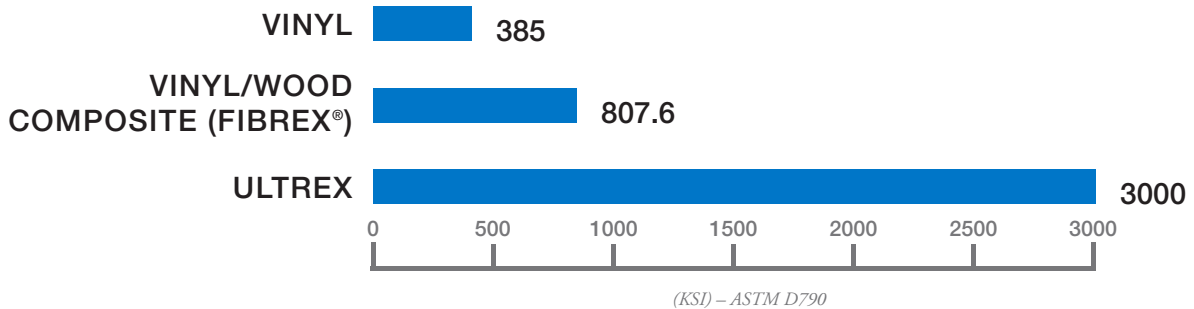
View through
Vinyl Windows



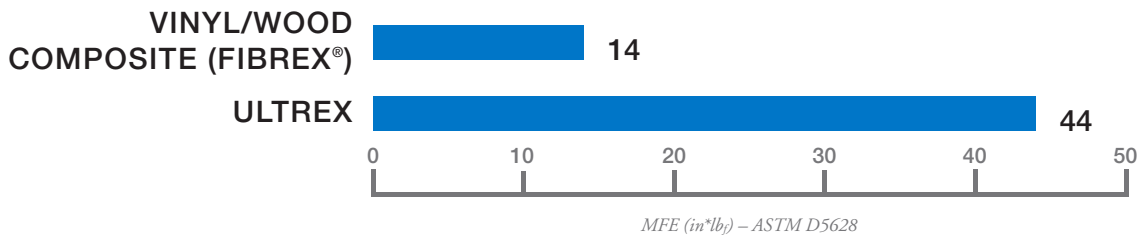
View through
Infinity Windows

** In comparison to longitudinal tensile strength.*

FLEXURAL MODULUS



IMPACT RESISTANCE



BENEFIT: Ultrex stands up to wind, rain, hail, and even baseballs.

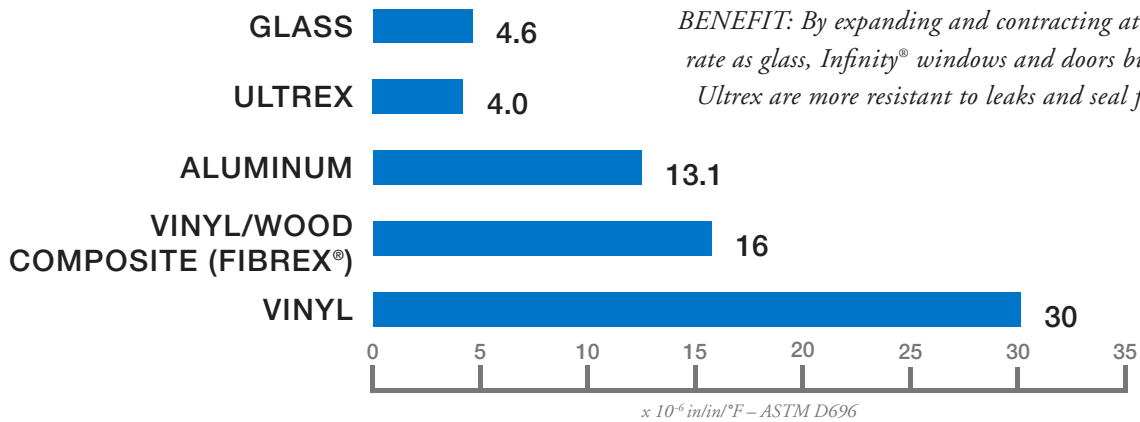
One Constant Performer in a World that Fluctuates.



ULTREX® HAS VERY LOW THERMAL EXPANSION RATES.

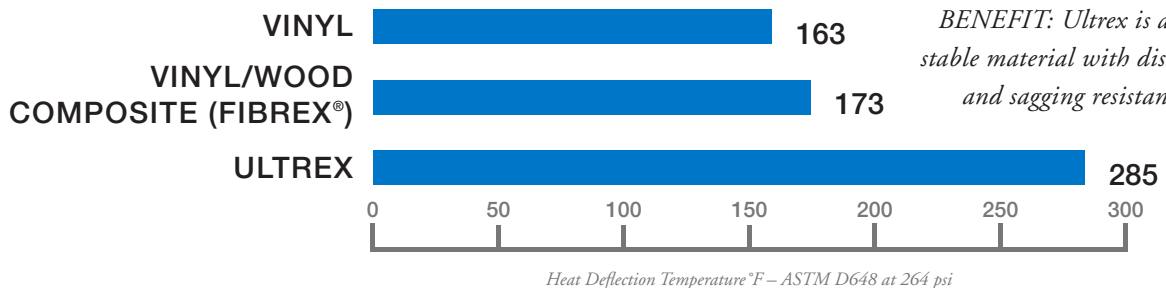
Which means that our windows and doors stay tight and true even after extreme temperature swings. Ultrex expands at virtually the same rate as glass and maintains a tight seal, so it's resistant to leaks, seal failures, and stress cracks that can compromise energy efficiency and long-term performance.

THERMAL EXPANSION & CONTRACTION



BENEFIT: By expanding and contracting at the same rate as glass, Infinity® windows and doors built with Ultrex are more resistant to leaks and seal failures.

HEAT DEFLECTION



BENEFIT: Ultrex is a very stable material with distortion and sagging resistance.

ULTREX® CAN TAKE THE HEAT.

Vinyl and vinyl/wood composites are **thermoplastic** materials, which means they have the potential to change shape when they are exposed to extreme temperatures. In extreme heat, they could soften, melt, sag and deform. In the cold, they could become brittle and break. Ultrex is a **thermoset** material that is cured and hardened into a shape. This curing process is an irreversible chemical reaction, which means doors and windows made of Ultrex will not melt or lose its true shape, even when exposed to extreme temperatures of up to 285° F.



ULTREX



VINYL

Windows and doors constructed of Ultrex maintain tight mitered corners and joinery throughout changing temperatures.

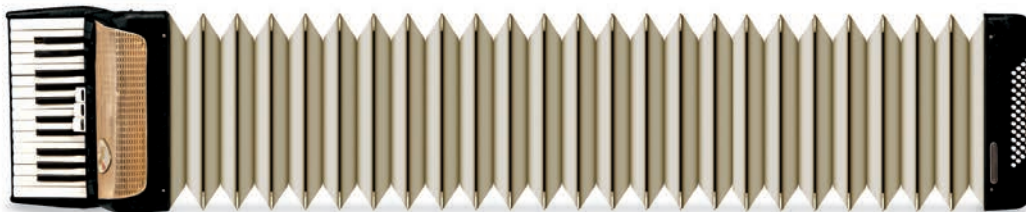
ULTREX: LOW THERMAL EXPANSION

ULTREX



Constant expansion and contraction can gradually break down windows and doors, causing poor operation, leaky seals and a loss of structural integrity. Ultrex expands 87% less than vinyl and 75% less than vinyl/wood composites. Now that's music to your ears.

VINYL



First-Class Appearance and Finish that lasts.

ULTREX® PROVIDES A SUPERIOR, CONSISTENT FINISH.

The Ultrex finish performs so well that we even offer it in dark colors, like bronze, without fear of increased heat loads or UV degradation. Our patented, high-performance co-extruded capping process is unlike anything else in the industry and provides a thick, even acrylic finish free of pin-holes, striations and imperfections that will resist scratches, fading and chalking to retain its original beauty.

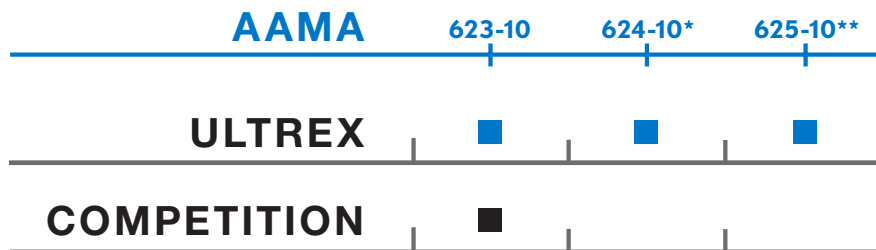


WHY AN ACRYLIC FINISH?

The red light to the left is acrylic, while the rest of the car is painted. The auto industry learned decades ago that acrylic lights outlast a painted finish. Similarly, Ultrex employs an acrylic finish to provide long-term color retention and durability.

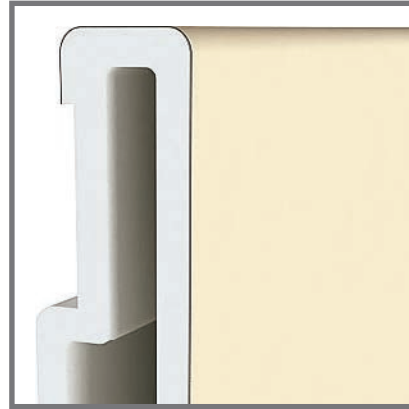


PREMIUM FINISH



** Infinity window and door components made of Ultrex meet all the requirements of AAMA 624-10 with minor temporary exceptions due to inventory. ** The Ultrex patented coating system is listed under the AAMA Verified Components List (VCL) for AAMA 625-10, with the exception of the long-term outdoor weathering performance test, which is currently in progress.*

ULTREX



COMPETITION

With a finish that is 3x thicker than competitive finishes, Ultrex® won't crack, dent, chip or peel.

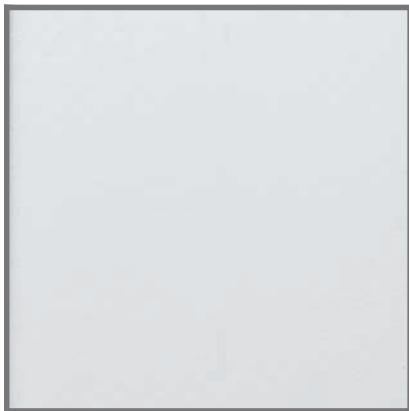


ULTREX ACRYLIC CAP:

A patented co-extruded acrylic cap is mechanically bonded directly to the pultruded fiberglass substrate. The result is a superior aesthetic that is unbelievably durable.



ULTREX



COMPETITION

It's easy to see the difference between the Ultrex patented, mechanically bonded finish, and the painted finish of fiberglass competitors.

The Lower Energy Bills are as Attractive as the Windows and Doors.

THERMAL CONDUCTIVITY



Windows with low conductivity reduce heat loss in homes, which translates to lower energy bills. Ultrex® is 5,000x less conductive than aluminum, so homes retain their heat more in the winter and stay cooler in the summer.

Infinity ENERGY STAR® qualified products can reduce energy bills by about 7-15% compared to non-qualified products*.

Additionally, Infinity products with LoE³-366/i89 have a 54% better thermal performance rating than windows with dual pane, clear glass**.



Infinity® windows and doors combines the low conductivity and superior performance attributes of Ultrex with a selection of energy-efficient glazing options to deliver ENERGY STAR® qualified solutions and beyond*. Choose from Argon filled dual pane LoE²-180™, LoE²-272® and LoE³-366®* or LoE³-366/i89 for maximum energy efficiency.



* ENERGY STAR at energystar.gov. ** 0.55 is the default glazed fenestration U-factor for a double page nonmetal frame window from IECC 2012 Table C303.1.3(1).

Ultrex Fiberglass

Our superior material. The strongest choice
for window and door replacement.

ADVANTAGES OF ULTREX®:

- Low maintenance
- Base material is silica sand — an abundant natural resource
- Intricate profiles replicate the look of traditional wood windows
- Low expansion provides easy operation for the life of the window
- Strength of Ultrex keeps windows square and true
- Narrow profiles allow for more visible glass area and expanded views
- Long-term stability reduces the risk of seal failures and air leakage through the window
- Patented, mechanically bonded inline acrylic finish is up to 3x thicker than competitive finishes, providing superior resistance to discoloring, scratching, and denting



WHY OVER 75,000 SATISFIED HOMEOWNERS PREFER INFINITY REPLACEMENT WINDOWS

- 1 Weathertight — provides year-round comfort wherever you live.
 - 2 Super Durable Ultrex — the ideal window material means virtually no maintenance for you.
 - 3 Energy Efficient — ENERGY STAR® qualified products mean you can save money.
 - 4 Better Looking — thoughtful design and traditional detailing not found in other replacement windows.
 - 5 No-hassle shopping experience — from a reputable local installing retailer.
 - 6 Easy to Clean — advanced designs make cleaning worries a thing of the past.
 - 7 Limited Lifetime Warranty — brings you peace of mind.
 - 8 Founded by Marvin® Windows and Doors — an industry leader for nearly a century.
-

For those who know, Ultrex® is not a choice.

It's THE Choice.



WHY YOU SHOULD INSIST ON ULTREX:

- STRENGTH
- PERFORMANCE
- APPEARANCE
- DURABILITY
- LIMITED LIFETIME WARRANTY

CALL 1-800-391-6664 FOR THE
INFINITY RETAILER NEAREST YOU,
OR VISIT INFINITYWINDOWS.COM

The characteristics that separate Ultrex from other windows and doors truly make it the world's perfect window material. That's why homeowners think of Infinity® windows and doors made with Ultrex as THE CHOICE for their homes.



WANT TO LEARN MORE? SCAN TO SCHEDULE
A FREE IN HOME CONSULTATION.

Ultrex® Specifications

	VINYL	VINYL/WOOD COMPOSITE (FIBREX®)	ULTREX FIBERGLASS
THERMOPLASTIC/THERMOSET	THERMOPLASTIC	THERMOPLASTIC	THERMOSET
REINFORCEMENT	NONE	WOOD FIBER	GLASS FIBER
HEAT DEFLECTION TEMPERATURE (ASTM D648 AT 264° PSI)	163° F	173° F	285° F
TENSILE STRENGTH (LD) (ASTM D638/D3039)	6.5 ksi	5.5 ksi	41.6 ksi
FLEXURAL MODULUS (LD) (ASTM D790)	385 ksi	807.6 ksi	3000 ksi
CTE (x10⁻⁶ in/in/F) (LD) (ASTM D696)	30	16	4
SURFACE FINISH	PVC	PVC, POLYESTER URETHANE, ACRYLICS	ACRYLIC (AAMA VERIFIED)
COATING HARDNESS	NA/SUBSTRATE	B (HARDNESS) 15.00 (BARCOL)	H (HARDNESS) 35.03 (BARCOL)
THERMAL CONDUCTIVITY*	.10	.13	.12
IMPACT RESISTANCE		14 MFE (in * lb _f)	44 MFE (in * lb _f)

References: Stork Technimet/Testing Corporation: #0602-15293, #0512-14889, #0704-19702, #TCT006638P. Precision Measurements and Instruments Corporation: #13043-DS. Tecton: #ESP010521P, "Test Results for Fibrex and Ultrex". *Plastics Engineering Handbook of the Society of Plastics Industry, Inc. Fifth Edition.* Andersen Fibrex Manual: "A High Performance, High Value Biofiber Polymer Composite Technology". Renewal By Andersen: "Fibrex Material: A Better Alternative, A Better Window".

LD = Longitudinal Direction

* Highest rate of thermal conductivity shown. Test results range from .10 - .13 for vinylwood composite (Fibrex) and .09 - .12 for Ultrex.

CALL 1-800-391-6664 FOR THE INFINITY INSTALLING RETAILER
NEAREST YOU. IN CANADA CALL, 1-800-263-6161. OR VISIT US
AT INFINITYWINDOWS.COM

INFINITY[®]
from **MARVIN**
REPLACEMENT WINDOWS
Built for life[®]

*Infinity is backed by the Marvin Companies' century long heritage of service,
craftsmanship, and quality with a focus on all-out performance.*

MARVIN[®]
Windows and Doors
Built around you.[®]

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Fibrex[®] is a registered trademark of Andersen Windows and Doors. Part #19981669.