

TRACO Windows and Doors

NEXGEN™ Technology

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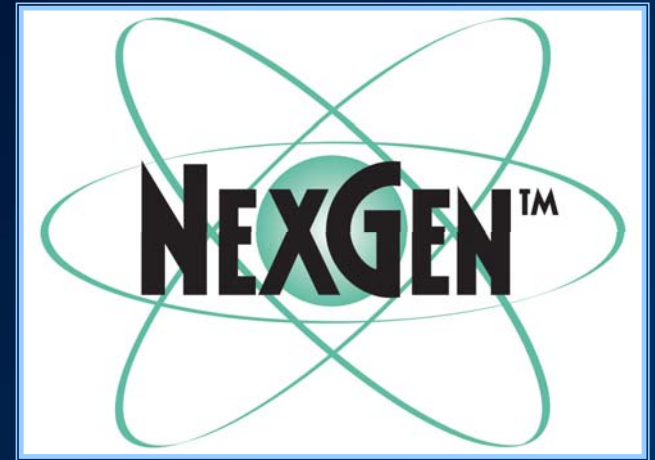


FOR 65 YEARS



NEXGEN Technology™ is...

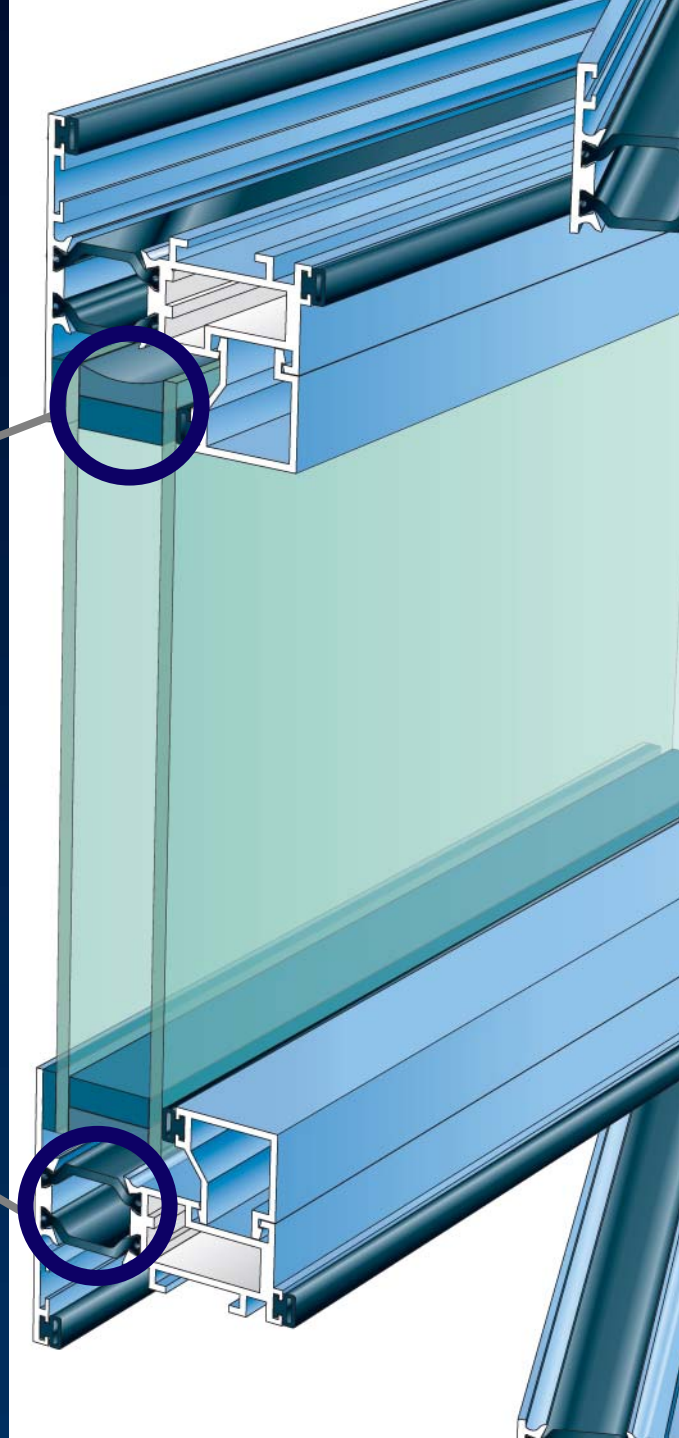
- The “platform” on which current and future TRACO products are being built
Including Blast



FOR 65 YEARS

NEXGEN™ Technology

- NEXGEN™ Energy Spacer
- NEXGEN™ Thermal Barrier System

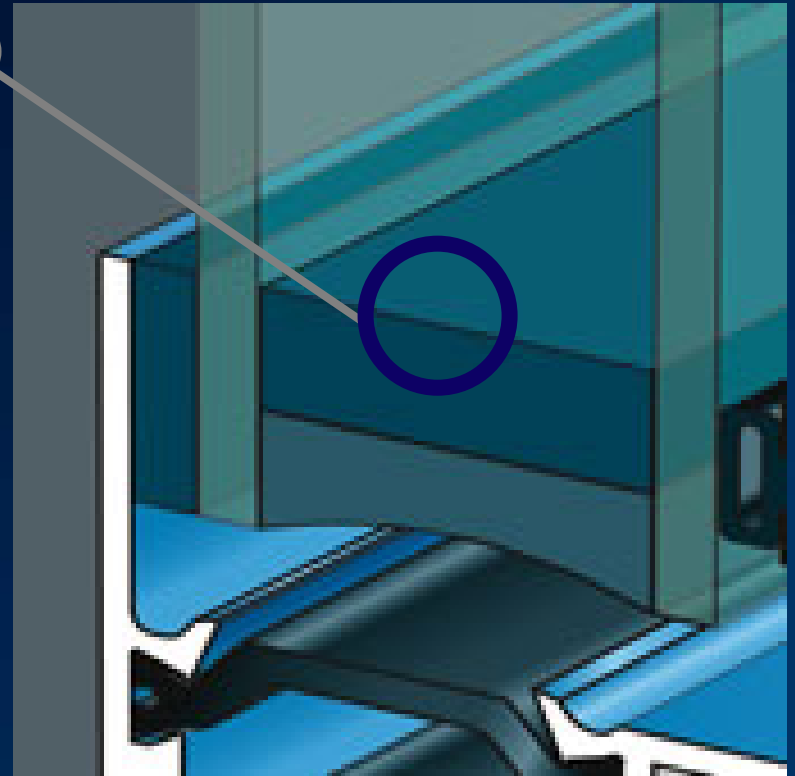


FOR 65 YEARS

NEXGEN™ Technology

NEXGEN™ Energy Spacer

- Thermo Plastic Spacer
 - Warm edge technology
 - Butyl based material



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NEXGEN™ Energy Spacer

- Advantages
 - Warm edge zone reduces condensation
 - Even temperature distribution on the glass surface
 - Lower water vapor and gas permeability
 - Excellent adhesion to glass
 - Elastic edge seal
 - Improved energy efficiency
 - Improved visual appearance of IGU
 - Passed Blast and Impact Testing!!



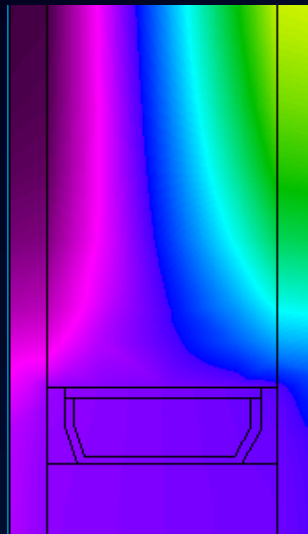
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Thermo Plastic Spacer

Warm edge zone reduces condensation

Metal Spacer

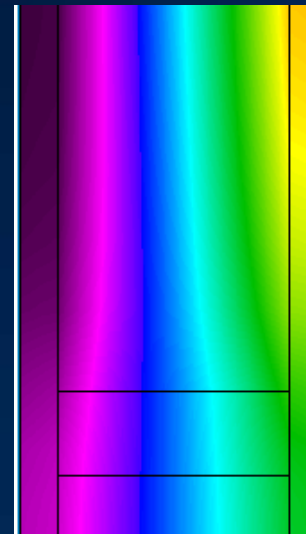
Exterior
Glass
Surface
0°F



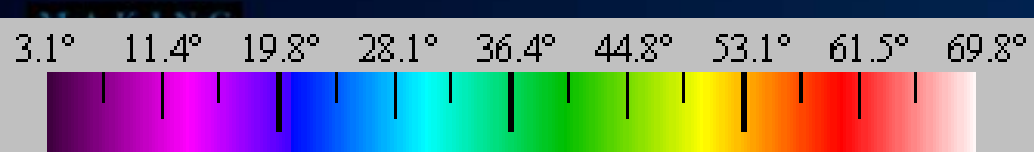
Interior
Glass
Surface
21°F

TPS Spacer

Exterior
Glass
Surface
0°F



Interior
Glass
Surface
40°F



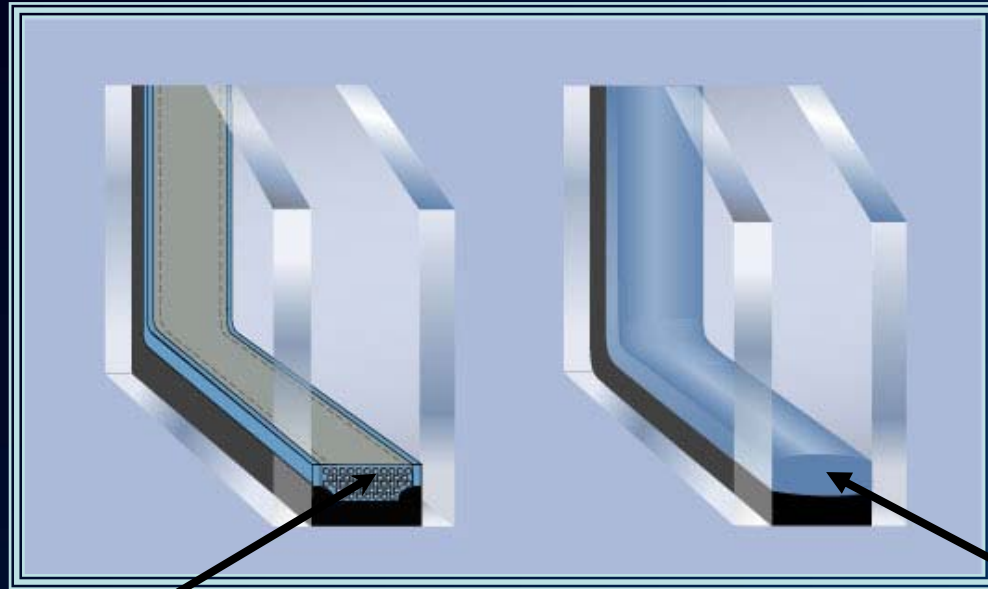
10% Improvement on
Overall Window CRF



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NEXGEN™ Energy Spacer



Traditional IG is produced with a **2.5mm** bead of PIB primary sealant placed on the shoulder of the Al spacer bar

TPS® Warm Edge IG is produced with a solid **6.8mm** band of desiccant impregnated PIB primary sealant

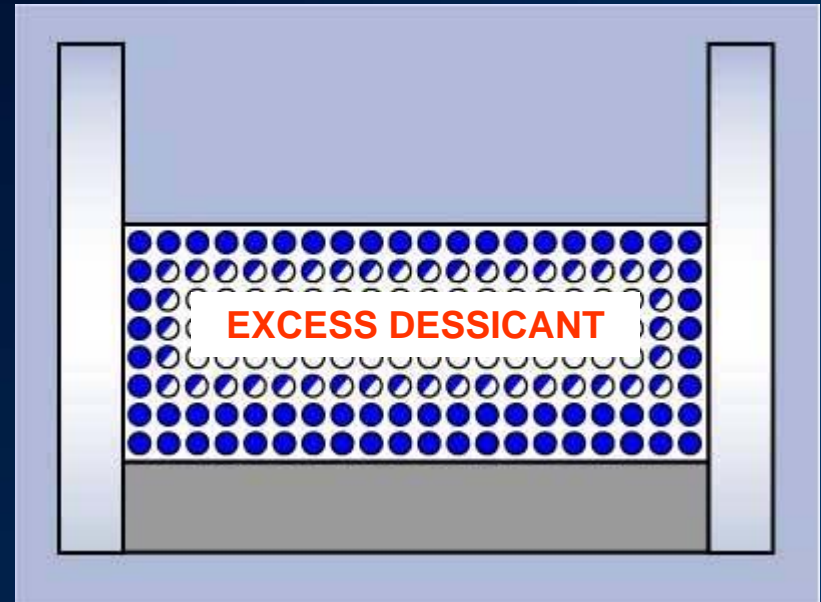


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NEXGEN™ Energy Spacer

- PIB primary sealants are the main defense against moisture intrusion into an IG unit
- 6.8mm of TPS® contains a vast excess of desiccant to insure years and years of protection against moisture



MAKING HISTORY



MAKING WINDOWS

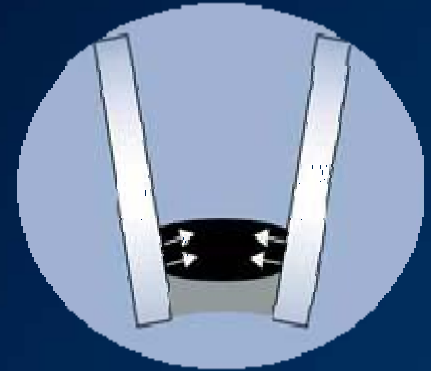
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NEXGEN™ Energy Spacer



Patented, self-sealing miter joint unlike any other IG System

Resists the effects of thermal pumping and maintains adhesion to the glass lite over the long run



NEXGEN™ Energy Spacer has a continuous primary seal which is vastly superior to that in other IG systems

6.8mm!

Nearly three times the primary sealant depth of traditional IG

Continuous corners with no seams, gaps, or spacer flares



NEXGEN™ Energy Spacer

- Withstands compression force without transferring stress from metal spacer to the glass lite surface
 - 4,409 lb auto - 20 hrs
 - IG unit compressed from 16mm to 15mm airspace
 - After removing auto the unit returned to 16mm airspace



MAKING
HISTORY



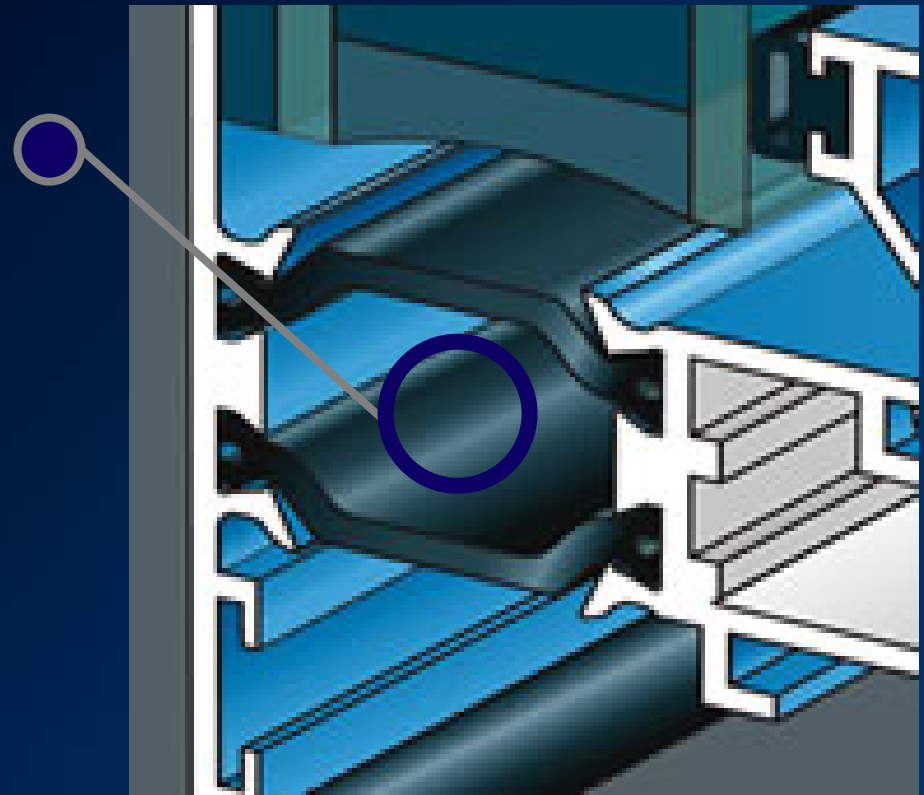
MAKING
WINDOWS

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NEXGEN™ Technology

NEXGEN™ Thermal Barrier System

- Strip System
 - Glass reinforced polyamide material
 - Superior thermal performance
 - Allows for dual finish
 - Improved quality



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NEXGEN™ Thermal Barrier System

- Advantages
 - Improved insulation
 - Design flexibility
 - Automated production increases quality
 - Dual color / dual finish
 - Strength and structural integrity



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NEXGEN™ Technology

Thermal Barrier System

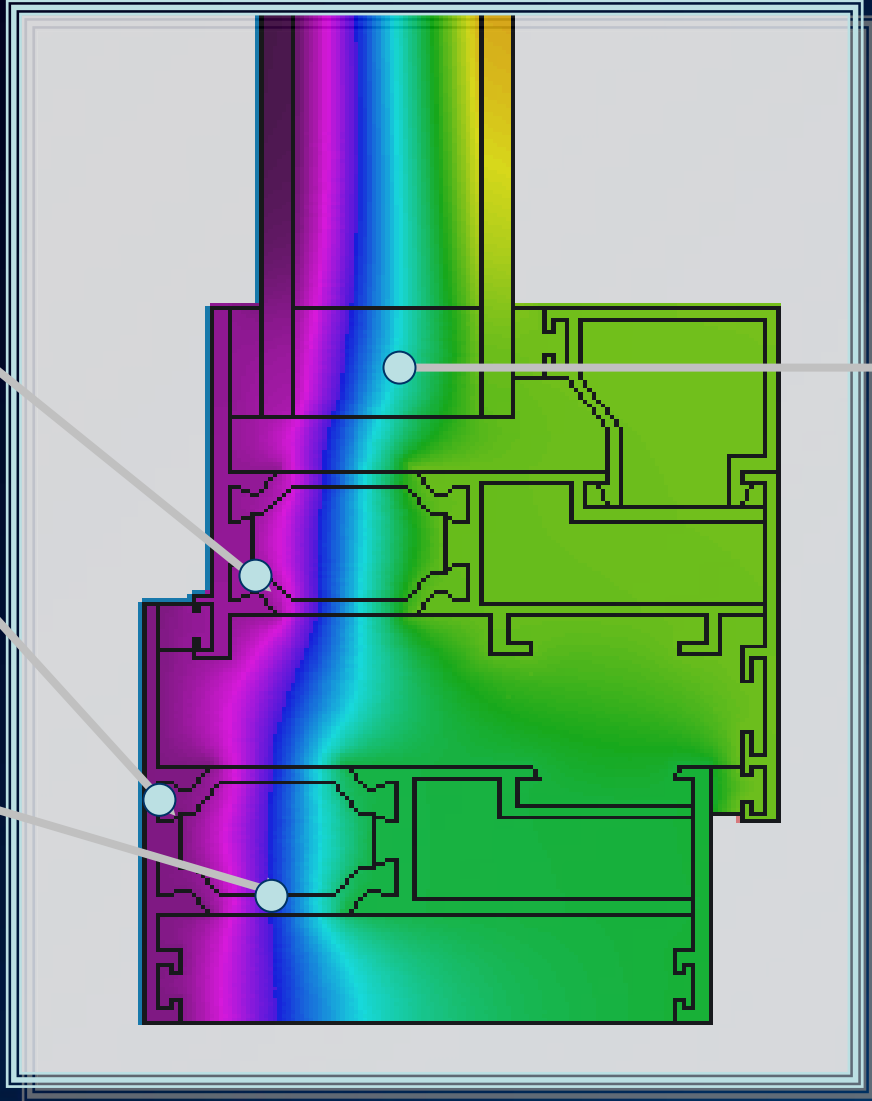
Energy Spacer

in the frame and vent

to the exterior of the window

5/8" wide vs. a 1/4" typical competitive window

Warm edge spacer, integrated desiccant, automated process

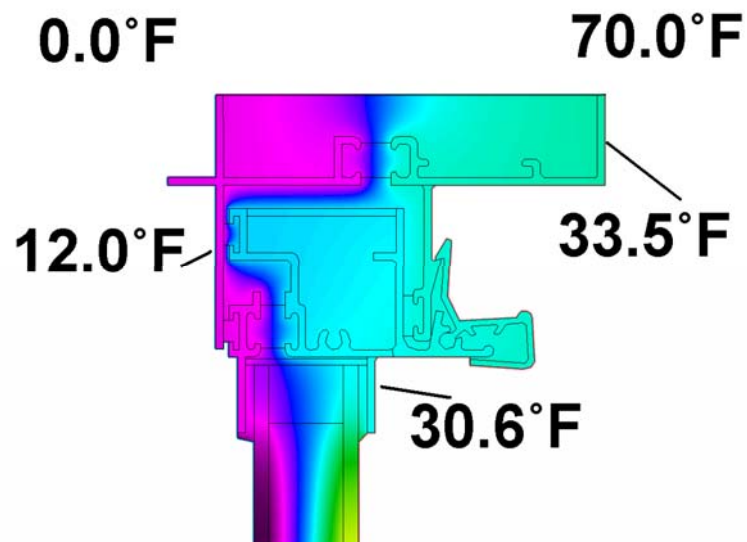


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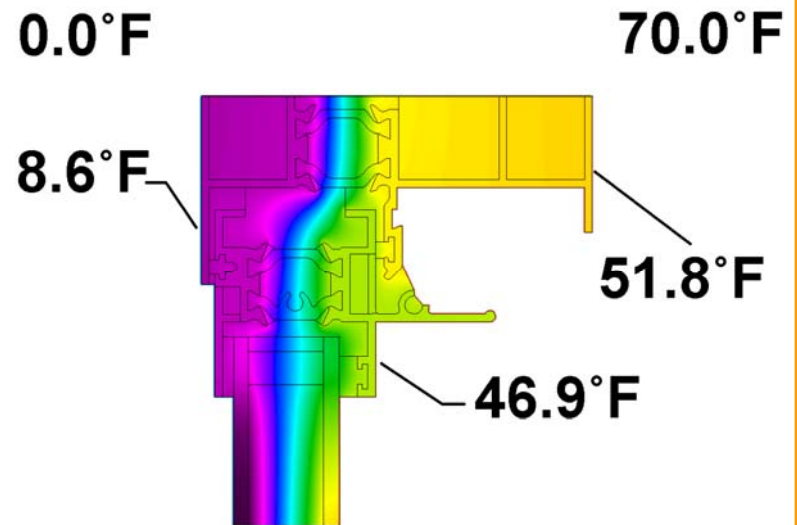
NEXGEN™ Performance

Competitive Window



Overall U Value = 0.48

TRACO NX-500



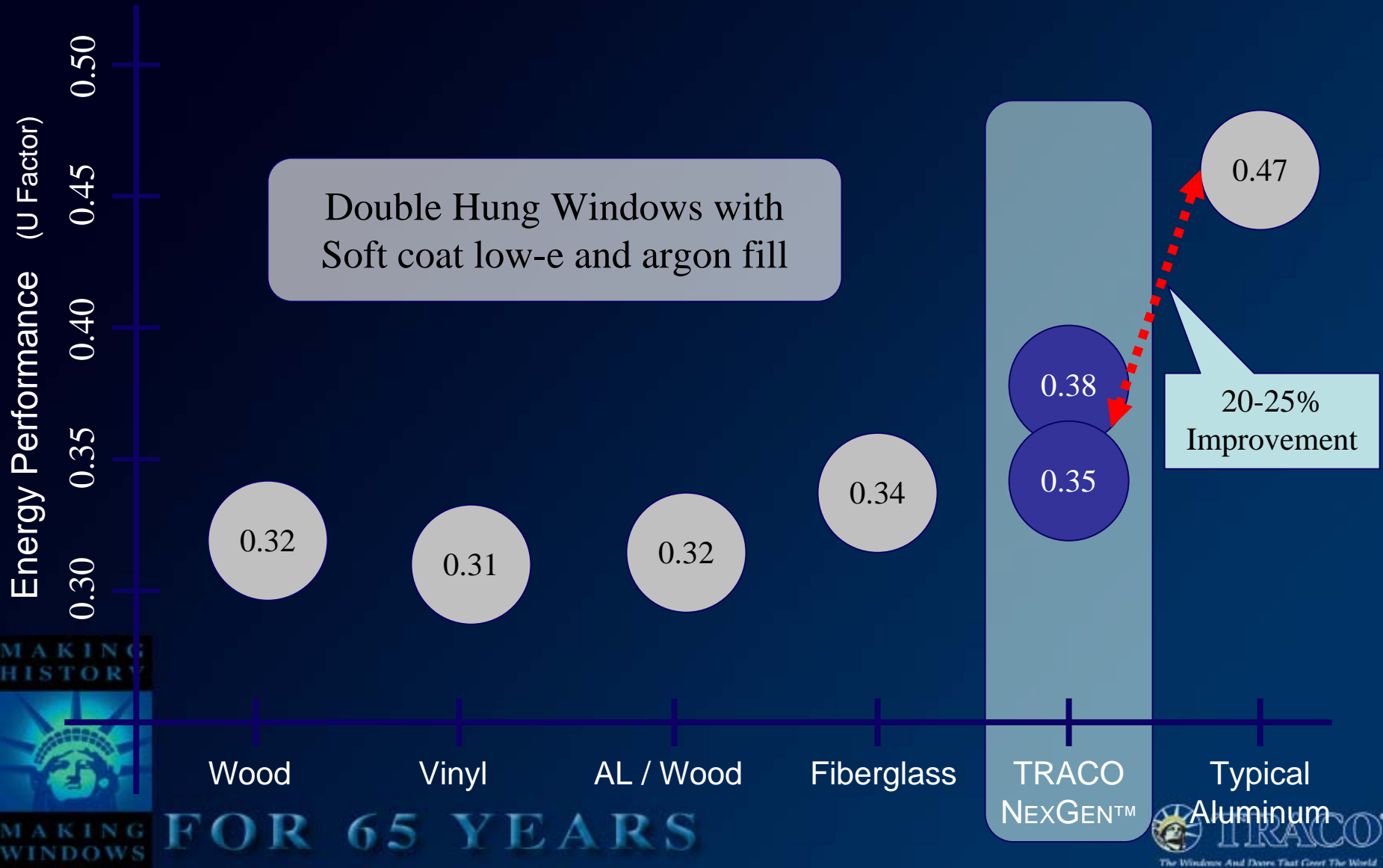
Overall U Value = 0.38

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NEXGEN™ Performance



NEXGEN™ Technology in Blast Windows

- TRACO is incorporating the NEXGEN™ Technology into its Blast Window Portfolio
 - NexGen TPS Spacer
 - NexGen Thermal Barrier
- The net result is an energy efficient window that provides the additional protection you demand!



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Blast Design Considerations



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Blast Applications

- New construction
 - Ability to design for optimal wall and stand off
 - Most projects will have blast considerations
- Retrofit
 - Constrained by existing building strength and position in the urban landscape
 - Windows could be stronger than building skin
 - Occupied spaces are an installation challenge
 - Over-design an issue



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Blast Design Considerations

- Window system must be designed to prevent deadly glass shards from flying into the room
- Frame should not disengage from the wall (anchoring)
- ***Installation***
 - Even best windows fail if poorly installed
 - Precise Construction Documents essential
 - Installation Drawings
 - Emphasis during Commissioning
 - Certification and experience



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Blast Mitigation Solution

- Summary Design Considerations
 - Glass Hazard Mitigation
 - Glass Retention
 - Frame Anchoring
 - Wall Reinforcement
- The entire system depends on each step
 - One failure = **TOTAL** failure
 - True system design



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Blast Mitigation Solutions

- Due Diligence
 - Standards aren't always available
 - Blast mitigation might still be a project issue
 - Commercial real estate
 - Collateral damage
 - Federal projects
 - Blast mitigation is most likely a requirement

If not called for explicitly, ask the question!



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Conclusion

- Blast Windows are different from traditional windows
- Threat assessment is first project step
- Primary goal of Glass Hazard Mitigation is protection of building occupants
- System approach is best solution



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Thank you for your Time



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