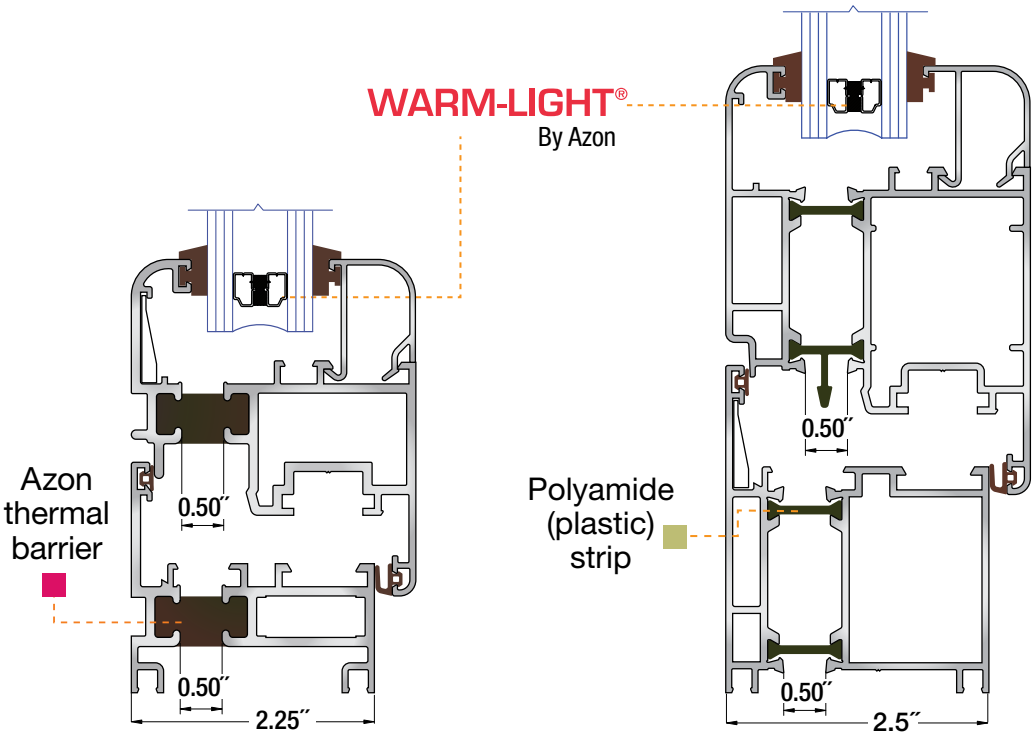
Comparing systems

Thermal barriers for aluminum windows, doors and curtain walls



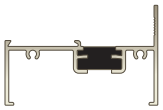
Azon structural thermoset polyurethane | **Polyamide thermoplastic strip system**

Less costly in materials and labor to produce *(savings of 25% materials and 75% labor)*	More labor-intensive, more materials required
Fast and simple to produce at 197 feet per minute	Typical production speeds less than 82 feet per minute
One aluminum extrusion, single polymer cavity	Two aluminum extrusions, two plastic strips
Turnkey supplier: chemicals, machinery, service	Supply chain requires multiple sources
Slim sightlines increase daylighting to improve energy savings, enhance interior spaces	Bulky, daylight-robbing sightlines required to achieve acceptable U-values
Less aluminum required at 20 percent *less*	More aluminum to produce, at *plus* 20 percent
Lower thermal conductivity, 0.84 Btu-in/(hr-°F-ft)	Higher thermal conductivity, 2.08 Btu-in/(hr-°F-ft)
Lower U-value at **2.25"**=0.39 Btu/(hr-°F-ft²)	Higher U-value at **2.5"**=0.41 Btu/(hr-°F-ft²)
Structural properties—higher loading and greater spans compared to polyamide	Structural properties are diminished and more so at wider sightline dimensions
Bendable, radius possible to 1.5"	No
Two-color availability—yes	Yes
Top-hung windows possible	No

Above CAD details represent an **AZO**/Tec® thermal barrier design conversion from polyamide (plastic) to Azon polyurethane

AZON

Technology
Chemicals
Machinery

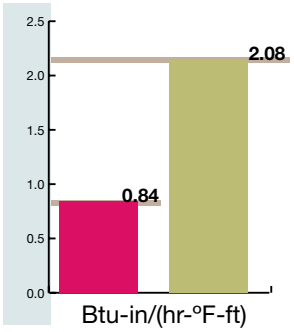


AZON SAVES ENERGY

Material comparison

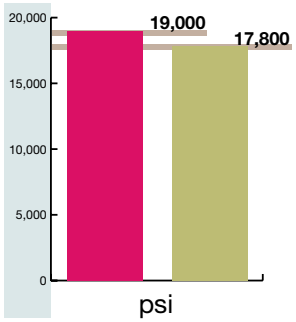
■ Pour and Debridge versus ■ Polyamide Strip System

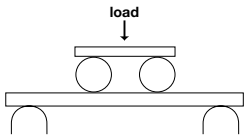
Thermal conductivity



Method: ASTM C 518
A measure of the rate at which heat flows through a material—an insulating material is a poor conductor of thermal energy and has a low **thermal conductivity**

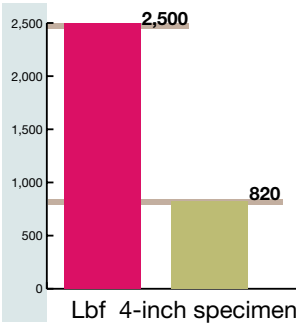
Flexural strength





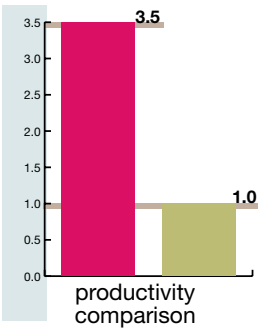
Method: ASTM D 790
A material's **flexural strength** is determined at rupture or when the material is disfigured to where it cannot return to its normal shape

Shear strength



Method: AAMA TIR-A8
Shear strength is the ability of the thermal barrier material to resist slippage or tearing parallel to the line of application of loading

Throughput ratio



The **throughput ratio** is the number of thermal barrier extrusions that can be processed during the same period of time

Thermal performance and heat transfer analyses of fenestration systems are conducted using Therm and Window

Therm and Window are trade names of Lawrence Berkeley National Laboratory.

AZO/Tec® For assistance with the design or analyses of energy-saving properties of thermal barrier windows, please contact **azotec@azonusa.com**.

AZON USA INC.
643 W. Crosstown Parkway
Kalamazoo, MI 49008-1910
USA
Tel: 269.385.5942
Fax: 269.373.9295

AZON UK LTD.
Unit 2, Withey Dyffryn Court
Alder Avenue, Dyffryn Business Park
Ystrad Mynach
HENGOED
CF82 7TT
UK
Tel: + 44 (0) 1443 865090
Fax: + 44 (0) 1443 865099

AZON KOREA INC.
E1-Space
60-1 Samsung-Dong
Kangnam-Gu, Seoul 135-870
Korea
Tel: + 82 (0) 2 544 5906
Fax: + 82 (0) 2 544 5908

AZON POLYURETHANE (Shanghai) **LTD. CO.**
Room 2804-2807, 28th Floor
Hua Yuan World Square
1958 North Zhongshan Road
Shanghai 200063
PR China
Tel: + 86 (0) 21 62122213
Fax: + 86 (0) 21 62110004

International Web site: www.azonintl.com