

INTRODUCING ULTRASTAR™

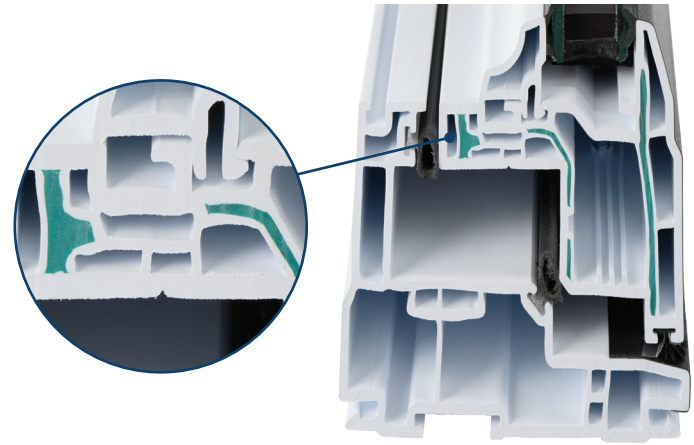
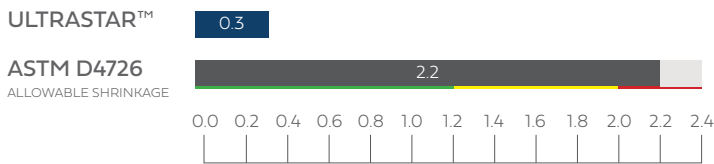
CO-EXTRUDED REINFORCEMENT FOR CASEMENT AND AWNING SASHES

ULTRASTAR™ co-extruded reinforcements are engineered for lasting durability and deliver the stiffness, strength and stability that matter most in any window investment. By co-extruding virgin vinyl PVC and 55% fiberglass content, the need for metal reinforcing is eliminated and a homogenous lightweight profile is formed.

DIMENSIONAL STABILITY

Profiles made with ULTRASTAR™ have been tested in extreme temperatures reaching as high as 82° C (180° F) without moving, shrinking or warping, ensuring long-term stability in varying climates and conditions.

Made in compliance with ASTM D4726 Section 7, Subsection 7.2.



THE FIRST OF ITS KIND IN NORTH AMERICA

North Star Windows & Doors is proud to lead the way with the introduction of ULTRASTAR co-extruded reinforcements within our casement and awning sashes. Engineered in Europe, ULTRASTAR boasts the quality, reliability and sustainability that we've come to expect of European products. The high-tech formulation of PVC and fiberglass dramatically reduce the potential of heat-induced shrinkage and/or contraction in both light and dark applications.

PERFORMANCE RESULTS

Material	Density	Tensile	E Modulus	Thermal Conductivity	Thermal Expansion			
PVC	1.4 g/cm ³	70 MPa	101.5E+3 psi	3 GPa	4.4E+5 psi	0.1 W/mk	2.81E-05 (in/in/°F)	0.0000281
ULTRASTAR™	1.8 g/cm ³	130 MPa	18.9E+3 psi	16 GPa	2.32E+6 psi	0.254 W/mK (NFRC)	8.3-36 E-06 (in/in/°F)	0.0000083
Aluminum	2.7 g/cm ³	250 MPa	36.3E+3 psi	69 GPa	10E+6 psi	170 W/mK	2.36 E-05 (in/in/°F)	0.0000236
Steel	7.8 g/cm ³	400 MPa	58.0E+3 psi	210 GPa	30E+6 psi	40 W/mK	6.45E-06 (in/in/°F)	0.00000645