Architen ETFE System

Single Layer ETFE System

A beautifully engineered, lightweight building alternative to glazing.

5.9 W/m²K
Overall U-value

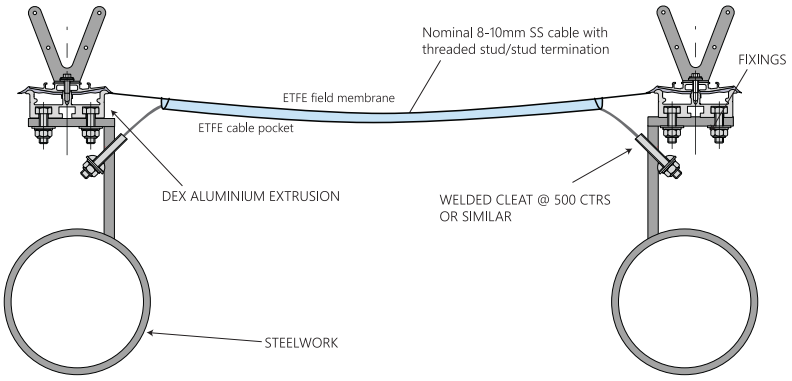
Up to 95%
Light transmission

Approx. 1%
Of the weight of glass

Up to 6 m
Typical panel width

Typical single layer section

Dimensions in mm



U-value calculation

Outer membrane	R_{se} = 0.04 m²K/W
Inner surface	R_{si} = 0.13 m²K/W
Total resistance R_T	$R_{se} + R_{si}$
	0.04 + 0.13
	= 0.17 m²K/W
U-value	$U = 1 / R_T = 1 / 0.17$

Overall U-value **5.9 W/m²K**

ETFE foil 100–300 micron

Mass per unit area	175–525 g/m²
Tensile strength	55 MPa
Tensile strength @ 10% strain	23 MPa
Elongation at break	550%
Tear resistance	400 N/mm
Opacity	3–10%
Sample width	15 mm
Sample length	100 mm
Test speed	200 mm/min

About ETFE systems

A single layer ETFE system uses one tensioned sheet of ETFE foil, supported by cables and clamped into aluminium extrusions. With light transmission of up to 95% and approximately 1% of the weight of glass, it reduces the size of the steel and foundations needed to support the roof.

With no air inflation, a single layer system needs no Air Handling Unit, making it an economical, quick-to-install choice where daylight and weather protection matter more than insulation. Its smooth surface means dirt doesn't stick, and rain keeps it clean. Panel widths are typically up to 6 m, while lengths are unlimited.

Other configurations available

2 layer cushions	2.9 W/m²K
3 layer cushions	1.9 W/m²K
4 layer cushions	1.4 W/m²K

How to specify

Product	Architen Single Layer ETFE System
System manufacturer	Architen Landrell Manufacturing Limited
Size	As per architect's drawings
Fabric	ETFE foil
Configuration	Single layer ETFE (clear)
U-value	5.9 W/m²K