KoolShade®

MADE IN BRITAIN

FIRE-SAFE

EXTERNAL SOLAR SHADING FOR THE 21st CENTURY

ENERGY
78%
SAVING

SOLAR SHADING SYSTEMS

CONTENTS

APPLICATIONS

Solar Shading, Blocking 100% of Solar Heat Gain

INFORMATION

Shading the planet, not costing the earth

DETAILS

Bringing comfort and cool to all internal spaces

KOOLSHADE FABRIC & SCREENS ARE FULLY

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COOL BUILDINGS

SUSTAINABLE HOMES

USABLE VENUES

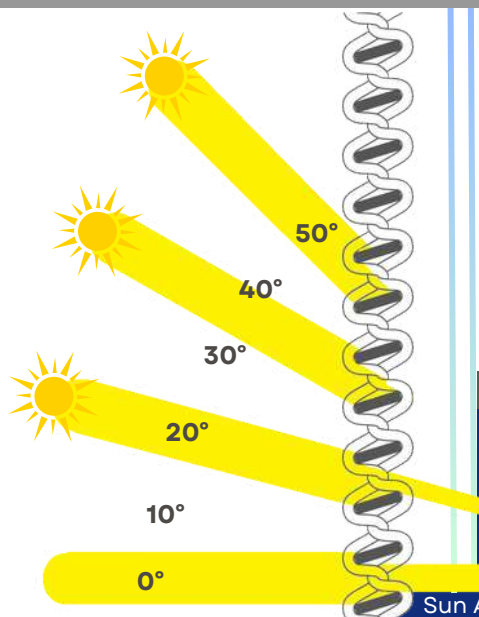# HOW DOES KOOLSHADE® WORK?

The micro louvres **stop** the hot solar radiation getting through.

Even with temperatures well **in excess of 40°+** no direct solar heat gain will reach the inside of the building. Zero heat gain, reduced glare but with perfect vision out.

Internal Blinds **allow solar heat** into your room.

KoolShade stops it before it reaches the glazing.

WITH SUMMER SUN, TOTAL SHADING IS PROVIDED

KoolShade Fabrics, Low Sun Angle (LSA) & K17

Sun Angle	% Shading	
	LSA	K17
50°	100%	100%
40°	100%	100%
30°	100%	100%
20°	86%	68%
10°	68%	55%

Internal temperature reduced by over 50%

6 X BETTER VISION OUT THAN FABRIC BLINDS*

100%
Shading & Zero Heat Gain*

Laminar Air-flow
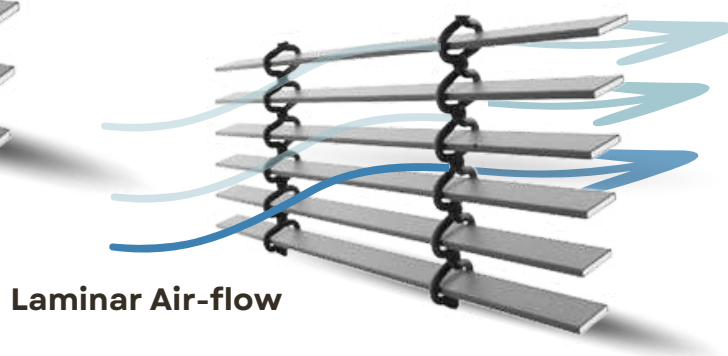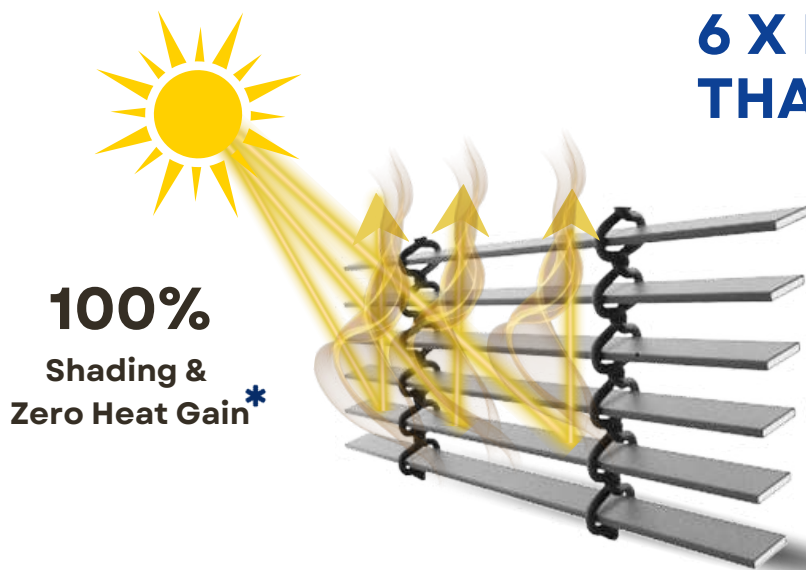
LIGHT & AIR PASS THROUGH, KEEPING ROOMS WELL LIT & COMFORTABLY COOL*

04

*Research undertaken by

Fraunhofer

Scan for info.
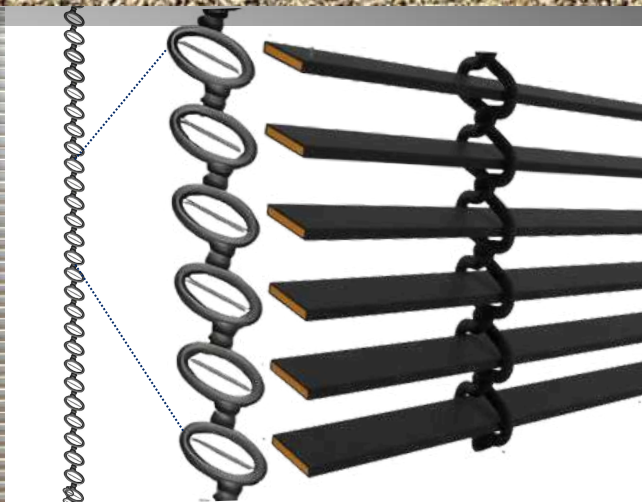
06 KoolShade's® most popular systems are screens. These are made to measure and can be used on **any** building, **any** size and fitted to **any** shape.

OPTIONS

Sizes

Width Min/Max
100mm to 1,800mm

Height Min/Max
100mm to 3,000mm

Standard Colours

Frames

Black White Anthracite

Fabrics

Black White Bronze

Optional:
Any RAL Colour

Frame Widths

FE51

51mm

FE38

38mm

FE25

25mm

Durability

Cat 2 Hurricane proof to 100+mph

Operation

Hinged
Removable
Sliding
Cable

Suitability

Residential ✓
Commercial ✓
Industrial ✓
New build ✓
Retro-fit ✓
Fire-safe ✓

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CABLE FACADE SYSTEM

Creating a stunning architectural facade, the use of cables to suspend KoolShade® frames enables large areas of glazing to benefit rapidly from the most efficient solar shading.

Standard Colours

Frames

Black   White   Anthracite

Fabrics

Black   White   Bronze

Optional:
Any RAL Colour

Fixings

Residential   Commercial   Industrial

Load bearing values
& fixtures calculated at quotation

Durability
Cat 2 Hurricane proof to 100+mph

Suitability

Residential   ☑
Commercial   ☑
Industrial   ☑
New build   ☑
Retro-fit   ☑
Fire-safe   ☑
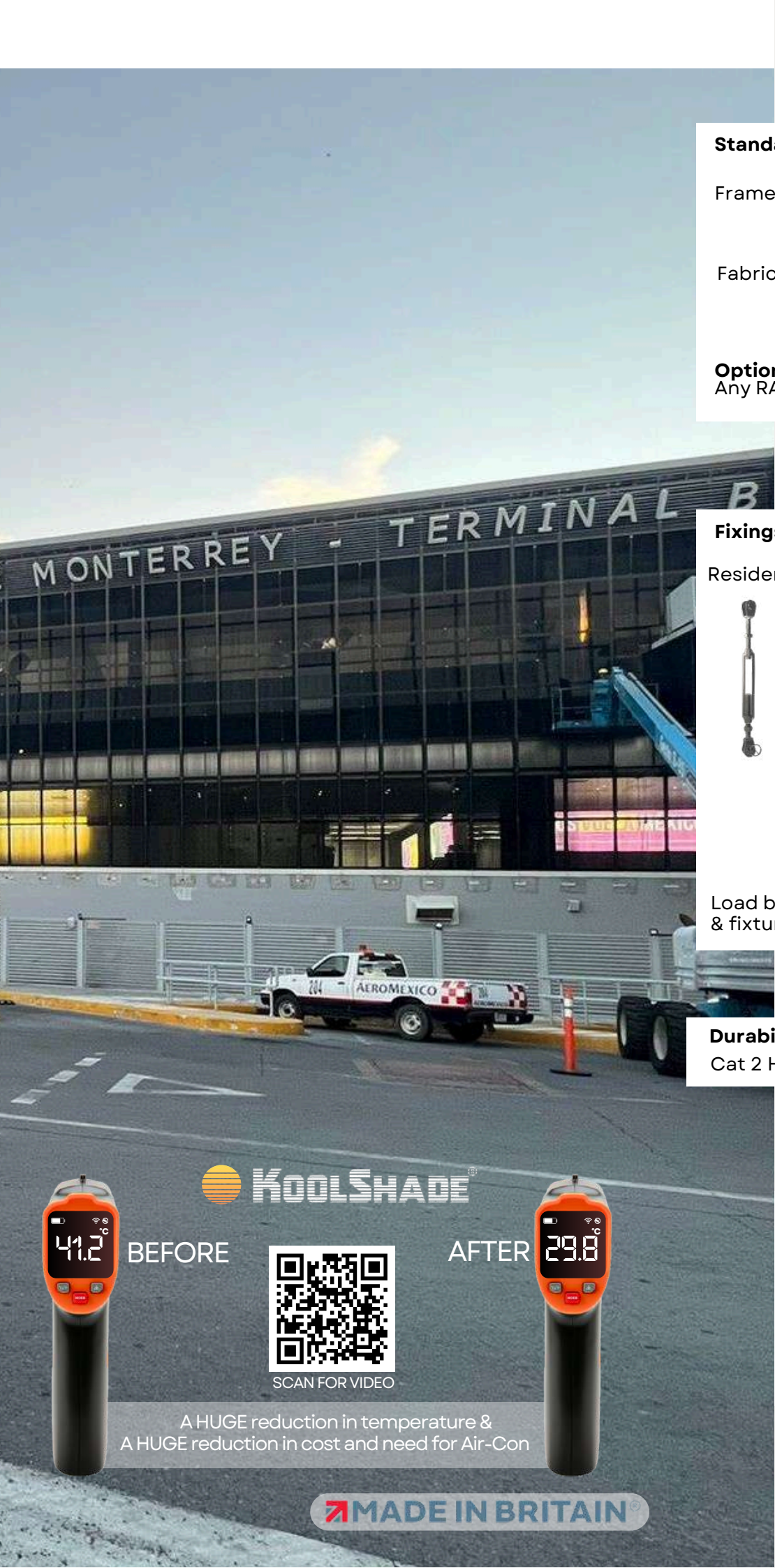
41.2 °C   BEFORE   AFTER   29.8 °C

KoolShade®

SCAN FOR VIDEO

A HUGE reduction in temperature &
A HUGE reduction in cost and need for Air-Con

MONTERREY · TERMINAL B

AeroMexico

↗ MADE IN BRITAIN®

10 Roof glazing can bring light and openness to a variety of spaces, but they can also be the cause of severe overheating. KoolShade® stops the heat before it reaches the inside.

Sizes
KoolShade screens are built to fit all of the most popular brands of rooflight and custom built to any bespoke sizes.
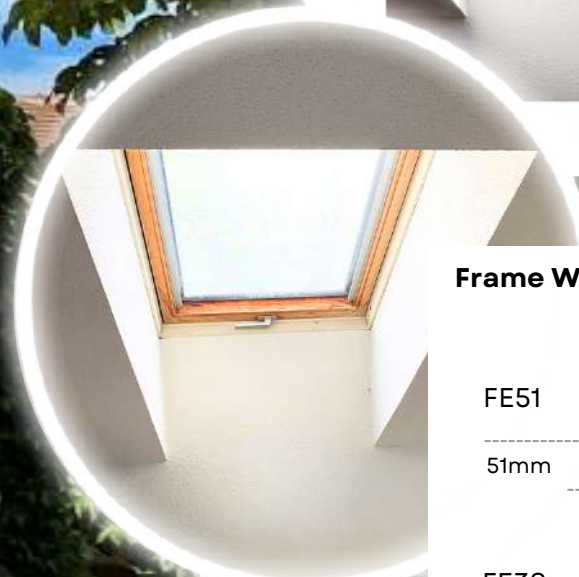
Frame Widths

FE51
51mm

FE38
38mm

FE25
25mm

Durability
Cat 2 Hurricane proof to over 100mph Protection against hailstones.

Suitability
Residential ✓
Commercial ✓
Industrial ✓
New build ✓
Retro-fit ✓
Fire-safe ✓

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12 This listed building suffered from fierce solar heat gain. Even the thickest curtains didn't help. KoolShade® was made to order and fitted within 2 days. Heat gain problem solved!

OPTIONS

Sizes

Width Min/Max
100mm to 1,800mm

Height Min/Max
100mm to 3,000mm

Standard Colours

Frames

Black   White   Anthracite

Fabrics

Black   White   Bronze

Optional:
Any RAL Colour

Frame Widths

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51mm

FE38
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38mm

FE25
- - - - - - - - - - - -
25mm

Durability
Cat 2 Hurricane proof to 100+mph

Operation
Hinged
Removable
Sliding & Rolling
Cable

Suitability
Residential   ☑
Commercial   ☑
Industrial   ☑
New build   ☑
Retro-fit   ☑
Fire-safe   ☑

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GABLE END & DOOR SOLAR SHADING

KoolShade® screens are ideal for gable ends and can be manufactured to any shape or size to satisfy the most demanding of projects & reduce internal temperatures by up to 51%

14

OPTIONS

Sizes
Width Min/Max
100mm to 1,800mm

Height Min/Max
100mm to 3,000mm

Durability
Cat 2 Hurricane proof to 100+mph

Frame Widths

FE51
51mm

FE38
38mm

FE25
25mm

Standard Colours

Frames
Black White Anthracite

Fabrics
Black White Bronze

Optional:
Any RAL Colour

Operation
Hinged
Removable
Sliding & Rolling
Cable

Suitability
Residential ✓
Commercial ✓
Industrial ✓
New build ✓
Retro-fit ✓
Fire-safe ✓

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STRATEGIC SOLAR SHADING

16 When the sun's glare and heat affects specific areas, KoolShade® can be used to neutralise this creating a cool, comfortable and usable internal space.

OPTIONS

Sizes

Width Min/Max
100mm to 1,800mm

Height Min/Max
100mm to 3,000mm

Standard Colours

Frames

Black   White   Anthracite

Fabrics

Black   White   Bronze

Optional:
Any RAL Colour

Frame Widths

FE51
51mm

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Durability
Cat 2 Hurricane proof to 100+mph

Operation
Hinged
Removable
Sliding
Cable

Suitability
Residential ✓
Commercial ✓
Industrial ✓
New build ✓
Retro-fit ✓
Fire-safe ✓

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18 Whether it's installed horizontally, vertically, or any angle, KoolShade effectively stops the heat & glare of the sun reaching the glass, whilst allowing air and light through.

Sizes

Width Min/Max
100mm to 1,800mm

Height Min/Max
100mm to 3,000mm

Durability

Cat 2 Hurricane proof to 100+mph

Frame Widths

FE51
51mm

FE38
38mm

FE25
25mm

Standard Colours

Frames
Black   White   Anthracite

Fabrics
Black   White   Bronze

Optional:
Any RAL Colour

Operation

Hinged
Removable
Sliding & Rolling

Suitability

Residential	☑
Commercial	☑
Industrial	☑
New build	☑
Retro-fit	☑
Fire-safe	☑

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20 KoolShade® can be encapsulated or laminated into glazing. The benefits of the solar shading screens remain, whilst delivering a beautiful and unique appearance to any building.

Sizes	**Width** Min/Max 100mm to 1,800mm
	Height Min/Max 100mm to 3,000mm

Suitability

Residential	☑
Commercial	☑
Industrial	☑
New build	☑
Retro-fit	☑
Fire-safe	☑

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SHAPED SOLAR SHADING

22 KoolShade® has been installed on many listed and historic buildings. It protects the inside of buildings without damaging the substrate, even on arched windows.

Sizes

Width Min/Max
100mm to 1,800mm

Height Min/Max
100mm to 3,000mm

Cat 2 Hurricane proof to 100+mph

Frame Widths

FE51
51mm

FE38
38mm

FE25
25mm

Standard Colours

Frames
Black White Anthracite

Fabrics
Black White Bronze

Optional:
Any RAL Colour

Suitability

Residential ☑
Commercial ☑
Industrial ☑
New build ☑
Retro-fit ☑
Fire-safe ☑

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KOOL-KLIP

klip!

Simply position & fit the the bottom and top clips to your surface

Locate frame into bottom clips and move the fix-clips to the middle
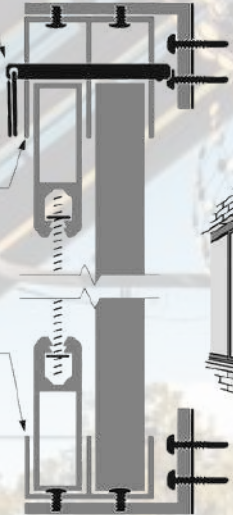
Push the fix-clips outward and into the top clips & you hear them snap into place
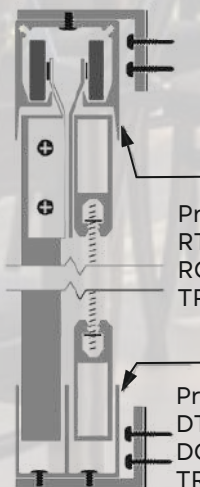
LIFT-IN LIFT-OU

Detent ring-pin to lock down the panels.

Profile:
DT-34
Top Track
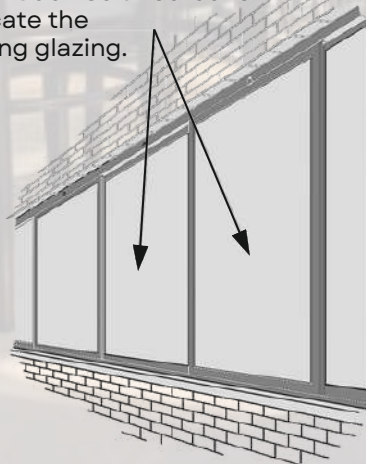
Profile:
BT-32
Bottom Track

ROLLER TRACK INSTALLATION

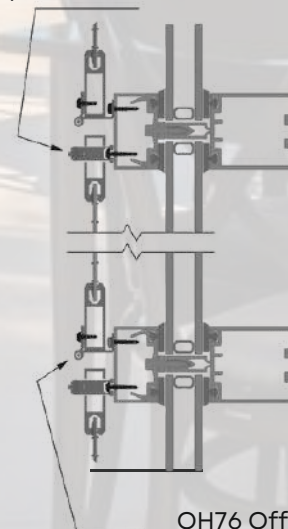Alternating overlapped KoolShade® Solar Screens replicate the existing glazing.

Profile:
RT-37
ROLLER
TRACK

Profile:
DT-34
DOUBLE
TRACK

OFFSET HINGE

DN28/V Drop Nose Latch provides a secure hold with a quick release.

OH76 Offset
access for v

...T INSTALLATION

Alternating overlapped KoolShade® Solar Screens replicate the existing glazing.
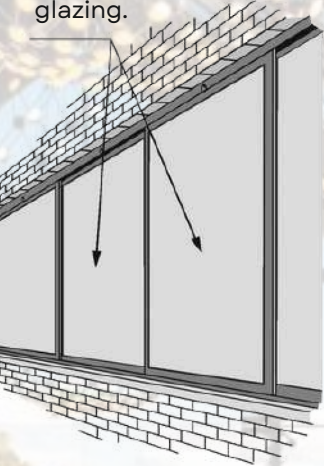
CABLE FIX INSTALLATION

Bespoke 316 Stainless Steel Cable Mounting System with fastener components.

Wire rope specification is dependent on minimum load requirements.

Suspended **KoolShade®** Solar Screens create a unique architectural feature.
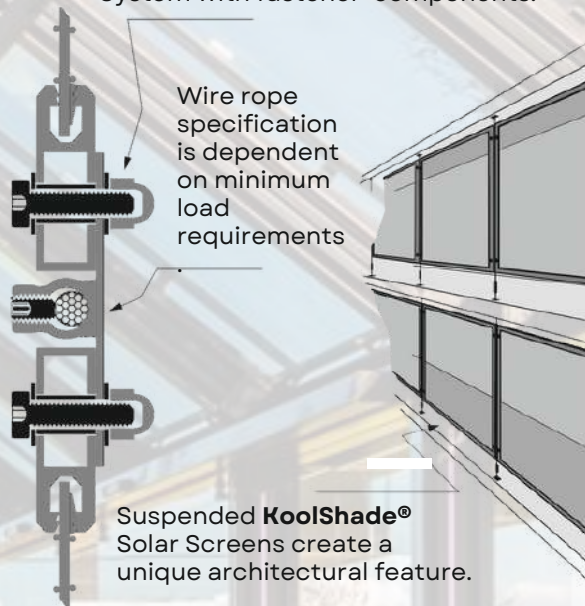
...INSTALLATION

KoolShade® Solar Screens fix seamlessly to existing windows & mullions to complement the original glazing.

...t Hinge Mounting allows for easy ...window maintenance.

DIRECT FIX INSTALLATION

KoolShade® Solar Screens fix seamlessly to existing windows and mullions to complement the window array.

The Screens fixed to opening lights will not impede the window's function.

KOOLSHADE® METAL FABRIC: THIS IS WHAT WE WEAVE.

First created in the 1940s SmartLouvre Technology has brought this **solar shading technology** into the 21st century. With computerised weaving machines, a range of angular selective* fabrics has been developed to further combat solar heat gain.

K700-17

Fabric Weight: 1.10 kg / m2
Clear open area: 80%
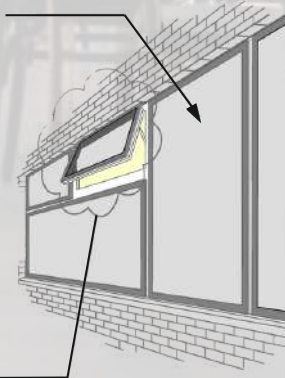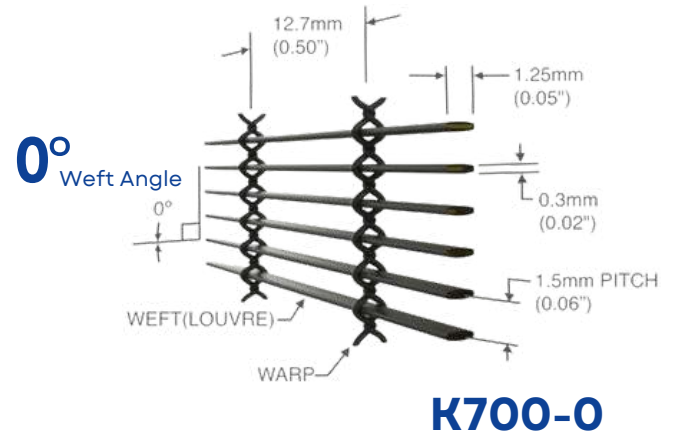**Fabric composition:** 90% CuZn15 (C230) commercial bronze and 10% CUSi3Mn1 (C655) silicon bronze

17° Weft Angle.

0° Weft Angle

K700-0
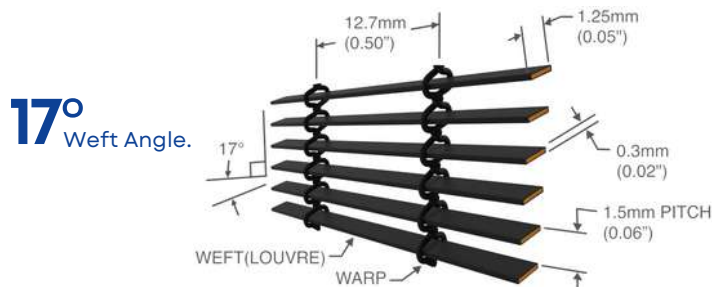
Finishes:
Polyester powder coat in any RAL colour (with the ability to create designs on the fabric which are directionally visible)

Fire Safe:

Class A1/A2-s1,d0 in accordance with BS EN 13501-1:2007+A1:2009 BAL & Burning Ember Attack

Resistance to wind:
Hurricane proof: 100mph/160kph

Fabric

K700-17-LSA

Fabric Weight: 1.35kg / m2
Clear open area: 80%
Fabric composition: 90% CuZn15 (C230) commercial bronze and 10% CUSi3Mn1 (C655) silicon bronze

17° Weft Angle.

0° Weft Angle
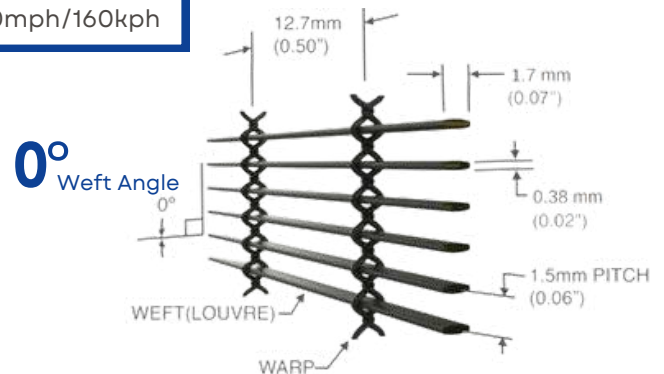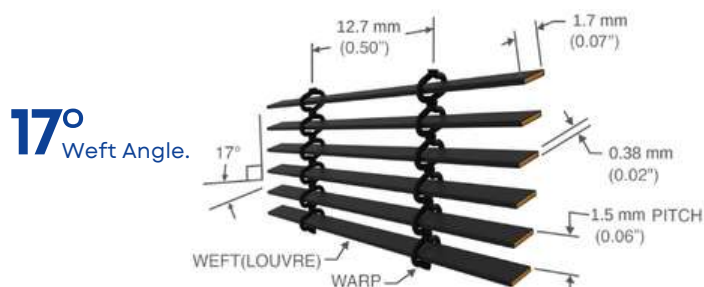
K700-0-LSA

Vision out ➡

⬅ **Daylight in**

KoolShade® has achieved top Class 4 classification for Thermal Comfort, Daylight Utilisation and Contact with the Outside, with **100% daylight quality Colour Rendering Index (CRI).**

*Fraunhofer Institute

Fire Safe. For People, for Buildings & for your Protection

FIRE-SAFE

Fires in residential buildings are becoming increasingly commonplace and more & more regulations are demanding **EN 13501 A1/A2** etc Reaction to Fire/Fire Resistance for external attachments like sun shading devices.

Koolshade is a multi-function, all-in-one shading system. It maximises natural ventilation and daylight and **is fully A1/A2 -s1,d0 to EN 13501 compliant**. **Fire safety: Approved Document B**.

ARE YOU FIRE-SAFE & LEGAL?

The amended guidance for solar shading devices can be summarised as follows:

• External shading devices greater than **4.5 metres above ground** level are included in the definition of a specified attachment.

• Components whose primary function is to provide shade or deflect sunlight must achieve class **A2-s1, d0 or better**.

SCAN FOR MORE

KoolShade® fire protection

• Fire-safe ⊘
• Non-combustible ⊘
• Burning Ember Protection ⊘
• Heat Flashover Protection ⊘
• Spread of Flame ⊘

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A = Combustibility

'**A1/A2**': **Top** Classifications

'**s**' = Smoke & Toxic Gases

'**s1**': **Top** Classification

'**d**' = Burning Droplets

'**dO**' = **Top** Classification

BAL - FZ - 49.4 Heat Attenuation

BAL - 40 Whole window protection

- Made from 90+% recycled material
- Maintenance free
- NO plastic or vinyl

- Over 78% saving in air-con costs
- 100% Recyclable
- 60+ year life span

SUSTAINABILITY

shading the planet without costing the earth

PASSIVE

zero energy to maintain peak performance

FABRIC AND FRAMES

90% recycled scrap metal

LONGEVITY

with 60+ maintenance free years

0%

90%

60+

FABRIC AND FRAMES

are fully recyclable

AIR-CONDITIONING

reduced by over 78%+

100%

78%

How sustainable is KoolShade®?

100%
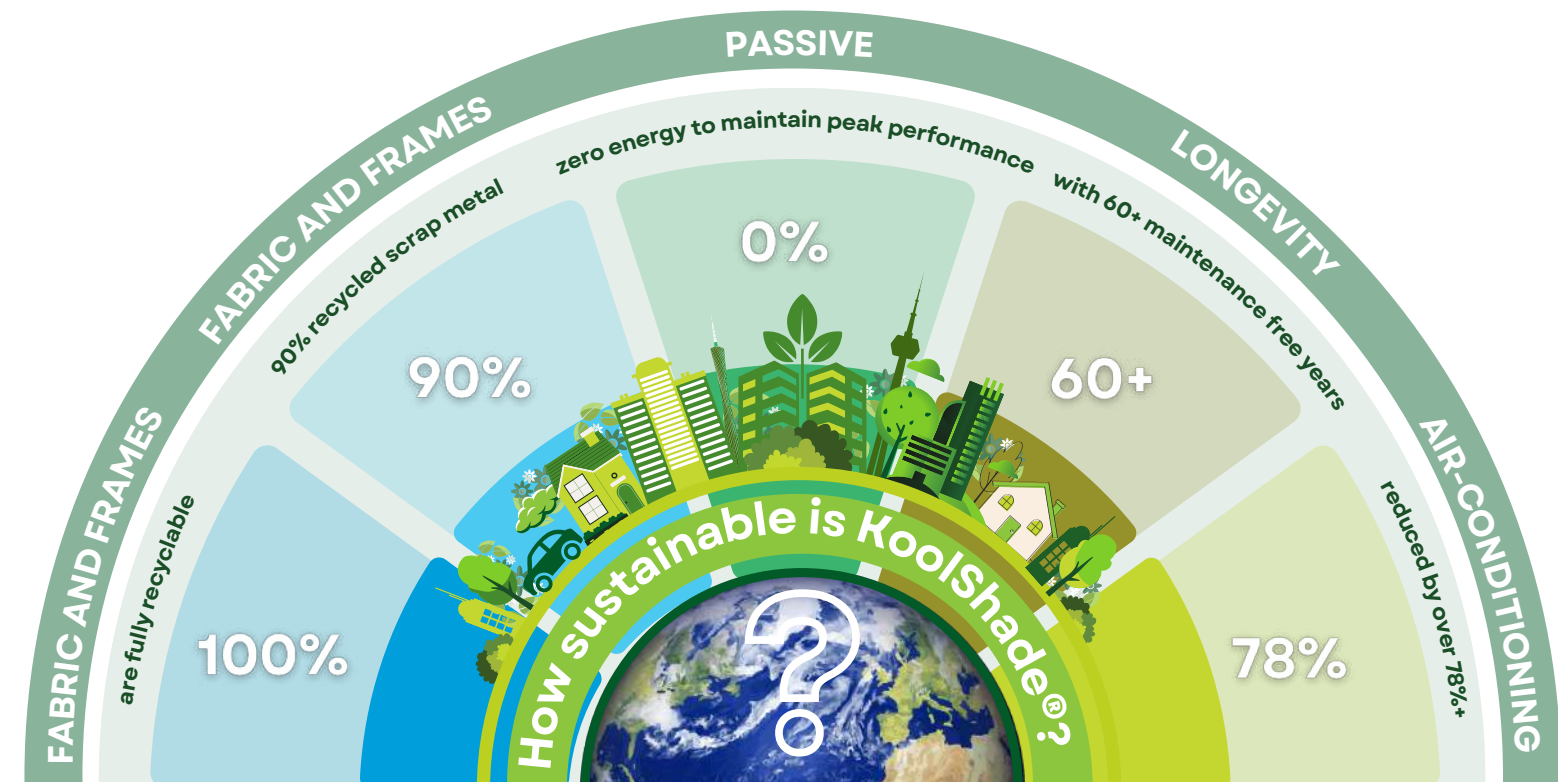
UNITED NATIONS

"the ability to exist and develop without depleting natural resources for the future"

	TESTER/BODY	TEST NAME	TEST SUMMARY
EXTERNAL	AkzoNobel	AkzoNobel Coating Testing for MicroLouvre™ K700 Metal Fabric Test Summary	
	AkzoNobel	AkzoNobel Fire Propagation and Flame Spread in Powder Coatings	
	AkzoNobel	AkzoNobel Salt spray test - Original	Fire Safe & Salt Water Testing
	BRE	BRE - Certificate Of Test	
	BRE	BRE - High Speed Wind Integrity Test	
	BRE	BRE - Smartlouvre solar modelling report - Final	Wind Resistance & Shading Performance
	BRE	BRE Light diffusion tests in white KoolShade – Coopers datasheet	
	BRE	BRE MicroLouvre Screens Wind Tunnel Testing BRE	
	CSIRO	CSIRO Raidant Heat & Burning Ember Protection Report	Fire Protection
	Fraunhofer	Angle-dependent light & solar transmittance measurements report 2	
	Fraunhofer	Fraunhofer Test Report - Black	
	Fraunhofer	Fraunhofer Test Report - With Watermark	
	Fraunhofer	Fraunhofer ANTU EEB3-UA-2106-E02_EPP	Angle Dependent Light & Solar Transmittance
	Fraunhofer	Fraunhofer CLEAR COAT EEB3-HRW-2210-E15_smartlouvre_221011	
	Fraunhofer	Sikkens	
	Fraunhofer	Tasliq	
	IFC	IFC MicroLouvre FHA Test Certificate Metal Fabric-1a	
	IFC	IFC A1 A2 Test Summary	Fire Safe
	IFC	IFC Official Letter	
	Interpon	Interpon D - Fire Test Compilation	Fire Safe
	ISO	ISO Certificate	Quality
	LBNL	LBNL ORIGINAL TEST RESULTS lbnl-2001051	Cooling Load Reduction
	LBNL	LBNL TECH ASSESSMENT OF HIGH PERFORMANCE BUILDING ENVELOPES	
	O.Lof	O.Lof Decibel Traffic Sound Test	Noise Reduction
	SIMSCALE	SIMSCALE Smartlouvre MicroLouvre Modelling User Guide v6	Finite Element Analysis Thermal
	TAIT	TAIT - SOLAR OPTICAL PROPERTIES Black	Heat Transfer Coefficient
	TAIT	TAIT - SOLAR OPTICAL PROPERTIES White	
	Yellot	Yellot	Energy Conservation

	TESTER/BODY	TEST NAME	TEST SUMMARY
INTERNAL	SmartLouvre	KoolShade MicroLouvre light diffusion test	Light Diffusion
	SmartLouvre	Heat Comparison chart 2	
	SmartLouvre	Heat Gain Heat Lamp Comparison charts	Heat Gain
	SmartLouvre	Peak Cooling in kWh - CDG	Cooling
	SmartLouvre	Pressure Test Greene Fire	Fabric Pressure Resistance
	SmartLouvre	Pressure washing ML on building	Washing
	SmartLouvre	Static Load Test Paper	Fabric Load
	SmartLouvre	Tensile Load Test Paper	
	SmartLouvre	Tensile Test	Tensile Load
	SmartLouvre	Wind Loading Test Report Summary	
	SmartLouvre	Wind Test - MS angles w smoke	Wind Load

RELEVANT REPORTS			
	Milano D.O.E	Angular dependency of optical TESI_2004-057	ANGULAR EFFECT
	BRE	BRE - Study On Energy Use By AirConditioning Final Report	AIR-CON USAGE
	Uni. Of Florence	Transparent Building Envelope Windows	BUILDING ENVELOPES

CERTIFICATES			
	FHA	FHA MicroLouvre FHA Test Certificate Metal Fabric	FIRE
	Interpon	Interpon MicroLouvre Test Certificate Metal Fabric Fraunhofer	FIRE
	LBNL	LBNL MicroLouvre LBNL Test Certificate	PASSIVE SOLAR SHADING
	SmartLouvre	SLT MicroLouvre Test Certificate Screens Wind Load	WIND LOAD

Summary of testing, accreditations, memberships and certification

45%
45% *back of room* daylight transmittance.
BRE Daylight and Solar Transmittance of KoolShade.

100 mph
Cat 2 Hurricane Proof 100mph+winds.
No damage witnessed at BRE wind tunnel test - certified.

92%
92% Solar radiation rejected.
Mid-pane Glass D (Best number) , London UK.

89%
89% Solar radiation rejected.
External Glass D (Best external) , London UK.

12%
12% Solar heat gain co-efficient (g-value).
Calculation of summertime solar shading performance for KoolShade.

12%
12% Solar transmittance or Ts.
Calculation of summertime solar shading performance for KoolShade.

3%
3% Solar reflectance or Tr.
Calculation of summertime solar shading performance for KoolShade.

85%
85% Solar absorption or Ta.
Calculation of summertime solar shading performance for KoolShade.

60+ years
60+ years service life.
Ref City County Building - Indianapolis, Indiana.

49%
49.4% fire attenuation.
Compliant screening for bushfire up to BAL-40 (Australia).

80%
80% Free air flow ventilation
Proprietary Testing - Physical measurement.

A1
Fire Rating - Class A1.
In accordance with BS EN 13501-1:2002

78%
78% Reduction in cooling loads.
LBNL FlexLab - 48hrs Oct.21-22, 2015.

52%
52% UV Transmittance.
TAIT: UV transmission regardless of sun angle.

100%
100% Solar shading.
YELLOT: Sun angle above 40deg.

52%
51.5% Daylight transmission or Tvis or Tv.
YELLOT: Daylight transmission regardless of sun angle.

100%
100% Solar radiation rejected.
YELLOT: Sun angle above 40deg.

NaCl +H2O
Salt Water Testing.
Akzo Nobel.

ABOUT
US

Smartlouvre Technology is the sole, global manufacturer of Koolshade® metal fabric, the ultimate in shading from solar heat.

The fabric was invented by two senior research members of Dow Chemical and first manufactured in conjunction with the Borg-Warner Corporation.

Fabric screens were being mass produced for commercial building application across the US, and later throughout the globe by a distributor network.

WE ARE A WEAVER OF A TOTALLY UNIQUE METAL FABRIC USED FOR SOLAR HEAT CONTROL

Under SLTechnology the manufacturing has been brought it into the 21st century, by computerising the machines.

Whilst continuing to invest in manufacturing Smartlouvre focused on providing unique apprenticeships and training, supporting our young engineers of the future.

The production volumes have increased and new weaving machines are producing fabric that is being used on the most sustainable buildings in the world.

As our climate changes, there is a fast growing need for PASSIVE ways to reduce temperatures in buildings.

Koolshade® achieves this.

From a VERY smart idea, realised decades ago, to one the most effective ways to shade our planet from a modern challenge.

Our vision.

Our core business lies in the manufacture of a totally unique, tried and tested high-performance heat blocking and glare reduction shading system that creates better working and living environments for people in commercial, public, and residential buildings, whilst dramatically reducing air-conditioning running and equipment costs.

We, at Smartlouvre, are committed to providing sustainable and innovative solutions that reduce energy consumption, protect the well-being of occupants and maintain superior comfort levels.

Koolshade® provides 100% shade and 100% heat block, saving over 78% of air conditioning costs. It also allows perfect vision and outperforms all other external solar shading systems.

The ideal Passive House shading material.

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We serve diverse fields of Solar Shading, Daylighting, Thermal, Visual and Environmental Comfort, Fire Protection, Privacy and Security, Night Sky Pollution, Anti-Glare Lighting, Light Trespass, and even Insect Screening and Bird-Strike Protection.

In short, there is no other product as versatile, or effective, as Koolshade®.

SLTechnology Ltd. Global Manufacturers of MicroLouvre KoolShade Fabric
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