

# Microlouvre Fabric®

Fire-safe External Shading & Fire Protection Screens



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## FIRE PERFORMANCE

Building Attack Level Protection:

- **BAL/FZ/BAL-40 AS3959**

Fire/Heat Attenuation:

- **49.4% CSIRO**

Burning Ember Exclusion:

- **BAL-FZ AS3959-2009 100% (>1.2mm)**

Reaction to fire:

- **A1/A2-s1,d0:BS EN 13501 - 2007+A1:2009**

**HEIGHTS UP TO 3 metres**

**WIDTHS UP TO 1.8 metres**

**ANY SHAPE OR COLOUR**

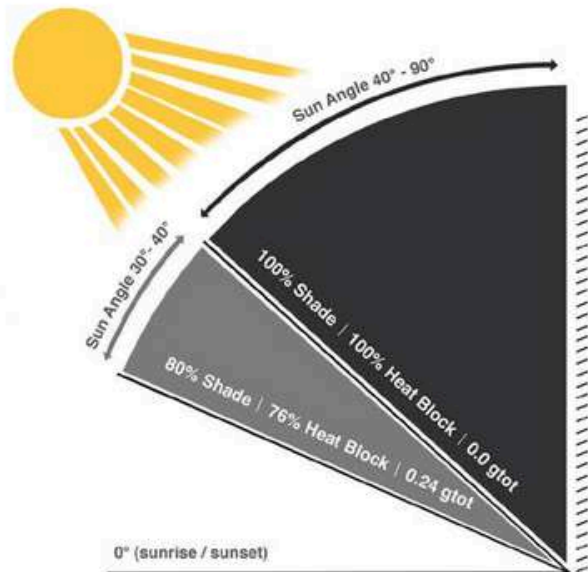
# Microlouvre® Fire-safe External Shading & Fire Protection Screens

Following tragic high-rise building fires in recent years, certain building envelopes must now be of A1/A2 non-combustible material compliant with UK Building Regulations. This applies to both new or retrofit buildings.

MicroLouvre® Solar Shading is compliant to EuroClass A1/A2-s1,d0 : BSEN 13501 Reaction to Fire.

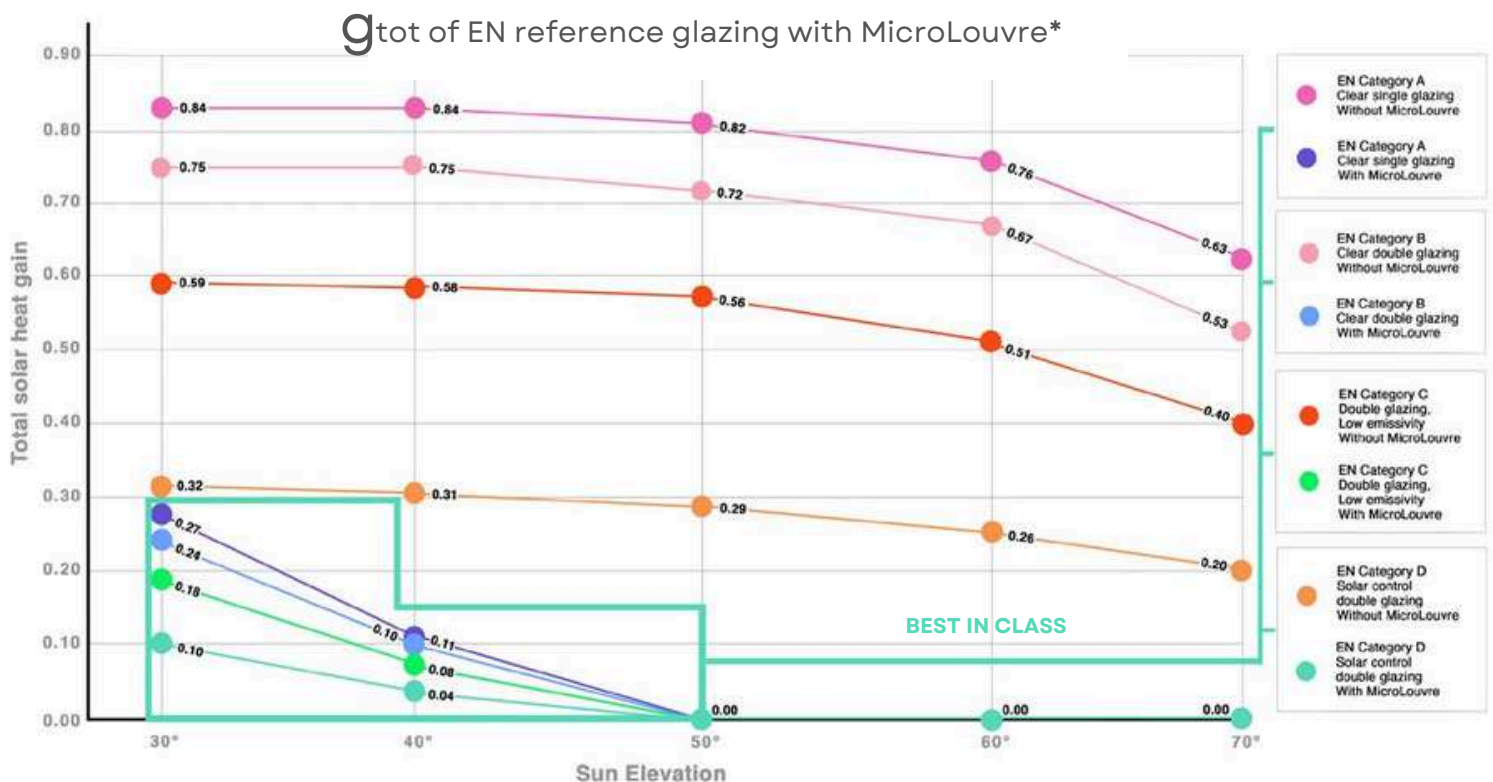
Arguably the most comprehensive external solar shading system on the market today, the all-metal MicroLouvre™ solar shading system has up to 700 paper thin brass louvres in every square metre, each only 1.2 mm apart and angled at 17°. This unique and innovative design:

- blocks 100% & absorbs almost 100% of all radiated heat gain from sun or fire
- reduces air conditioning energy and equipment costs by up to 68%
- enables complete outward vision
- permits high levels of unfiltered natural daylight, up to 70%.
- allows high levels of natural ventilation with 80% open area, essential for mitigating airborne viruses
- is maintenance free with a proven durability and lifespan 60+ years
- MicroLouvre™ louvres are made from 90% recycled copper scrap and are 100% recyclable



MicroLouvre® Shading outperforms solar glass and is A1/A2 Fire-Safe.

Single glazing with MicroLouvre® outperforms even top solar control glazing. Typical Low E glass, designed to retain heat in winter, is counterproductive in summer. MicroLouvre® reduces heat gain from a massive 0.59 gtot to 0.00 gtot.





# Why & When you need A1/A2 Reaction to Fire

High-rise and multi-level designs solve the problem of overcrowding but fires in such buildings are harder to control and make evacuation of occupants more difficult and hazardous. This rapid spread of fire, combined with burning droplets and toxic smoke is a real and present danger.

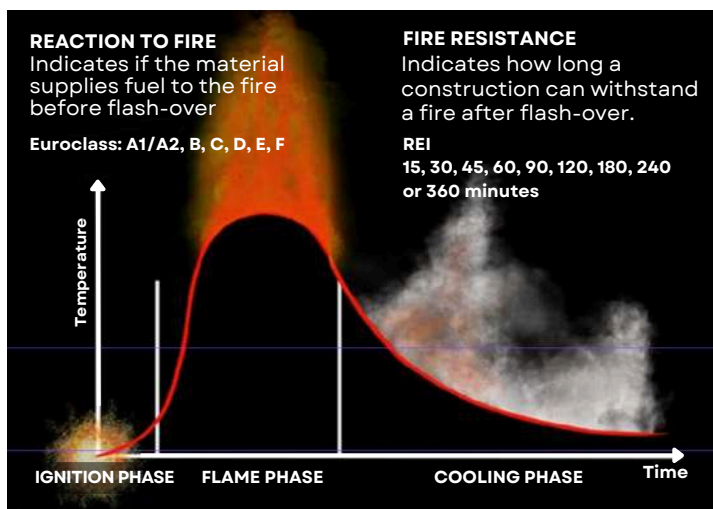
Regulations demanding fit-for-purpose construction materials used for both new build and upgrades, quite rightly, have been tightened.

England Building (Amendment) Regulation 2018 regarding materials used on building exteriors now demands materials to be proven non-combustible to EuroClass A1/A2-s1,d0 : BS EN 13501.

This applies to residential buildings over 18 metres eg. apartments, hospitals, schools or indeed any building of this size with any residential element.



A1/A2 external shading is a legal requirement on buildings over 18m with a residential element.



PERFORMANCE CRITERIA	MicroLouvre®
A = Combustibility	✓
A1/A2': Top Classifications	✓
s' = Smoke & Toxic Gases	✓
s1' : Top Classification	✓
d' = Burning Droplets	✓
d0' = Top Classification	✓



How does MicroLouvre® unconditionally achieve A1/A2-s1,d0 : BSEN 13501?

The answer is simple, the unique MicroLouvre™ system is made entirely of metal and is non combustible. The fabric is a copper / bronze alloy (melting point of nearly 1000°C (1800°F)).

Frames are from aircraft grade aluminium and fittings are either stainless steel or aluminium.

# How MicroLouvre™ Combines Solar Shading + Fire Safety

Comfortable temperatures, natural ventilation and contact with the outside are vital for our well-being. Typical, traditional external shading fabrics just block and distort natural light, vision out and natural ventilation.

In contrast, with MicroLouvre™ solar shading there is no trade-off. With an 80% open area, you get full shading and heat block plus:

- complete vision out
- natural ventilation
- 100% CRI perfect light quality.

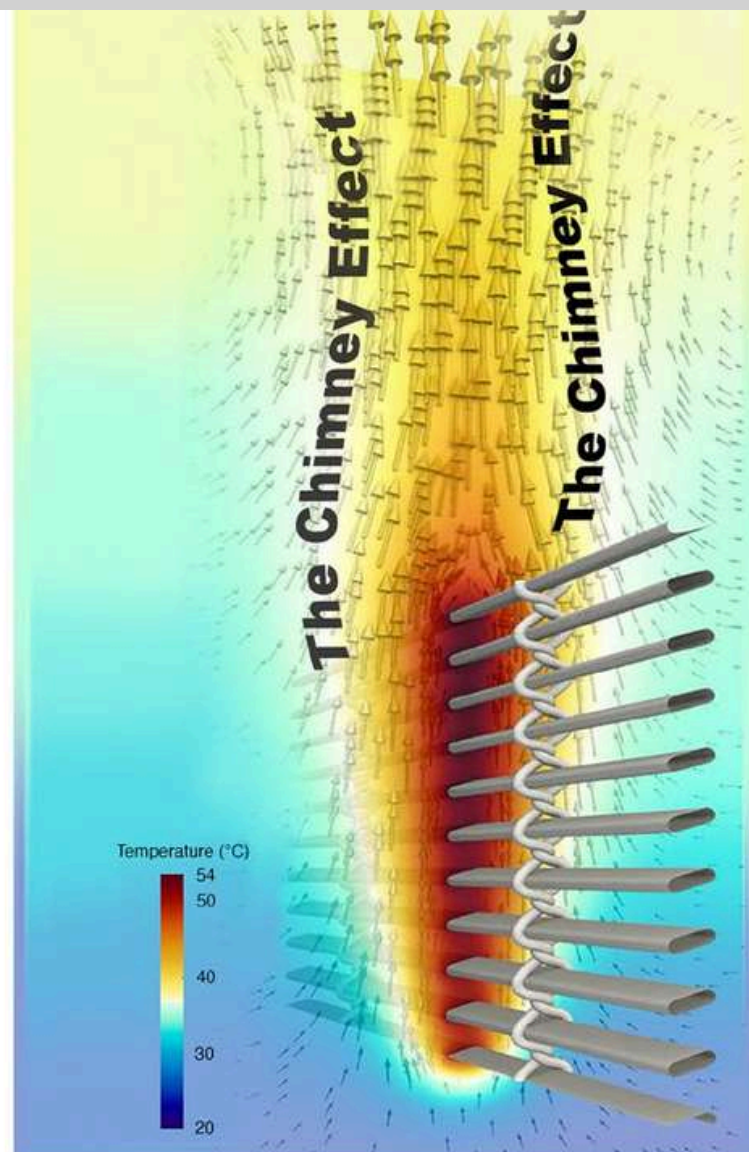
The bronze louvres in MicroLouvre's angle-selective technology, are specifically designed to absorb nearly 100% of radiated heat from the sun like a sponge, venting it away before it reaches the glazing.

## The Chimney Effect

The impact of the heat from the paper-thin bronze louvres on the circulating air is negligible and the air is driven upwards in a laminar flow so the louvres cannot transfer heat to the incoming air.

This is the '**Chimney Effect**', a thermal column of heated air driven upwards to be naturally ventilated away from the glazing to the outside. The Chimney Effect has been successfully modelled and proven by SimScale.

*(Modelling computational fluid dynamics and thermal performance of MicroLouvre™ - SimScale 2020)*



## MicroLouvre® KEY PERFORMANCE INDICATORS

Thermal Comfort*		Fire Performance	
Solar Shading (Ss)	100%	Reaction to Fire	A1/A2-s1,d0:BSEN 13501 - 2007+A1:2009
Solar Heat Block (Shb)	100%	Burning Ember Exclusion	BAL-FZ AS3959-2009 100% (>1.2mm)
Solar Heat Gain (gtot)	0.00 (glazing A-E)	Fire/Heat Attenuation	49.4% CSIRO
Solar Transmittance (Ts)	0.00 (Fraunhofer ISE)	Building Attack Level Protection	BAL-FZ/BAL-40 AS3959
Solar Absorbance (As)	0.97 (Fraunhofer ISE)		
Solar Reflectance (Rs)	0.03 (Fraunhofer ISE)		
Visual Comfort		Wind Performance (BRE)	
Light Transmittance (Tv)	51%	Wind Resistance	Hurricane: > Force 12 Hurricane: Cat 2
Colour Rendering Index	100%	Wind Loading	14.65kg/m2 @ 60mph
Visual Contact with the Outsi	Class 4 (EN14501)	Energy Saving Performance LBNL California	
Daylight Utilisation	Class 4 (EN14501)	Air Conditioning Reduction	68%+
		Energy Consumption	Nil
Environmental Comfort		Durability Performance	
Natural ventilation	80% Open Area	Oldest Operational Installation	60+ Years
Privacy & Visual Security*	100%	Maintenance	Nil
Insect & Pest Protection	100% (>1.2mm)		

\*angular selective >40° \*\*angular selective 0° @ normal incidence or 90° to the planar surface



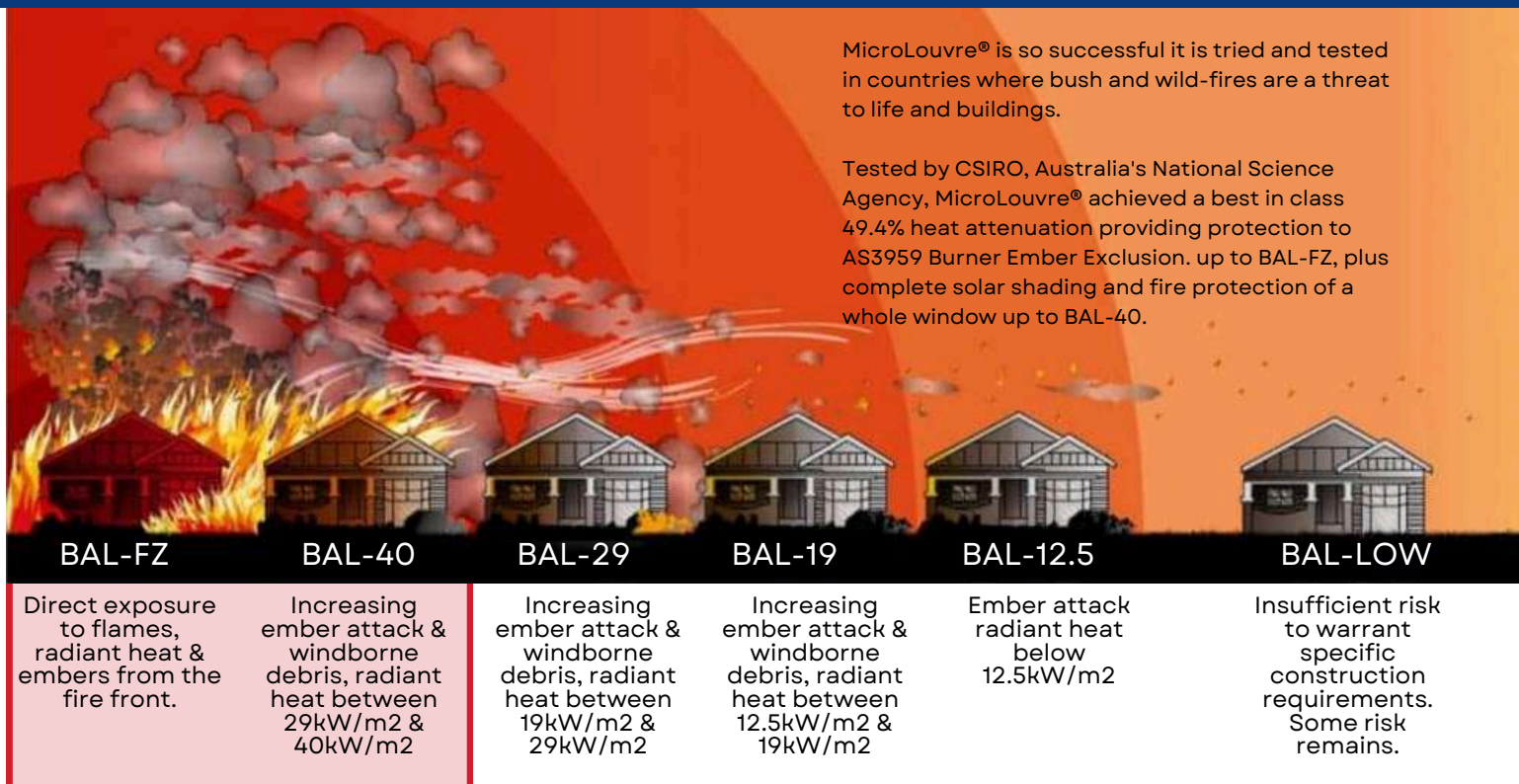
# MicroLouvre®: Wildfire + Flying Burning Ember Protection



MicroLouvre® metal fabric has paper-thin bronze louvres, angled at 17°, each only 1.2mm apart with over 17 miniature louvres in every 25mm/1" of the metal fabric, thereby effectively stopping dangerous flying embers from lodging on, or entering into a building and spreading the fire.

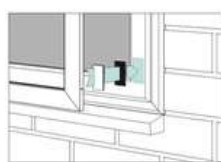


MicroLouvre® flying burning ember protection for close proximity building fires, bush fires and wildfires

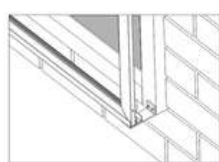


MicroLouvre® screens are simple, quick and easy to install or retrofit

Method of fixings depend on the facade or window frame materials.  
The recommendation is that suitable, fit for purpose mechanical fixings are always used.



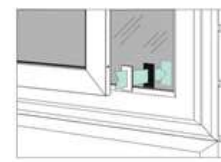
Frame Fix



Mullion Fix



Masonry Fix

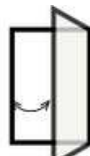


Glass Fix

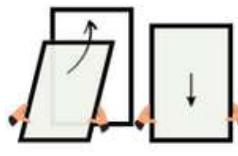
MicroLouvre® screens are simple, quick and easy to remove for access to windows



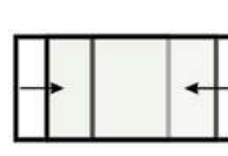
Snap on/off



Hinged



Lift-in/Lift-out  
(in channels)

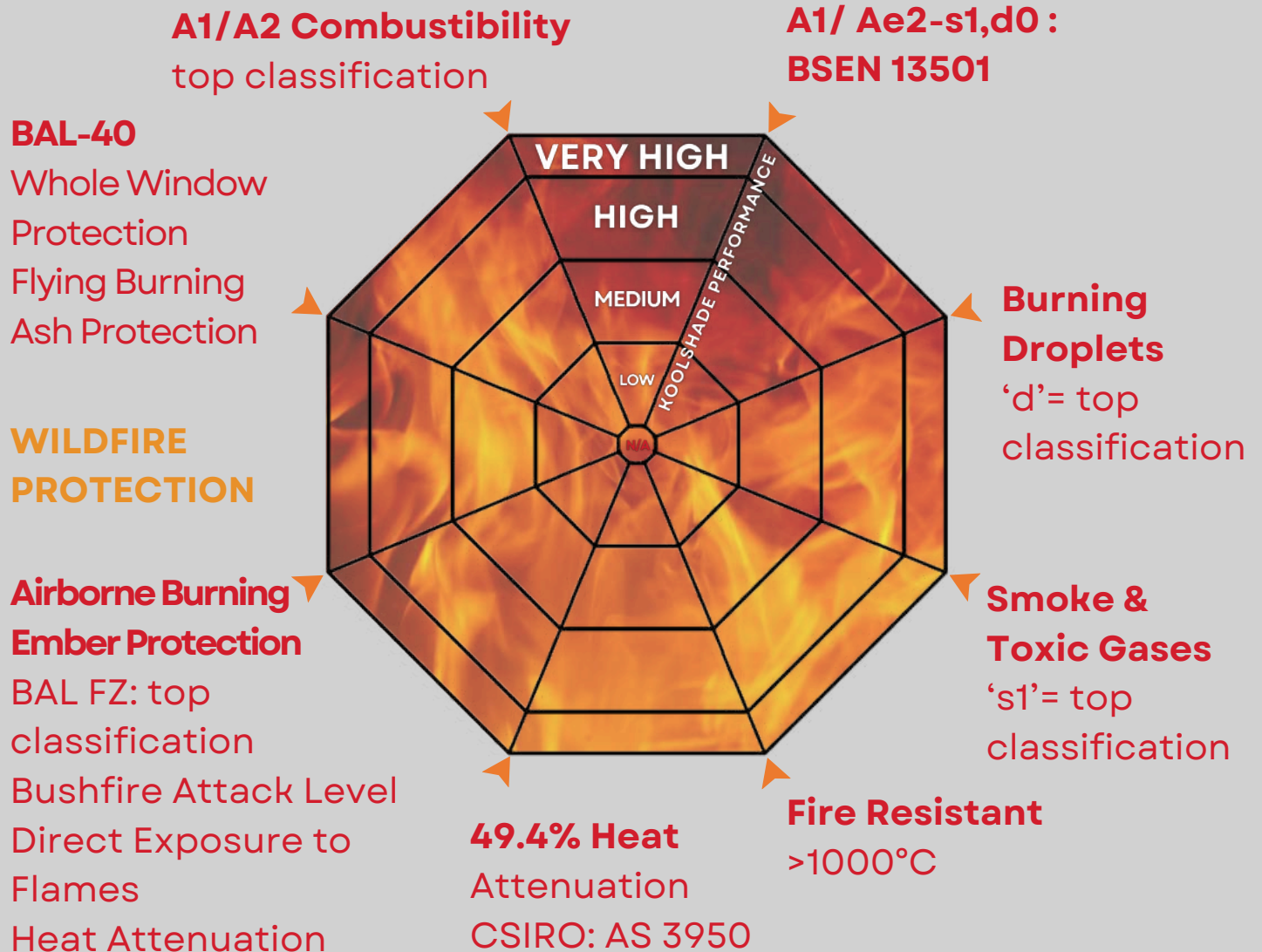


Horizontal Sliding  
(in channels)



Vertical Sliding  
(in channels)

## Arguably the **ONLY** shading product to satisfy Part B & Part O building regulations



**Koolshade compliance to part 'B'  
fire regulation for all products as  
required by part 'O'**





# How MicroLouvre™ Combines Solar Shading + Fire Safety

## Fire Safe: For People & Building Protection

Fires in medium and high rise buildings are becoming increasingly commonplace and more and more regulations are demanding A1/A2 etc Reaction to Fire / Fire Resistance for external attachments like sun shading devices: KoolShade® is Part B Compliant.

Koolshade is a multi-function, all-in-one shading, natural ventilation & daylight maximising system and is fully A1/A2 -s1,d0 to EN 13501

## Burning Ember & Ash Protection



KoolShade® also achieves the top Classification for Wildfire and Bush Fire protection to:

- AS 3959
- BAL- FZ Top Classification: Direct exposure to flames, radiant heat and burning embers
- BAL -40 Top Classification: Ember attack and burning debris. Radiant Heat 29 KW/m<sup>2</sup> and 40KW/m<sup>2</sup>

## SUSTAINABILITY

It's at the core of what we do.

- ✓ Reducing the need and cost of air-con by **68%+**
- ✓ Recycled, recyclable, no plastics, net zero
- ✓ Durable & Long Lasting
- ✓ Environmentally Conscious
- ✓ Non-mechanical Cooling

### SUSTAINABLE

We meet the needs of the present without compromising the ability of future generations to meet their own needs.



The metal fabrics are made from over **90%+** recycled scrap copper

**KoolShade® has proven longevity with 60+ maintenance free years**



KoolShade® metal fabrics & frames are fully recyclable

Air conditioning usage can be reduced by over **68%** when used as Solar Shading

KoolShade® is also a passive system that requires zero energy to maintain peak performance

**0%**

**60+**

**KOOLSHADE**  
The Ultimate In Passive Solar Shading



**Fully non-combustible**



**Ember protection**



**Hurricane Proof**



**Uninterrupted views out**



**Lightweight & easy to fit**



**Blocks Solar Heat Gain**



**90% Copper scrap**



**100% Recyclable**



**Insect & pest protection**



**Energy saving**



**Low/easy maintenance**



**Natural daylighting**



**Longevity**



**Allows fresh air flow**

TESTED, ACCREDITED & CERTIFIED.



**SIMSCALE**



**CSTB**  
le futur en construction



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