

c|sairfoil[®]

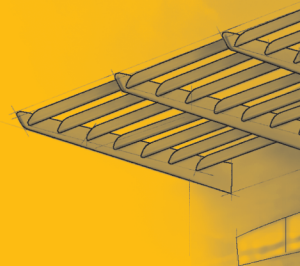
solar protection systems

Cantilevered, horizontal, vertical and noise-absorbing sunshade systems

CS Construction Specialties



CS FRANCE



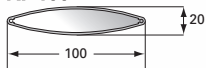
- **csairfoil® Blade**
extruded from a corrosion
resistant aluminium alloy

- Birdsmouth Brackets in
aluminium, (30°), 45° and 90°
(for blades up to AF 320)

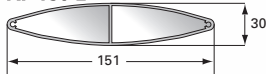
- Closing Plate
in aluminium or
stainless steel

- Direct End Fixing Plates
in stainless steel

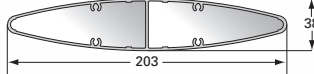
AF 100



AF 150 E



AF 200 E



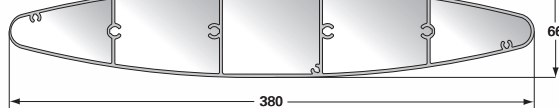
AF 270 F



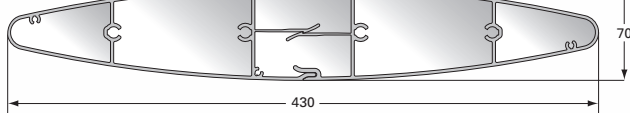
AF 320



AF 380



AF 430



- Parallel Off-Set Bracket
in stainless steel

- Compound Angle Fixing Bracket
in stainless steel, various angles

- Custom Made Fixing Brackets and Plates
in stainless steel



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photo gallery



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noise-absorbing
solar blade



[8] **csairfoil®**
cantilevered sun shades



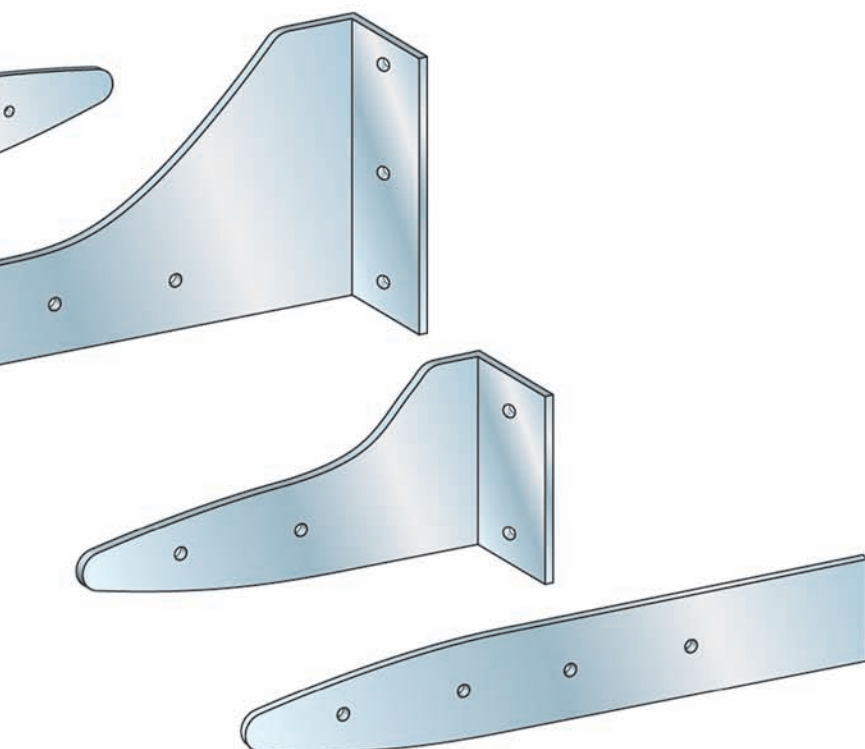
[10] **csairfoil®**
horizontal solar protection



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vertical solar protection
and decorative elements



[14] **csairfoil®**
technical information





the architect's choice solar protection

For over 50 years, architects have found that by using **csairfoil**® solar protection systems on commercial buildings, offices and schools they could create comfortable, productive environments for employees and students alike.

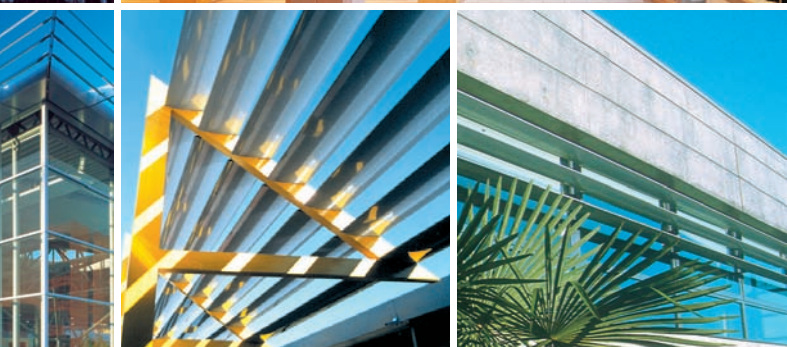
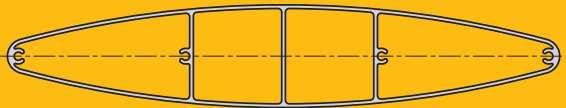
External sunshades are simply the most effective method of reducing heat and glare in a building's interior. Properly designed sun controls can reduce heat gain considerably, whilst increasing the interiors usable space by allowing to sit adjacent to windows.

The clean lines and sleek profile of **csairfoil**® blades achieve an appearance of quality and individuality whilst providing an effective solution to the control of solar heat gain in buildings.

Cantilevered sun shades with **csairfoil**® blades provide effective shading while maintaining unobstructed views. Also, in horizontal or vertical blade arrangements **csairfoil**® convinces through its superb combination of functionality and appearance.

The wide range and versatility of **csairfoil**® blades suit virtually every project requirement, making them the architect's prime choice.





Administration buildings office buildings **car show rooms** museums **shopping malls** cinema theatres **renovation of buildings** schools **banks** military installations **swimming pools** motorway service stations **airports** railway stations **hospitals** universities **sport stadiums** emergency stairways **ministries** elderly homes **high schools** exhibition and congress centres **bus terminals** covered sport halls **post offices** hotels **motels** petrol stations **car parks** large glazed constructions etc.

C/S FRANCE

c|sairfoil® noise-reducing sun control blade

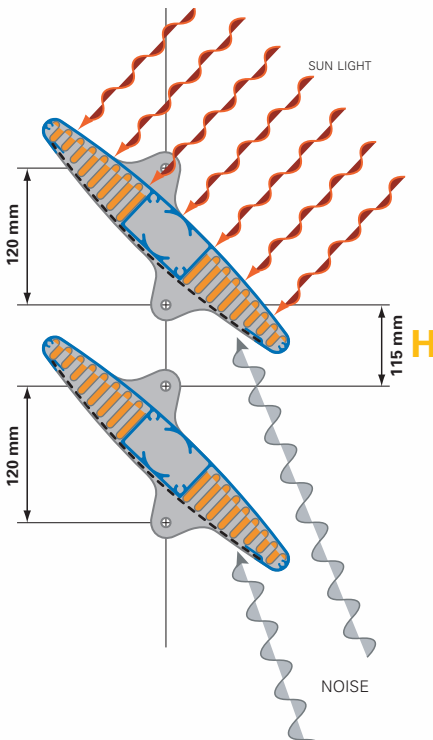


▲ **Office complex.** Horizontally mounted c|sairfoil® blades AF 320 LB provide effective sun control, reduce considerably noise from the outside getting into the building and integrate stylishly with the architecture of the glass facade.

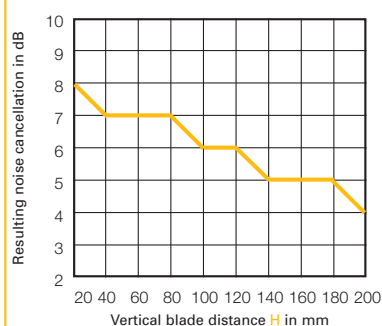
▪ Effective sun control and efficient sound insulation

The AF 320 LB blade offers an all-in-one protection against heat, sun, glare and noise contamination getting into the inside of a building. Without obstructing the outside view the AF 320 LB is capable of reducing noise by 5 to 8 dB.

The noise reducing effectiveness depends on the blade distance H (see table below).



Extrapolation of measured results with linear regression:



Thanks to its noise absorbing structure and filling the blade AF 320 LB reduces dramatically the penetration of noise contamination from busy city centres into the interior of any building.

Additionally, the AF 320 LB minimises efficiently the heating up of interiors through direct sunlight. The need for air conditioning is therefore greatly reduced, improving the interior climate and saving energy at the same time. Thanks to reducing heat and glare, valuable office space near windows can be used more efficiently, without the need for covering up window space with other conventional solutions and making compromises on an unobstructed view to the outside.

The AF 320 LB in an horizontal arrangement constitutes also an excellent protection against intrusion and vandalism, especially for low level storeys.

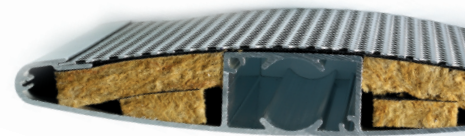
▪ Colour combinations

The blade's surface can be either RAL powder coated or silver anodised. The colours of the perforated aluminium sheet can be chosen independently from the profile's colour, allowing for a virtually unlimited range of colour combinations and providing the architect with an additional design feature.



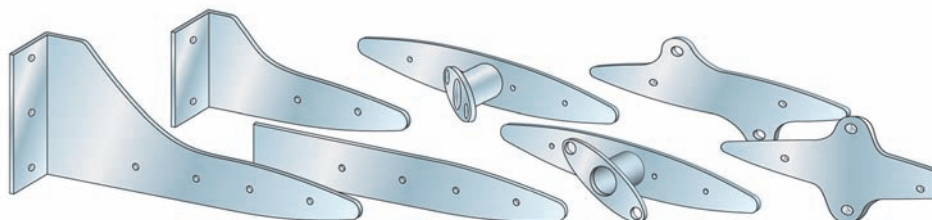
The noise absorbing AF 320 LB is constructed from a 3 mm thick, extruded, high quality aluminium profile and a perforated aluminium sheet.

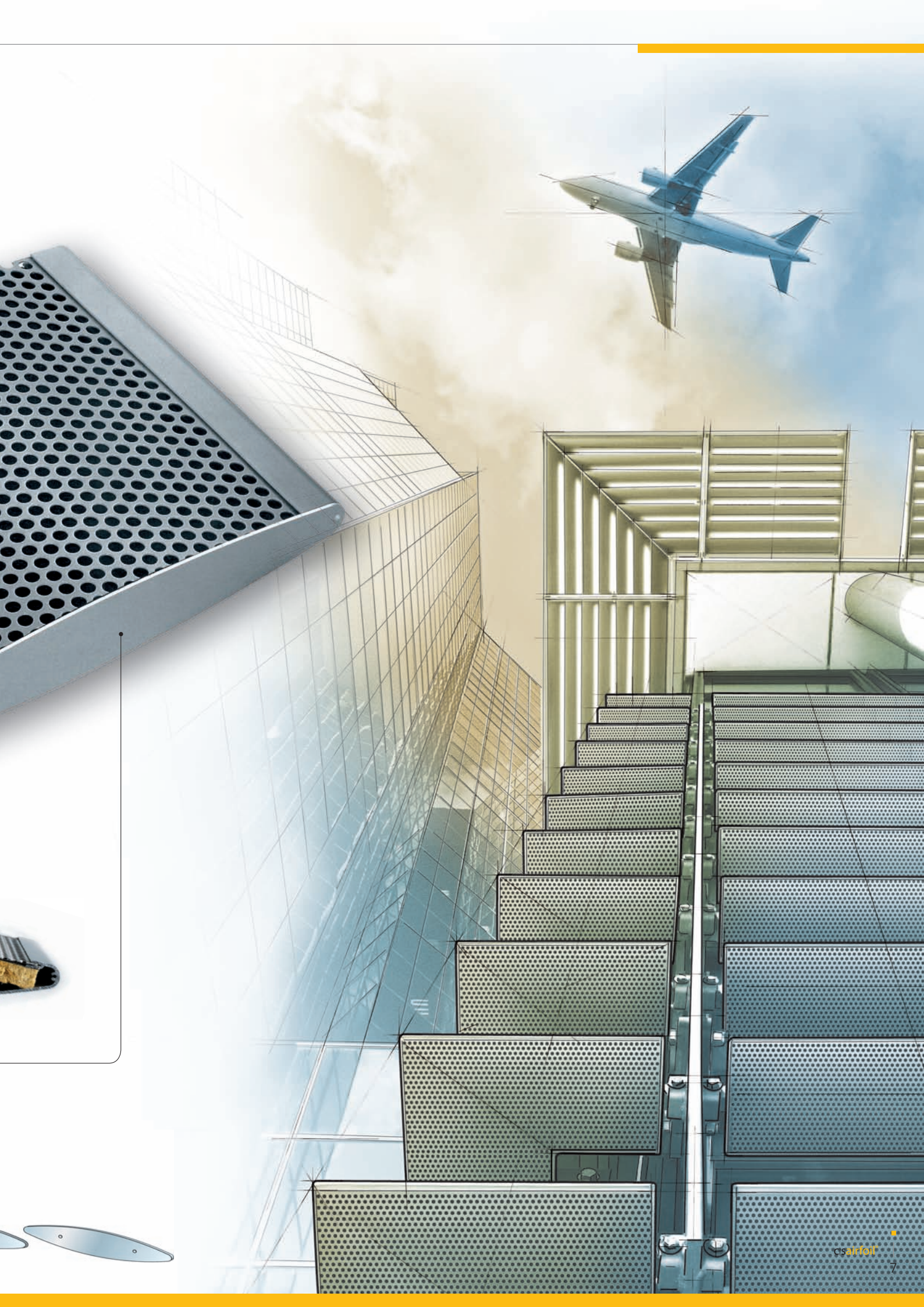
The blade is filled in its inside with a noise absorbing padding of category A2. The padding is additionally covered with a black fibre glass tissue.



▪ Fixing brackets and plates

The noise absorbing AF 320 LB blade is mounted with the same parallel off-set fixing brackets and direct end fixing plates as all other horizontal arrangements with conventional blades. This advantage allows for the design and construction of attractive and efficient combinations of AF 320 LB blades and conventional sun control blades without any additional effort.





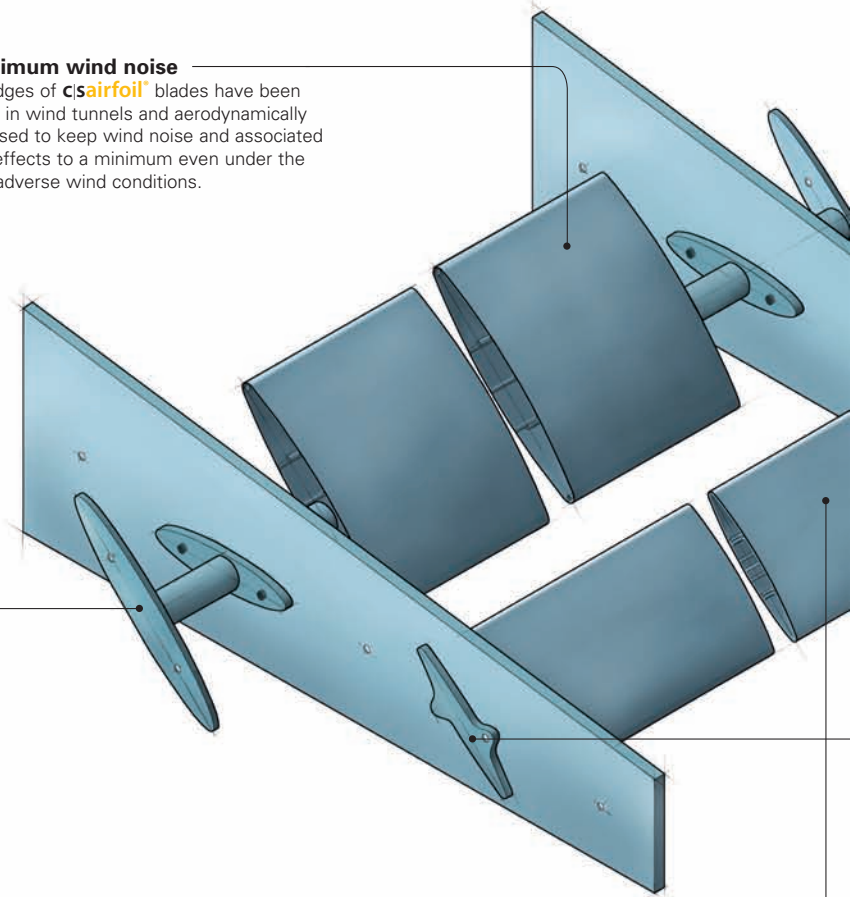
c|sairfoil® cantilevered sun shades



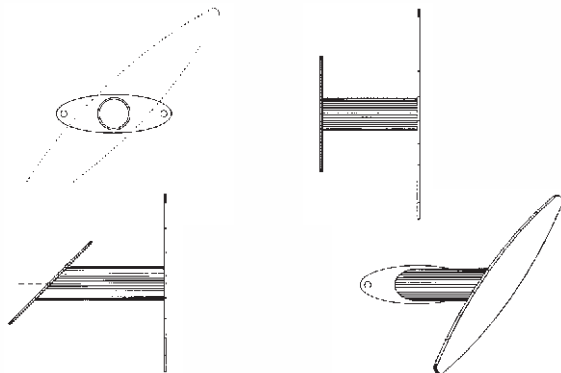
▲ **VW show room.** c|sairfoil® blades in a cantilevered solar protection system in front of the glass facade of a VW car show room.

■ Minimum wind noise

The edges of c|sairfoil® blades have been tested in wind tunnels and aerodynamically optimised to keep wind noise and associated siren effects to a minimum even under the most adverse wind conditions.



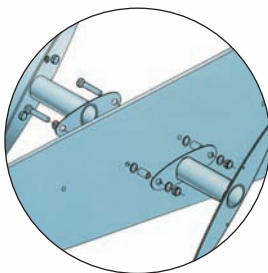
■ Parallel off-set fixing brackets and compound angle fixing brackets



Standard stainless steel fixing brackets with 45° blade inclination are available for straight runs and with 45° corner angles. Other inclinations and/or corner angles upon request.

■ Expansion system

CS FRANCE expansion system compensates for the expansion or contraction the blades may suffer due to temperature changes. The shear and tear of their fixtures and support structure is therefore avoided, contributing to a maintenance free lifetime cycle.



Cantilevered support

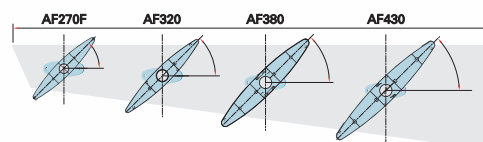
Metal sleeves allow for movement of fixing bracket.

Mobile fixing bracket compensates for blade expansion or contraction.

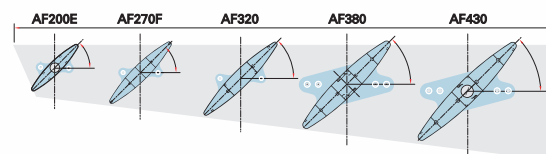
Parallel off-set fixing bracket firmly fixed to the cantilevered support structure

■ Examples of cantilevered projections

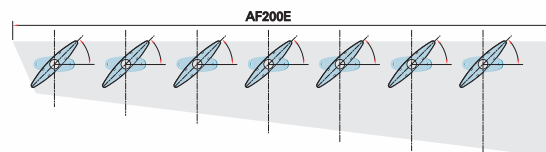
Depending on building or architectural design specifications, cantilevered systems can be designed with uniform or different sized blade arrangements to cater for virtually all building peculiarities and special sun protection needs.



Parallel off-set fixing brackets with 45° inclination hold an arrangement of four differently sized blades.

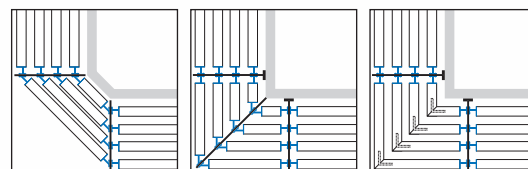


Direct end fixing plates with 45° inclination hold an arrangement of five differently sized blades.

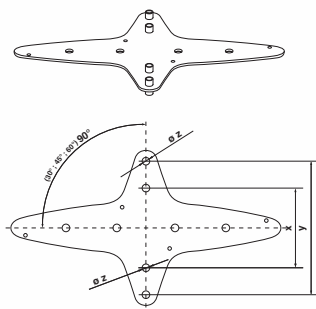


Parallel off-set fixing brackets with 45° inclination hold a uniform arrangement of seven blades.

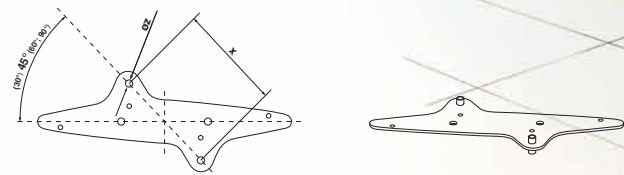
■ Corner solutions



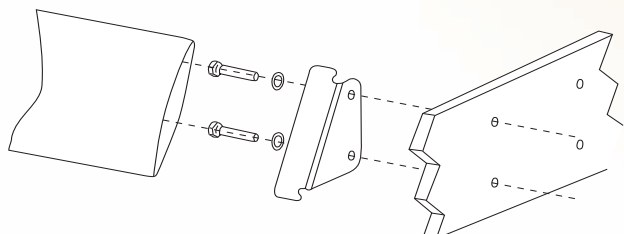
■ **Direct end fixing plates in stainless steel**



Direct end fixing plate 90° made of stainless steel for 90° blade inclination.



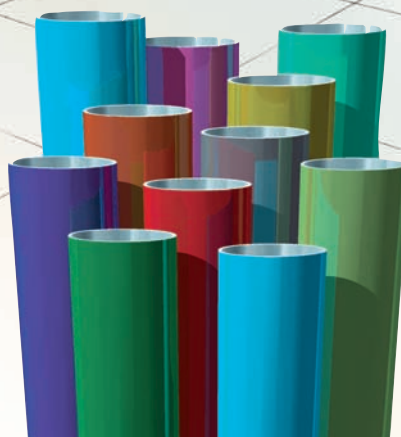
Direct end fixing plate 45° made of stainless steel for 45° blade inclination.



Insertion fixing plate (only AF 100) made of stainless steel is simply inserted into the blade and fixed with screws onto the structural support. Available in any desired angle.

■ **Finishing options**

c/sairfoil® blades are RAL powder coated or silver anodised. The blades must be systematically surface protected through anodisation or powder coating to prevent from corrosion.



c|sairfoil® horizontal solar protection systems



▲ **Cinema.** Horizontally mounted c|sairfoil® blades AF270-F cover the facade of the building.

Designing with solar protection. Also in horizontal arrangements c|sairfoil® blades are the prime choice for its unsurpassed combination of functionality, appearance and quality.

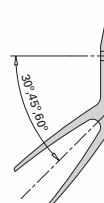
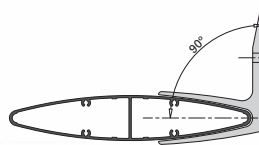
The sleek and elegant horizontal lines of c|sairfoil® blades integrate harmoniously into the architecture of any building and put a stamp of individuality on the visual appearance of its facade.

The horizontal arrangement also minimises efficiently the heating up of interiors through direct sunlight, reducing greatly the need for air conditioning while improving the interior climate.

Horizontal c|sairfoil® blades are also an excellent protection against intrusion and vandalism, especially for low level storeys and reduce noise contamination of busy city centres penetrating into interiors.

■ Birdsmouth Brackets

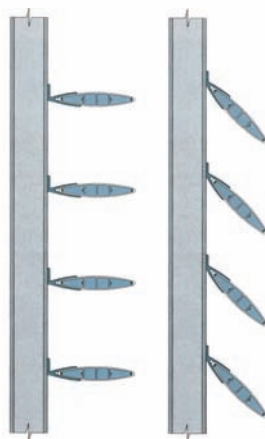
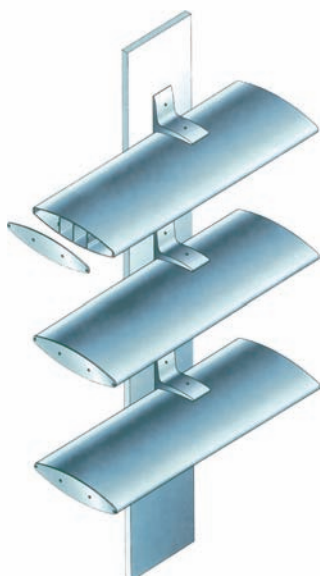
The brackets are screwed directly onto the facade of the building or onto the support structure and fixed with rivets onto the blades. Standard angles are available in 30° (only AF150 E), 45° and 90°.



■ **Closing plate** in stainless steel or Aluminium is screwed onto the end of the profile.

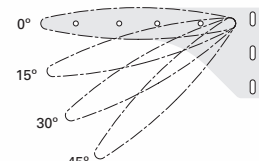
■ Mounting of horizontal arrangements

Birdsmouth brackets with the desired angle are screwed directly onto the facade of the building or onto a support structure. Blade are then simply fixed with rivets.



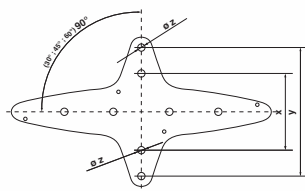
Horizontal blade arrangements with 90° and 45° inclination.

■ Custom made fixing brackets

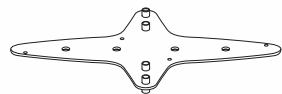


Console fixing brackets are available for 0°, 15°, 30° and 45° blade inclinations. Customised angles available upon request.

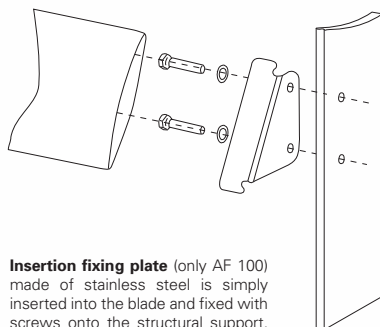
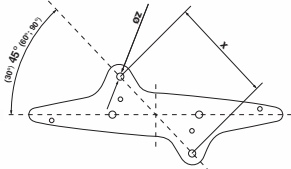
▪ Direct end fixing plates in stainless steel



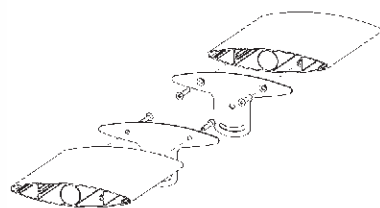
Direct end fixing plate 90° in stainless steel for 90° blade inclination.



Direct end fixing plate 45° in stainless steel for 45° blade inclination.



Insertion fixing plate (only AF 100) made of stainless steel is simply inserted into the blade and fixed with screws onto the structural support. Available in any desired angle.

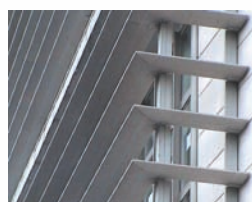


Console fixing brackets in stainless steel for adjustable inclination angles of blades.

▪ Parallel off-set fixing brackets and compound angle fixing brackets

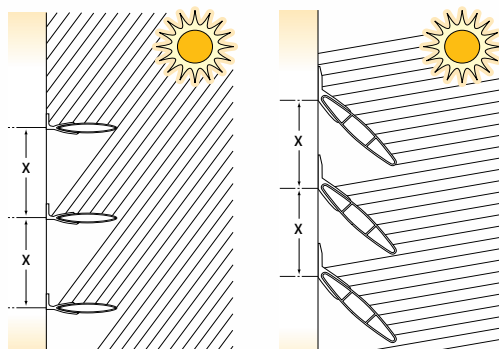


▪ Corner joint solutions



▪ Shadow projection of horizontal arrangements.

The distance X between blades varies depending on the type of blade, its inclination angle and the altitude. Please consult the maximum span admission table published on page 15 or contact our technical office to obtain additional product information and/or project related assistance.



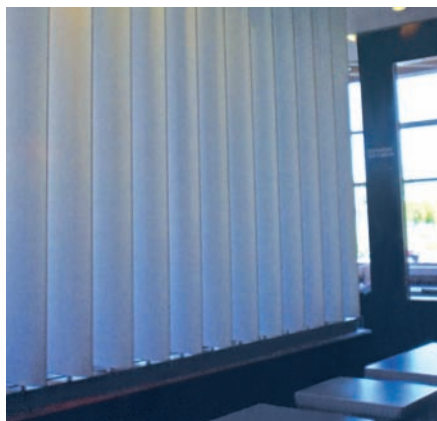
c|sairfoil® vertical solar protection systems and



▲ **Office building.** Vertically mounted c|sairfoil® AF200 E blades cover the emergency staircase.



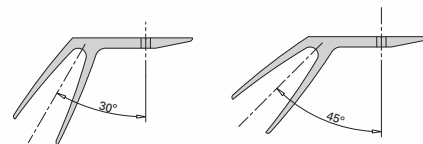
▲ **Hotel bar.** Vertically mounted c|sairfoil® AF 380 blades are used in this hotel bar as a decorative element for separating the bar from the table section.



Decorating with functionality in mind. If you are thinking in a superb sun control system for buildings with east or west orientation, simply using the sleek design of the blades to enhance a building's appearance, elegantly covering facades or unsightly building elements or using them to provide a solid barrier against intrusion and vandalism, there are simply no limits to what you can do with c|sairfoil® blades.

▪ Birdsmouth Brackets

The brackets are screwed directly onto the facade of the building or onto the support structure and fixed with rivets onto the blades. Standard angles are available in 30° (only AF150 E), 45° and 90°.

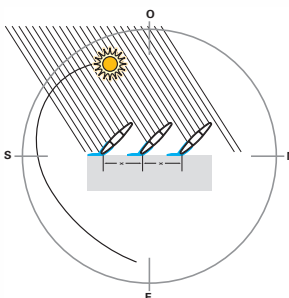


▪ Closing plate

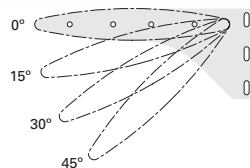
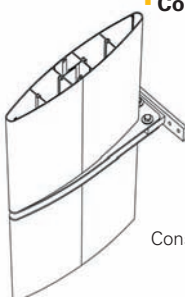
Closing plate in stainless steel or Aluminium is screwed onto the end of the blade profile.

▪ Shadow projection of vertical systems

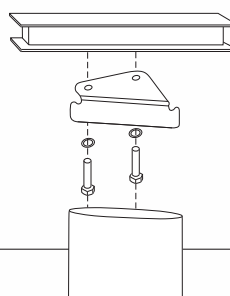
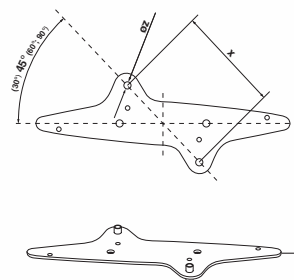
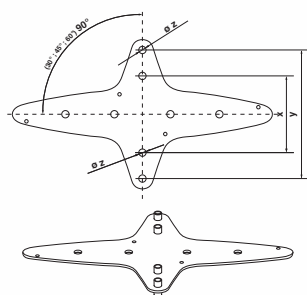
The distance X between blades varies depending on the type of blade, its inclination angle and the altitude. Please contact our technical office to obtain project related assistance.



▪ Console fixing brackets



Console fixing brackets are available for 0°, 15°, 30° and 45° blade inclinations. Customised angles available upon request.

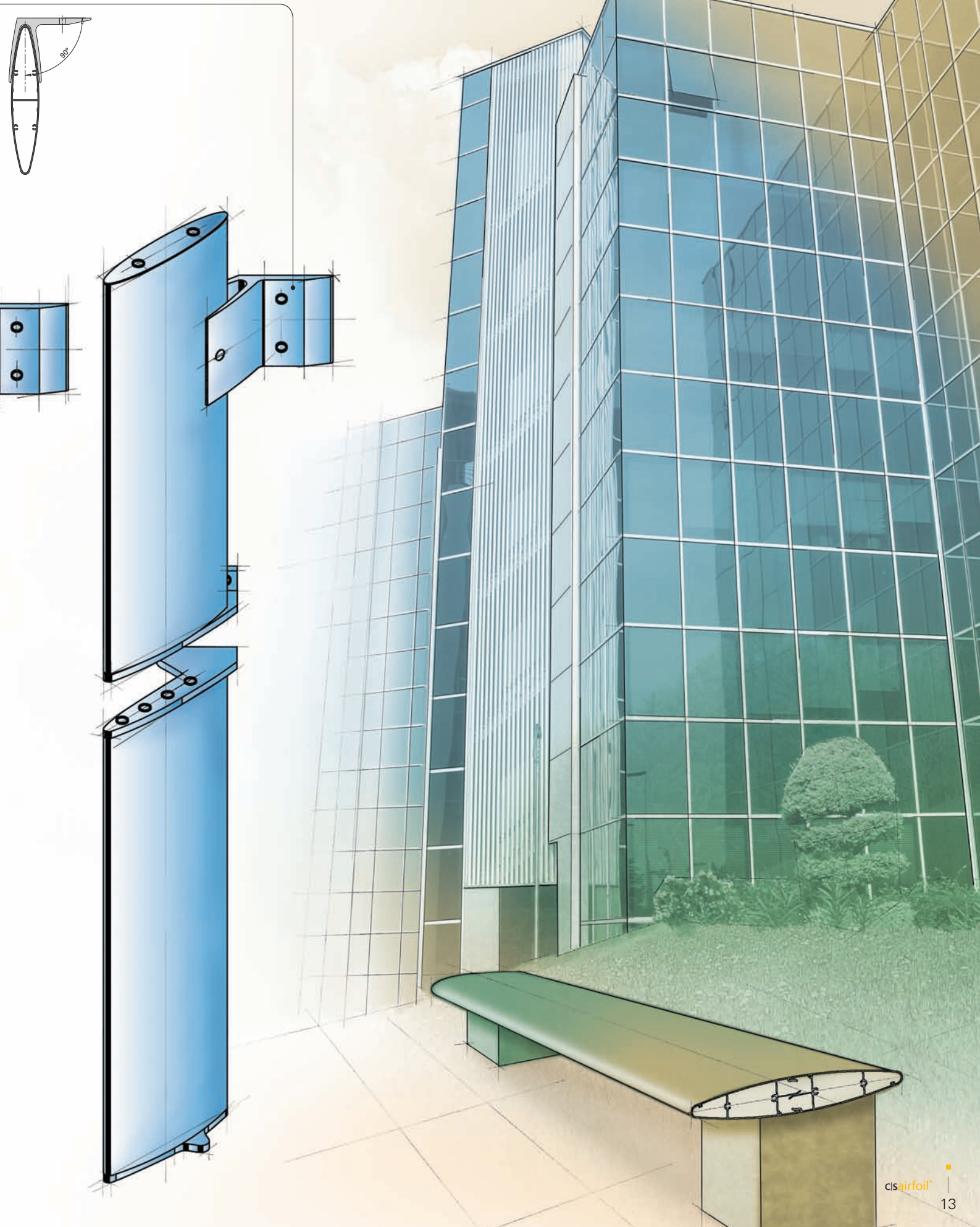


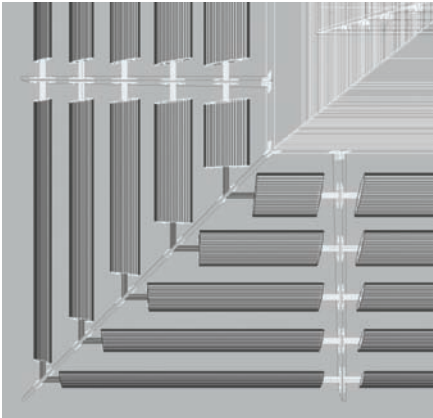
▪ Direct end fixing plates in stainless steel

Direct end fixing plate 90° in stainless steel are screwed first onto the end of the blade and are then fixed on the support structure. Available in the most commonly used angles.

Insertion fixing plate (only AF 100) made of stainless steel is simply inserted into the blade and fixed with screws onto the structural support. Available in any desired angle.

d decorative elements





▲ **Office building.** 3D view of a cantilevered arrangement of 5 differently sized **csairfoil** blades using compound angle fixing brackets as corner solution.



▲ **Screw channels.** This side view of a **csairfoil** AF380 blade shows clearly the screw channels which are incorporated in the extrusion of the blade. This has the advantage that the blade can be cut onsite to any custom size and be fixed immediately onto the chosen fixing plate or bracket, thus saving time and effort during the installation process.



▲ **Birdsmouth brackets.** Horizontally mounted **csairfoil** AF270 blades are shown from behind the facade of a building. Birdsmouth brackets had been fixed onto vertical support segments at specified distances and **csairfoil** blades were simply slotted into the brackets and fixed with screws or rivets. Birdsmouth brackets allow for speedy onsite installations and have the additional advantage of being virtually invisible when seen from the front.

Blades








csairfoil blades are extruded in grade 6063-T6 aluminium alloy in seven standard widths. Blades can be extruded in lengths of 4.0 and 6.0 metres.

However, subject to minimum quantities, we are able to extrude any blade profile to one or more specific lengths to suit project requirements, thus minimising unnecessary waste.

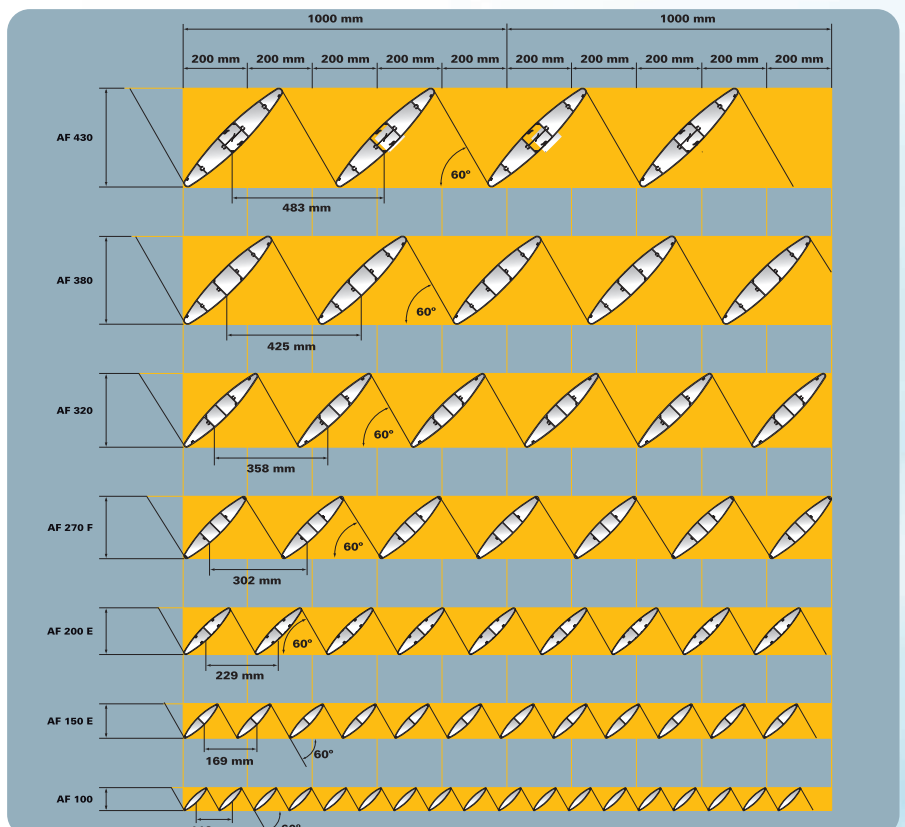
Mounting Options

There are various methods for fastening **csairfoil** blades to the supporting structure, although usually blades would be 'end fixed' between the depth of the supporting frames. An alternative fixing method is the use of birdsmouth brackets which have the additional advantage of being virtually invisible after installation.

Bracket and Blade size compatibility

	Material	Angle	AF-100	AF-150	AF-200	AF-270	AF-320
	Aluminium	30°	-	●	-	-	-
	Aluminium	45°	-	●	●	●	●
	Aluminium	60°	-	-	-	-	●
	Aluminium	90°	-	●	●	●	●
	Aluminium		-	●	●	●	●
	Stainless Steel		-	●	●	●	●
	Stainless Steel	various	●	●	●	●	●
	Stainless Steel	various	-	●	●	●	●
	Stainless Steel	various	-	●	●	●	●
	Aluminium	various	●	●	●	●	●
	Stainless Steel						

Blade inclination of 45° and shadow projection of 60°



End Fixings

All **c|sairfoil** blades incorporate screw channels within the extrusion, allowing self-tapping screws/ or bolts to be passed through supporting end plates and into the end of the blades.

This method of fixing is strong enough to support the blade even at its maximum span.

Birdsmouth Brackets

Extruded aluminium brackets for AF-150, AF-200, AF-270 and AF-320 blade profiles are available in 45° and 90° angle options and can be cut to custom width to adapt to the metallic structure.



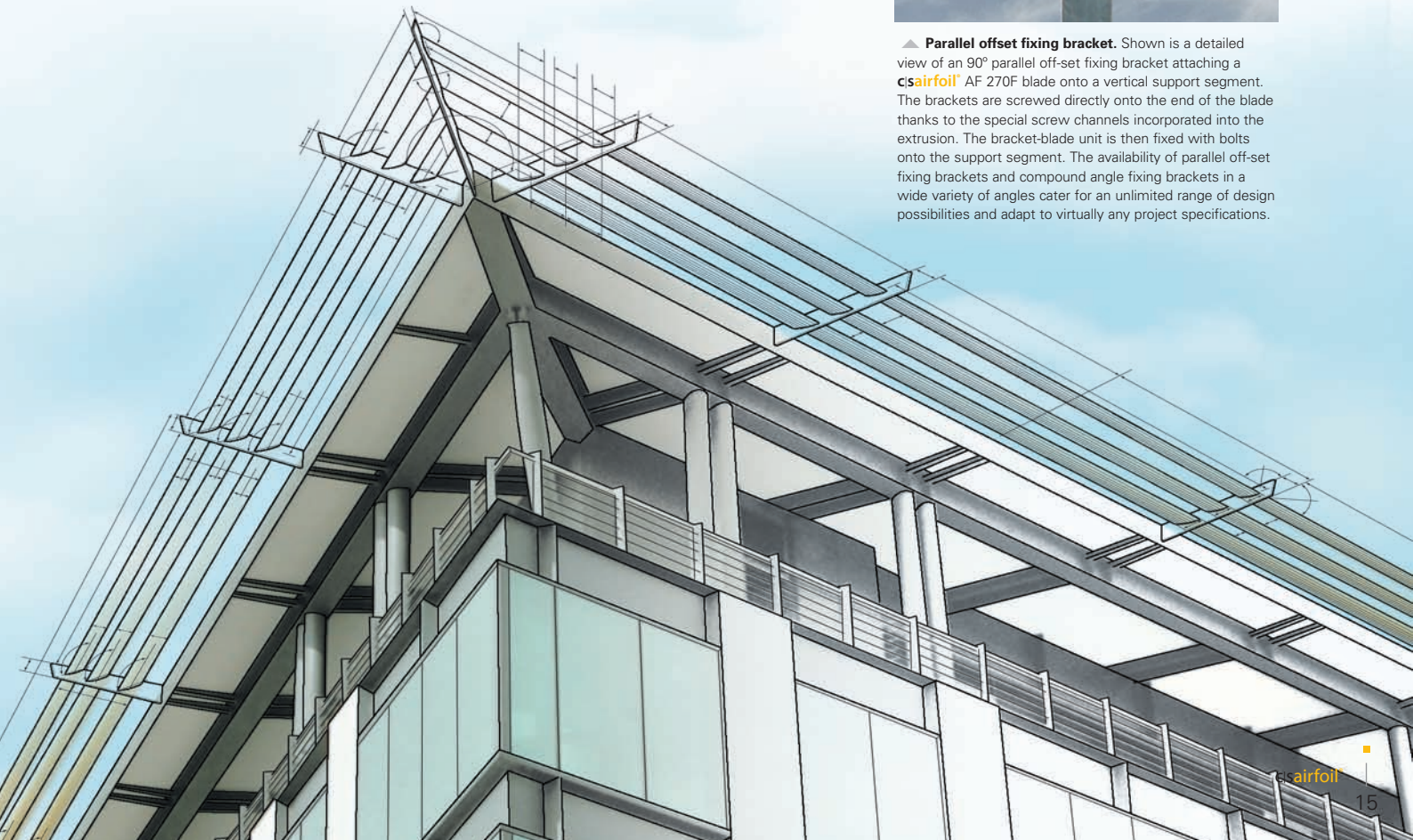
▲ Custom blade supports. The custom blade supports shown have been specifically designed for cantilevered projections of Audi showrooms. **c|sairfoil** AF270 blades are fixed onto vertical custom-made supports, attached to horizontal support segments. The lightweight but extremely robust structure of **c|sairfoil** blades allow for the design of any imaginable support, fixture, suspension or attachment, proofing to be an extremely versatile, architectural design element and sun control system at the same time.



▲ Parallel offset fixing bracket. Shown is a detailed view of an 90° parallel off-set fixing bracket attaching a **c|sairfoil** AF 270F blade onto a vertical support segment. The brackets are screwed directly onto the end of the blade thanks to the special screw channels incorporated into the extrusion. The bracket-blade unit is then fixed with bolts onto the support segment. The availability of parallel off-set fixing brackets and compound angle fixing brackets in a wide variety of angles cater for an unlimited range of design possibilities and adapt to virtually any project specifications.

Blade Span Capacity

		Blade span with inclination angles of 45° and 90°			
AF-380	AF-430	Blade	Snow load	Height	
				0 - 8 m	8 - 20 m
					20 - 100 m
-	-	AF 100	I	2340	2145
-	-		II	2170	2020
-	-	AF 150 E	I	3105	2850
-	-		II	2885	2650
-	-	AF 200 E	I	3980	3660
-	-		II	3705	3455
●	●	AF 270 F	I	4405	4055
●	●		II	4105	3830
●	●	AF 320	I	4835	4465
●	●		II	4515	4225
●	●	AF 380	I	5915	5475
●	●		II	5540	5150
●	●	AF 430	I	6070	5620
●	●		II	5685	5330



International sales office

CS FRANCE

135, rue Isambard
B.P. 66

F-27120 PACY/EURE

Tel.: +33 2 32 67 00 00

Fax: +33 2 32 67 14 12

e-mail: marketing@cs-france.fr

web: www.cs-france.fr

www.c-sgroup.com

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