Architectural Louvres

RAIN DEFENCE. VENTILATION. SCREENING. ACOUSTICS.

Construction Specialties®

St Regis, Chicago, US
RSV-5700 Rain Defence Louvres ▸ **30**

CONSTRUCTION SPECIALTIES

About Us

Established in 1948, Construction Specialties is a family-owned business with 22 offices worldwide and has key manufacturing locations or sales offices in most European countries.

Wherever you are, we can provide customers with fast local support from trained and experienced personnel.

As a manufacturer and supplier of specialist products, we have become a global leader in many of our product ranges, which have been successfully installed in some of the world's most prestigious buildings and across a wide spectrum of sectors.

GLOBAL EXPERIENCE

CS developed the first extruded louvre 60 years ago and has since been involved in thousands of successful projects around the world.

INNOVATION

Many of our standard models have been created through collaboration with customers, helping them realise their design vision and meet their building's performance requirements.

KNOW-HOW

From early design stage and product selection to installation, we provide advice and support to ensure successful project delivery.

www.c-sgroup.co.uk/110

ARCHITECTURAL LOUVRES

Contents

World Trade Center Transportation Hub, New York, US
RSH-5700 Rain Defence Louvres (blast resistant option) ▸ **26**

Why CS Louvres?

We have been manufacturing and selling louvres globally for over 60 years. When you specify our systems, you get the support of a dedicated team with a wealth of experience and design capability.

The performance of our louvres has been evaluated by independent third party testing. In addition, any of our standard or bespoke solutions can be verified in our own testing chamber to ensure they achieve specified performance levels in real world conditions.

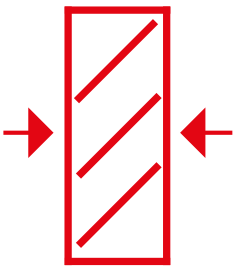
Required on most facilities to provide essential airflow, architectural louvres help to improve a building's energy efficiency. They are also often needed to provide protection from rain ingress, or screening of plant machinery.

Whatever your building's requirements, we have a louvre to meet your needs.

www.c-sgroup.co.uk/2369

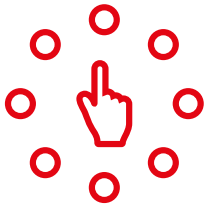
MAXIMUM PERFORMANCE

We always aim to combine the best possible weather protection and airflow. Our RS-5605 rain defence model delivers Class A rain defence up to 3.5m/s, whilst offering Class 1 airflow performance.



SPATIAL EFFICIENCY

Our highly engineered extruded louvre designs are optimised to deliver high performance and space savings at the same time.



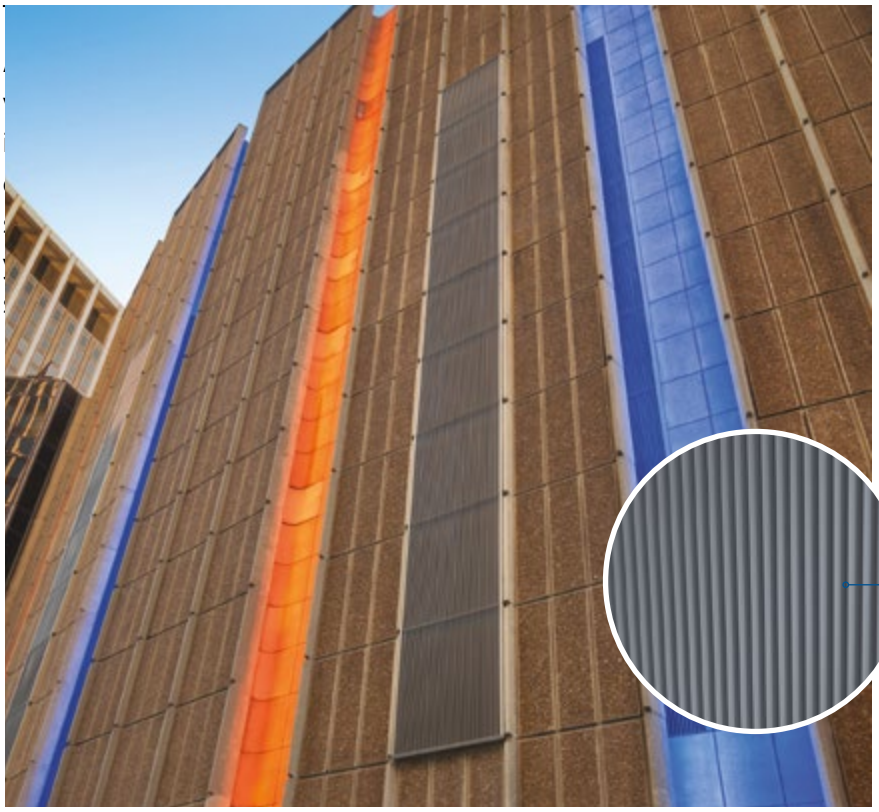
DESIGN FREEDOM

With a myriad of design options you can blend, contrast or make a feature of your building's louvres.
For inspiration ▸ **8-13**.

St Regis, Chicago, US
RSV-5700 Rain Defence Louvres ▸ **30**

Why CS Louvres?

DESIGN FREEDOM



Horizontal blade orientation is not a default with our louvre systems.

Some of our best performing rain defence models feature vertical blade arrangements and are available in a variety of blade pitches to fit with your façade design.

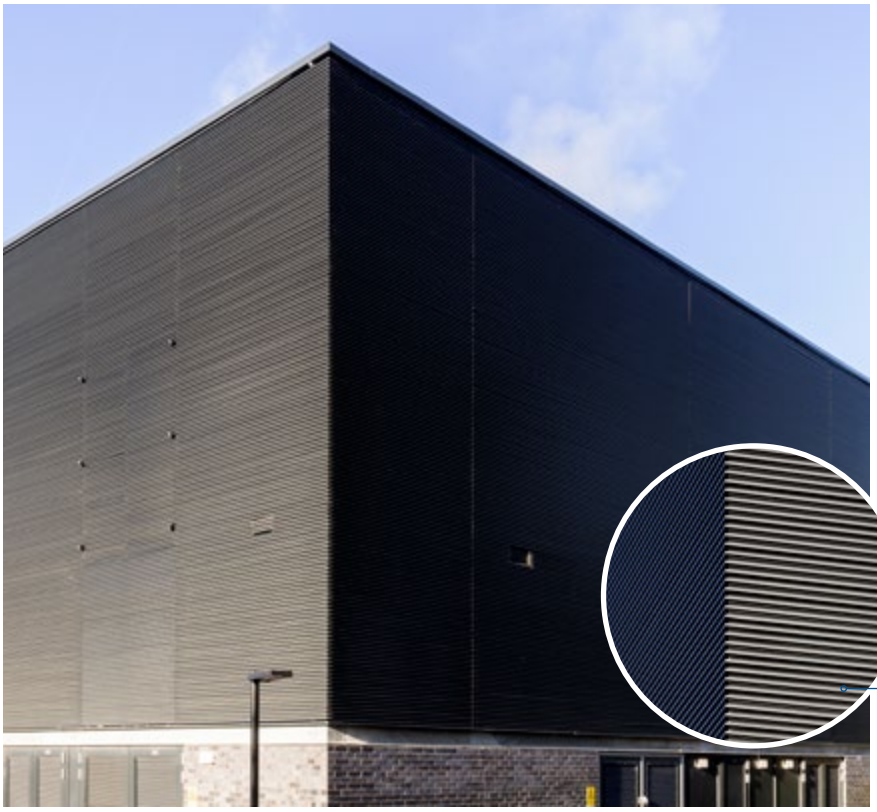
Rain Defence Louvres:

RSV-5700 ▸ **30**

RS-5900 ▸ **32**

RS-5605 ▸ **34**

Vertical blade designs are particularly effective at capturing and draining rain water from the louvred area.



Where continuous blade appearance is desired, we have a range of solutions to suit functional needs.

In areas where rain defence is paramount, double bank Architectural Line Louvres combine required aesthetics and performance.

Ventilation models provide continuous appearance and can also be used where curves or faceted designs are required.

Architectural Line Louvres ▸ **40**

Ventilation Louvres:

A-3105C / A-3105 ▸ **44** / **46**

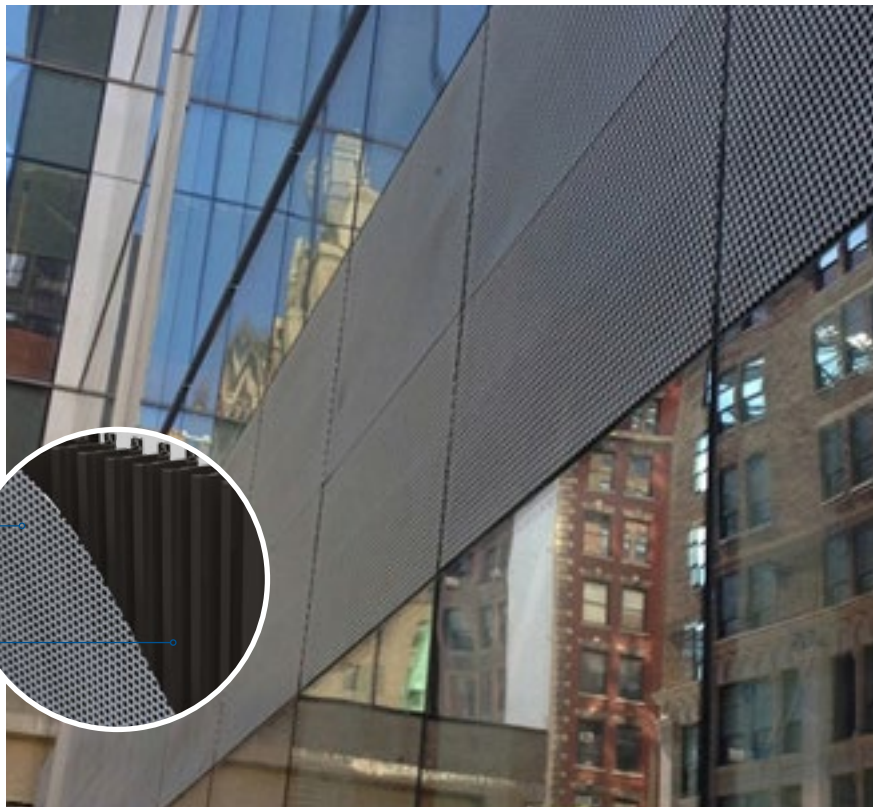
A-4085C / A-4085 ▸ **48** / **50**

Models featuring hidden mullions and mitred corners can be used to create a striking wrap-around effect.

While some louvres are all about standing out — others are more about blending in.

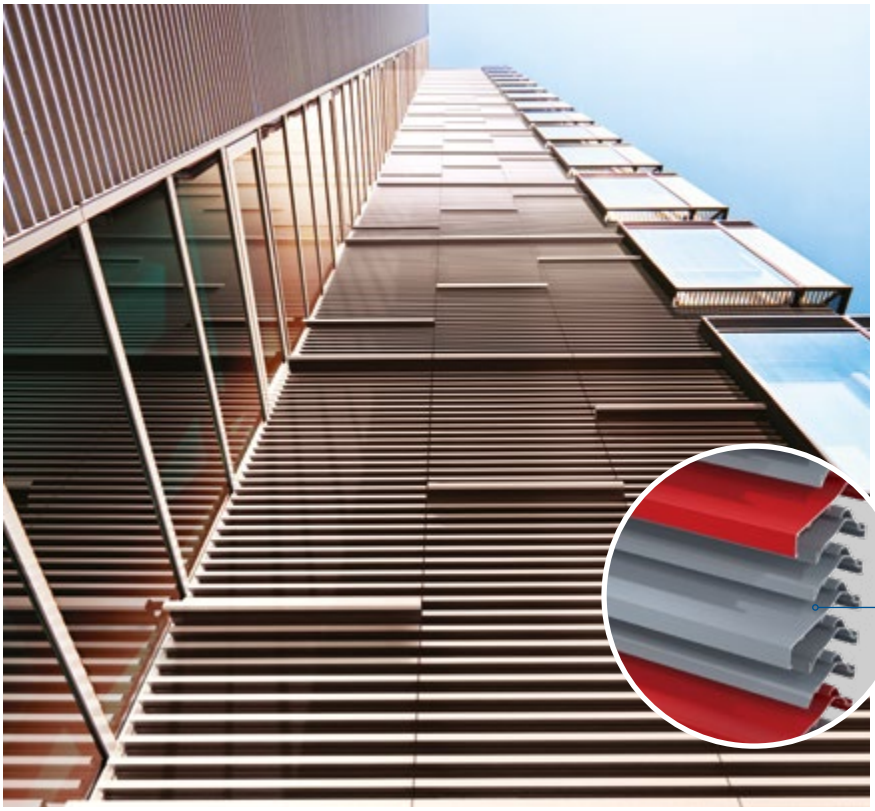
Our **Perform**™ options are concealed behind an attractive, perforated aluminium skin. They've been fully tested for rain defence and airflow performance.

Rain Defence Louvre PL-5700 ▸ **36**
Ventilation Louvre PL-4080 ▸ **48**



Perforated aluminium skin is available in a wide range of colours and finishes. Custom materials or perforation patterns can be accommodated, subject to additional testing.

The louvre modules are supplied powder coated black to disappear behind the decorative screen.



Defy boring and add drama to your louvre application with our customisable Bold Line™ options.

They allow you to accentuate the façade with colour, crisp shadow lines, varying blade depths or staggered blade placement. All this without compromising performance.

Rain Defence Louvre B-7505 ▸ **38**
Ventilation Louvre B-6485 ▸ **54**

Accent blades used in Bold Line models can be specified in a contrasting colour, or even in multiple colours. They can span the façade or be arranged in an artistic pattern. See more design examples in our project gallery ▸ **10**

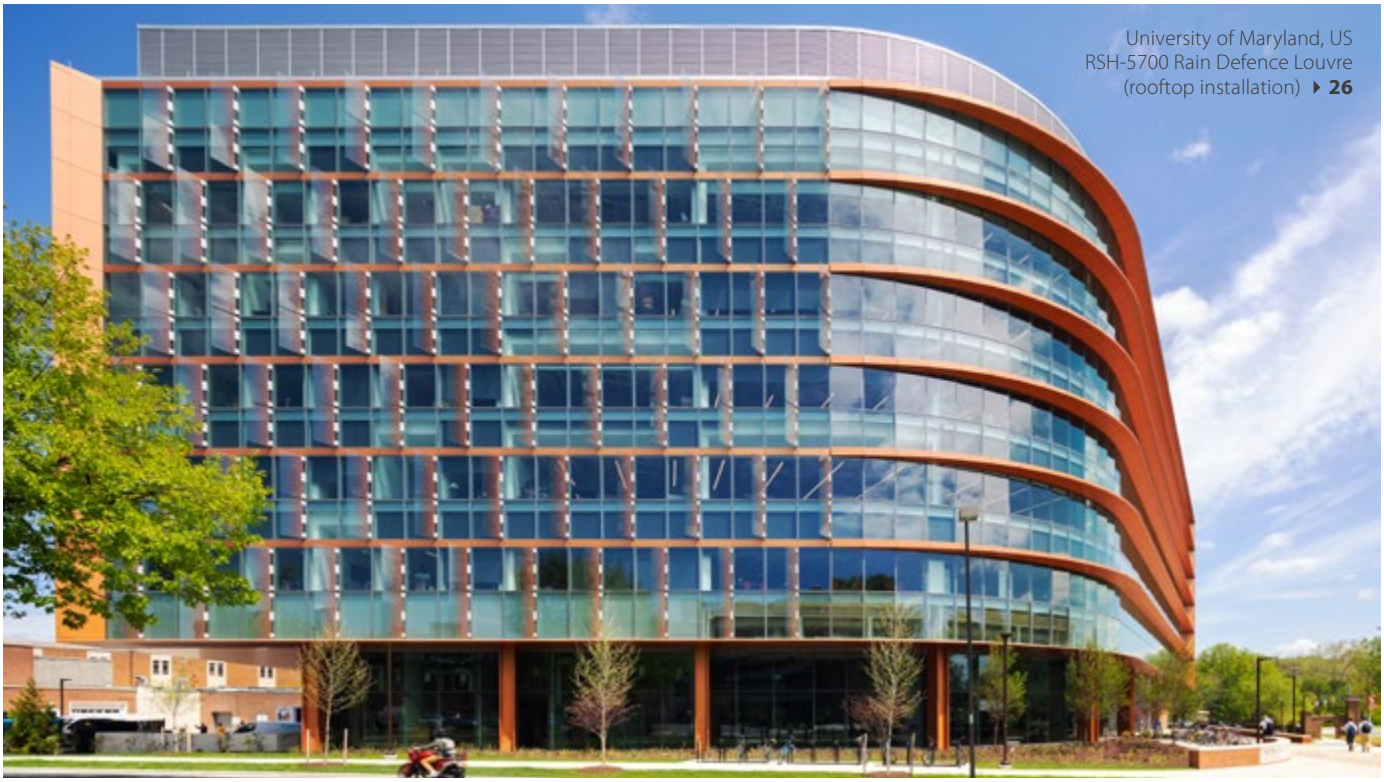
Project Gallery

One World Trade Center, New York, US
RSH-5700 Rain Defence Louvres ▸ 26

16 Chestnut, Denver, US
Bold Line™ B-7505 Rain Defence Louvres
incorporating LED lighting ▸ 38

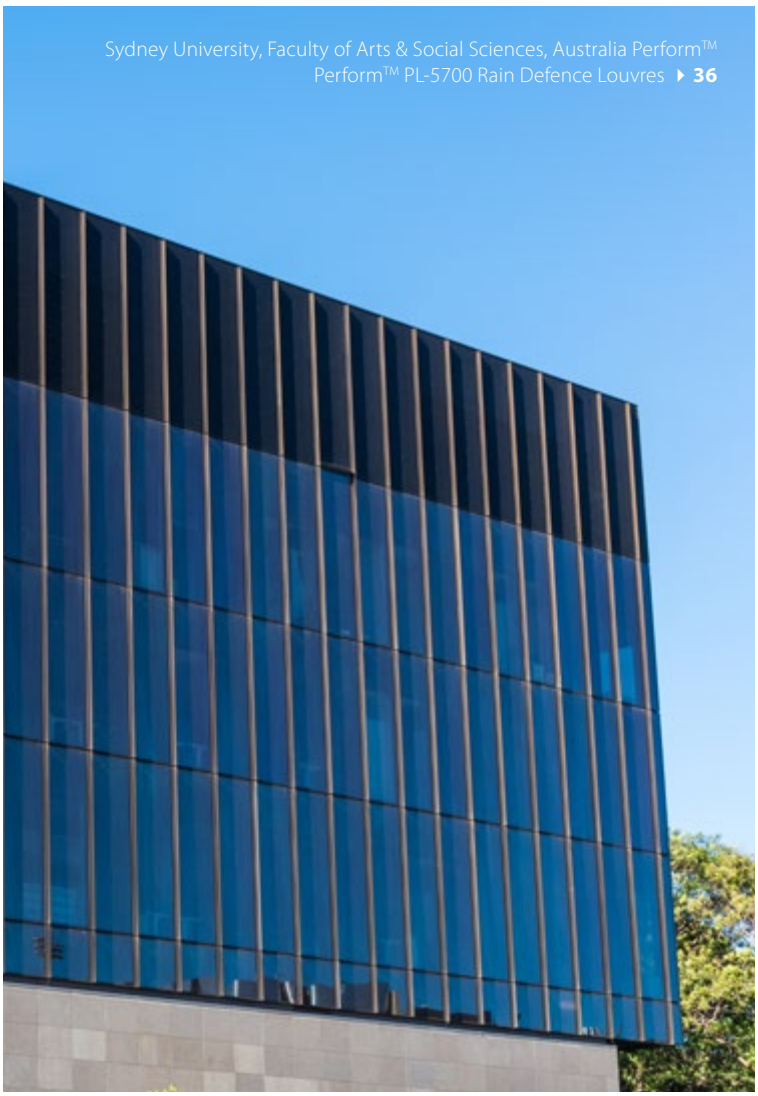
Loma Linda, US
Perform™ PL-4080 Ventilation Louvres ▸ 52

One Raffles Quay, Singapore
Bold Line™ Rain Defence Louvres



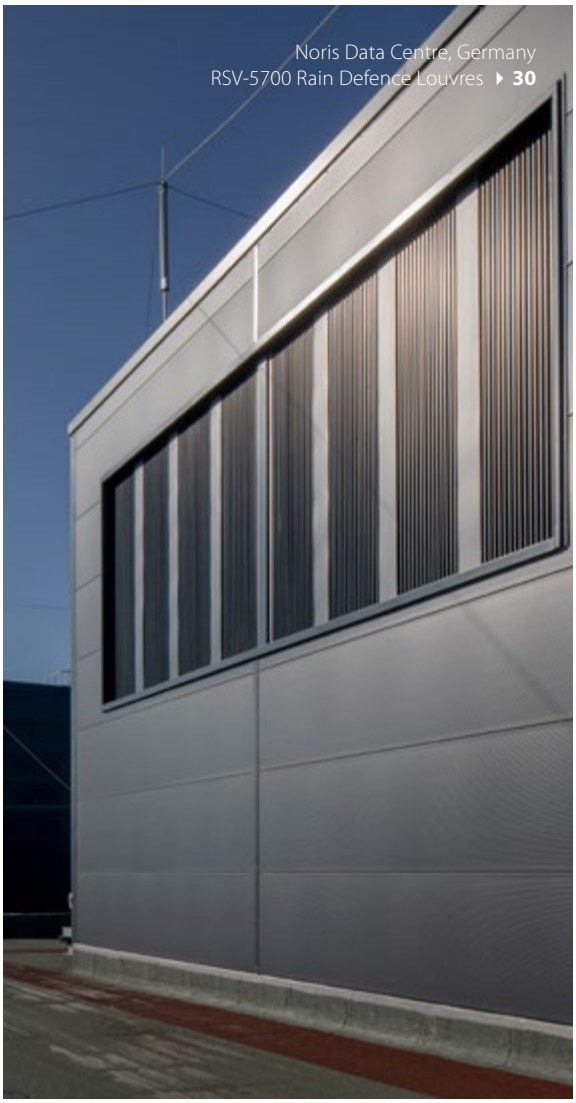
University of Maryland, US
RSH-5700 Rain Defence Louvre
(rooftop installation) ▸ **26**

177 Pacific Highway, Sydney, Australia
A-4085 Ventilation Louvres ▸ 50

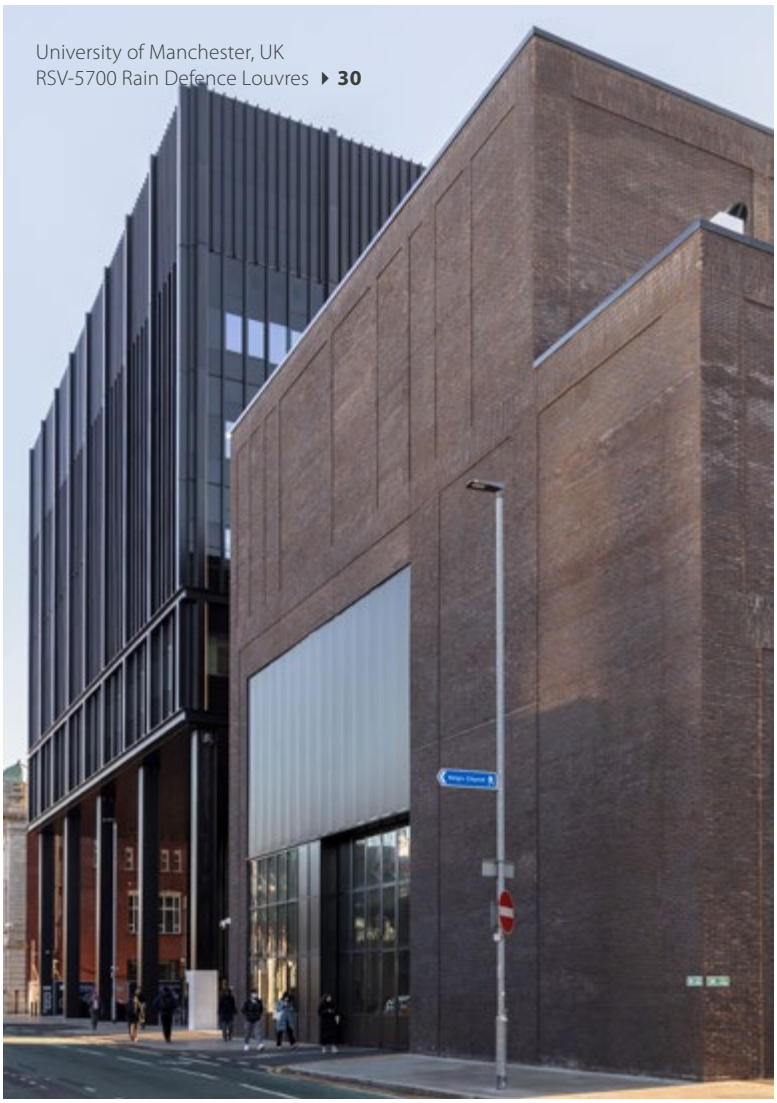


Sydney University, Faculty of Arts & Social Sciences, Australia Perform™
Perform™ PL-5700 Rain Defence Louvres ▸ 36

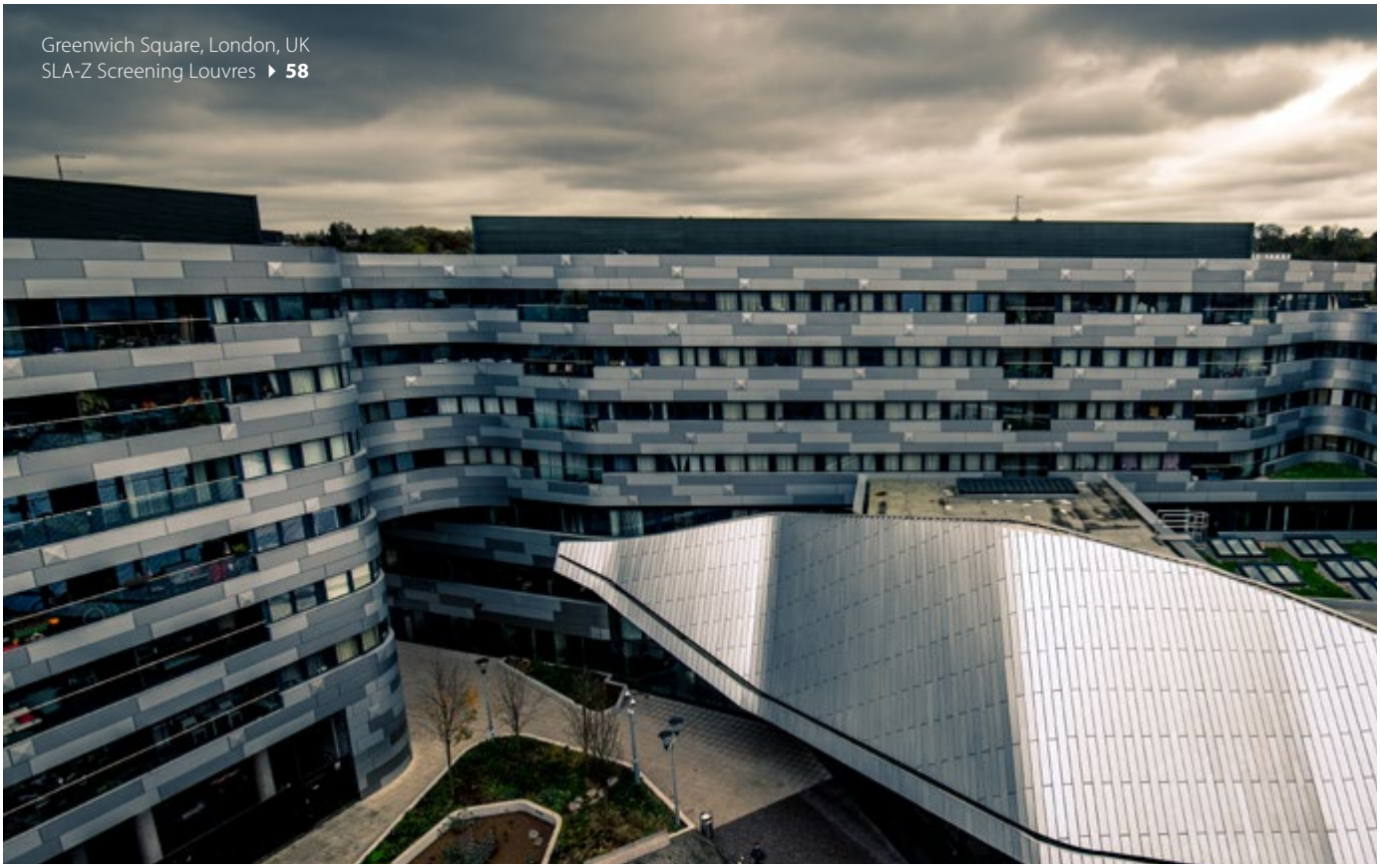
University of Northampton Campus, UK
RSV-5700 Rain Defence Louvres ▸ 30



Noris Data Centre, Germany
RSV-5700 Rain Defence Louvres ▸ **30**



University of Manchester, UK
RSV-5700 Rain Defence Louvres ▸ **30**



Greenwich Square, London, UK
SLA-Z Screening Louvres ▸ **58**

Specification Guidance

The principal reason for using louvres is to allow the movement of air. Each project should be considered independently, ensuring that the specified solution delivers all the required performance criteria.

A plant room housing expensive HVAC equipment will typically require **rain defence** louvres to offer both good airflow and protection from rain water ingress.

For projects where the primary concern is maximum airflow, and some rain penetration is acceptable, **ventilation** louvres can be considered.

Where visual screening is the main requirement and rain ingress is not an issue, e.g. a car park or rooftop plant room, **screening** models offer an easy to install and economical solution.

In addition, sound attenuation and noise reduction may be required in any of those situations. **Acoustic** louvres should then be considered.

Detailed information on our standard louvre options:

Rain Defence	▸ **22-41**
Ventilation	▸ **42-55**
Screening	▸ **56-57**
Acoustic	▸ **60-69**

Heschel School, New York, US
RSV-5700 Rain Defence Louvres ▸ **30**

PERFORMANCE VS. DESIGN VISION

Louvre specification is a balance between form and function, with louvred façade appearance playing an important part in the selection process. With a wide range of options available, louvres can become a stand out feature, or harmoniously blend with the building's design.

KEY SPECIFICATION FACTORS

- Building site's position
- Prevailing weather conditions (especially wind direction)
- Location of the louvres on the building and their exposure to wind driven rain
- Required airflow performance and acceptable pressure drop
- Level of permissible rain water penetration
- Acoustic requirements
- Exterior building design and aesthetics

We look at these considerations in more detail on the following pages.

181 Fremont, San Francisco, US
RS-5605 Rain Defence Louvres ▸ 34

Specification Guidance

PERFORMANCE CONSIDERATIONS

AIRFLOW PERFORMANCE

With the exception of projects where louvres are specified purely to provide vision screening, their effectiveness in letting the air in and out of a building will always be a critical performance consideration.

FREE AREA

Traditionally, louvres were specified and sized based on the Free Area alone. The industry commonly uses a nominal 1m^2 louvre size when quoting Free Area. In reality, louvres are never precisely this size.

What's more, when Free Area calculation includes the louvre's frame, the value will be affected by the overall louvre size *(fig 1)*.

Finally, Free Area itself does not take into account how the air flows through the louvre.

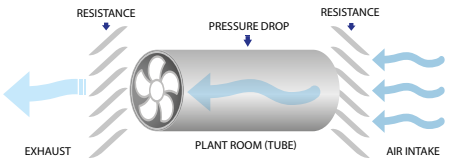
fig. 1

RSH-5700
1 m x 1 m
45.33% Free Area

RSH-5700
2 m x 2 m
48.5% Free Area

PRESSURE DROP

All louvres restrict the passage of air, creating a pressure differential between the air pressure at the front and back of the louvre, known as Pressure Drop.



The pressure drop of a louvre will increase with increasing air intake velocities. Too high a pressure drop, and not enough air will be allowed through, causing any HVAC or generator equipment located behind to work harder and overheat.

Therefore, Aerodynamic Free Area[1], expressing true ventilation performance of a louvre, should be used instead of Free Area.

For third party verified Pressure Drop data of our louvre systems see individual product pages. In addition, our easy to use, free website tool enables you to calculate Pressure Drop for different louvre products.

[1] *Aerodynamic Free Area is the product of Core Area (A) and louvre's Loss Coefficient ($C_{e/d}$) = A x $C_{e/d}$*

RAIN DEFENCE PERFORMANCE

Many projects require protection from wind-driven rain ingress. Prevailing weather conditions in a building's location and position of louvres on the building should be taken into account in assessing the risk of water entering the building and potential damage it could cause.

One way of mitigating that risk is to allow for a ducted plenum chamber and suitable drainage to keep sensitive equipment safe (*fig. 2*). In those situations, standard ventilation louvres would often be selected for their excellent airflow characteristics.

A more space saving approach is to specify weather louvres, which are designed to deliver both efficient airflow and rain defence (*fig. 3*).

The products should be independently tested to EN 13030 to substantiate their performance claims. For further details ▸ 20

fig. 2

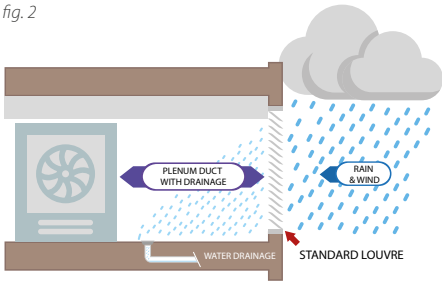
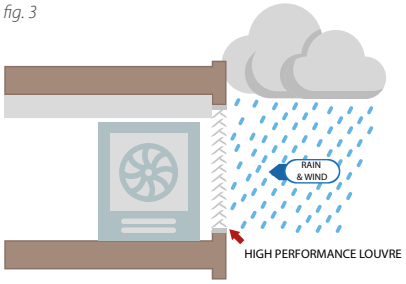


fig. 3



ACOUSTIC PERFORMANCE

Where noise emission to the outside environment is a concern, acoustic louvres should be considered.

Acoustic louvres may be required to reduce factory or plant room noise, particularly in areas close to pedestrian walkways or other buildings.

They can be installed as standalone screens, or integrated into the façade. Where required, they can be fitted behind rain defence or ventilation models.

Their depth (typically between 150mm and 600mm, depending on acoustic performance) and weight should be considered early to ensure sufficient support structure is provided.

SECURITY REQUIREMENTS

Some projects, such as government or military buildings, data centres or power plants, may require particularly robust solutions to meet increased security demands.

BURGLAR RESISTANCE

Often fitted in building openings, louvres can be seen as a weaker point of the façade, alongside doors, windows or shutters.

European standards EN 1627 to EN 1630 prescribe test methods for determining burglary resistance of those products under static loading, dynamic loading and in manual forced entry attempts.

Tested products are certified with one of six RC classes.

BLAST RESISTANCE

For buildings vulnerable to explosive threats, a range of our louvres can be configured to resist blast.

These models are designed to withstand up to 86.87 kPa blast pressure, at an impulse of 536.41 kPa-msec. They will remain in their frame and anchored adequately, preventing them from becoming a projectile.

A selection of our louvre systems is RC2 rated or available in blast resistant configuration. See individual product pages for details.

ACCESSORIES

All louvres can be supplied with additional accessories and fittings.

GUARDS & MESHES

Bird / vermin guards or insect meshes can be fitted to the back of the louvres if required.

It is important to remember that inclusion of guards will likely have an impact on the airflow performance of the louvre and relevant test data should be examined.

BLANKING PANELS

In non-active parts of the façade louvres are typically blocked off with single skin blanking plates, or insulated blanking panels.

DAMPERS

Motorised or manually operated dampers can also be used behind louvres, typically where natural ventilation is utilised.

DOORS

Finally, where access to the building through the louvred area is required, louvred doors featuring the same blade type and pitch as surrounding wall units can be supplied for a uniform look.

For full range of accessories available with our louvre systems ▸ **60-69**

Specification Guidance

DESIGN CONSIDERATIONS

INTEGRATION INTO THE BUILDING FABRIC

Louvres can form a part of any façade design and are typically fitted into prepared openings or fixed to secondary supporting steel structure.

Some modular louvre options are available with glazing frames, allowing them to be easily integrated into curtain walling.

Louvre depth, weight (including any associated accessories) and maximum self-supporting unit size should be considered at design stage.

DESIGN CHOICES

With a wide range of options available, ventilation isn't a restriction, it's an opportunity.

HIDDEN OR VISIBLE MULLIONS

Louvres with hidden mullions offer a continuous line appearance. They are often used where there are multiple or irregular openings on an elevation.

Visible mullion options have a framed form, often arranged to line up with other façade features, such as glazing mullions or cladding panels.

HORIZONTAL OR VERTICAL BLADES

Horizontal blade louvres are the most common, with both continuous line and visible mullion options available.

Models featuring vertical blade arrangements have proven to be particularly effective at rain defence, whilst offering excellent airflow characteristics. Their visual appearance may be preferred on some projects.

SHAPES AND CURVES

Most louvres can be cut to create arches or other interesting shapes. Some models can be curved on plan, or faceted to create the illusion of a curve. Potential impact on performance should always be considered.

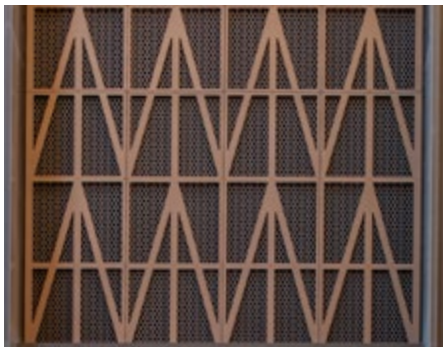
DESIGN CHOICES (CONT.)

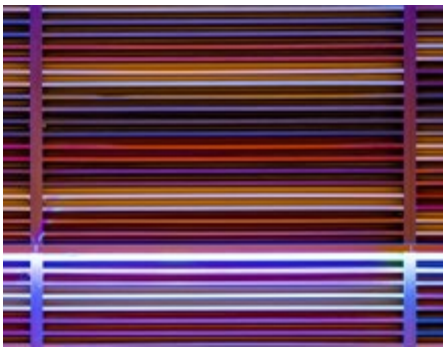
BLENDING IN OR STANDING OUT

Louvres can be installed behind decorative grilles or screens to mask their appearance, however the impact of such features on airflow should always be considered.

Some models allow flexibility in creating a truly bespoke façade utilising accent blades, colours and shade.

Bold use of colour, or even addition of LED lighting is possible with some louvre models, turning them into a unique design feature.





SLOPING APPLICATIONS

Some rain defence louvres can be integrated into sloping façades, while maintaining their performance.

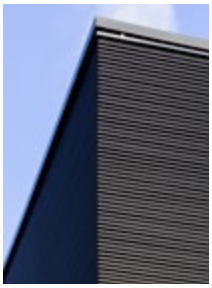
CORNER TREATMENT

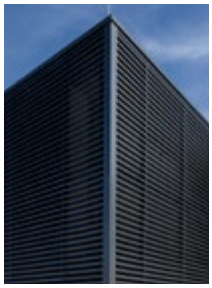
Where louvre installation extends across two or more elevations, many models offer a choice of mitred corners or corner flashings.

COLOURS AND FINISHES

Louvres can be anodised or powder coated in colours to suit the design requirements.

To learn more about specifying louvres book a presentation at your practice, or visit **www.c-sgroup.co.uk/2895** to watch the on-demand version.





Specification Guidance

WEATHER LOUVRE TESTING

The standard performance test for weather louvres in Europe is EN 13030:2001 'Ventilation for buildings — Terminals — Performance testing of louvres subjected to simulated rain'.

Two aspects of performance are measured during the test:

- **Water Penetration**
  The ability of the louvre to prevent wind driven rain ingress (expressed as a rating at each face velocity)
- **Airflow**
  The airflow characteristic of the louvre (expressed as Discharge and Entry Loss Coefficient Class)

The test results enable specifiers to directly compare the performance of different rain defence louvre models.

A single louvre design classification should be accompanied by the limiting core velocity, e.g. Class A 2 up to 2 m/s.

PENETRATION CLASSIFICATION

Class	Effectiveness	Max. allowed rain penetration (l/h/m²)
A	1 to 0.99	0.75
B	0.989 to 0.95	3.75
C	0.949 to 0.80	15.00
D	Below 0.80	Greater than 15.00

Water penetration effectiveness is measured for each of eight face velocities between 0 m/s and 3.5 m/s. Louvre penetration class should always be expressed in the context of the face velocity it was measured at.

DISCHARGE LOSS COEFFICIENT CLASSIFICATION

Class	Discharge Loss Coefficient	Rating
1	0.4 to 1	Excellent
2	0.3 to 0.399	Very Good
3	0.2 to 0.299	Good
4	0.199 & below	Fair

Discharge/entry loss coefficient is expressed as a single class, based on an average result over at least five air velocities. Class 1 indicates the least and Class 4 the most resistance to airflow. The higher the value, the lower the energy usage.

NOTE: Whilst simplifying the selection process, the test results reflect the performance of a one-off test panel, 1 m² in size. The EN 13030:2001 test does not measure or give consideration to the way the water is collected and drained from larger louvre installations.

All our **Rain Defence** and **Ventilation Louvres** sold in Europe have been tested by BSRIA to EN 13030:2001.

In addition, select models are AMCA- 500-L certified . If AMCA testing is a requirement on your project, contact us for further information.

Creating custom louvres is nothing new. Neither is testing them. But doing both? That's our specialty.

IN-HOUSE TESTING

We can verify how our products will perform in real-life conditions by testing them in our own wind-driven test chamber.

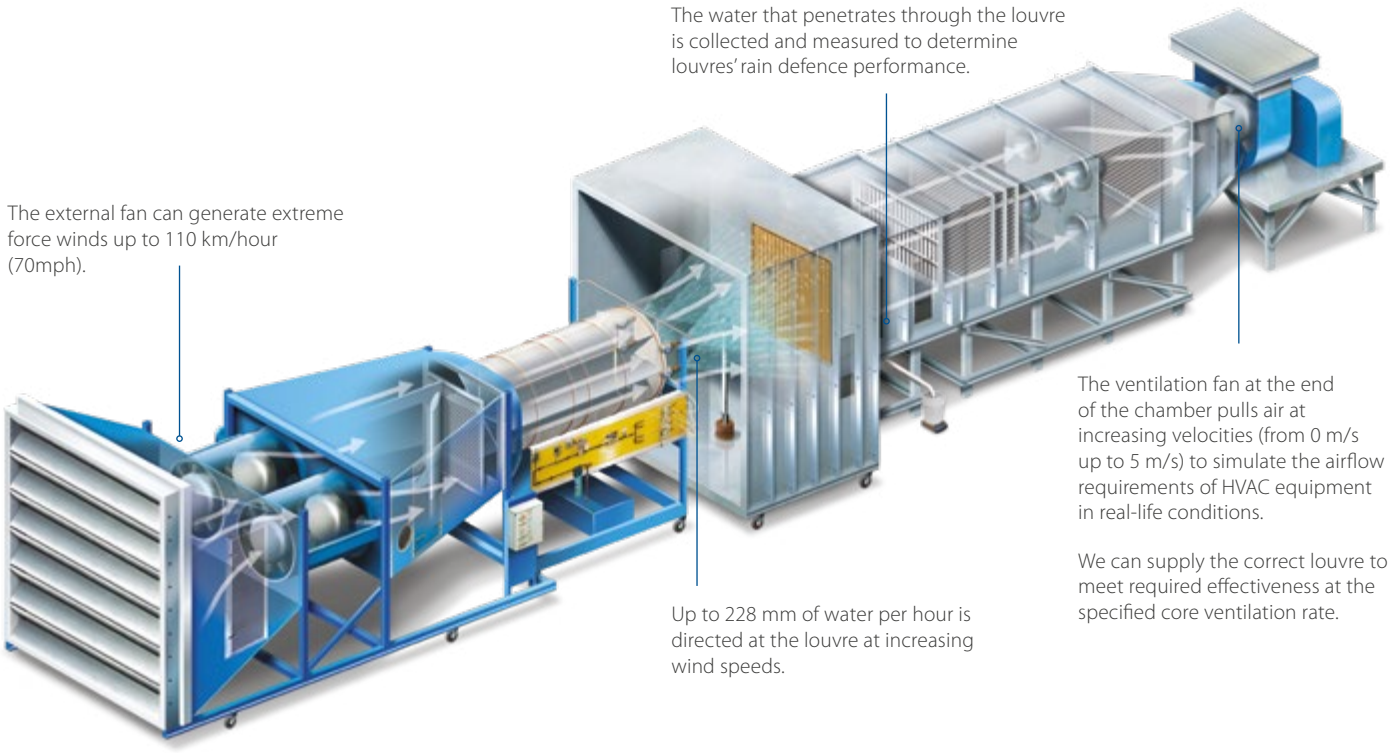
This allows us to work with you to create custom louvre systems and ensure they will meet your specific performance requirements.

SETTING THE STANDARD

Our louvre test chamber has the ability to replicate the AMCA test standards for airflow, still air water penetration and wind-driven rain.

- Our wind generator can simulate extreme weather conditions, with wind-driven rain speeds reaching up to 110 km/hour (70 mph) and producing up to 228 mm of water per hour.
- An intake fan runs constantly to simulate the building's air-handling equipment. If water does get through to the collection chamber, we can make design adjustments to increase louvre's water removal.

By evaluating a louvre's resistance to water penetration at incremental intake speeds, we can ensure that it will deliver the air intake and water removal performance you require.



Specification Guidance

LOUVRE TERMINOLOGY

AERODYNAMIC COEFFICIENT

A unitless number, determined by airflow testing, representing the aerodynamic effectiveness of the louvre.

Unlike **% Free Area**, it accounts for the design and configuration of the louvre and provides an accurate measure of its airflow performance.

Values are recorded for both air intake (Entry Loss Coefficient C_e) and exhaust (Discharge Loss Coefficient C_d) and typically range from 0.1 to 0.5 (the higher the number, the more efficient airflow).

AERODYNAMIC FREE AREA

The product of **Core Area** and the **Aerodynamic Coefficient**. Equal to the total area of a theoretically perfect opening.

This value is used for calculating **Pressure Drop**.

BLADE PITCH

The individual spacing of blades within the louvre system, typically expressed in mm.

BSRIA

Based in the UK, Building Services Research and Information Association is one of Europe's leading independent test laboratories for the testing and certification of building services products.

CORE AREA

The louvre core area is product of the minimum height and minimum width of the front opening in the louvre assembly with the louvre blades removed. Usually expressed in m^2.

Used with the **Aerodynamic Coefficient** to calculate the **Aerodynamic Free Area** and thus the **Pressure Drop**.

CORE VELOCITY

The velocity at which air passes through the **Core Area**, typically expressed in m/s.

Core Velocity = Volumetric Flow Rate / Core Area

EN 13030

EN 13030:2001 'Ventilation for buildings - Terminals - Performance testing of louvres subjected to simulated rain' is the European standard to which louvre performance is tested.

The EN 13030 test procedure is based on a nominally 1 m x 1 m sized louvre panel.

Whilst allowing direct performance comparisons between different louvre designs, the test does not measure or give consideration to the way the water is collected and drained from larger louvre installations.

AMCA 500-L is a similar test used in the US and some other parts of the world.

FREE AREA

The minimum area through which air can pass. It is determined by multiplying the sum of the minimum distance between intermediate louvre blades, top blade and head, and bottom blade and cill, by the minimum distance between jambs.

Although commonly used by Building Services Engineers as a 'rule of thumb' for louvre sizing, Free Area does not provide an accurate assessment of actual louvre performance, as it takes no account of the effects of louvre design on airflow efficiency.

Louvre's **Pressure Drop** and **Aerodynamic Free Area** should be considered instead.

PRESSURE DROP

The pressure differential between two sides of the louvre, typically expressed in Pascals (Pa).

As air is mechanically drawn or pushed through a louvre, pressure is created due to the turbulence. The increasing pressure measurement of this turbulence or 'Pressure Drop' at higher air velocities is an important part of overall mechanical system design and louvre selection and sizing.

SPECIFIC DENSITY OF AIR

Used in louvre airflow performance calculations. When taken at 20°C and 101.325 kPa the air has a density of 1.225 kg/m^3.

VOLUMETRIC FLOW RATE

The specific volumetric flow rate of air (entry or discharge) to pass through the louvre system, expressed in m^3/s.

WEATHER / RAIN DEFENCE LOUVRE

A louvre intended to allow the passage of intake or exhaust air while minimising the ingress of rain.

KEY TO SYMBOLS

Throughout the brochure we've used symbols to help you identify key performance characteristics of our products at a glance.

AIRFLOW PERFORMANCE

One of 4 classes, class 1 indicating products with excellent and class 4 with fair airflow performance. ▸ **20**

Separate classification has been included for air intake and air discharge conditions.

RAIN DEFENCE PERFORMANCE

One of 4 classes, with class A indicating products most effective and class D those least effective at preventing wind driven rain ingress. ▸ **20**

Penetration class should always be accompanied by a limiting face velocity (e.g. A up to 3.5m/s).

ACOUSTIC PERFORMANCE

Weighted Sound Reduction Index (Rw) indicates louvre's acoustic performance. The higher the dB value the better.

SIGHTPROOF DESIGN

This icon indicates louvres which alongside their main performance characteristics offer excellent screening due to their sightproof design.

99 Hudson, Jersey City, US
RSV-5700 Rain Defence Louvres ▸ **30**

Rain Defence Louvres

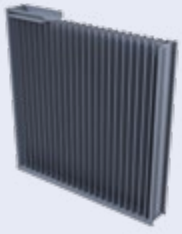
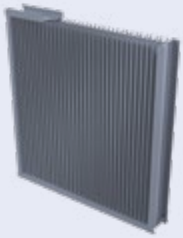
Engineered to provide excellent protection from rain penetration and good airflow, our Rain Defence models are available in a choice of blade configurations, can be hidden behind attractive perforated screens or can feature different blade depths to integrate beautifully with your building.

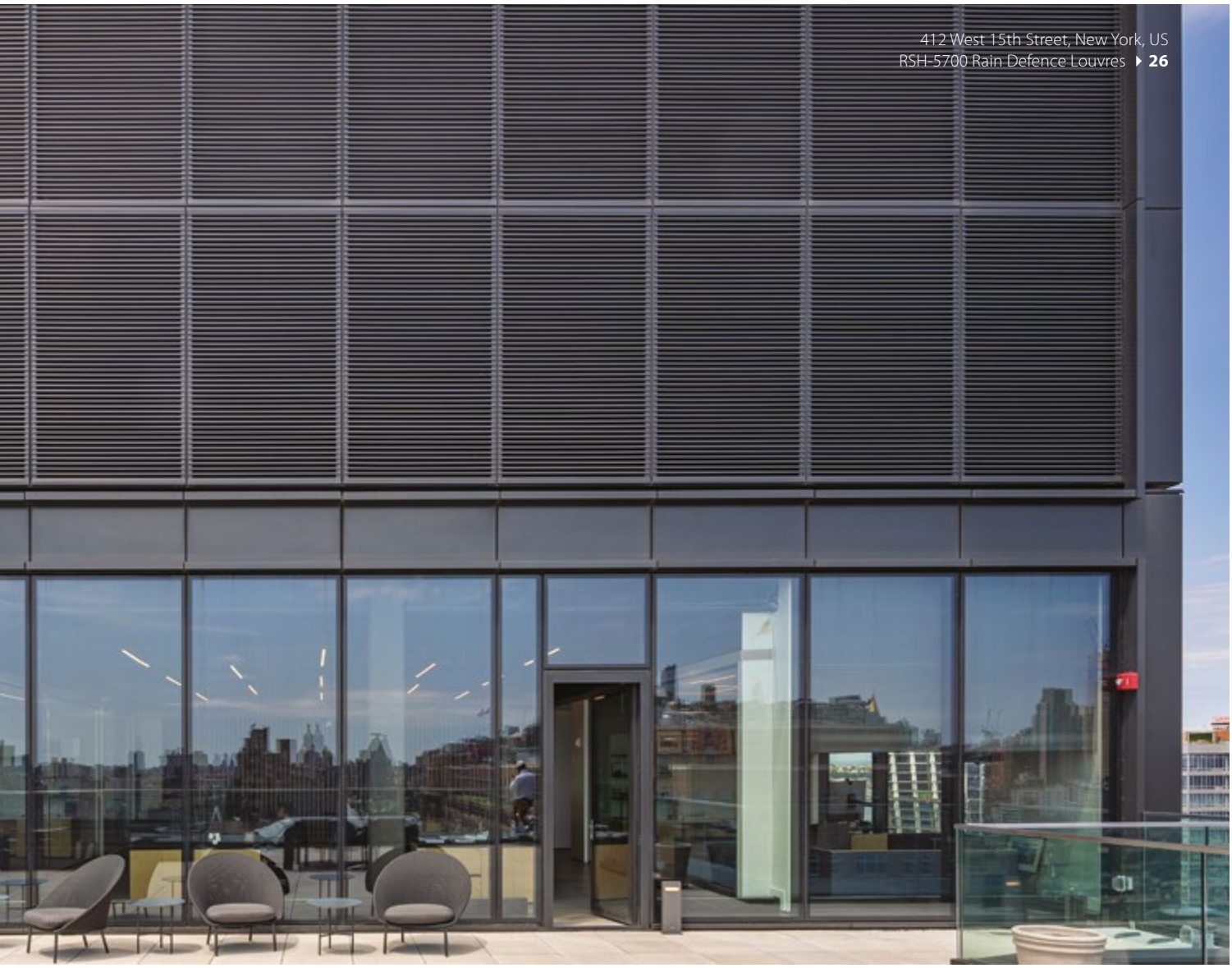
They are ideal when:

- Reliable resistance to wind-driven rain is a priority
- Using a large plenum behind louvres is impractical due to cost or space considerations
- Sensitive equipment will be housed close to the louvre system
- Integrating louvres into the building design is a priority. They can be housed behind architectural features or continuous line louvres

www.c-sgroup.co.uk/2409

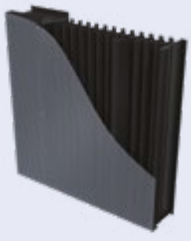
SELECTION CHART

	RSH-5700	RSH-5700AL	RSV-5700	RS-5900	RS-5605
					
Penetration Class	A up to 3.0 m/s	A up to 3.0 m/s	A up to 3.5 m/s	A up to 3.5 m/s	A up to 3.5 m/s
Airflow Class	3 (C_e & C_d)	3 (C_e & C_d)	3 (C_e & C_d)	2 (C_e & C_d)	1 (C_e & C_d)
Mullion Type	Visible	Recessed	Visible	Visible	Visible
Blade Pitch	51 mm	51 mm	51 mm	38 mm	25 mm
Depth	129 mm	129 mm	129 mm	130 mm	131 mm
Blast Resistant Option	Yes	No	Yes	Yes	Yes
Burglar Resistant Option	Yes (RC2)	No	Yes (RC2)	No	No
Pages	26-27	28-29	30-31	32-33	34-35



412 West 15th Street, New York, US
RSH-5700 Rain Defence Louvres ▸ **26**

PL-5700



A up to 3.0 m/s
3 (C_e & C_d)
Hidden
51 mm
191 mm
No
No
36-37

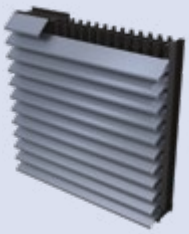
B-7505

A up to 2.5 m/s
2 (C_e), 3 (C_d)
Visible / Hidden
51 mm
183 mm
No
No
38-39

Architectural Line Louvres

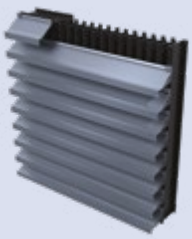
Double bank combinations featuring a front ventilation louvre for a continuous blade appearance on the façade, and one of our high performing rain defence models positioned behind it.

A-3105 / Rain Defence



A up to 3.5 m/s
3 (C_e & C_d)
Hidden
75 mm (front)
varies
No
No
40

A-4085 / Rain Defence



A up to 3.5 m/s
3 (C_e & C_d)
Hidden
100 mm (front)
varies
No
No
41

RAIN DEFENCE LOUVRES

RSH-5700

High performing louvres with horizontal blades and visible mullions, offering great protection against wind-driven rain penetration and good airflow.

A 3.0 m/s

3 ENTRY

3 DISCHARGE

1. Complex extruded blade design for maximum rain defence performance
2. Multiple channels in blades and vertical components to collect and drain water from the louvred area
3. Interlocking visible mullions to line up with other façade elements
4. Sightproof design
- Delivered to site as pre-fabricated modules for efficient installation

www.c-sgroup.co.uk/2411

KEY FEATURES

Blade Orientation
Horizontal

Mullion Type
Visible

Louvre Depth
129 mm

Blade Pitch
51 mm

Weight [1]
25 kg/m²

PERFORMANCE OVERVIEW

STANDARD

Rain Penetration Class
A up to 3.0 m/s

Airflow Class
3 (entry & discharge)

Airflow Coefficient C_e (entry)
0.289

Airflow Coefficient C_d (discharge)
0.284

K factor (entry / discharge)
11.973 / 12.398

ADDITIONAL SECURITY OPTIONS

Burglar Resistance Class

RC2 (tested to EN 1627-1630)

Blast Resistant Option

Can withstand up to 86.87 kPa blast pressure at an impulse of 536.41 kPa-msec

MATERIALS & FINISHES

Materials
Aluminium alloy 6063-T6

Finish Options

- Mill finish
- Clear or colour anodised
- Polyester powder coated
  Matt (standard) or gloss

For details ▸ **70**

OPTIONAL EXTRAS

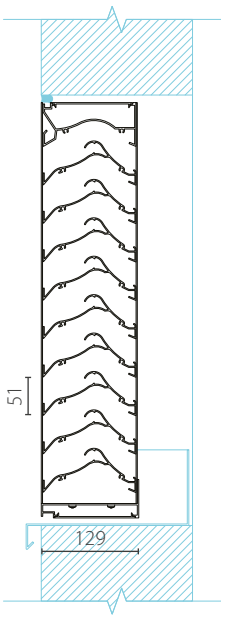
- Head / cill / jamb cover plates
- Blanking panels (single skin or insulated)
- Bird / vermin guards, insect mesh
- Louvred doors
- Dampers

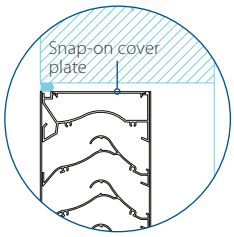
For details ▸ **72-75**

[1] *Based on a 2 m x 2 m module size*

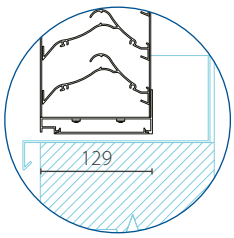
STANDARD DETAILS

SECTION ON ELEVATION



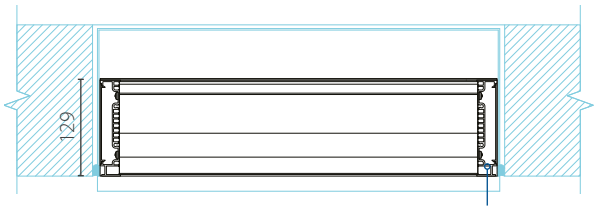


Head frame with optional snap-on cover plate

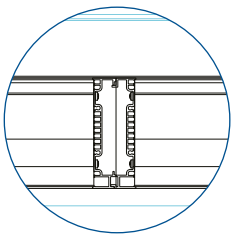


Cill frame with optional snap-on cover plate and typical cill pan (size to project requirements)

PLAN VIEW



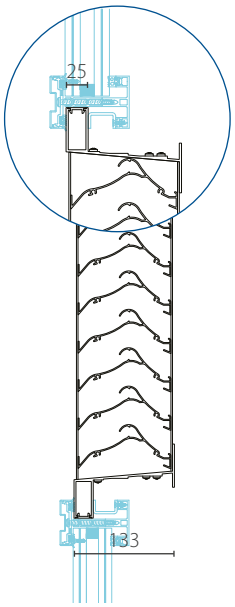
Jamb frame with drainage channels, shown with optional snap-on cover plate



Interlocking mullion with drainage channels

OPTIONAL DETAILS

GLAZED FAÇADES



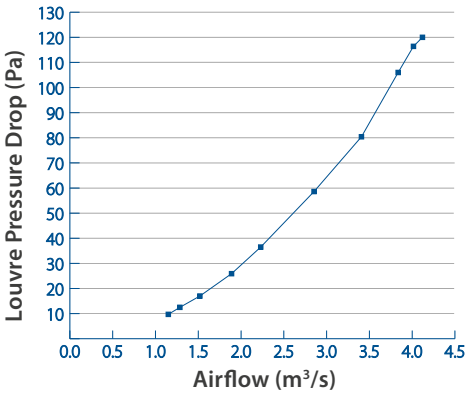
25 mm captured glazing frame with optional snap-on cover plate; spacers can be used to suit wider glazing sockets

WIND DRIVEN RAIN PERFORMANCE (EN 13030:2001)

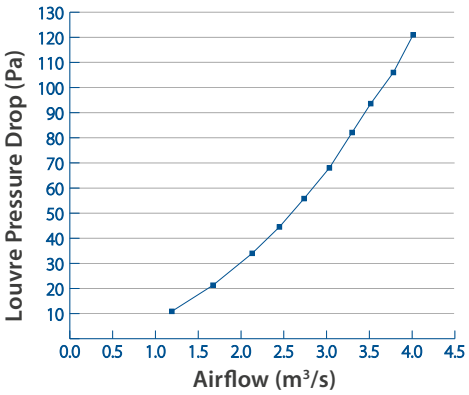
Core Ventilation Rate (m/s)	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5
Penetration Class (13 m/s & 75 mm/hr)	A	A	A	A	A	A	A	B
Effectiveness (%)	100	100	100	99.8	99.9	99.8	99.9	98.7
Airflow	Coefficient of Entry C_e		0.289	Class 3	Coefficient of Discharge C_d		0.284	Class 3

RESISTANCE TO AIRFLOW

RESISTANCE TO AIRFLOW - ENTRY (C_e) [2]



RESISTANCE TO AIRFLOW - DISCHARGE (C_d) [2]



[2] *Based on a 1 m x 1 m size. Smaller louvres may have a higher Pressure Drop.*

RAIN DEFENCE LOUVRES

RSH-5700AL

High performing louvres offering great protection against wind-driven rain penetration, good airflow and a continuous line appearance on a façade.

A 3.0 m/s

3 ENTRY

3 DISCHARGE

1. Complex extruded blade design for maximum rain defence performance
2. Multiple channels in blades and vertical components to collect and drain water from the louvred area
3. Louvre blades are cut out around recessed black mullions for a continuous line appearance
4. Sightproof design

- Delivered to site as pre-fabricated modules for efficient installation

www.c-sgroup.co.uk/19019

KEY FEATURES

Blade Orientation
Horizontal

Mullion Type
Recessed

Louvre Depth
129 mm

Blade Pitch
51 mm

Weight [1]
27 kg/m²

PERFORMANCE OVERVIEW

Rain Penetration Class
A up to 3.0 m/s

Airflow Class
3 (entry & discharge)

Airflow Coefficient C_e (entry)
0.289

Airflow Coefficient C_d (discharge)
0.284

K factor (entry / discharge)
11.973 / 12.398

MATERIALS & FINISHES

Materials
Aluminium alloy 6063-T6

Finish Options
Mullions: powder coated black as standard.
Louvre blades and perimeter frames:

- Mill finish
- Clear or colour anodised
- Polyester powder coated
  Matt (standard) or gloss

For details ▸ **70**

OPTIONAL EXTRAS

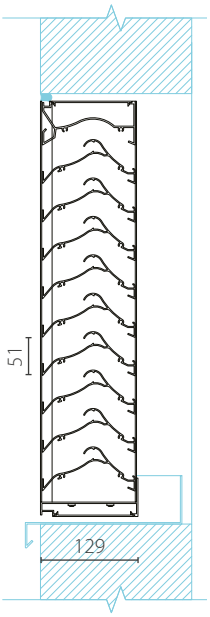
- Head / cill / jamb cover plates
- Blanking panels (single skin or insulated)
- Bird / vermin guards, insect mesh
- Louvred doors
- Dampers

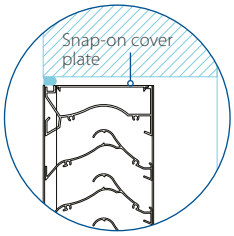
For details ▸ **72-75**

[1] *Based on a 2 m x 2 m module size*

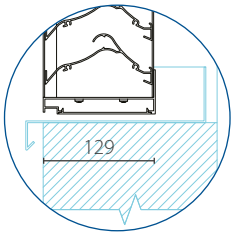
STANDARD DETAILS

SECTION ON ELEVATION



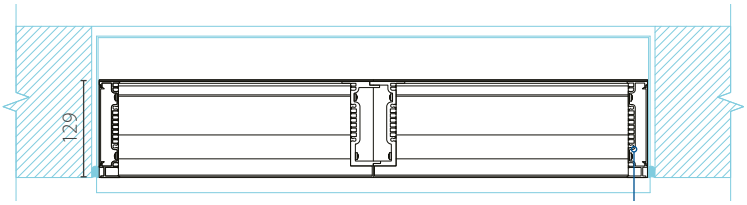


Head frame with optional snap-on cover plate

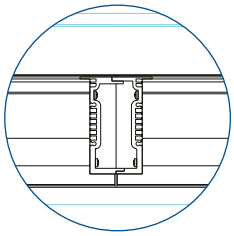


Cill frame with optional snap-on cover plate and typical cill pan (size to project requirements)

PLAN VIEW



Jamb frame with drainage channels, shown with optional snap-on cover plate



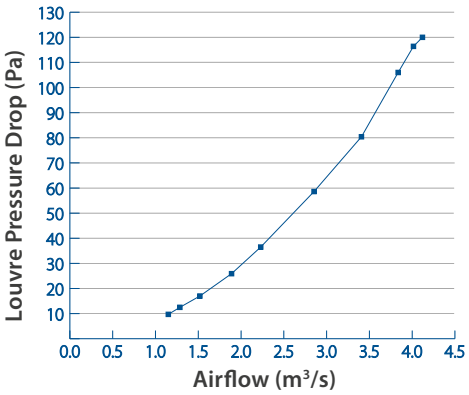
Recessed interlocking mullion with drainage channels

WIND DRIVEN RAIN PERFORMANCE (EN 13030:2001)

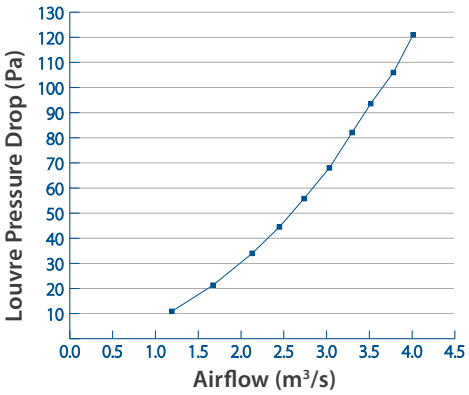
Core Ventilation Rate (m/s)	**0.0**	**0.5**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**
Penetration Class (13 m/s & 75 mm/hr)	A	A	A	A	A	A	A	B
Effectiveness (%)	100	100	100	99.8	99.9	99.8	99.9	98.7
Airflow	Coefficient of Entry C_e		0.289	Class 3	Coefficient of Discharge C_d		0.284	Class 3

RESISTANCE TO AIRFLOW

RESISTANCE TO AIRFLOW - ENTRY (C_e) [2]



RESISTANCE TO AIRFLOW - DISCHARGE (C_d) [2]

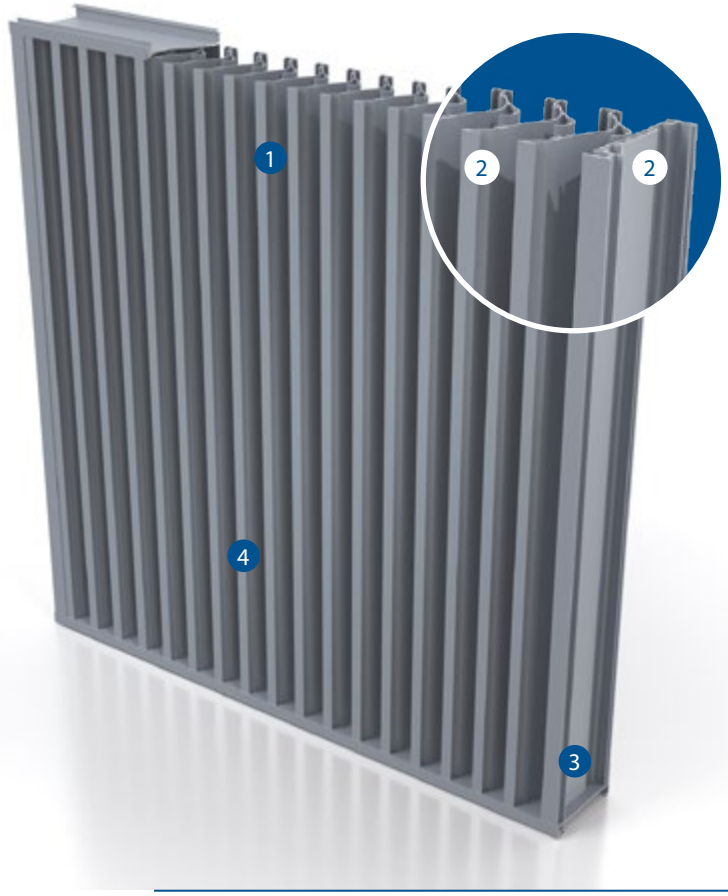


[2] *Based on a 1 m x 1 m size. Smaller louvres may have a higher Pressure Drop.*

RAIN DEFENCE LOUVRES

RSV-5700

High performing louvres with vertical blades and visible mullions, offering excellent protection against wind-driven rain penetration and good airflow.



A 3.5 m/s

3 ENTRY

3 DISCHARGE

1. Complex extruded blade design in vertical arrangement for maximum rain defence performance
2. Multiple channels in blades and other vertical components to collect and drain water from the louvred area
3. Visible mullions to line up with other façade elements; invisible joint detail can be achieved if preferred
4. Sightproof design
- Delivered to site as pre-fabricated modules for efficient installation

www.c-sgroup.co.uk/2416

KEY FEATURES

Blade Orientation
Vertical

Mullion Type
Visible

Louvre Depth
129 mm

Blade Pitch
51 mm

Weight [1]
25 kg/m²

PERFORMANCE OVERVIEW

STANDARD

Rain Penetration Class
A up to 3.5 m/s

Airflow Class
3 (entry & discharge)

Airflow Coefficient C_e (entry)
0.287

Airflow Coefficient C_d (discharge)
0.251

K factor (entry / discharge)
12.140 / 15.873

ADDITIONAL SECURITY OPTIONS

Burglar Resistance Class
RC2 (tested to EN 1627-1630)

Blast Resistant Option
Can withstand up to 86.87 kPa blast pressure at an impulse of 536.41kPa-msec

MATERIALS & FINISHES

Materials
Aluminium alloy 6063-T6

Finish Options
- Mill finish
- Clear or colour anodised
- Polyester powder coated
  Matt (standard) or gloss

For details ▸ **70**

OPTIONAL EXTRAS

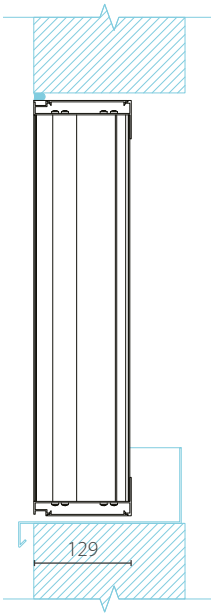
- Head / cill / jamb cover plates
- Blanking panels (single skin or insulated)
- Bird / vermin guards, insect mesh
- Louvred doors
- Dampers

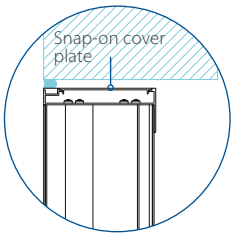
For details ▸ **72-75**

[1] *Based on a 2 m x 2 m module size*

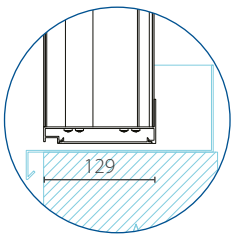
STANDARD DETAILS

SECTION ON ELEVATION



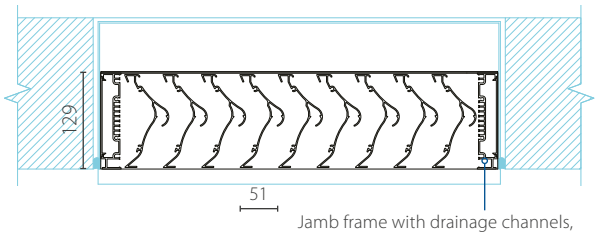


Head frame with optional snap-on cover plate

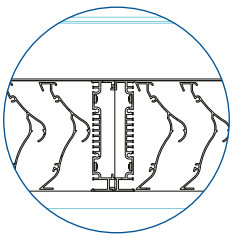


Cill frame with optional snap-on cover plate and typical cill pan (size to project requirements)

PLAN VIEW



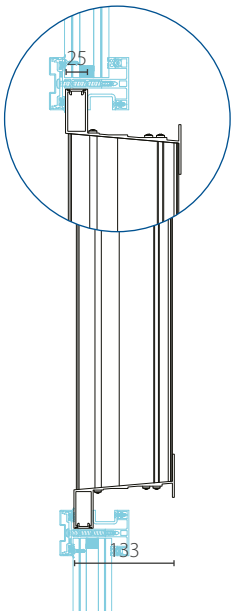
Jamb frame with drainage channels, shown with optional snap-on cover plate



Interlocking mullion with drainage channels

OPTIONAL DETAILS

GLAZED FAÇADES



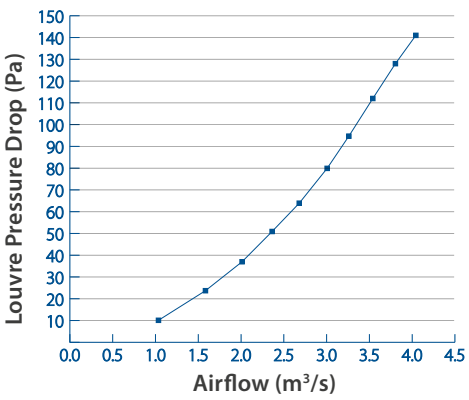
25 mm captured glazing frame with optional snap-on cover plate; spacers can be used to suit wider glazing sockets

WIND DRIVEN RAIN PERFORMANCE (EN 13030:2001)

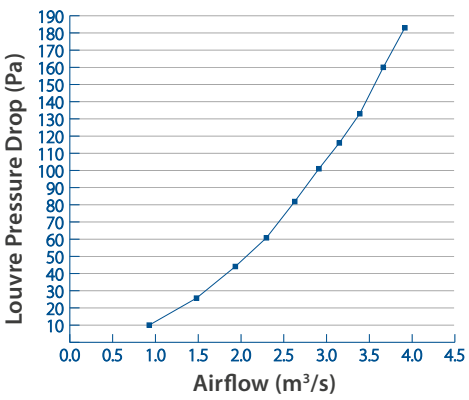
Core Ventilation Rate (m/s)	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5
Penetration Class (13 m/s & 75 mm/hr)	A	A	A	A	A	A	A	A
Effectiveness (%)	100	100	100	100	100	100	100	100
Airflow	Coefficient of Entry C_e		0.287	Class 3	Coefficient of Discharge C_d		0.251	Class 3

RESISTANCE TO AIRFLOW

RESISTANCE TO AIRFLOW - ENTRY (C_e) [2]



RESISTANCE TO AIRFLOW - DISCHARGE (C_d) [2]



[2] *Based on a 1 m x 1 m size. Smaller louvres may have a higher Pressure Drop.*

RAIN DEFENCE LOUVRES

RS-5900

High performing louvres with vertical blades and visible mullions, offering excellent protection against wind-driven rain penetration and very good airflow.

A 3.5 m/s | 2 ENTRY | 2 DISCHARGE

1. Complex extruded blade design in vertical arrangement for maximum rain defence performance
2. Channels in louvre blades to collect and drain water from the louvred area
3. Visible mullions to line up with other façade elements; invisible joint detail can be achieved if preferred
4. Sightproof design
- Delivered to site as pre-fabricated modules for efficient installation

www.c-sgroup.co.uk/19020

KEY FEATURES

Blade Orientation
Vertical

Mullion Type
Visible

Louvre Depth
130 mm

Blade Pitch
38 mm

Weight [1]
26 kg/m²

PERFORMANCE OVERVIEW

STANDARD

Rain Penetration Class
A up to 3.5 m/s

Airflow Class
2 (entry & discharge)

Airflow Coefficient C_e (entry)
0.342

Airflow Coefficient C_d (discharge)
0.352

K factor (entry / discharge)
8.550 / 8.071

ADDITIONAL SECURITY OPTIONS

Blast Resistant Option

Can withstand up to 86.87 kPa blast pressure at an impulse of 536.41 kPa-msec

MATERIALS & FINISHES

Materials
Aluminium alloy 6063-T6

Finish Options

- Mill finish
- Clear or colour anodised
- Polyester powder coated
  Matt (standard) or gloss

For details ▸ **70**

OPTIONAL EXTRAS

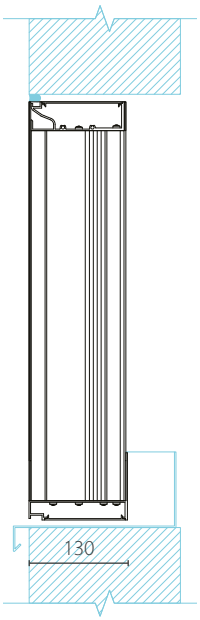
- Head / cill / jamb cover plates
- Blanking panels (single skin or insulated)
- Bird / vermin guards, insect mesh
- Louvred doors
- Dampers

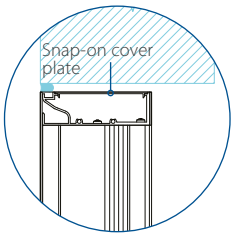
For details ▸ **72-75**

[1] *Based on a 2 m x 2 m module size*

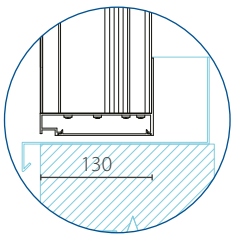
STANDARD DETAILS

SECTION ON ELEVATION



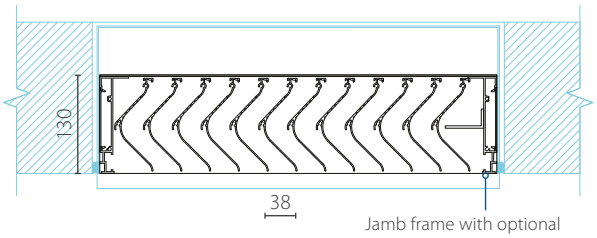


Head frame with optional snap-on cover plate

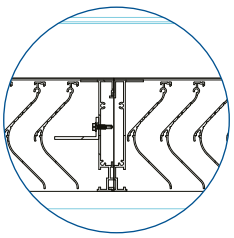


Cill frame with optional snap-on cover plate and typical cill pan (size to project requirements)

PLAN VIEW



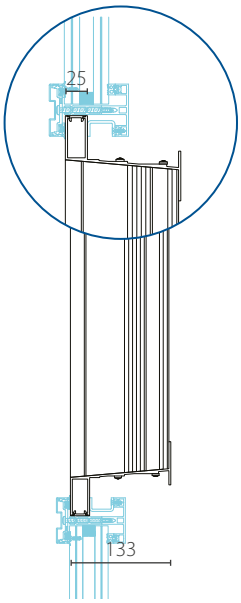
Jamb frame with optional snap-on cover plate



Interlocking mullion

OPTIONAL DETAILS

GLAZED FAÇADES



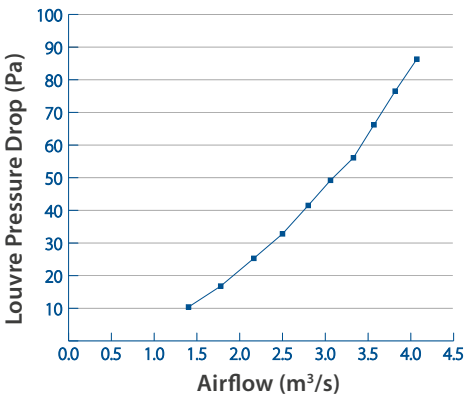
25 mm captured glazing frame with optional snap-on cover plate; spacers can be used to suit wider glazing sockets

WIND DRIVEN RAIN PERFORMANCE (EN 13030:2001))

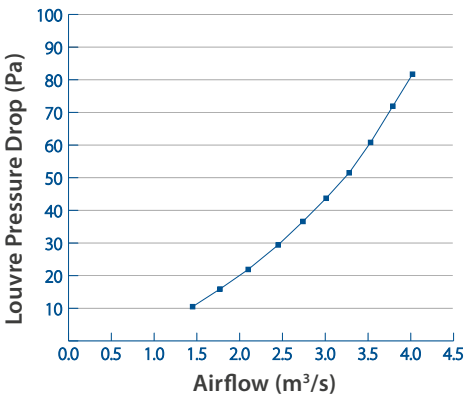
Core Ventilation Rate (m/s)	**0.0**	**0.5**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**
Penetration Class (13 m/s & 75 mm/hr)	A	A	A	A	A	A	A	A
Effectiveness (%)	100	99.91	99.92	99.94	99.96	100	99.99	100
Airflow	Coefficient of Entry C_e		0.342	Class 2	Coefficient of Discharge C_d		0.352	Class 2

RESISTANCE TO AIRFLOW

RESISTANCE TO AIRFLOW - ENTRY (C_e) [2]



RESISTANCE TO AIRFLOW - DISCHARGE (C_d) [2]



[2] *Based on a 1 m x 1 m size. Smaller louvres may have a higher Pressure Drop.*

RAIN DEFENCE LOUVRES

RS-5605

High performing louvres with vertical blades and visible mullions, offering maximum protection against wind-driven rain penetration and excellent airflow.

A 3.5 m/s

1 ENTRY

1 DISCHARGE

1. Complex extruded blade design in vertical arrangement for maximum rain defence performance
2. Channels in louvre blades to collect and drain water from the louvred area
3. Visible mullions to line up with other façade elements; invisible joint detail can be achieved if preferred
4. Sightproof design
5. Delivered to site as pre-fabricated modules for efficient installation

www.c-sgroup.co.uk/4050

KEY FEATURES

Blade Orientation
Vertical

Mullion Type
Visible

Louvre Depth
131 mm

Blade Pitch
25 mm

Weight [1]
33 kg/m^2

PERFORMANCE OVERVIEW

STANDARD

Rain Penetration Class
A up to 3.5 m/s

Airflow Class
1 (entry & discharge)

Airflow Coefficient C_e (entry)
0.466

Airflow Coefficient C_d (discharge)
0.421

K factor (entry / discharge)
4.605 / 5.642

ADDITIONAL SECURITY OPTIONS

Blast Resistant Option

Can withstand up to 86.87 kPa blast pressure at an impulse of 536.41 kPa-msec

MATERIALS & FINISHES

Materials
Aluminium alloy 6063-T6

Finish Options

- Mill finish
- Clear or colour anodised
- Polyester powder coated
  Matt (standard) or gloss

For details ▸ **70**

OPTIONAL EXTRAS

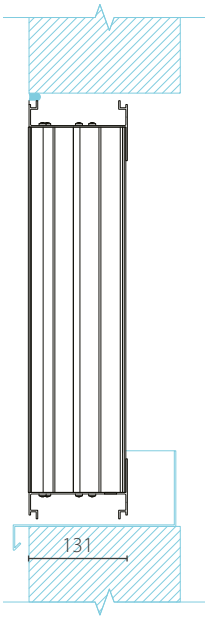
- Blanking panels (single skin or insulated)
- Bird / vermin guards, insect mesh
- Louvred doors
- Dampers

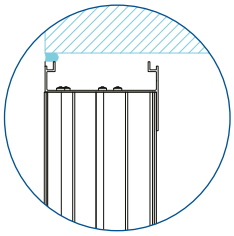
For details ▸ **72-75**

[1] *Based on a 2 m x 2 m module size*

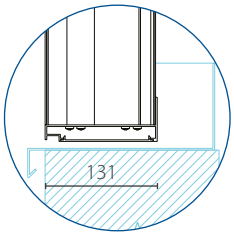
STANDARD DETAILS

SECTION ON ELEVATION



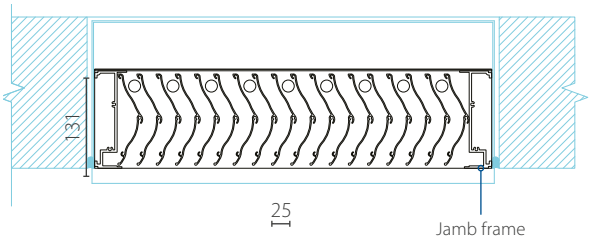


Head frame

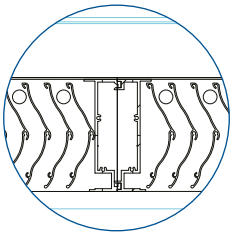


Cill frame and typical cill pan (size to project requirements)

PLAN VIEW



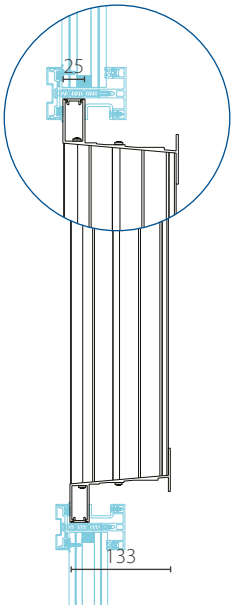
Jamb frame



Interlocking mullion

OPTIONAL DETAILS

GLAZING FAÇADES



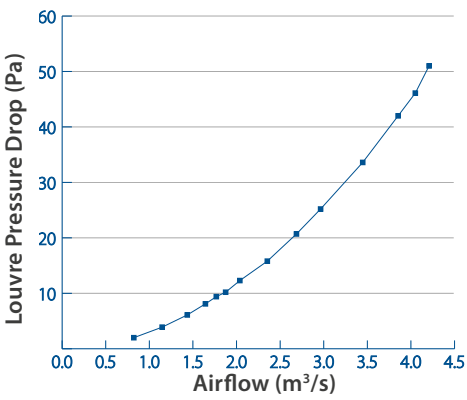
25 mm captured glazing frame with optional snap-on cover plate; spacers can be used to suit wider glazing sockets

WIND DRIVEN RAIN PERFORMANCE (EN 13030:2001)

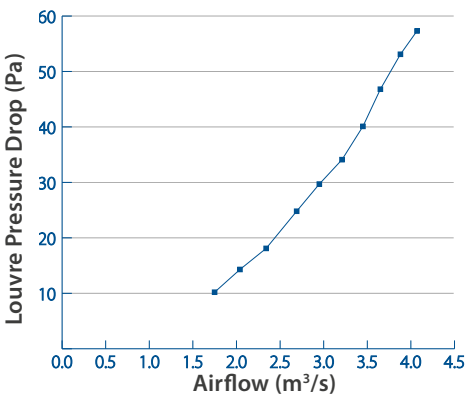
Core Ventilation Rate (m/s)	**0.0**	**0.5**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**
Penetration Class (13 m/s & 75 mm/hr)	A	A	A	A	A	A	A	A
Effectiveness (%)	99.8	99.9	99.9	99.9	100	100	100	100
Airflow	Coefficient of Entry C_e		0.466	Class 1	Coefficient of Discharge C_d		0.421	Class 1

RESISTANCE TO AIRFLOW

RESISTANCE TO AIRFLOW - ENTRY (C_e) [2]



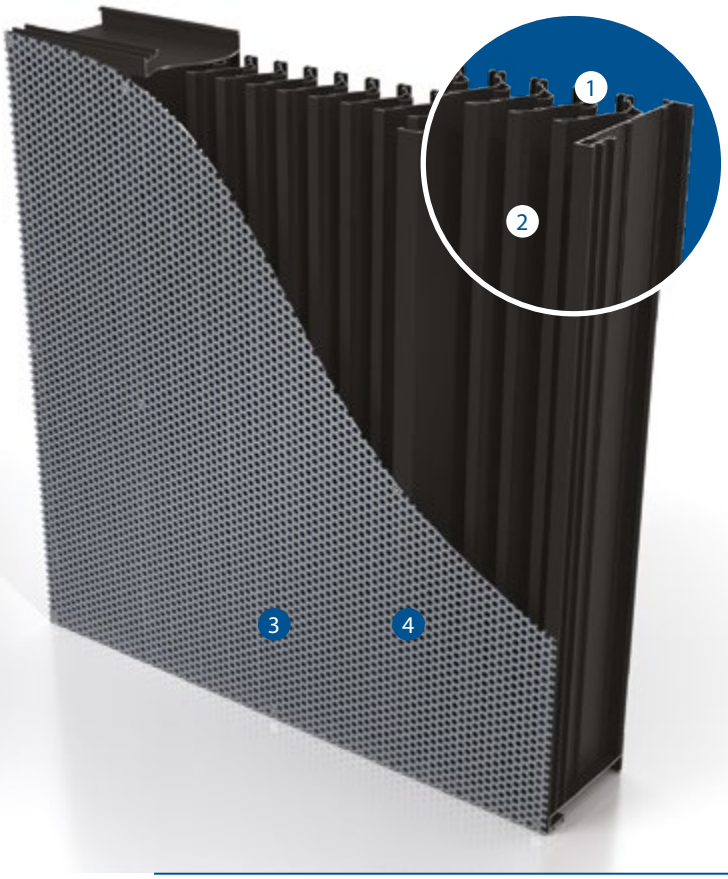
RESISTANCE TO AIRFLOW - DISCHARGE (C_d) [2]



[2] *Based on a 1 m x 1 m size. Smaller louvres may have a higher Pressure Drop.*

RAIN DEFENCE LOUVRES
PL-5700

Concealed behind an attractive perforated skin, Perform™ PL-5700 louvres offer excellent weather performance, combined with good airflow and sight screening.

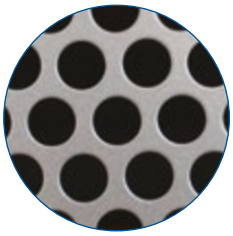


A 3.0 m/s

3 ENTRY

3 DISCHARGE

1. Complex extruded blade design in vertical arrangement for maximum rain defence performance
2. Multiple channels in blades to collect and drain water from the louvred area
3. Perforated aluminium face conceals the louvre while offering modern appearance



The screen can be supplied anodised or powder coated. Louvre modules are powder coated black as standard for maximum concealment.

4. Sightproof design

www.c-sgroup.co.uk/19021

KEY FEATURES

Blade Orientation
Vertical

Mullion Type
Hidden behind perforated screen

Overall Depth
191 mm

Blade Pitch
51 mm

Weight [1]
32 kg/m²

PERFORMANCE OVERVIEW

Rain Penetration Class
A up to 3.0 m/s

Airflow Class
3 (entry & discharge)

Airflow Coefficient C_e (entry)
0.252

Airflow Coefficient C_e (discharge)
0.222

K factor (entry / discharge)
15.747 / 20.291

OPTIONAL EXTRAS

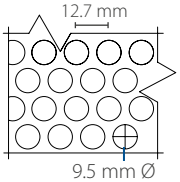
- Head / cill / jamb cover plates
- Blanking panels (single skin or insulated)
- Bird / vermin guards, insect mesh
- Louvred doors
- Dampers

For details ▸ **72-75**

MATERIALS & FINISHES

Materials

Perforated sheet: 3mm thick aluminium alloy 1050 H14/H24 as standard.



Perforation pattern: 9.5 mm Ø holes, with 12.7 mm staggered centres and pitch.

Louvres: aluminium alloy 6063-T6.

Finish Options

Louvres: powder coated matt black as standard

Perforated sheet:

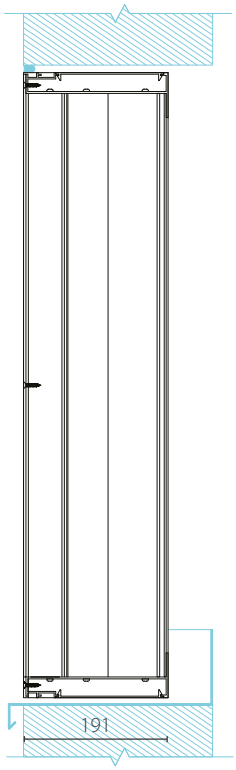
- Mill finish aluminium
- Clear or colour anodised
- Polyester powder coated
  Matt (standard) or gloss

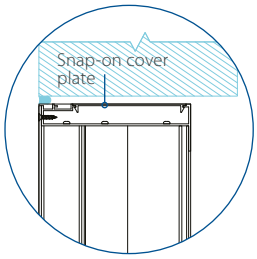
For details ▸ **70**

[1] *Based on a 2 m x 2 m module size*

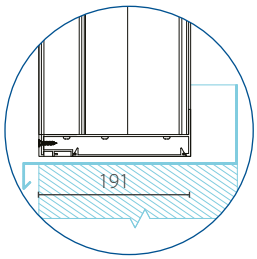
STANDARD DETAILS

SECTION ON ELEVATION



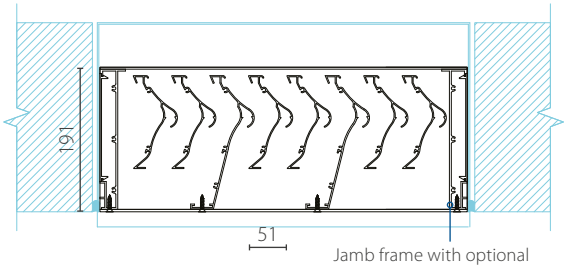


Head frame with optional snap-on cover plate

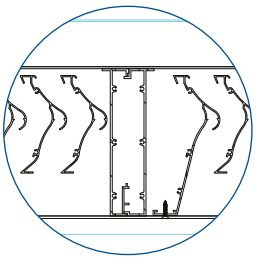


Cill frame with optional snap-on cover plate and typical cill pan (size to project requirements)

PLAN VIEW



Jamb frame with optional snap-on cover plate



Interlocking mullion

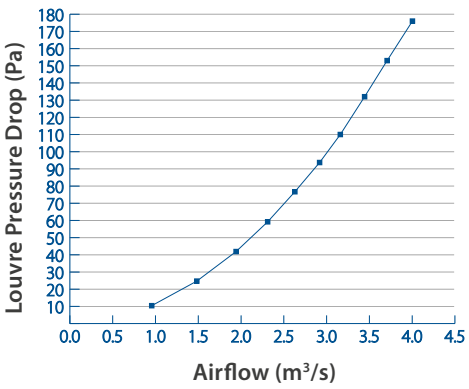
Perforated sheet sections are attached to louvre modules and butt jointed for a uniform look across the façade

WIND DRIVEN RAIN PERFORMANCE (EN 13030:2001)

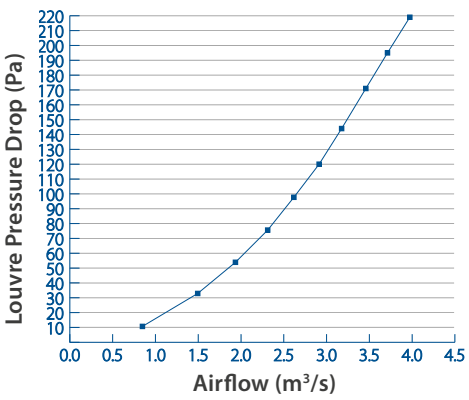
Core Ventilation Rate (m/s)	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5
Penetration Class (13 m/s & 75 mm/hr)	A	A	A	A	A	A	A	B
Effectiveness (%)	100	100	100	100	100	100	99.8	97.1
Airflow	Coefficient of Entry C_e		0.252	Class 3	Coefficient of Discharge C_d		0.222	Class 3

RESISTANCE TO AIRFLOW

RESISTANCE TO AIRFLOW - ENTRY (C_e) [2]



RESISTANCE TO AIRFLOW - DISCHARGE (C_d) [2]



Weather considerations:

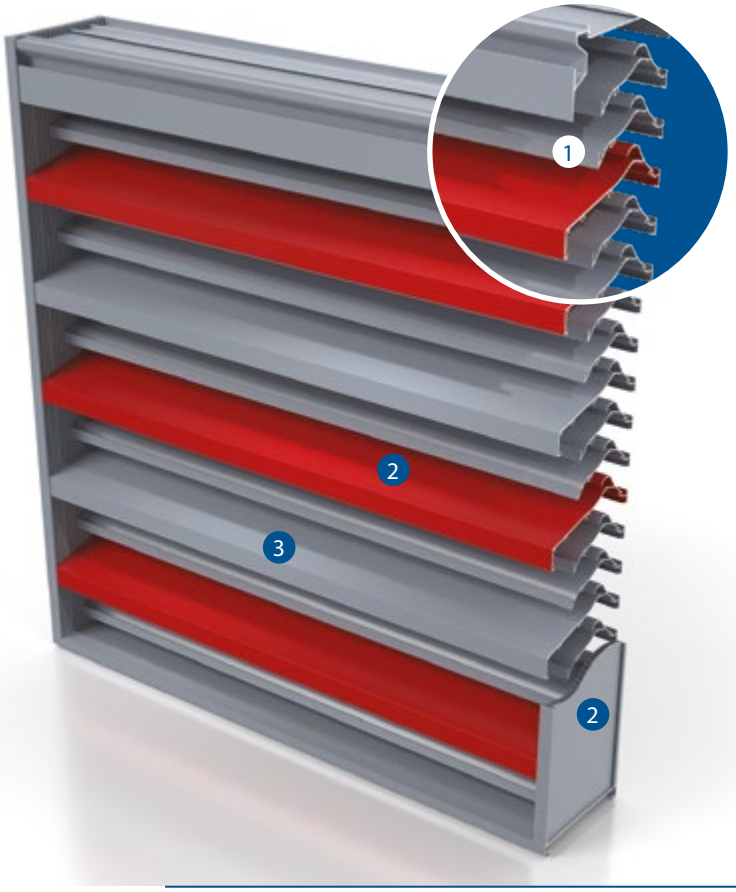
Perform Louvres are not suitable for use in areas where perforations may become blocked or clogged with snow, ice, debris, or other occlusions. To maximise their performance, prevent property damage and provide a safe environment, they should be inspected and maintained regularly.

[2] *Based on a 1 m x 1 m size. Smaller louvres may have a higher Pressure Drop.*

RAIN DEFENCE LOUVRES

B-7505

Bold Line™ rain defence louvres utilising two blade depths to allow creation of unique façade designs, customised with patterns, colours and shadow lines.



A 2.5 m/s

2 ENTRY

3 DISCHARGE

1. Complex extruded blade design featuring multiple channels for maximum rain defence performance
2. Choice of mullion styles, accent blade arrangements and colours for a truly bespoke façade look. For project inspiration ▸ **9-13**

Visible butt joint *Recessed mullion* *Hidden mullion*

3. Sightproof design
4. Delivered to site as pre-fabricated modules for efficient installation

www.c-sgroup.co.uk/19022

KEY FEATURES

Blade Orientation
Horizontal

Mullion Types
Visible, recessed or hidden

Louvre Depth
183 mm

Blade Pitch
51 mm

Weight [1]
27 kg/m²

PERFORMANCE OVERVIEW

Rain Penetration Class
A up to 2.5 m/s

Airflow Class
2 (entry), 3 (discharge)

Airflow Coefficient C_e (entry)
0.324

Airflow Coefficient C_e (discharge)
0.273

K factor (entry / discharge)
9.526 / 13.418

MATERIALS & FINISHES

Materials
Aluminium alloy 6063-T6

Finish Options

- Mill finish
- Clear or colour anodised
- Polyester powder coated
  Matt (standard) or gloss

For details ▸ **70**

OPTIONAL EXTRAS

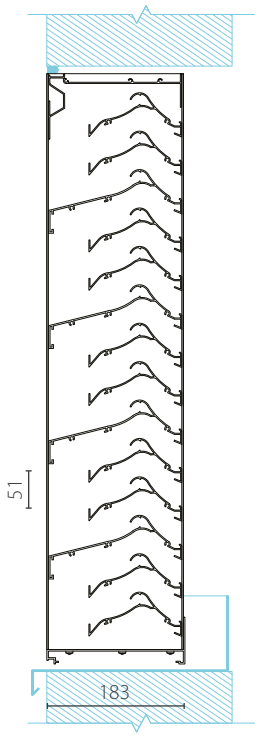
- Blanking panels (single skin or insulated)
- Bird / vermin guards, insect mesh
- Louvred doors
- Dampers

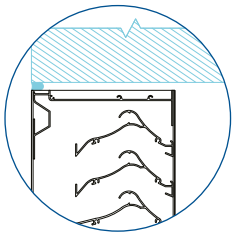
For details ▸ **72-75**

[1] *Based on a 2 m x 2 m module size*

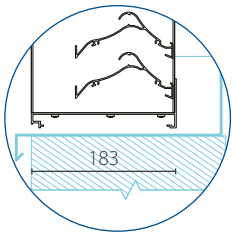
STANDARD DETAILS

SECTION ON ELEVATION [2]



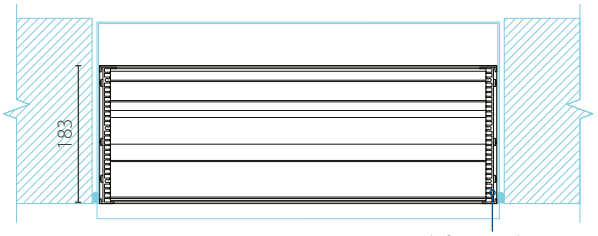


Head frame



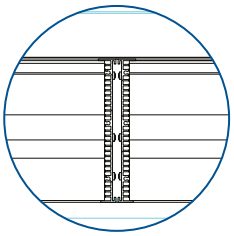
Cill frame and typical cill pan (size to project requirements)

PLAN VIEW

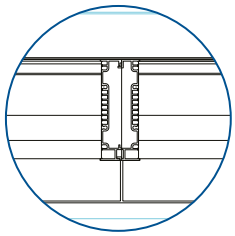


Jamb frame with drainage channels

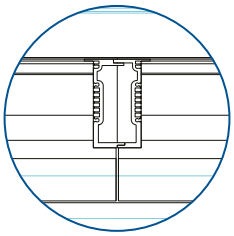
Mullion options:



Visible butt joint



Recessed interlocking mullion



Hidden interlocking mullion

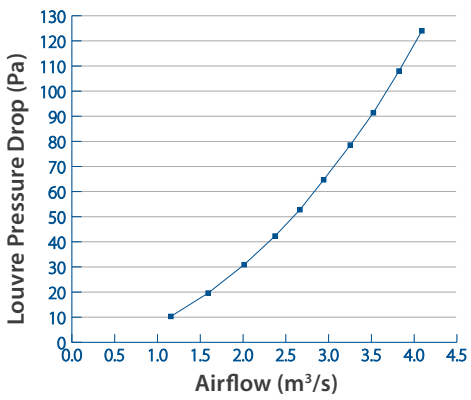
[2] A ratio of standard : accent blades and/or accent blade position on the façade is driven by project design. Elevation detail features 2 : 1 ratio as an example.

WIND DRIVEN RAIN PERFORMANCE (EN 13030:2001)

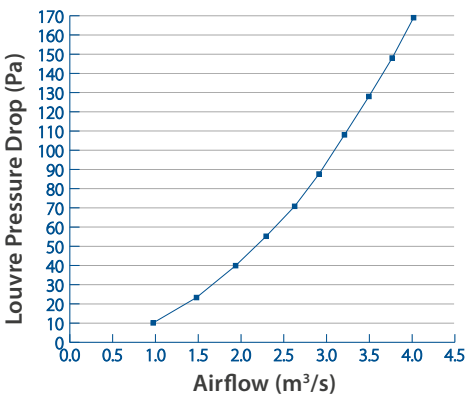
Core Ventilation Rate (m/s)	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5
Penetration Class (13 m/s & 75 mm/hr)	A	A	A	A	A	A	B	B
Effectiveness (%)	100	99.92	99.87	99.75	99.68	99.51	98.51	98.04
Airflow	Coefficient of Entry C_e		0.324	Class 2	Coefficient of Discharge C_d		0.273	Class 3

RESISTANCE TO AIRFLOW

RESISTANCE TO AIRFLOW - ENTRY (C_e) [3]



RESISTANCE TO AIRFLOW - DISCHARGE (C_d) [3]



[3] *Based on a 1 m x 1 m size. Smaller louvres may have a higher Pressure Drop.*

RAIN DEFENCE

Architectural Line Louvres

Where continuous blade appearance is desired and high level of rain defence needs to be maintained, double bank arrangements offer a solution.

1. A fronting ventilation louvre, in a choice of 75 mm or 100 mm blade pitch, offers a continuous blade appearance across a façade
2. One of our rain defence models with vertical blade arrangement is located at the rear to provide excellent protection from wind driven rain ingress
- Where only parts of the façade are functionally active, blanking panels are used behind ventilation louvres in non-active areas, keeping costs down
- All double bank configurations shown have been tested for airflow performance

www.c-sgroup.co.uk/21928

A-3105 / RSV-5700

A 3.5 m/s | 3 ENTRY | 3 DISCHARGE

Airflow Coefficient C_e (entry)
0.260

Airflow Coefficient C_d (discharge)
0.232

Blade Pitch (front)
75 mm

A-3105 / RS-5900

A 3.5 m/s | 3 ENTRY | 3 DISCHARGE

Airflow Coefficient C_e (entry)
0.294

Airflow Coefficient C_d (discharge)
0.299

Blade Pitch (front)
75 mm

A-4085 / RSV-5700

Airflow Coefficient C_e (entry)
0.259

Airflow Coefficient C_d (discharge)
0.224

Blade Pitch (front)
100 mm

A-4085 / RS-5900

Airflow Coefficient C_e (entry)
0.290

Airflow Coefficient C_d (discharge)
0.287

Blade Pitch (front)
100 mm

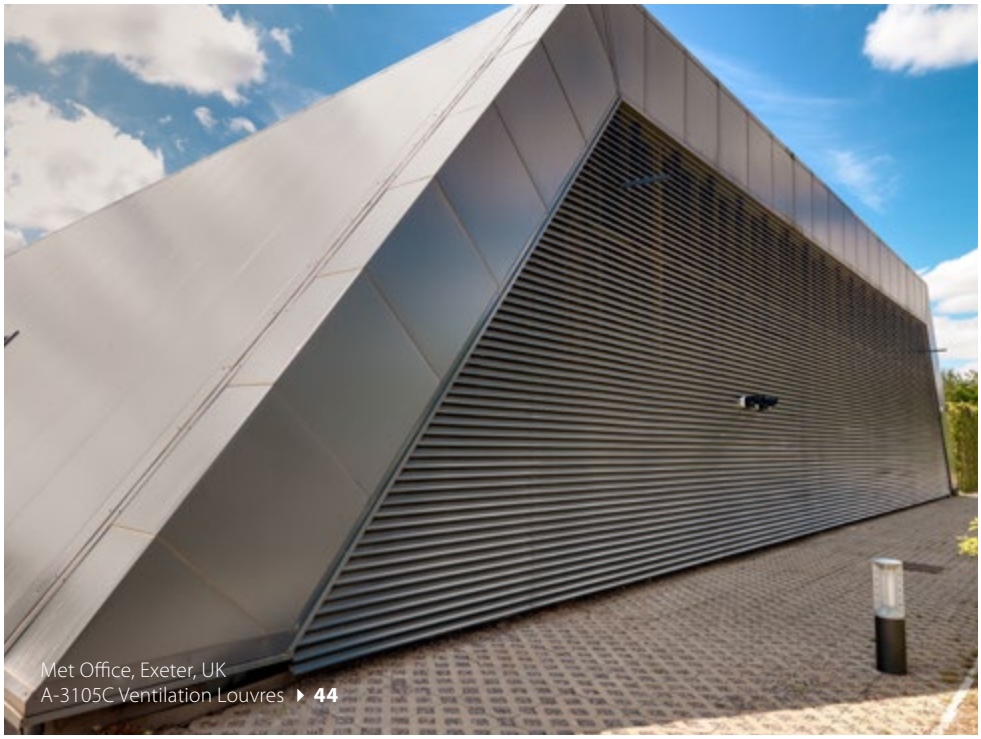
Ventilation Louvres

Where maximum airflow is the primary consideration, our ventilation range is a perfect solution. Our louvres offer high levels of airflow with low pressure drop, whilst still delivering some weather protection. Continuous line or modular mullion options can be specified to fit with desired façade design.

They are the right choice when:

- High free area / high airflow solution is required
- Economy is the primary consideration
- Occasional rain water penetration is not an issue
- Continuous line appearance on the façade is preferred

www.c-sgroup.co.uk/2397



Met Office, Exeter, UK
A-3105C Ventilation Louvres ▸ 44

SELECTION CHART

Penetration Class
Airflow Class
Mullion Type
Blade Pitch
Depth
Pages

Loews Hotel, Chicago, US
A-4085 Ventilation Louvres ▸ **50**

A-3105C

D up to 3.5 m/s
1 (C_e & C_d)
Hidden
75 mm
128 mm
44-45

A-3105

D up to 3.5 m/s
1 (C_e & C_d)
Visible / Hidden
75 mm
102 mm / 150 mm
46-47

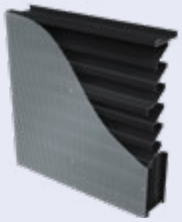
A-4085C

C up to 1.0 m/s
2 (C_e & C_d)
Hidden
100 mm
151 mm
48-49

A-4085

C up to 1.0 m/s
2 (C_e & C_d)
Visible / Hidden
100 mm
102 mm / 154 mm
50-51

PL-4080



C up to 3.0 m/s
3 (C_e & C_d)
Hidden
100 mm
191 mm
52-53

B-6485

C up to 1.5 m/s
2 (C_e & C_d)
Visible / Hidden
100 mm
159 mm / 207 mm
54-55

VENTILATION LOUVRES

A-3105C

Continuous line ventilation louvres offering excellent airflow and a degree of rain defence.

D 3.5 m/s

1 ENTRY

1 DISCHARGE

1. Simple blade design affords excellent airflow and low pressure drop
2. Hidden mullions for continuous blade appearance on the façade
3. Optional perimeter flashings and cill pan can be supplied
- Easy to install solution, delivered to site in component form

www.c-sgroup.co.uk/21927

KEY FEATURES

Blade Orientation
Horizontal

Mullion Type
Hidden

Louvre Depth
128 mm

Blade Pitch
75 mm

Weight [1]
11 kg/m^2

PERFORMANCE OVERVIEW

Rain Penetration Class
D up to 3.5 m/s

Airflow Class
1 (entry & discharge)

Airflow Coefficient C_e (entry)
0.400

Airflow Coefficient C_d (discharge)
0.434

K factor (entry / discharge)
6.250 / 5.309

MATERIALS & FINISHES

Materials
Aluminium alloy 6063-T6

Finish Options

- Mill finish
- Clear or colour anodised
- Polyester powder coated
  Matt (standard) or gloss

For details ▸ **70**

OPTIONAL EXTRAS

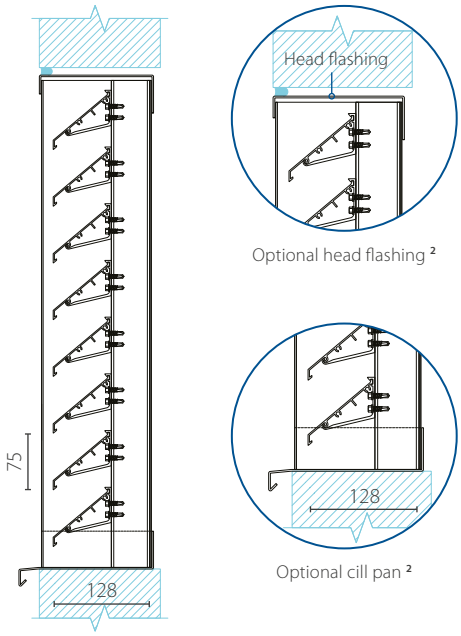
- Perimeter flashings and cill pan
- Blanking panels (single skin or insulated)
- Bird / vermin guards, insect mesh
- Louvred doors
- Dampers

For details ▸ **72-75**

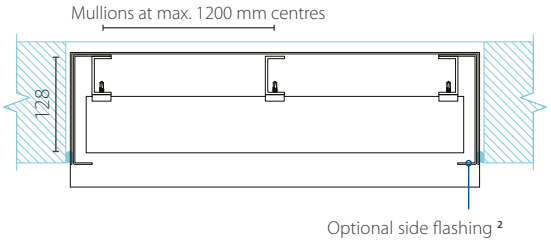
[1] *Based on a 2 m x 2 m module size*

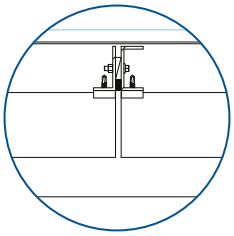
STANDARD DETAILS

SECTION ON ELEVATION



PLAN VIEW





Hidden mullion at joint between blade lengths

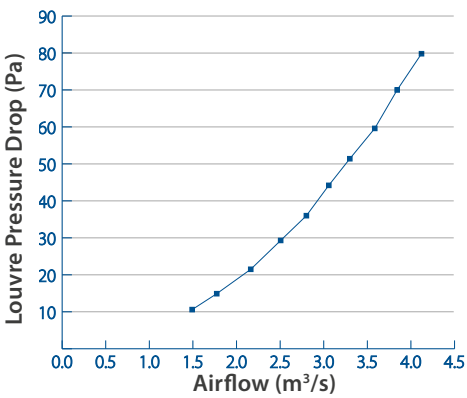
² *Size to project requirements*

WIND DRIVEN RAIN PERFORMANCE (EN 13030:2001)

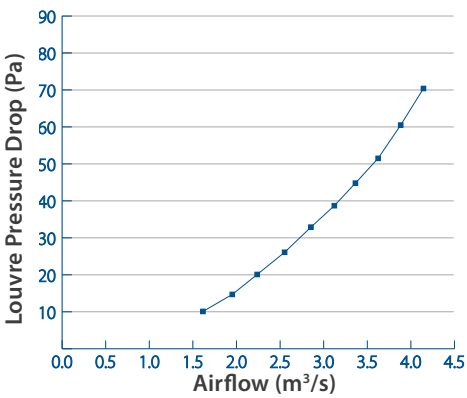
Core Ventilation Rate (m/s)	**0.0**	**0.5**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**
Penetration Class (13 m/s & 75 mm/hr)	D	D	D	D	D	D	D	D
Effectiveness (%)	63.9	53.5	45.7	39.7	34.0	28.3	23.4	18.3
Airflow	Coefficient of Entry C_e		0.400	Class 1	Coefficient of Discharge C_d		0.434	Class 1

RESISTANCE TO AIRFLOW

RESISTANCE TO AIRFLOW - ENTRY (C_e) ³



RESISTANCE TO AIRFLOW - DISCHARGE (C_d) ³

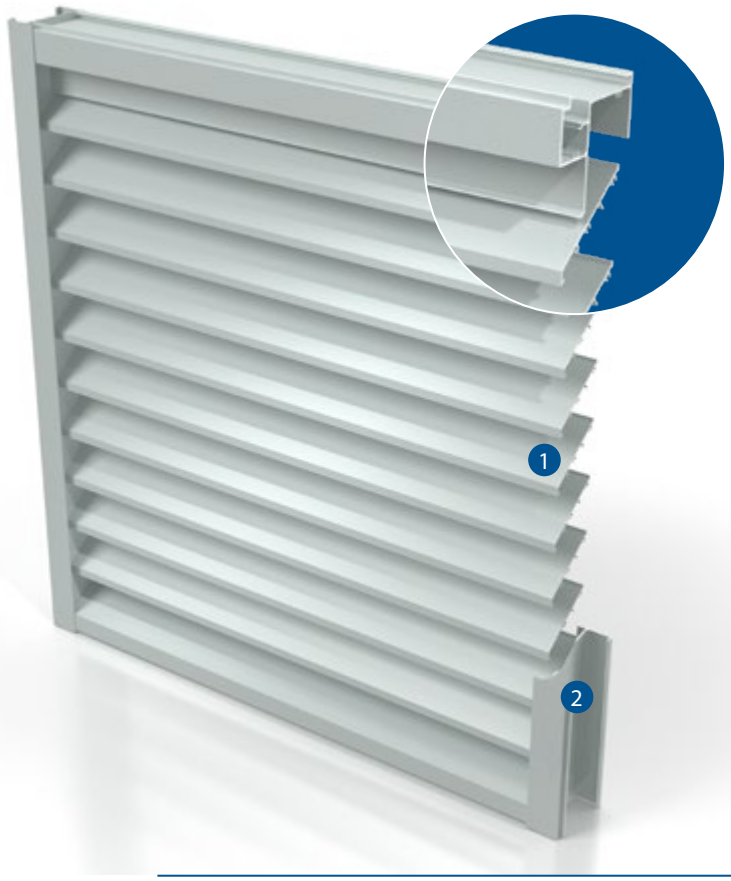


³ *Based on a 1 m x 1 m size. Smaller louvres may have a higher Pressure Drop.*

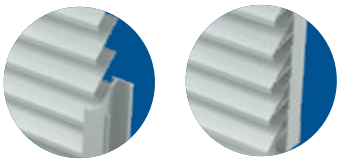
VENTILATION LOUVRES

A-3105

Modular ventilation louvres offering excellent airflow and a degree of rain defence, offered with a choice of visible or hidden mullions.



1. Simple blade design affords excellent airflow and low pressure drop
2. Choice of mullions to create desired effect on the façade



Visible mullion *Hidden mullion*

- Delivered to site as pre-fabricated modules for efficient installation

www.c-sgroup.co.uk/2393

KEY FEATURES

Blade Orientation
Horizontal

Mullion Type
Visible / Hidden

Louvre Depth
102 mm / 150 mm

Blade Pitch
75 mm

Weight [1]
12 kg/m^2

PERFORMANCE OVERVIEW

Rain Penetration Class
D up to 3.5 m/s

Airflow Class
1 (entry & discharge)

Airflow Coefficient C_e (entry)
0.400

Airflow Coefficient C_d (discharge)
0.434

K factor (entry / discharge)
6.250 / 5.309

MATERIALS & FINISHES

Materials
Aluminium alloy 6063-T6

Finish Options

- Mill finish
- Clear or colour anodised
- Polyester powder coated
  Matt (standard) or gloss

For details ▸ **70**

OPTIONAL EXTRAS

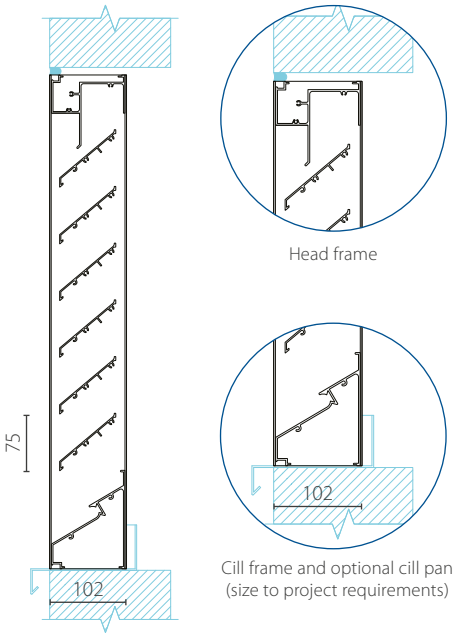
- Cill pan
- Blanking panels (single skin or insulated)
- Bird / vermin guards, insect mesh
- Louvred doors
- Dampers

For details ▸ **72-75**

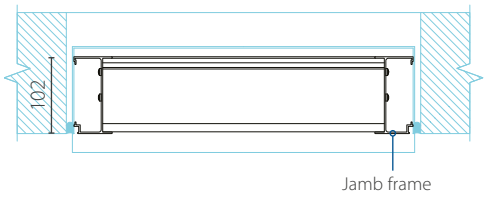
[1] *Based on a 2 m x 2 m module size*

STANDARD DETAILS

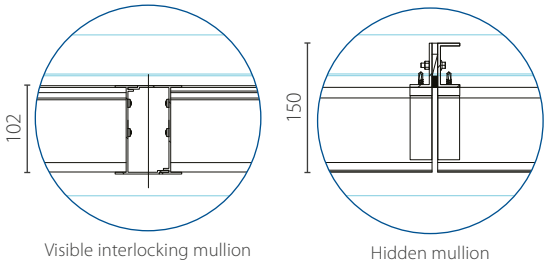
SECTION ON ELEVATION



PLAN VIEW



Mullion options:

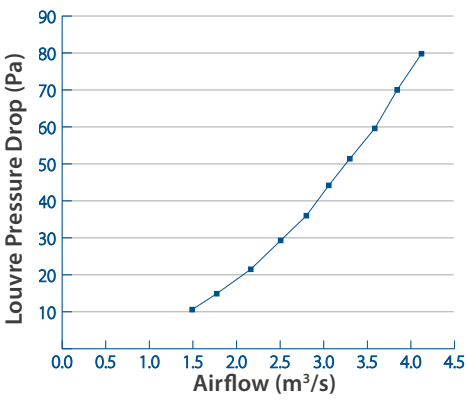


WIND DRIVEN RAIN PERFORMANCE (EN 13030:2001)

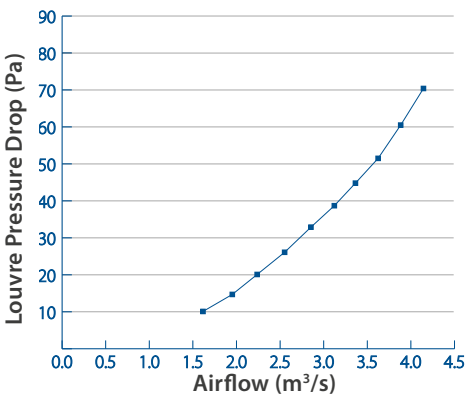
Core Ventilation Rate (m/s)	**0.0**	**0.5**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**
Penetration Class (13 m/s & 75 mm/hr)	D	D	D	D	D	D	D	D
Effectiveness (%)	63.9	53.5	45.7	39.7	34.0	28.3	23.4	18.3
Airflow	Coefficient of Entry C_e		0.400	Class 1	Coefficient of Discharge C_d		0.434	Class 1

RESISTANCE TO AIRFLOW

RESISTANCE TO AIRFLOW - ENTRY (C_e) [2]



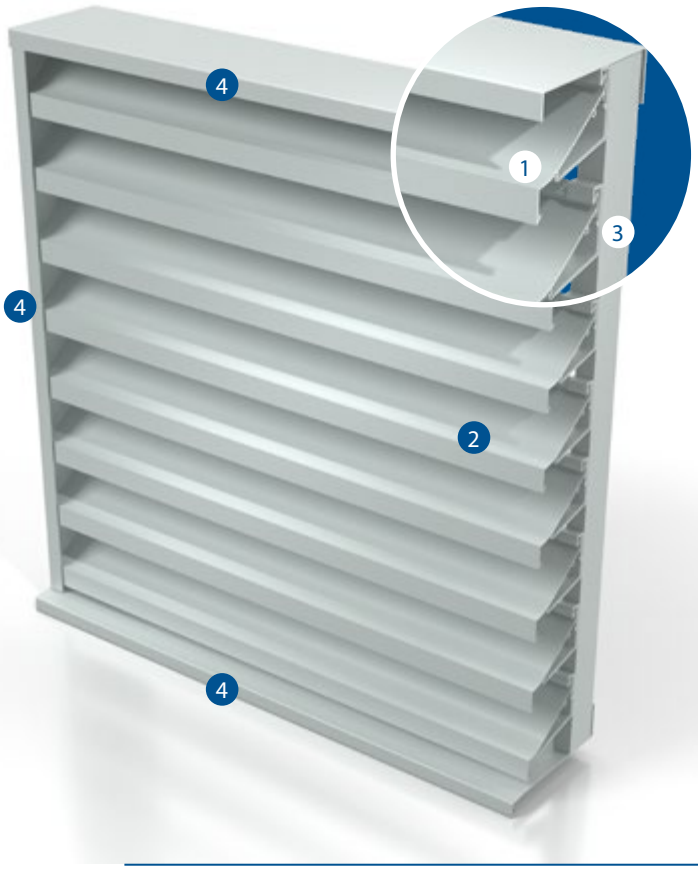
RESISTANCE TO AIRFLOW - DISCHARGE (C_d) [2]



[2] *Based on a 1 m x 1 m size. Smaller louvres may have a higher Pressure Drop.*

VENTILATION LOUVRES
A-4085C

Continuous line ventilation louvres offering very good airflow and some rain defence.



C 1.0 m/s

2 ENTRY

2 DISCHARGE

1. Wide pitched extruded blade design for maximum airflow performance
2. Blades designed to offer some protection from wind-driven rain in lower face velocities
3. Hidden mullions for a continuous blade appearance on the façade
4. Optional perimeter flashings and cill pan can be supplied
- Easy to install solution, delivered to site in component form

www.c-sgroup.co.uk/2403

KEY FEATURES

Blade Orientation
Horizontal

Mullion Type
Hidden

Louvre Depth
151 mm

Blade Pitch
100 mm

Weight [1]
13 kg/m^2

PERFORMANCE OVERVIEW

Penetration Class
C up to 1.0 m/s

Airflow Class
2 (entry & discharge)

Airflow Coefficient C_e (entry)
0.338

Airflow Coefficient C_d (discharge)
0.345

K factor (entry / discharge)
8.753 / 8.402

MATERIALS & FINISHES

Materials
Aluminium alloy 6063-T6

Finish Options
- Mill finish
- Clear or colour anodised
- Polyester powder coated
  Matt (standard) or gloss

For details ▸ **70**

OPTIONAL EXTRAS

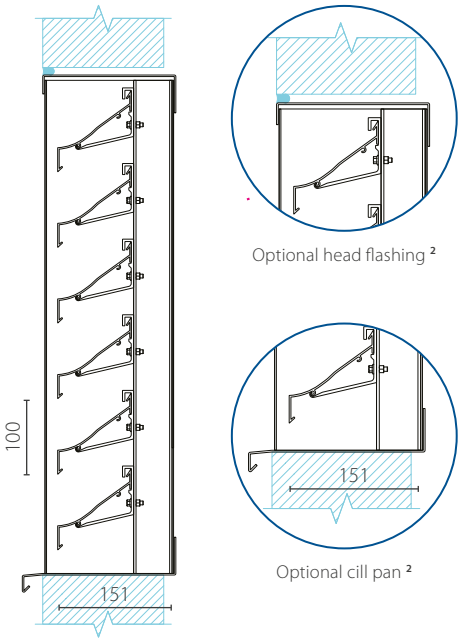
- Perimeter flashings and cill pan
- Blanking panels (single skin or insulated)
- Bird / vermin guards, insect mesh
- Louvred doors
- Dampers

For details ▸ **72-75**

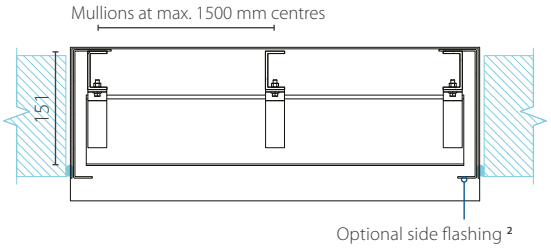
[1] *Based on a 2 m x 2 m module size*

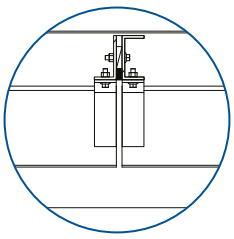
STANDARD DETAILS

SECTION ON ELEVATION



PLAN VIEW





Hidden mullion at joint between blade lengths

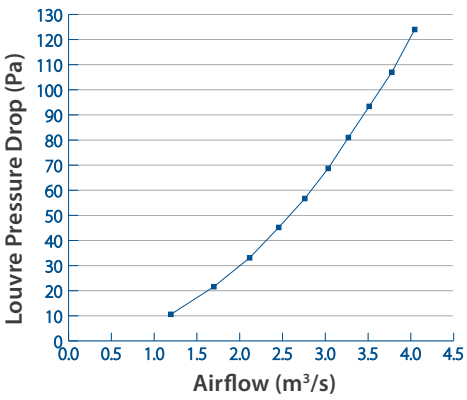
² *Size to project requirements*

WIND DRIVEN RAIN PERFORMANCE (EN 13030:2001)

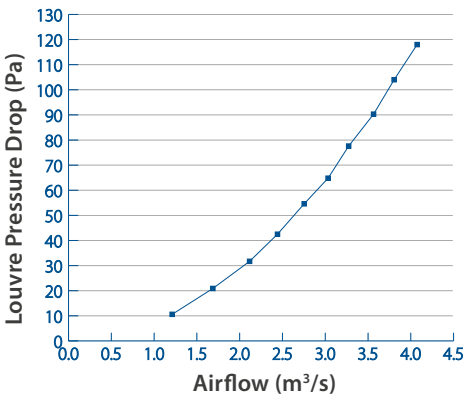
Core Ventilation Rate (m/s)	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5
Penetration Class (13 m/s & 75 mm/hr)	C	C	C	D	D	D	D	D
Effectiveness (%)	93.1	87.6	83.3	79.5	76.6	70.5	63.3	57.9
Airflow	Coefficient of Entry C_e		0.338	Class 2	Coefficient of Discharge C_d		0.345	Class 2

RESISTANCE TO AIRFLOW

RESISTANCE TO AIRFLOW - ENTRY (C_e) ³



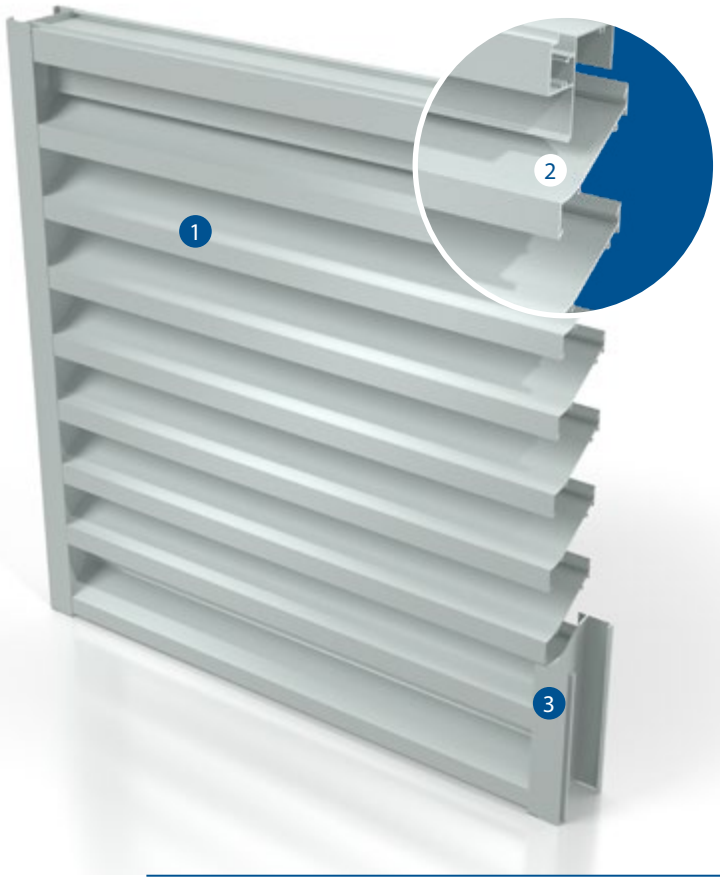
RESISTANCE TO AIRFLOW - DISCHARGE (C_d) ³



³ *Based on a 1 m x 1 m size. Smaller louvres may have a higher Pressure Drop.*

VENTILATION LOUVRES
A-4085

Modular ventilation louvres offering very good airflow and some rain defence, offered with a choice of visible or hidden mullions.

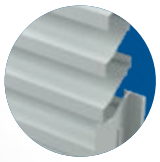


C 1.0 m/s

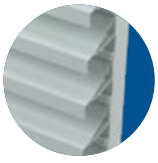
2 ENTRY

2 DISCHARGE

1. Widely spaced extruded blades for maximum airflow performance
2. Designed to offer some protection from wind driven rain in lower face velocities
3. Choice of mullions to create desired effect on the façade



Visible mullion



Hidden mullion

- Delivered to site as pre-fabricated units for simplified installation

www.c-sgroup.co.uk/2406

KEY FEATURES

Blade Orientation
Horizontal

Mullion Type
Visible / Hidden

Louvre Depth
102 mm / 154 mm

Blade Pitch
100 mm

Weight [1]
13 kg/m²

PERFORMANCE OVERVIEW

STANDARD

Rain Penetration Class
C up to 1.0 m/s

Airflow Class
2 (entry & discharge)

Airflow Coefficient C_e (entry)
0.338

Airflow Coefficient C_d (discharge)
0.345

K factor (entry / discharge)
8.753 / 8.402

ADDITIONAL SECURITY OPTIONS

Blast Resistant Option

Can withstand up to 86.87 kPa blast pressure at an impulse of 536.41 kPa-msec

MATERIALS & FINISHES

Materials
Aluminium alloy 6063-T6

Finish Options

- Mill finish
- Clear or colour anodised
- Polyester powder coated
  Matt (standard) or gloss

For details ▸ **70**

OPTIONAL EXTRAS

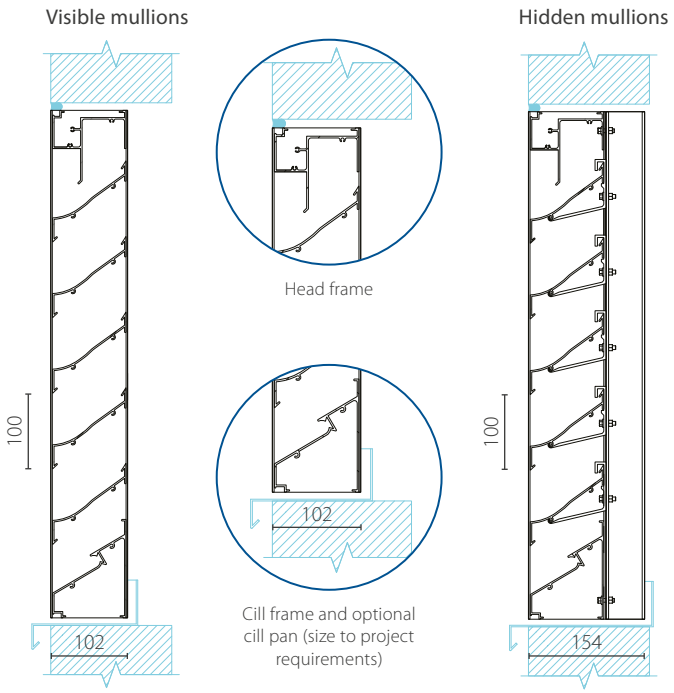
- Cill pan
- Blanking panels (single skin or insulated)
- Bird / vermin guards, insect mesh
- Louvred doors
- Dampers

For details ▸ **72-75**

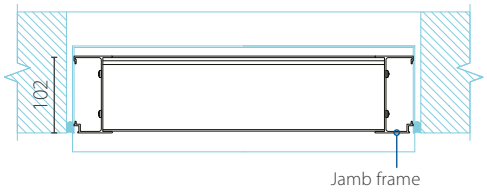
[1] *Based on a 2 m x 2 m module size*

STANDARD DETAILS

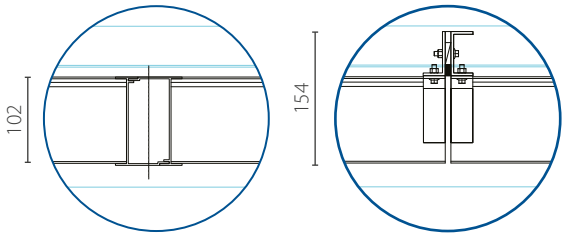
SECTION ON ELEVATION



PLAN VIEW



Mullion options:

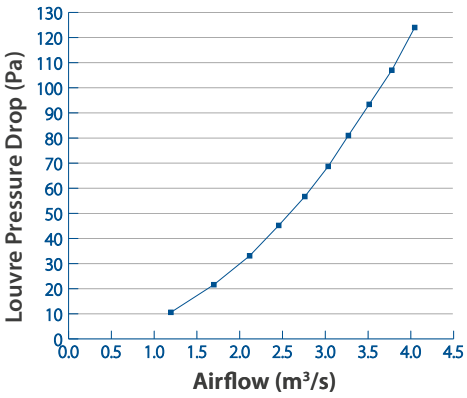


WIND DRIVEN RAIN PERFORMANCE (EN 13030:2001)

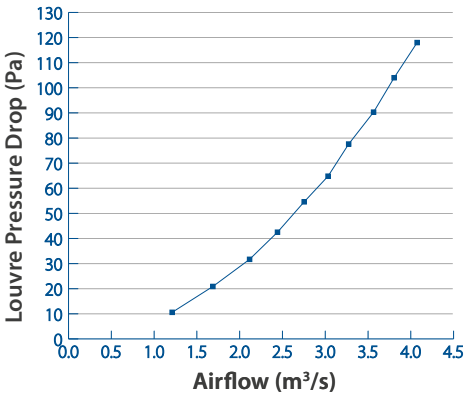
Core Ventilation Rate (m/s)	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5
Penetration Class (13 m/s & 75 mm/hr)	C	C	C	D	D	D	D	D
Effectiveness (%)	93.1	87.6	83.3	79.5	76.6	70.5	63.3	57.9
Airflow	Coefficient of Entry C_e		0.338	Class 2	Coefficient of Discharge C_d		0.345	Class 2

RESISTANCE TO AIRFLOW

RESISTANCE TO AIRFLOW - ENTRY (C_e) [2]



RESISTANCE TO AIRFLOW - DISCHARGE (C_d) [2]

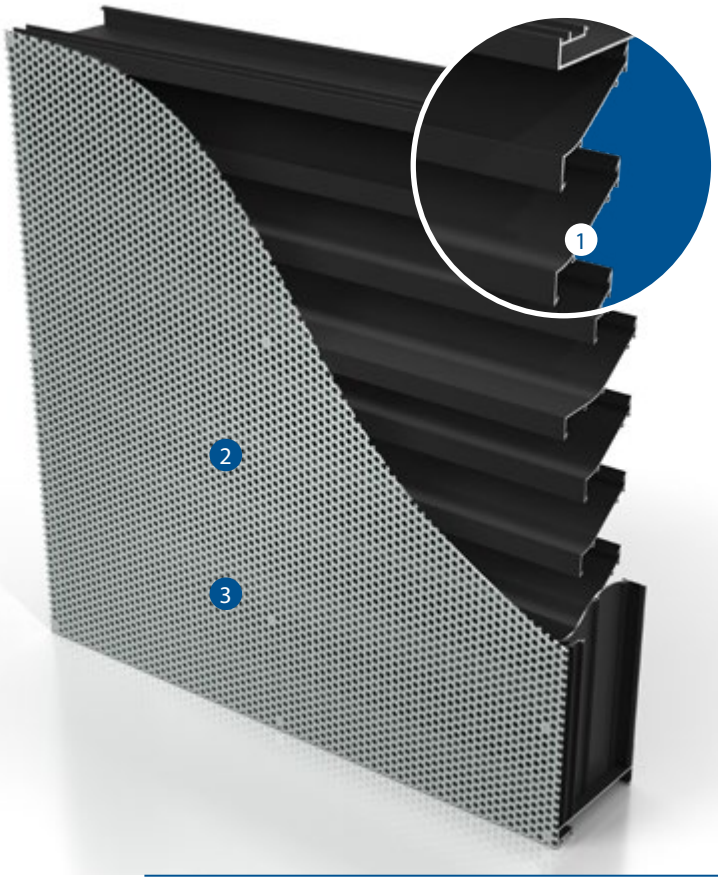


[2] *Based on a 1 m x 1 m size. Smaller louvres may have a higher Pressure Drop.*

VENTILATION LOUVRES

PL-4080

Concealed behind an attractive perforated skin, Perform™ PL-4080 louvres offer good airflow and weather performance.

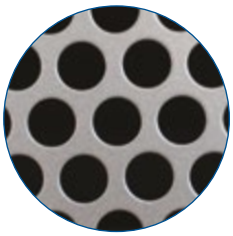


C 3.0 m/s

3 ENTRY

3 DISCHARGE

1. Widely spaced extruded blades for maximum airflow performance
2. Perforated aluminium face conceals the louvre while offering modern appearance



The screen can be supplied anodised or powder coated. Louvre modules are powder coated black as standard for maximum concealment.

3. Sightproof design
4. Delivered to site as pre-fabricated modules for efficient installation

www.c-sgroup.co.uk/19023

KEY FEATURES

Blade Orientation
Horizontal

Mullion Type
Hidden

Louvre Depth
191 mm

Blade Pitch
100 mm

Weight [1]
21 kg/m²

PERFORMANCE OVERVIEW

Rain Penetration Class
C up to 3.0 m/s

Airflow Class
3 (entry & discharge)

Airflow Coefficient C_e (entry)
0.260

Airflow Coefficient C_d (discharge)
0.253

K factor (entry / discharge)
14.793 / 15.623

OPTIONAL EXTRAS

- Head / cill / jamb cover plates
- Blanking panels (single skin or insulated)
- Bird / vermin guards, insect mesh
- Louvred doors
- Dampers

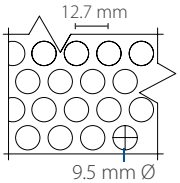
For details ▸ **72-75**

MATERIALS & FINISHES

Materials

Perforated sheet: 3mm thick aluminium alloy 1050 H14/H24 as standard.

Perforation pattern: 9.5 mm Ø holes at 12.7 mm staggered centres and pitch.



Louvres: aluminium alloy 6063-T6.

Finish Options

Louvres: powder coated matt black as standard.

Perforated Sheet:

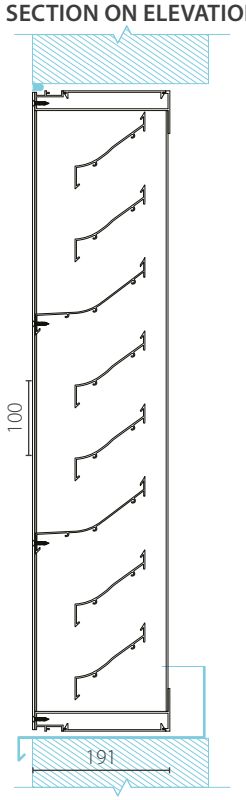
- Mill finish aluminium
- Clear or colour anodised
- Polyester powder coated
  Matt (standard) or gloss

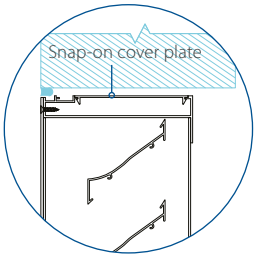
For details ▸ **70**

[1] *Based on a 2 m x 2 m module size*

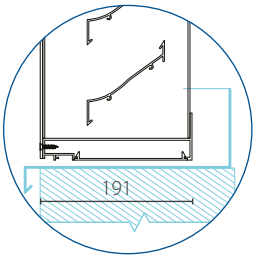
STANDARD DETAILS

SECTION ON ELEVATION



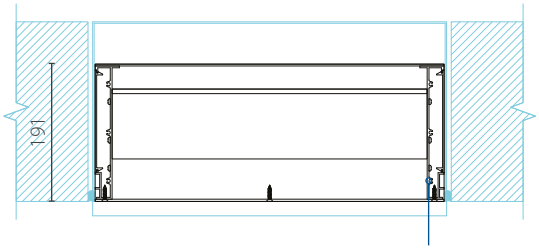


Head frame with optional snap-on cover plate

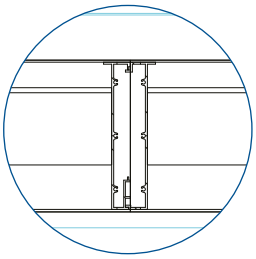


Cill frame with optional snap-on cover plate and optional cill pan (size to project requirements)

PLAN VIEW



Jamb frame with optional snap-on cover plate



Interlocking mullion

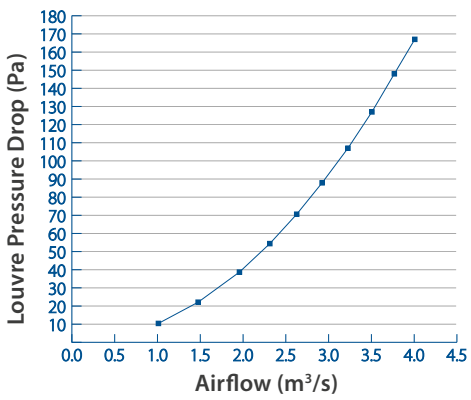
Perforated sheet sections are attached to louvre modules and butt jointed for a uniform look across the façade

WIND DRIVEN RAIN PERFORMANCE (EN 13030:2001)

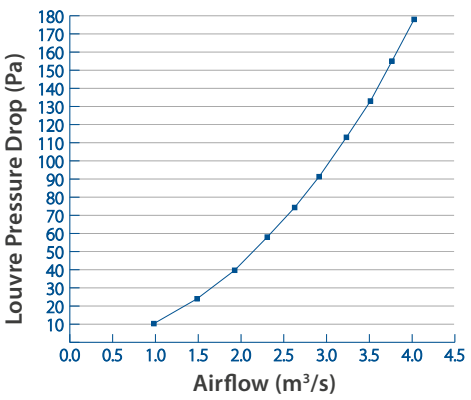
Core Ventilation Rate (m/s)	**0.0**	**0.5**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**
Penetration Class (13 m/s & 75 mm/hr)	B	C	C	C	C	C	C	D
Effectiveness (%)	96.5	93.8	92.6	91.6	91.0	91.0	86.2	73.2
Airflow	Coefficient of Entry C_e		0.260	Class 3	Coefficient of Discharge C_d		0.253	Class 3

RESISTANCE TO AIRFLOW

RESISTANCE TO AIRFLOW - ENTRY (C_e) [2]



RESISTANCE TO AIRFLOW - DISCHARGE (C_d) [2]



Weather considerations:

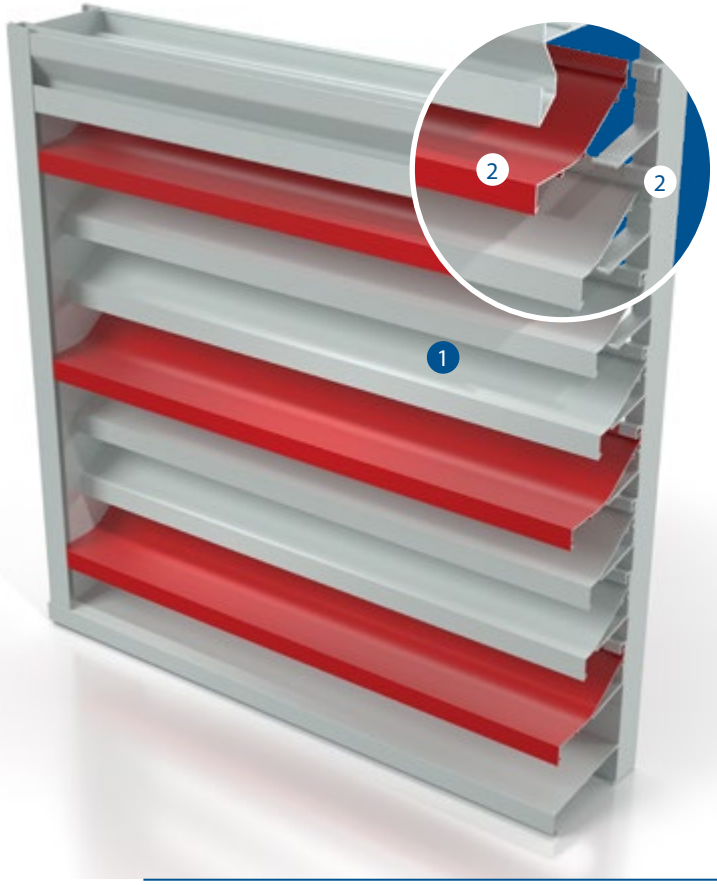
Perform Louvres are not suitable for use in areas where perforations may become blocked or clogged with snow, ice, debris, or other occlusions. To maximise their performance, prevent property damage and provide a safe environment, they should be inspected and maintained regularly.

[2] *Based on a 1 m x 1 m size. Smaller louvres may have a higher Pressure Drop.*

VENTILATION LOUVRES

B-6485

Bold Line™ ventilation louvres utilising two blade depths to allow creation of unique façade designs, customised with patterns, colours and shadow lines.



C 1.5 m/s

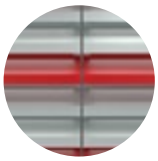
2 ENTRY

2 DISCHARGE

1. Widely spaced extruded blades for maximum airflow performance
2. Choice of mullion styles, accent blade arrangements and colours for a truly bespoke façade look. For project inspiration ▸ **9-13**

Visible mullion

Recessed mullion



Hidden mullion

- Delivered to site as pre-fabricated modules for efficient installation

www.c-sgroup.co.uk/19024

KEY FEATURES

Blade Orientation
Horizontal

Mullion Type
Visible / Hidden

Louvre Depth
159 mm / 207 mm

Blade Pitch
100 mm

Weight [1]
15 kg/m²

PERFORMANCE OVERVIEW

Rain Penetration Class
C up to 1.5 m/s

Airflow Class
2 (entry & discharge)

Airflow Coefficient C_e (entry)
0.370

Airflow Coefficient C_d (discharge)
0.331

K factor (entry / discharge)
7.305 / 9.127

MATERIALS & FINISHES

Materials
Aluminium alloy 6063-T6

Finish Options

- Mill finish
- Clear or colour anodised
- Polyester powder coated
  Matt (standard) or gloss

For details ▸ **70**

OPTIONAL EXTRAS

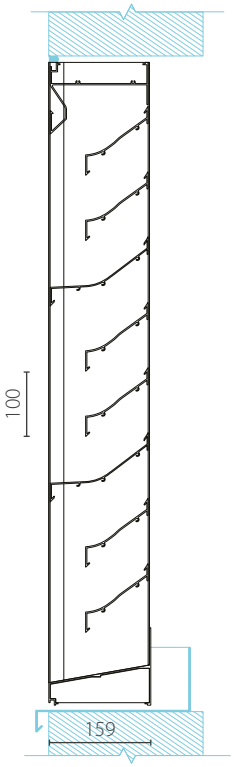
- Blanking panels (single skin or insulated)
- Bird / vermin guards, insect mesh
- Louvred doors
- Dampers

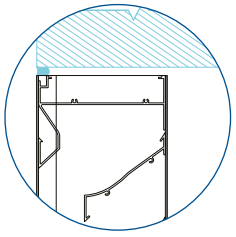
For details ▸ **72-75**

[1] *Based on a 2 m x 2 m module size*

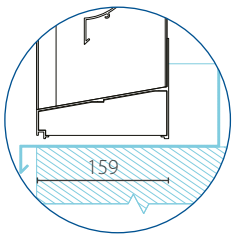
STANDARD DETAILS

SECTION ON ELEVATION [2]



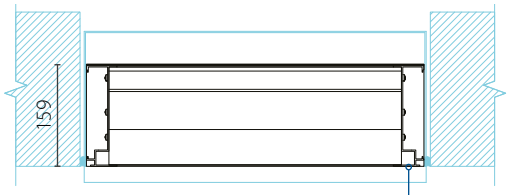


Head frame



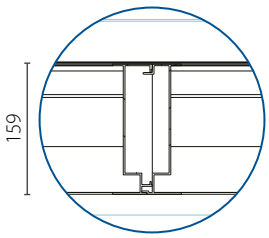
Cill frame and optional cill pan
(size to project requirements)

PLAN VIEW

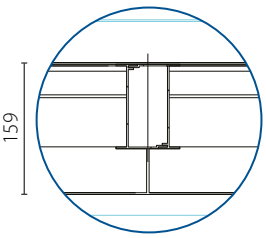


Jamb frame

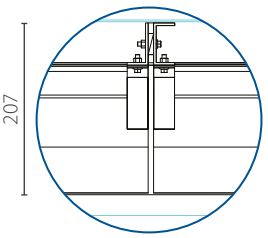
Mullion options:



Visible interlocking mullion



Recessed interlocking mullion



Hidden mullion

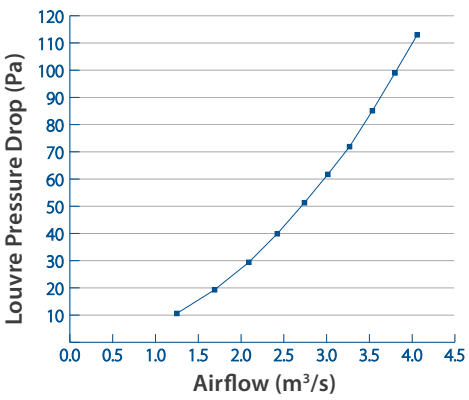
[2] A ratio of standard : accent blades and/or accent blade position on the façade is driven by project design. Elevation detail features 2 : 1 ratio as an example.

WIND DRIVEN RAIN PERFORMANCE (EN 13030:2001)

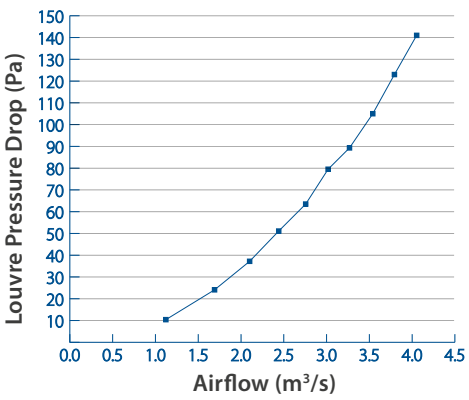
Core Ventilation Rate (m/s)	**0.0**	**0.5**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**
Penetration Class (13 m/s & 75 mm/hr)	C	C	C	C	D	D	D	D
Effectiveness (%)	91.8	86.4	83.4	81.2	79.2	76.3	68.5	62.5
Airflow	Coefficient of entry C_e		0.370	Class 2	Coefficient of discharge C_d		0.331	Class 2

RESISTANCE TO AIRFLOW

RESISTANCE TO AIRFLOW - ENTRY (C_e) [3]



RESISTANCE TO AIRFLOW - DISCHARGE (C_d) [3]



[3] *Based on a 1 m x 1 m size. Smaller louvres may have a higher Pressure Drop.*

Screening Louvres

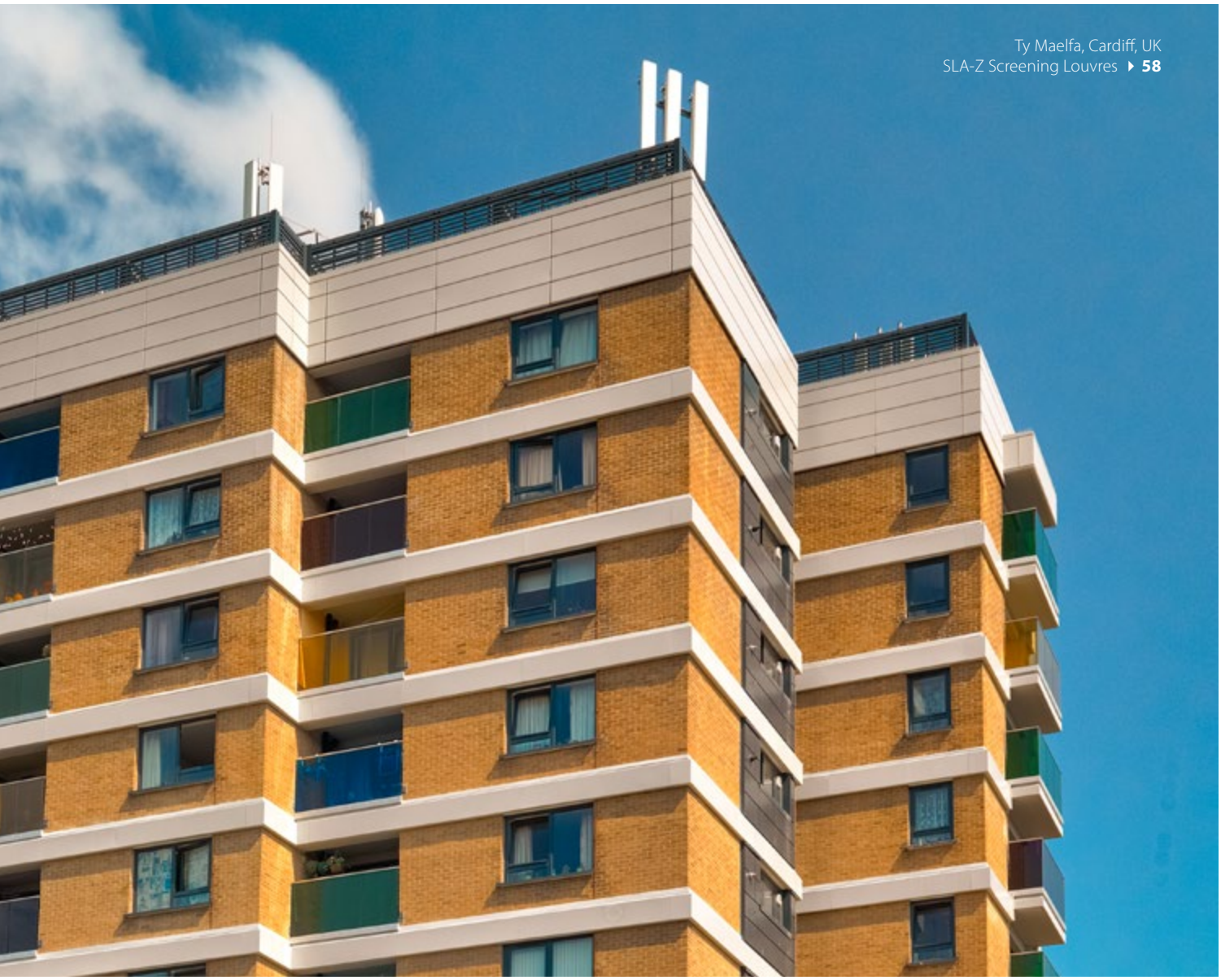
A simple solution to providing visual screening of plant or other equipment, our screening range is typically used in applications where rain penetration is not a concern. Their continuous appearance can blend in with the building's design and provide an aesthetically pleasing feature.

Choose screening louvres when:

- A low cost, easy to install screening solution is needed
- Rain ingress to the area is not a consideration
- Continuous line appearance on the façade is preferred

www.c-sgroup.co.uk/2373

Premier Inn Car Park, London, UK
SLA-C Screening Louvres ▸ 58



Ty Maelfa, Cardiff, UK
SLA-Z Screening Louvres ▸ **58**

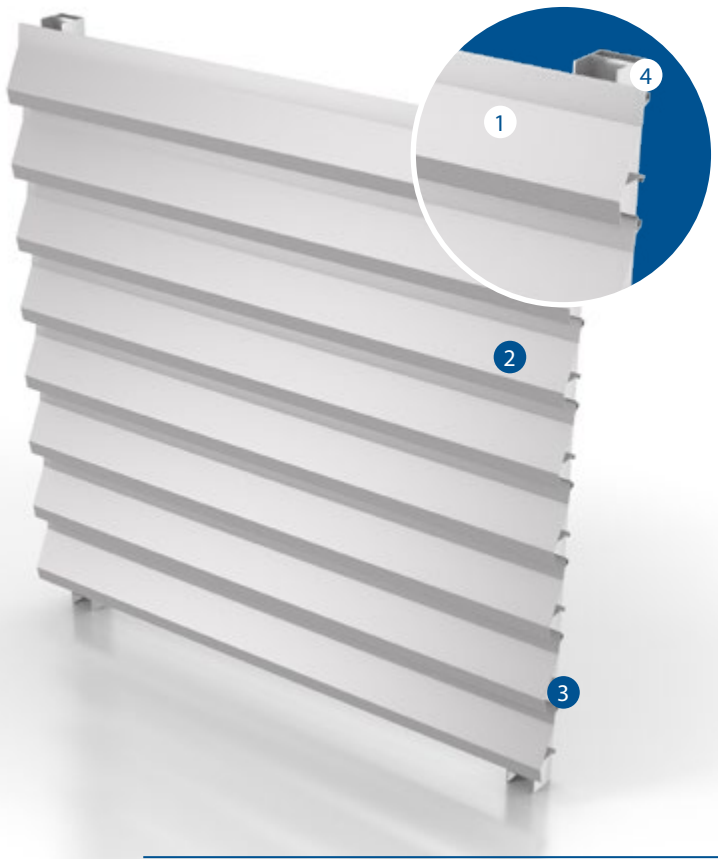
SELECTION CHART

	SLA-Z	SLA-S	SLA-C	SLA-I	SLP-Z
					
Blade Material	Aluminium	Aluminium	Aluminium	Aluminium	PVC
Blade Shape	Z-shaped	S-shaped	C-shaped	I-shaped	Z-shaped
Mullion Type	Hidden	Hidden	Hidden	Hidden	Hidden
Blade Pitch	100 mm	100 mm	100 mm	100 mm	100 mm
Depth	70 mm	70 mm	70 mm	70 mm	70 mm
Pages	58-59	58-59	58-59	58-59	58-59

SCREENING LOUVRES

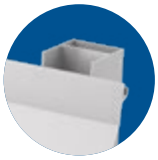
SLA & SLP

A simple to install and cost effective solution to screening parts of a building, rooftop plant areas or car parks.



1. Choice of aluminium blade shapes to suit project aesthetic needs ▸ **Blade options**
2. Z-shaped blade is also available in PVC for projects where economy is important or aluminium options cannot be used
3. Blades clip into vertical mullions for simple installation
4. Mullions are supplied in mill finish, or can be powder coated or anodised to match blade colour

Mill finish mullion as standard



Powder coated / anodised mullion optional

www.c-sgroup.co.uk/2373

KEY FEATURES

Blade Orientation
Horizontal

Mullion Type
Hidden

Louvre Depth
70 mm

Blade Pitch
100 mm

Weight [1]
SLA-Z - 4.9 kg/m²
SLA-S - 6.1 kg/m²
SLA-I - 4.8 kg/m²
SLA-C - 6.4 kg/m²
SLP-Z - 3.5 kg/m²

MATERIALS & FINISHES

Materials

- SLA-Z, -I, -S, -C models - aluminium alloy 6063-T5
- SLP-Z - PVC blades and mullions in aluminium alloy 6063-T5

Finish Options

Aluminium blades:

- Mill finish aluminium
- Clear or colour anodised
- Polyester powder coated
  Matt (standard) or gloss

PVC blades: Grey or White

Aluminium mullions:

- Mill finish (standard)
- Anodised or polyester powder coated to match blades (optional)

For details ▸ **70**

OPTIONAL EXTRAS

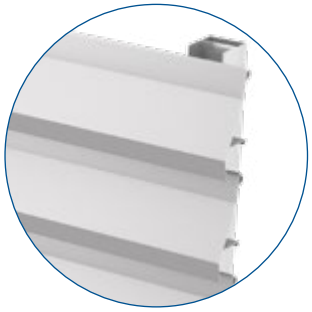
- Blanking panels (single skin or insulated)
- Bird / vermin guards, insect mesh
- Louvred doors

For details ▸ **72-75**

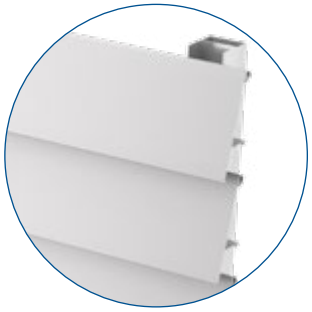
[1] *Based on a 2m x 2m module size*

BLADE OPTIONS

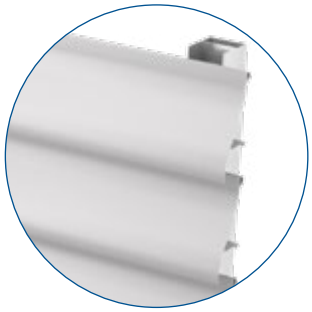
ALUMINIUM



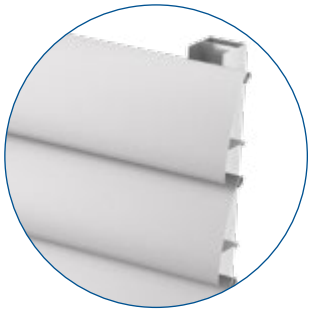
SLA-Z



SLA-I

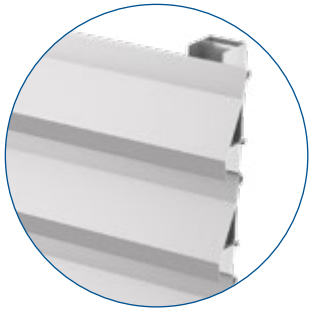


SLA-S



SLA-C

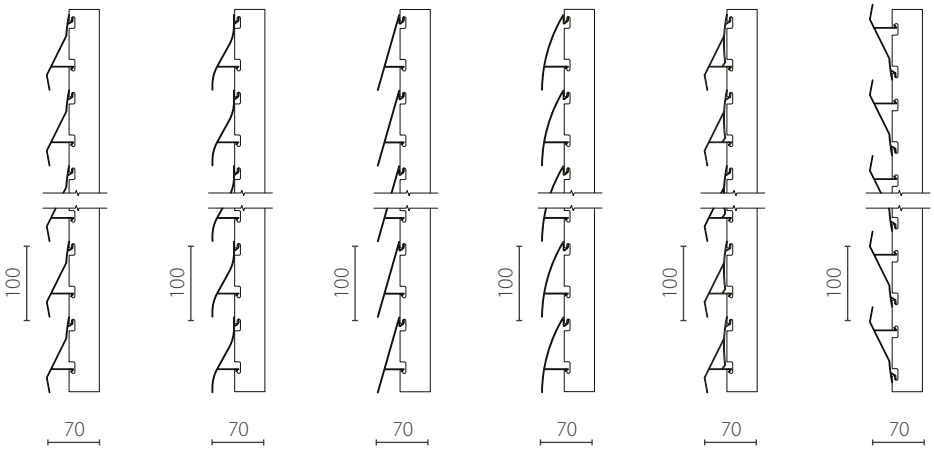
PVC



SLP-Z

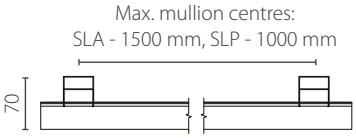
STANDARD DETAILS

SECTION ON ELEVATION



All models can be installed inverted for better screening of rooftop areas

PLAN VIEW



Acoustic Louvres

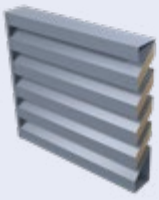
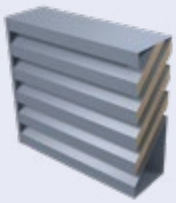
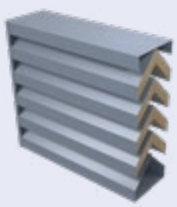
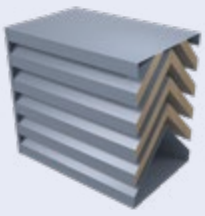
Suitable for applications where both noise control and airflow are required, our Acoustic Louvres can be installed as standalone screens, or can be integrated into building façades. They can also be used in combination with any of our rain defence or ventilation models, if required.

Choose acoustic louvres for:

- Car parks, plant rooms, substations, cooling towers and any other application that requires both sound attenuation and ventilation
- Areas where sound levels that escape from exterior or interior walls need to be minimised

www.c-sgroup.co.uk/4730

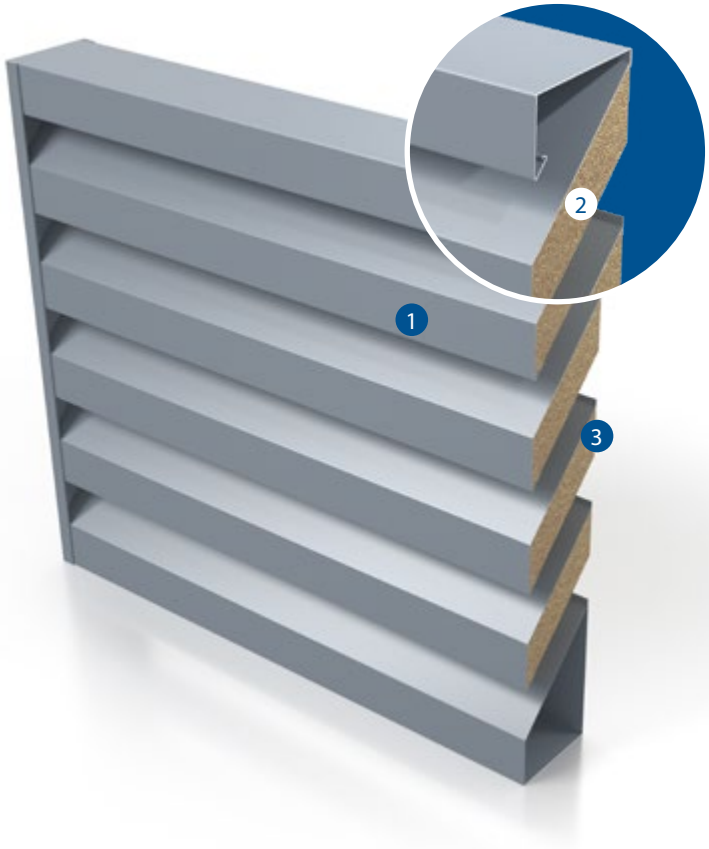
SELECTION CHART

	A-150S	A-300S	A-300C	A-600C
				
Weighted Sound Reduction Index Rw (dB)	10	12	15	19
Mullion Type	Visible	Visible	Visible	Visible
Blade Pitch	150 mm	150 mm	150 mm	150 mm
Depth	150 mm	300 mm	300 mm	600 mm
Pages	62-63	64-65	66-67	68-69

ACOUSTIC LOUVRES

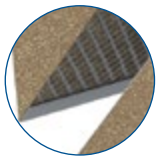
A-150S

150mm deep, single bank acoustic louvres with horizontal blade arrangement, offering 10db weighted sound reduction.



10 Rw dB

1. Single bank design offering good sound attenuation
2. Mineral wool infill material with acoustic, thermal and fire resistant properties. Water repellent to prevent moisture build up, damp and rot.
3. Galvanised mesh on the back and underside of louvre blades maximises noise reduction performance



- Supplied as modules for efficient installation

www.c-sgroup.co.uk/4731

KEY FEATURES

Blade orientation
Horizontal

Mullion type
Visible

Louvre depth
150 mm

Blade pitch
150 mm

Weight
Galvanised steel 30 kg/m^2
Aluminium 18 kg/m^2

MATERIALS & FINISHES

Materials

- Galvanised mild steel as standard
- Aluminium options available

Finish Options

- Unfinished as standard
- Painted (steel) or polyester powder coated (aluminium)
  Matt (standard) or gloss

For details ▸ **70**

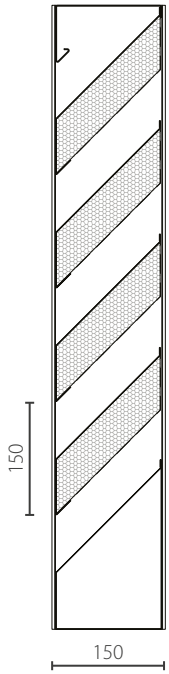
OPTIONAL EXTRAS

- Blanking panels (single skin or insulated)
- Bird / vermin guards
- Insect mesh
- Louvred doors

For details ▸ **72-75**

STANDARD DETAILS

SECTION ON ELEVATION



PLAN VIEW

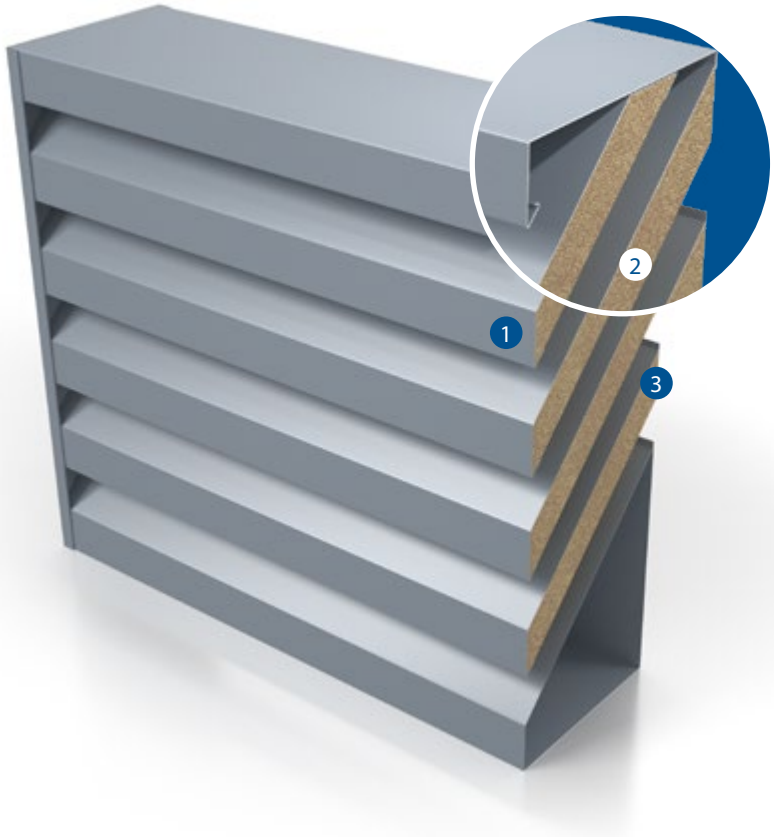
ACOUSTIC PERFORMANCE (TESTED TO EN ISO 10140-2:2010)

Octave Band Centre Frequency (Hz)	63	125	250	500	1K	2K	4K	8K
Sound Reduction Index (dB)	7.7	2.5	2.7	4.8	10.3	12.6	10.8	8.9
Weighted Sound Reduction Index R_w (dB) Rating according to EN ISO 717-1:2013	10							

ACOUSTIC LOUVRES

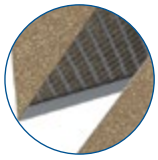
A-300S

300mm deep, single bank acoustic louvres with horizontal blade arrangement, offering 12db weighted sound reduction.



12 Rw dB

1. Deep single bank design offers good sound attenuation
2. Mineral wool infill material with acoustic, thermal and fire resistant properties. Water repellent to prevent moisture build up, damp and rot
3. Galvanised mesh on the back and underside of louvre blades maximises noise reduction performance



- Supplied as modules for efficient installation

www.c-sgroup.co.uk/4732

KEY FEATURES

Blade Orientation
Horizontal

Mullion Type
Visible

Louvre Depth
300 mm

Blade Pitch
150 mm

Weight
Galvanised steel 52 kg/m²
Aluminium 32 kg/m²

MATERIALS & FINISHES

Materials

- Galvanised mild steel as standard
- Aluminium options available

Finish Options

- Unfinished as standard
- Painted (steel) or polyester powder coated (aluminium)
  Matt (standard) or gloss

For details ▸ **70**

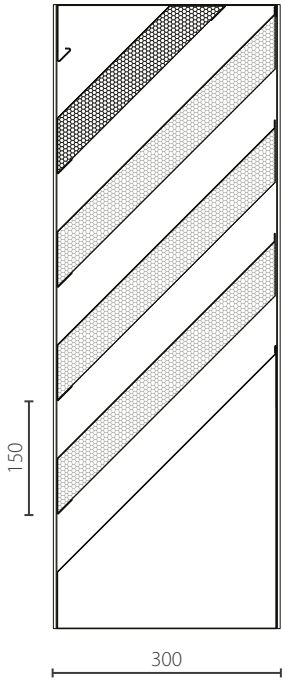
OPTIONAL EXTRAS

- Blanking panels (single skin or insulated)
- Bird / vermin guards
- Insect mesh
- Louvred doors

For details ▸ **72-75**

STANDARD DETAILS

SECTION ON ELEVATION



PLAN VIEW

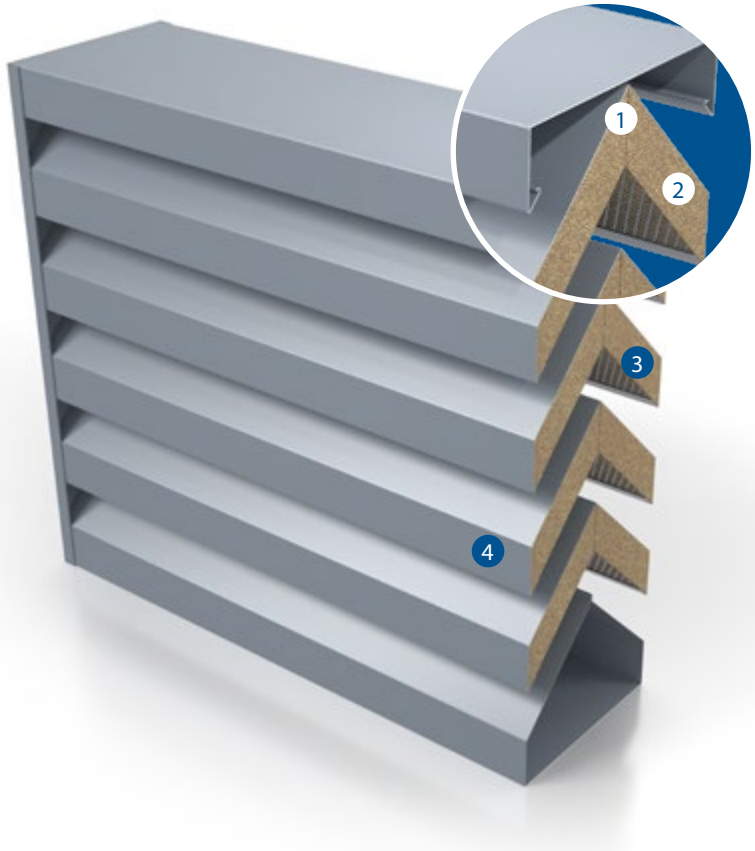
ACOUSTIC PERFORMANCE (TESTED TO EN ISO 10140-2:2010)

Octave Band Centre Frequency (Hz)	63	125	250	500	1K	2K	4K	8K
Sound Reduction Index (dB)	10.4	4.5	6.3	9.3	16.9	17.6	15.2	11.8
Weighted Sound Reduction Index R_w (dB) Rating according to EN ISO 717-1:2013	12							

ACOUSTIC LOUVRES

A-300C

300mm deep, double bank louvres with horizontal chevron blade arrangement, offering 15db weighted sound reduction.



15 Rw dB

1. Chevron, double bank design for maximum sound attenuation
2. Mineral wool infill material with acoustic, thermal and fire resistant properties. Water repellent to prevent moisture build up, damp and rot
3. Galvanised mesh on the underside of louvre blades maximises noise reduction performance
4. Sightproof design

- Supplied as modules for efficient installation

www.c-sgroup.co.uk/4733

KEY FEATURES

Blade Orientation
Horizontal

Mullion Type
Visible

Louvre Depth
300 mm

Blade Pitch
150 mm

Weight
Galvanised steel 40 kg/m²
Aluminium 29 kg/m²

MATERIALS & FINISHES

Materials

- Galvanised mild steel as standard
- Aluminium options available

Finish Options

- Unfinished as standard
- Painted (steel) or polyester powder coated (aluminium)
  Matt (standard) or gloss

For details ▸ **70**

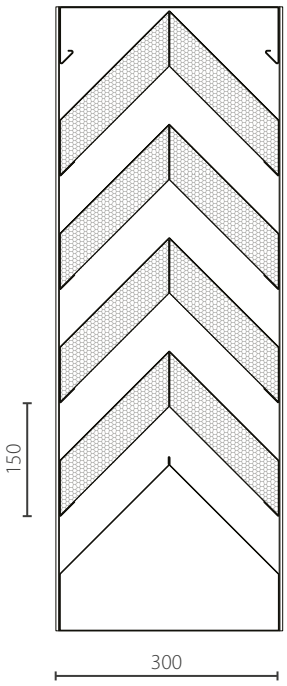
OPTIONAL EXTRAS

- Blanking panels (single skin or insulated)
- Bird / vermin guards
- Insect mesh
- Louvred doors

For details ▸ **72-75**

STANDARD DETAILS

SECTION ON ELEVATION



PLAN VIEW

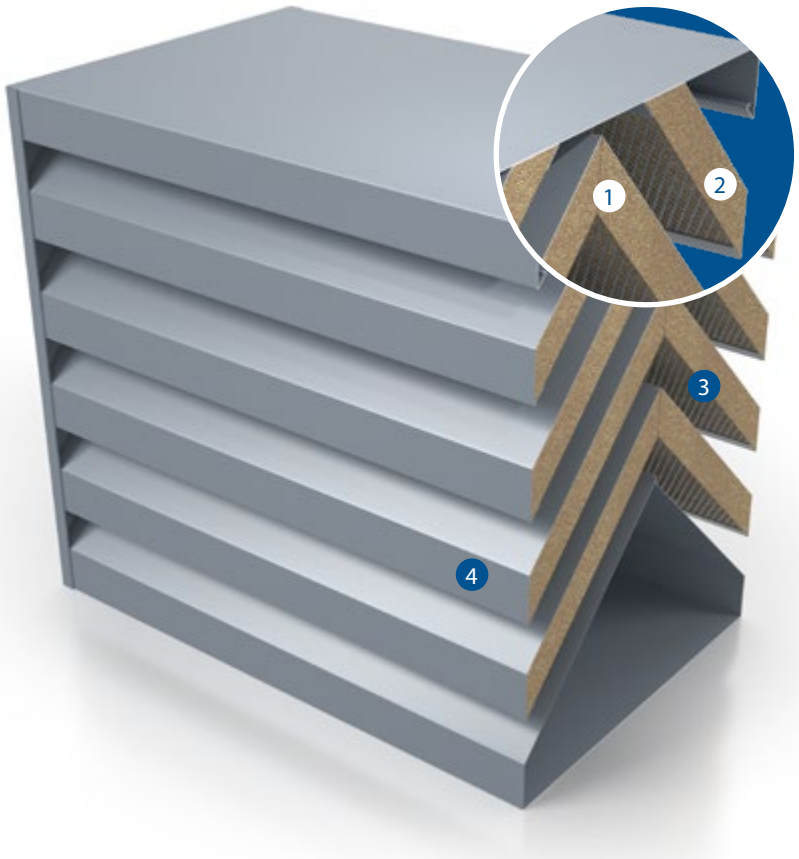
ACOUSTIC PERFORMANCE (TESTED TO EN ISO 10140-2:2010)

Octave Band Centre Frequency (Hz)	63	125	250	500	1K	2K	4K	8K
Sound Reduction Index (dB)	8.3	2.4	4.3	6.9	13.9	13.9	13.1	13
Weighted Sound Reduction Index R_w (dB) Rating according to EN ISO 717-1:2013	15							

ACOUSTIC LOUVRES

A-600C

600mm deep, double bank louvres with horizontal chevron blade arrangement, offering 19db weighted sound reduction.



19 Rw dB

1. Chevron, deep double bank design for maximum sound attenuation
2. Mineral wool infill material with acoustic, thermal and fire resistant properties. Water repellent to prevent moisture build up, damp and rot
3. Galvanised mesh on the back and underside of louvre blades maximises noise reduction performance
4. Sightproof design
- Supplied as modules for efficient installation

www.c-sgroup.co.uk/4734

KEY FEATURES

Blade Orientation
Horizontal

Mullion Type
Visible

Louvre Depth
600 mm

Blade Pitch
150 mm

Weight
Galvanised steel 75 kg/m²
Aluminium 48 kg/m²

MATERIALS & FINISHES

Materials

- Galvanised mild steel as standard
- Aluminium options available

Finish Options

- Unfinished as standard
- Painted (steel) or polyester powder coated (aluminium)
  Matt (standard) or gloss

For details ▸ **70**

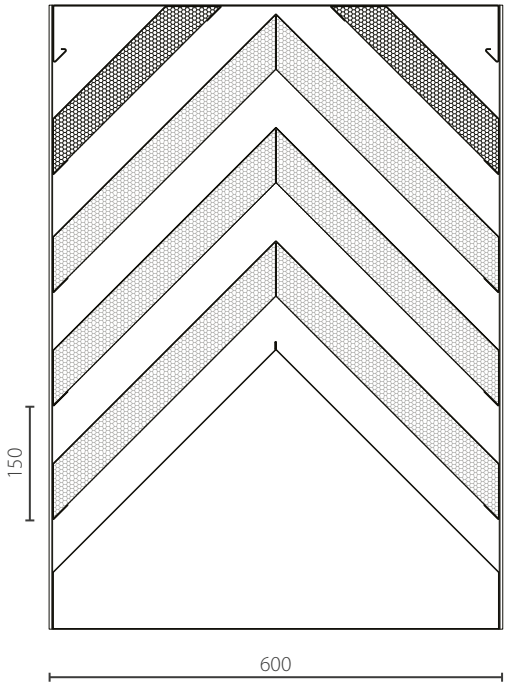
OPTIONAL EXTRAS

- Blanking panels (single skin or insulated)
- Bird / vermin guards
- Insect mesh
- Louvred doors

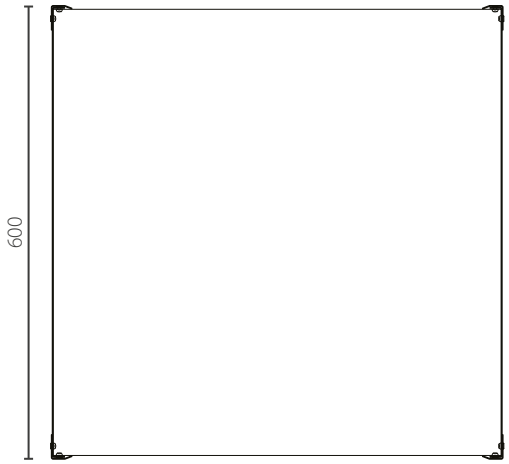
For details ▸ **72-75**

STANDARD DETAILS

SECTION ON ELEVATION



PLAN VIEW



ACOUSTIC PERFORMANCE (TESTED TO EN ISO 10140-2:2010)

Octave Band Centre Frequency (Hz)	63	125	250	500	1K	2K	4K	8K
Sound Reduction Index (dB)	10	5.7	8.7	16.2	21.2	20.1	20	19.9
Weighted Sound Reduction Index R_w (dB) Rating according to EN ISO 717-1:2013	19							

Materials & Finishes

RAIN DEFENCE, VENTILATION & SCREENING RANGES

Most of our louvre systems are manufactured using extrusions made of 6063-T6 aluminium alloy* and can be supplied in a range of finishes to suit project requirements.

STANDARD FINISHES

- Anodised - clear
- Anodised - colour
- Polyester powder coated in RAL colours (options from other colour systems can be offered)

** SLP-Z Screening Louvre features PVC blades which are available in grey or white as standard*

POWDER COATING GLOSS LEVELS

- Standard - Matt (30 Gloss Units)
- Gloss (70 Gloss Units)

measured at 60° angle.

POWDER COATING GUARANTEES

Powder coated finishes are guaranteed for up to 30 years from the date of application, subject to regular maintenance as outlined in our Cleaning and Maintenance Instructions and Terms and Conditions. Exposure to harsh environmental or operating conditions may impact on the guarantee term.

Coastal location guarantees are based on specific project location and can be issued on request.

FINISHES - ACOUSTIC RANGE

Our acoustic range is made of galvanised mild steel as standard. Aluminium options are available on request.

FINISHES

- Mill finish (galvanised mild steel or aluminium)
- Galvanised mild steel louvres can be painted with polyurethane coatings in RAL colours, either on the louvre face only or on all surfaces
- Aluminium louvres can be polyester powder coated in RAL colours, either on the face only or on all surfaces

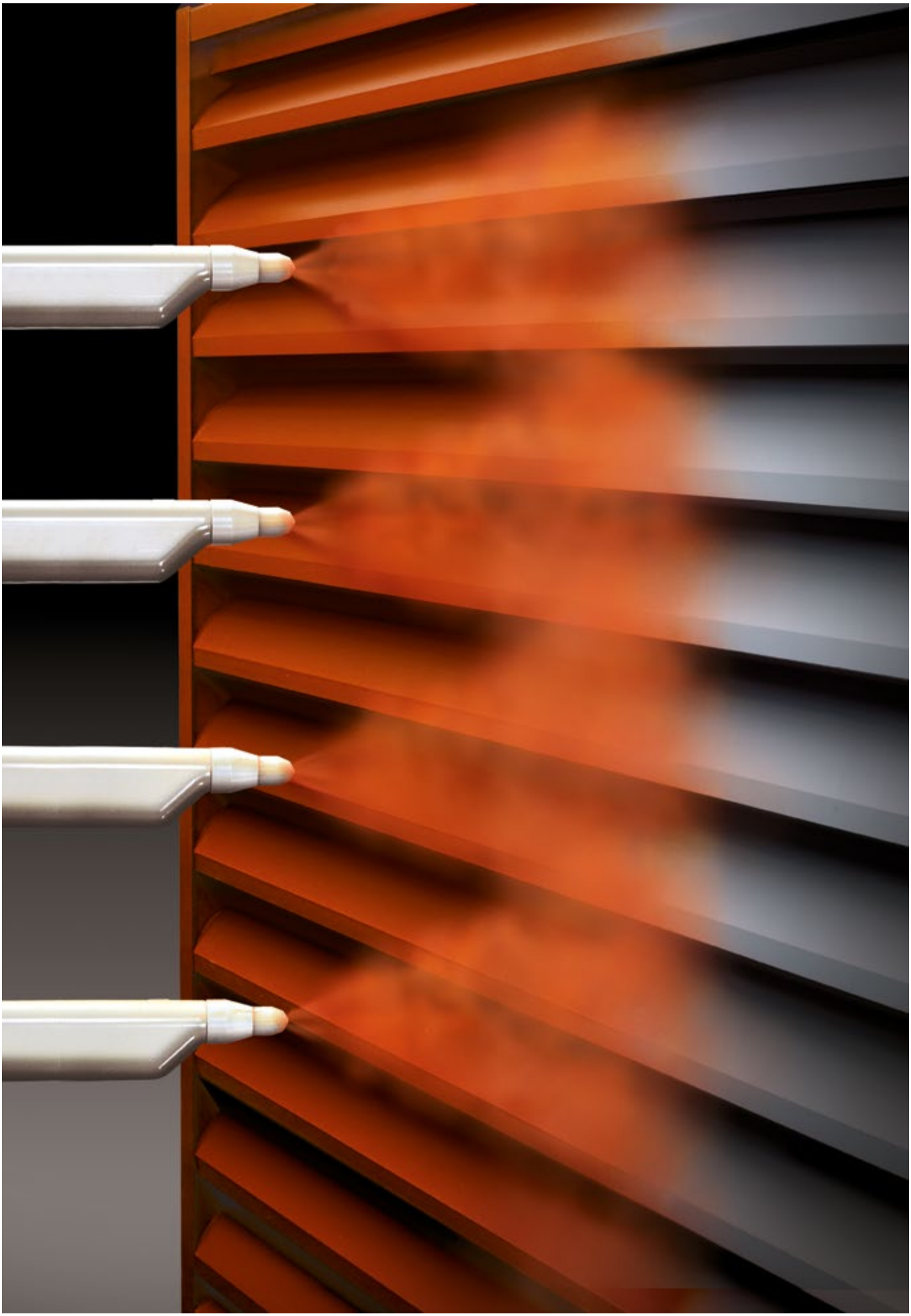
ACOUSTIC INFILL

Acoustic louvre blades contain a fibrous, sound absorbent infill faced with glass cloth. The infill is non-shredding, non-combustible, non-hygroscopic and chemically inert.

MATERIALS AND SUSTAINABILITY

Our aluminium louvre extrusions are typically made of a 6063-T6 alloy.

Aluminium is an infinitely recyclable material. The manufacturing process uses a combination of recycled pre-consumer scrap, recycled post-consumer scrap and primary aluminium, with recycled content constituting up to 70% of that mix.



Accessories and Extras

GUARDS & MESHES

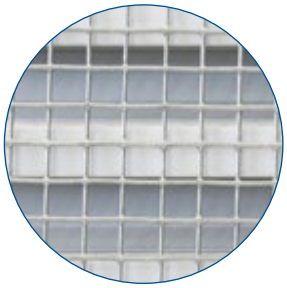
Some protection against birds or vermin is often required with louvre installations. Insect meshes can also be specified.

Guards / meshes are usually permanently fixed to the back of louvre modules, but if required can be supplied with frames to allow for their easy removal for maintenance.

Consideration needs to be given to the impact of these accessories on airflow and, particularly when using insect mesh, ensuring easy access to louvred areas for regular maintenance.

BIRD / VERMIN GUARDS

Galvanised welded mesh (standard)



Material: Galvanised steel (stainless steel option available)

Wire diameter: 1.5 mm

Aperture: 12.7 mm x 12.7 mm

Finish: Unfinished as standard

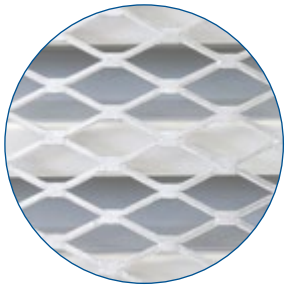
Weight: 0.37 kg/m^2

Open area: 76%

Louvre airflow reduction [1]: up to 5%

Stock size: 1220 mm wide x 30 m long roll

Expanded aluminium (optional)



Material: Aluminium alloy 1050 H14

Material thickness: 1.14 mm

Aperture: 33.53 mm x 12.45 mm

Finish: Mill finished as standard, or can be powder coated in RAL colours

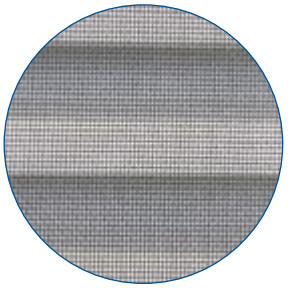
Weight: 0.87 kg/m^2

Open area: 73%

Louvre airflow reduction [1]: up to 10%

Stock size: 1250 mm wide x 3000 m high sheet

INSECT MESH



Material: PVC coated fibreglass (stainless steel option available)

Wire diameter: 0.22 mm

Aperture: 1.18 mm x 1.36 mm

Finish: Black

Weight: 0.11 kg/m^2

Open area: 72%

Louvre airflow reduction [1]: up to 12%

Stock size: 1200 mm wide x 30 m long roll

[1] *Our louvres are tested without any guards attached. The % reduction values are indicative of airflow performance reduction and may vary per louvre model. The values apply to new installations, or ones that had been cleaned and maintained regularly.*

BLANKING PANELS

Non-active areas of a louvred façade can have single skin blanking plates or insulated panels fitted behind the louvres.

SINGLE SKIN ALUMINIUM PLATES

Material

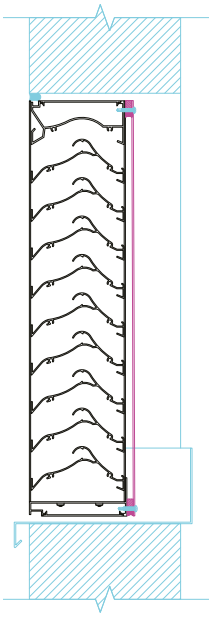
2 mm thick aluminium as standard.

Sizes

Supplied in sizes to best suit project requirements. Can be pre-fitted to louvre modules if required.

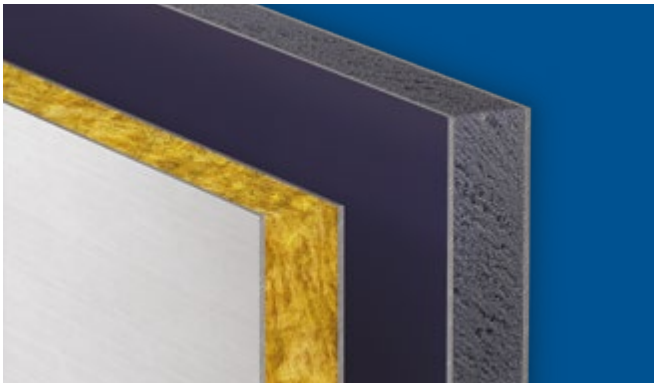
Finishes

- Standard - mill finished aluminium
- Polyester powder coated or anodised to match louvre finish on request



Example: RSH-5700 with a blanking plate - section on elevation

INSULATED PANELS



Materials

Insulated panels comprise thermal insulation core material faced on both sides with a 1 mm thick aluminium sheet and set within an aluminium channel frame.

Insulation material options include:

- Non-combustible, A1 classified (to EN 13501-1) high strength stone wool core faced with open filament net
- Extruded polystyrene core

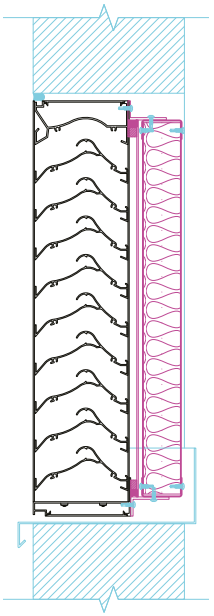
Panel thickness will vary, depending on the chosen core type and project's insulation requirements.

Sizes

Supplied in sizes to match louvre sizes. Can be pre-fitted to modules if required.

Finishes

- Mill finished
- Polyester powder coated or anodised to match louvre finish



Example: RSH-5700 with an insulated panel - section on elevation

Accessories and Extras (CONT.)

LOUVRED DOORS

Where louvred doors are required to gain access into areas such as plant rooms, we offer solutions to suit most needs.

KEY FEATURES

- Manufactured to bespoke sizes and specifications
- Maximum size of a single door leaf is 2400 mm x 1150 mm (may vary per model type)
- Single and double door configurations are available
- Door leaf frames filled with louvre blades to match the rest of the louvred façade
- Typically supplied with a door frame and pre-fitted hinges
- Other hardware, including locks, door closers etc. can be supplied

Example: doors featuring RSH-5700 blades

DAMPERS

Where required, we can offer a selection of volume control dampers for installation with louvre solutions.

Motorised or manually operated options in uPVC or aluminium are available to meet performance and budget requirements.

HIGH PERFORMANCE uPVC VOLUME CONTROL DAMPERS

- For areas where low leakage insulated solution is required
- Manufactured mainly from uPVC to reduce heat loss through conduction and condensation
- Corrosion resistant design
- Low U value of 1.2 W/m²K
- Drive system enclosed within the frame, for reliable long term performance and low maintenance
- Tested for air leakage (up to 2000 Pa static pressure). Low and high pressure specifications available.
- Tested to EN ISO 10140-2:2010 for acoustic performance
- Choice of actuators types

Materials
Extruded rigid uPVC frame and blades, aluminium blade cores and stainless steel seals & fixings

Sizes
Max. single unit 1500 mm (W) x 1005 mm (H), larger installations utilise mullions

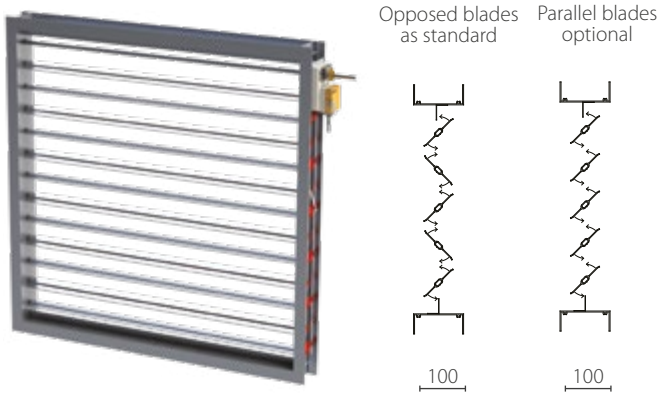
Frame
130 mm overall depth; 40 mm flanges as standard

Finishes
White uPVC as standard, or can be painted to RAL colour

Controls
As standard supplied with extended spindle for motorisation by others; a range of actuator options available

Weight
17.5 kg/m² face area

ALUMINIUM VOLUME CONTROL DAMPERS



- General purpose volume control damper
- Lightweight aluminium construction
- High resistance to corrosion
- Fully protected low torque drive system for easy operation from a single manual handle or actuator
- Additional blade edge and frame side seals for reduced air leakage if required
- Opposed blade motion as standard, parallel motion on request (see sectional details)
- Control options for manual and motorised operation

Materials
Extruded aluminium frame and blades

Sizes
Max. single unit 2900 mm (W) x 2900 mm (H), widths over 1200 mm size utilise mullions

Frame
100 mm overall depth; 40 mm flanges as standard

Finishes
Mill finish aluminium as standard, or can be polyester powder coated to RAL colour

Controls
Lockable plastic handle (standard), or a range of actuator options

Weight
14.0 kg/m² face area

Our Services

SPECIFICATION SUPPORT

SPECIFICATION DOCUMENTS

Need help with specification? Detailed specification texts for our louvre systems are available. Contact your local CS Office or download from our website.

BIM OBJECTS

BIM Objects are available on request, contact your local CS Office.

KNOWLEDGE BANK

PRODUCT PRESENTATIONS

Should you wish to learn more about louvre specification, we offer Product Presentations which can be delivered in person, via a live webinar or pre-recorded on-demand viewing.

WEBSITE

Our website features blogs and other educational content to help you specify louvres, as well as a range of case studies showcasing product applications across a range of market sectors.

TECHNICAL SUPPORT

PRODUCT SELECTION ADVICE

Our teams know our products inside out, and are available whenever you need them. Get in touch if you need advice on specifying louvres for your project.

DATASHEETS

Detailed datasheets for our products are available via your local CS Office or our website.

ON-LINE TOOLS

We have developed an easy and free to use on-line tool for calculating pressure drop of your louvre installation, depending on model used.

SAMPLES

PRODUCT SAMPLES

Standard samples of our louvres are available. These can either be ordered via our website or by contacting your local CS Office.

VIRTUAL PRODUCT SAMPLES

Digital samples of our louvres, allowing you to view them in 3D and rotate, are available for viewing from product pages on our website.

FACTORY SERVICES

MODULAR SYSTEMS

All our modular systems are manufactured to bespoke sizes and specification based on project drawings. Louvre units are delivered pre-fabricated for efficient installation on site.

SITE ASSEMBLY/CLIP SYSTEMS

Our clip based systems are delivered pre-cut to project specific sizes as standard, or can be supplied in stock lengths if cutting on site is preferred.

INSTALLATION

INSTALLATION INSTRUCTIONS

Installation instructions showcasing the optimal way of installing our products to ensure a quality end result are available from your local CS Office.

PRODUCT WARRANTY

Construction Specialties (CS) warrants to purchasers of its Architectural Louvre Systems that such products sold by it shall be free of defects in materials or factory workmanship and have a 2 year Warranty when properly handled, stored, installed and maintained.

For full Terms and Conditions contact your local CS Office.

DISCLAIMER

The company reserves the right to make design changes for the purpose of product improvement, or to withdraw any design without notice.

University of Manchester Campus, UK
RSV-5700 Rain Defence Louvres ▸ 30

Construction Specialties®

CS SOLUTIONS:

Acrovyn® Wall & Door Protection

Acrovyn by Design® Bespoke Wall Protection

Acrovyn® **Doors** Impact Resistant Doorsets

Pedisystems® Entrance Matting

Wallglaze® Performance Coatings

Omniwall® Interior Partitions

Expansion Joint Covers

Architectural Louvres

Airfoil® Solar Shading

Explovent® Explosion Venting

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