

C O N T I N U O U S L O U V R E S S Y S T E M S

LINIUS[®]



1. INTRODUCTION

The first louvres were designed to allow the passage of the sound of bells and chimes whilst protecting the bell tower from rain ingress.

Today louvres are refined to assist in the rejection of noise, rain, birds, vermin and in some cases air ! In other cases the louvres are designed to explicitly allow an air passage.

Many options including the incorporation of access doors and hatches can be achieved in one homogeneous façade with the RENSON continuous louvres system.



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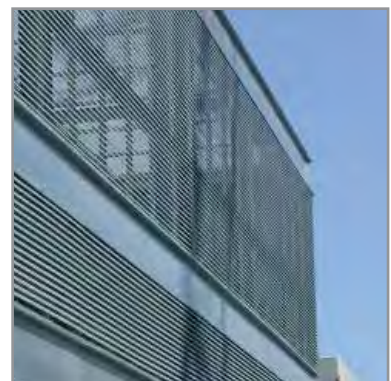
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Conditional technical changes

2. RENSON CORPORATE IDENTITY

6 Good reasons to become a RENSON customer

- 1.** Customer satisfaction through personal contact, professional advice, excellent service and reliable, high-performance products is the key goal of our company.
- 2.** RENSON is a renowned and established multinational company with international knowledge and experience thanks to the efforts of our local specialists. They are present in every region of the world. Renson has contributed to projects all around the world from Moscow to Tahiti and from Monaco to Shanghai.
- 3.** Complete service from start until finish, experienced support and advice at design stage, at site-meetings and at installation.
- 4.** The production process is fully vertically integrated, which enables manufacturing to strict standards. The investment in injection-moulding machinery, anodising facilities and a fully automatic powder-coating installation ensures efficiency and accuracy. The assembly method of components and profiles requires us to meet tight tolerances.
- 5.** Continuous research & development translates customer needs into unique solutions and innovative products.
- 6.** RENSON specialises in all aspects of ventilation and solar shading; achieving the current goals of the design of a Healthy Building with reduced energy costs.





WORLDWIDE REFERENCE LIST

BELGIUM

Highschool GroepT - Leuven
Airport - Zaventem
Smithkline Beecham Plant - Brussels

FRANCE

Futuroscope - Poitiers
Euralille - Rijsel
Paris-Expo - Parijs
UVE - Rouen
Gemey Maybelline - Orléans
Siege SNCF - Mouchotte, Parijs
Chu - Perpignan
Ifremer - Sète
Thomson - Rousset

GERMANY

Airport - Frankfurt
Messehalle - Frankfurt
Messehalle - München
Audi - Neckarsulm
Regierungsviertel - Erfurt
Technologycentre - Gelsenkirchen
Peek & Cloppenburg - Köln
Parkhaus Am Geucht - Rostock
Technologycentre - Heidelberg

ISRAEL

Telephone CY- Naharia

HUNGARY

NBC-Building - Budapest

ITALY

University - Bologna

POLAND

Riviera - Warschau
Reform Plaza - Warschau
Metro - Warschau
Hotel Mercure - Poznan
Galeria Kazimierz - Krakow

THE NETHERLANDS

High Tech Centre Philips - Eindhoven
Haagse Poort - Den Haag
Prinsenhof - Den Haag
Showbizzcity - Aalsmeer
BAM Krasnapolsky - Amsterdam
Shopping Center Alexandrium - Amsterdam
Scheepvaart en transportcollege - Rotterdam
Maritiem museum - Rotterdam
KPN Callcenter - Amersfoort
Sony Music - Delft

TURKEY

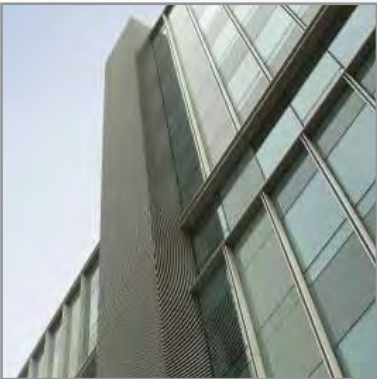
Pamuk Bank - Istanbul

UNITED KINGDOM

Royal Opera House - London
Carlton Gardens - London
Moor Plot 1 - Moor Plot 3 - London
Wembley Stadium - London
Central Transport Terminal Heathrow Airport
Windsor Castle Gardens
John Ratcliffe Hospital - Oxford
Odeon - Glasgow
Breahead Park - Glasgow
Bank of England - Cambridge
B.A.C.S. Facility - Loughton
Spinningfields - Manchester

SWITZERLAND

World Trade Center - Lugano





3. FUNCTIONS OF CLS



1



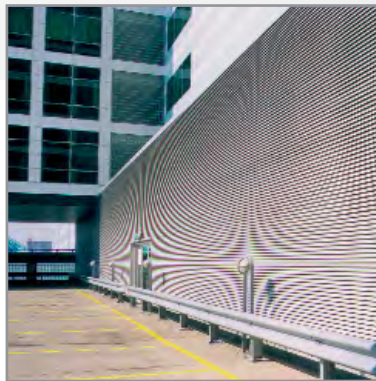
2



3



4



5



6

1. WEATHERED ENCLOSURES

Fixed to parent structure, weathered enclosures allow passage of air for natural and mechanical ventilation whilst rejecting rain and vermin.

2. VENTILATION

An assembly allowing the passage of air in and out of a building whilst restricting the entry of rain, where the CLS is the preferred aesthetic option over panels.

3. ACOUSTIC

Acoustic treatment in one specific area, where noisy equipment is hidden, with the objective to reduce the transfer of noise from one area to another area whilst allowing the supply of fresh air.

4. PLANT ROOM ENCLOSURE

An application where the need is to remove unsightly equipment from the view of the building user.

5. AESTHETIC CLADDING

Other applications where the design of a blade profile is preferred, not having one of the above specific functions.

6. INTERIOR

Interior cladding incorporating back-lighting.

Overview

The continuous louvre system consists of a support structure to which blades are fitted.

The support structure carries the complete louvre assembly and is formed by vertically placed mullions fixed by means of brackets at set distances. Depending on the structure, Renson offers different mullion types. Blade supports are permanently fixed to the mullions allowing the blade profiles to be clip-locked onto their supports. The method of construction is simple and well tested. Mitred corners, doors, vermin, bird or flyscreen can all be incorporated.

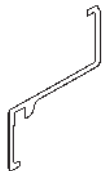
Depending on the application, different constructions are possible.

BLADE TYPES

Extruded Aluminium

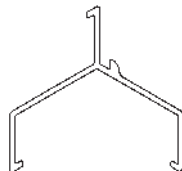
Ref. L.033
Small format

p. 12



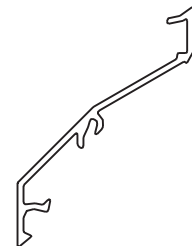
Ref. L.033V
V-blade

p. 14



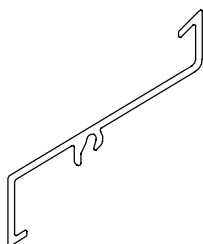
Ref. L.050
Medium format

p. 16



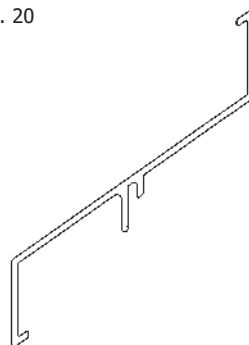
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Medium format

p. 18



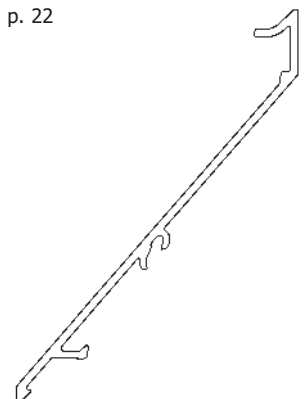
Ref. L.066
General format

p. 20



Ref. L.075
General format

p. 22

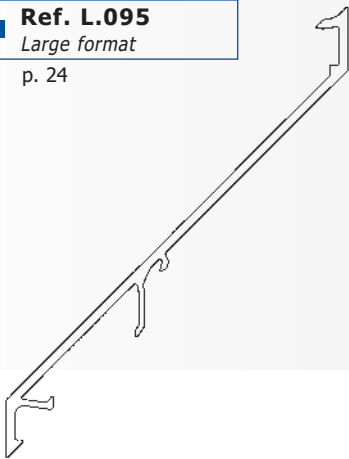


Extruded Aluminium

■ **Ref. L.095**

Large format

p. 24

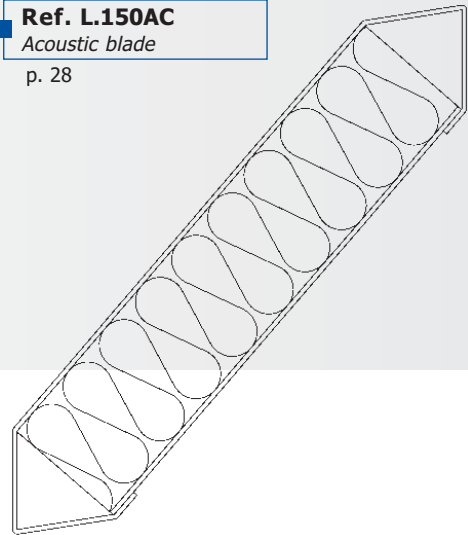


Acoustic

■ **Ref. L.150AC**

Acoustic blade

p. 28



Roll-Formed

■ **Ref. L.065AL**

Aluminium

p. 26

■ **Ref. L.065GL**

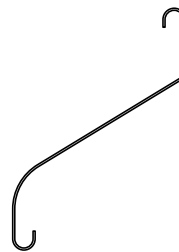
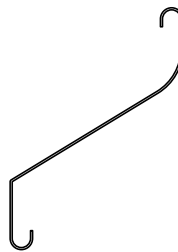
Galvanised Steel

p. 26

■ **Ref. L.065StS**

Stainless Steel

p. 26

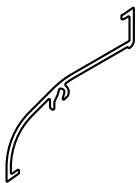


Project solutions

■ **Ref. L.050S**

Aluminium

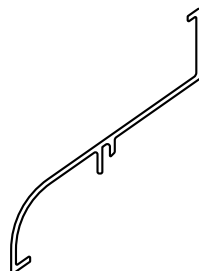
p. 16



■ **Ref. L.066S**

Aluminium

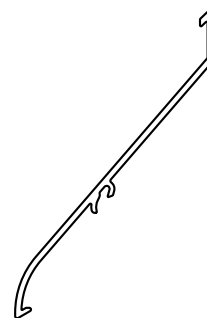
p. 20



■ **Ref. L.075S**

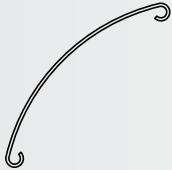
Aluminium

p. 22

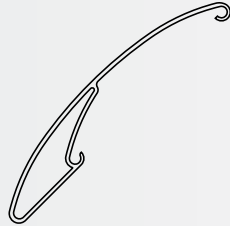


SUNCLIPS® Evo-Blades

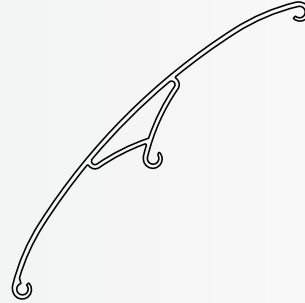
■ **Ref. SE.096**
Aluminium p. 30



■ **Ref. SE.130**
Aluminium p. 30



■ **Ref. SE.176**
Aluminium p. 30

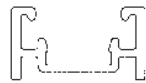


Support structures LINIUS®

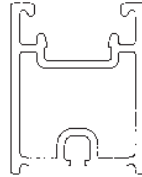
■ **Ref. LD.0065**
Light Duty p. 36



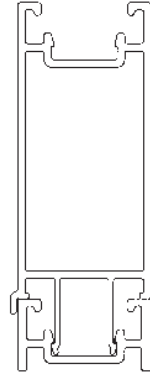
■ **Ref. LD.0195**
Medium Duty p. 37



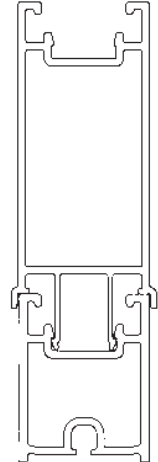
■ **Ref. LD.0460**
Heavy Duty p. 38



■ **Ref. LD.0995**
Extra Heavy Duty p. 39



■ **Ref. LD.1260**
Extra Heavy Duty p. 40

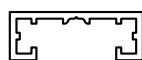


Support structures SUNCLIPS®

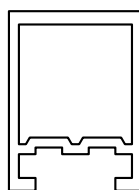
■ **Ref. LD.0108**
p. 42



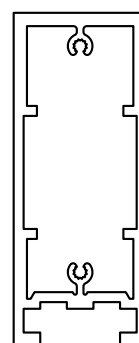
■ **Ref. SD.014**
p. 42



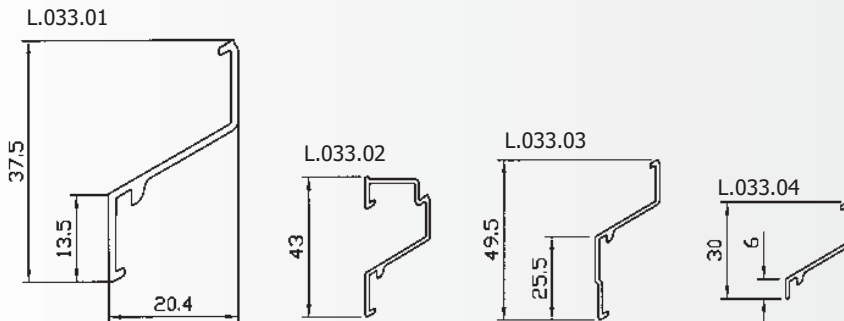
■ **Ref. SD.054**
p. 42



■ **Ref. SD.100**
p. 42



4. BLADE TYPES - REF. L.033



Description

Light duty extruded aluminium profile with pitch 33.3 mm. Generally used for smaller areas, feature shapes and curves.

MATERIALS

Aluminium extrusion to EN 573-3, alloy EN AW 6063 T66

FINISHES

- Anodised (20 microns) SAA and Euras colour range C31-34
- Polyester powdercoating (60-70 microns) RAL-colours

GUARDS

Fixed to rear of the support structure

FEATURES

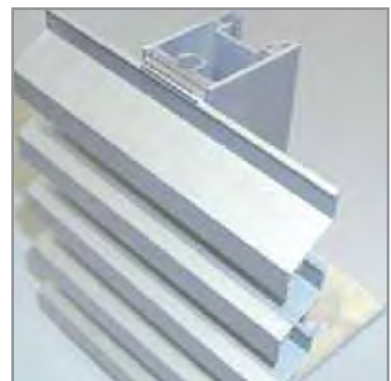
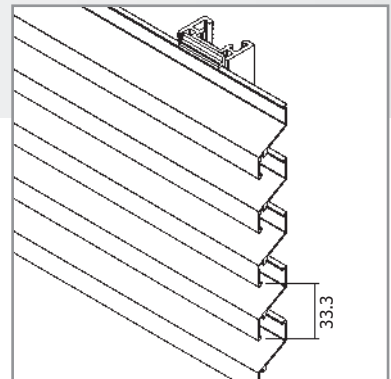
- L.033.01 can be curved from a minimum radius of 800 mm
- Top-blade L.033.02 for clean line head closure
- Short bottom blade L.033.04 and long bottom blade L.033.03
- Can be used in conjunction with block blade L.033.05 (see p. 54)

DOORS

Available; single & double doorsets with RENSON standard furniture
Doors are pivot hung (see p. 46 - 48)

BLADE SUPPORT

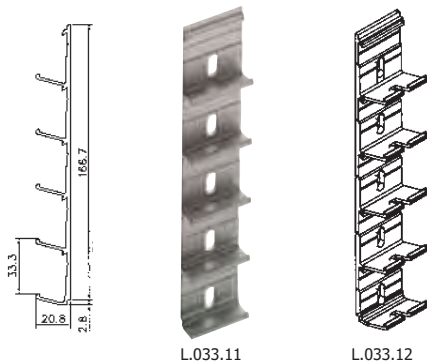
- Single blade support: L.033.11
- Double blade support for thermal expansion (blade joint): L.033.12



TECHNICAL CHARACTERISTICS L.033

- Pitch: 33,3 mm
- Depth: 20,4 mm
- Height: 37,5 mm
- K-Factor*: 19,04
- Visual Free Area*: 59%
- Phys. Free Area*: 43%
- Max. unsupported span between mullions*: 800 mm

* Definition see p. 32
maximum span depends on local situation



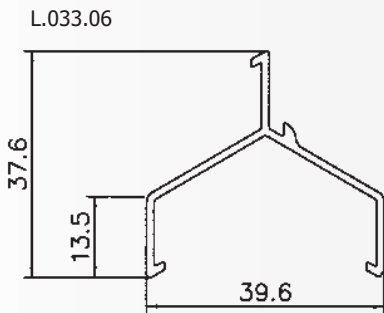
L.033.11

L.033.12

EXTRUDED ALUMINIUM BLADE



4. BLADE TYPES - REF. L.033V



Description

Extruded chevron shaped aluminium profile with pitch 33.3 mm.

Examples of use: - risk areas such as high voltage plants which require
 - restricted access
 - non-vision
 - small format with high weatherability.

Category 'A' classification BSRIA/HEVAC weathering test, natural ventilation. Can be used alongside blade type L.033, because of identical exterior appearance.

MATERIALS

Aluminium extrusion to EN 573-3, alloy EN AW 6063 T66

FINISHES

- Anodised (20 microns) SAA and Euras colour range C31-34
- Polyester powdercoating (60-70 microns) RAL-colours

GUARDS

Fixed to support structure

FEATURES

Can also be used for vertical applications

Can be used in conjunction with block blade L.033.05 (see p. 54)

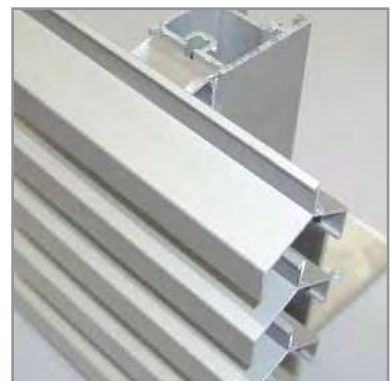
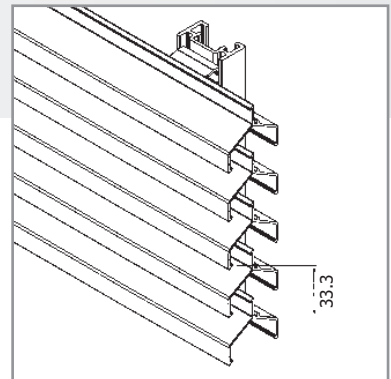
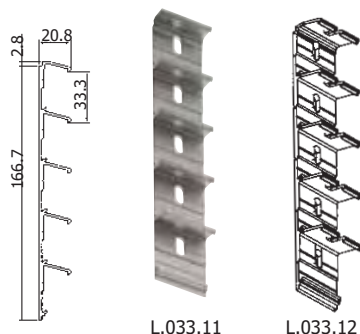
DOORS

Available; single & double doorsets with RENSON standard furniture
 Doors are pivot hung (see p. 46 - 48)

BLADE SUPPORT

Single blade support: L.033.11

Double blade support for thermal expansion (blade joint): L.033.12



TECHNICAL CHARACTERISTICS L.033V

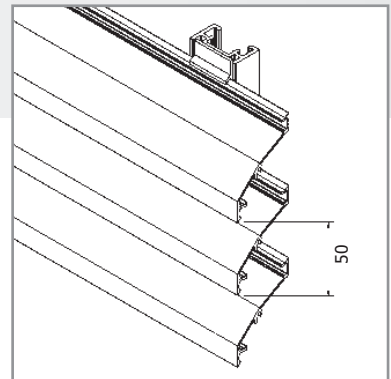
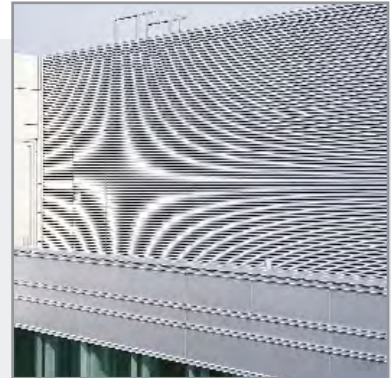
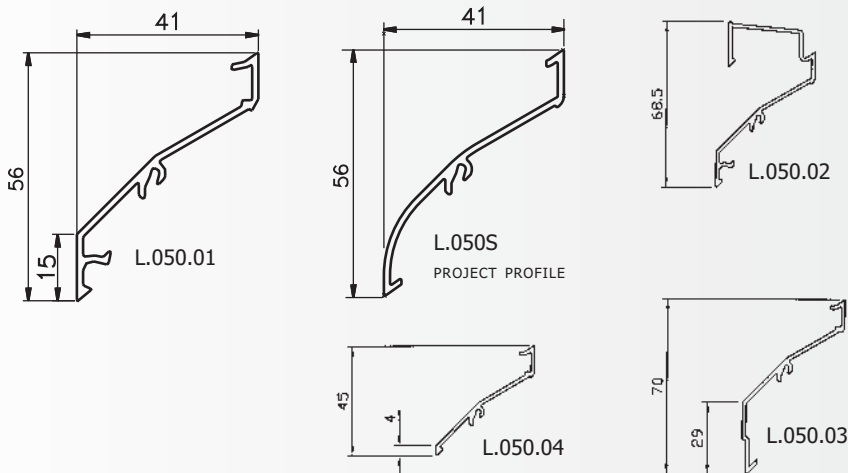
- Pitch: 33,3 mm
- Depth: 39,6 mm
- Height: 37,6 mm
- K-Factor*: 61,04
- Visual Free Area*: 60%
- Phys. Free Area*: 43%
- Max. unsupported span between mullions*: 1200 mm

* Definition see p. 32
 maximum span depends on local situation

EXTRUDED ALUMINIUM BLADE



4. BLADE TYPES - REF. L.050



Description

Heavy duty extruded aluminium profile at 50 mm pitch with good air flow. Often to be found where the blade pitch reflects the aesthetic of the overall project design. Available as doors, shapes and curves.

MATERIALS

Aluminium extrusion to EN 573-3, alloy EN AW 6063 T66

FINISHES

- Anodised (20 microns) SAA and Euras colour range C31-34
- Polyester powdercoating (60-70 microns) RAL-colours

GUARDS

Inserted between blades, or fixed to rear of support structure (see p. 42)

FEATURES

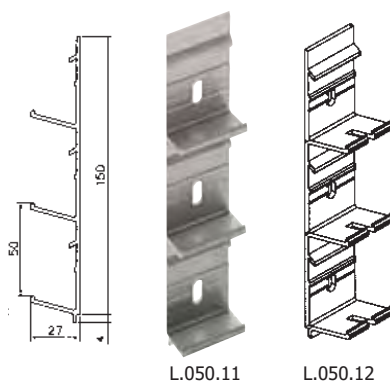
Can be curved from a minimum radius of 800 mm . Top-blade L.050.02 available for clean line head closure. Short bottom blade L.050.04 and long bottom blade L.050.03 for optimal patching. Can be used in conjunction with block blade L.050.05 (see p. 54)

DOORS

Available; single & double doorsets with RENSON standard furniture
Doors are pivot hung (see p. 46 - 48)

BLADE SUPPORT

Single blade support: L.050.11
Double blade support for thermal expansion (blade joint): L.050.12



TECHNICAL CHARACTERISTICS L.050

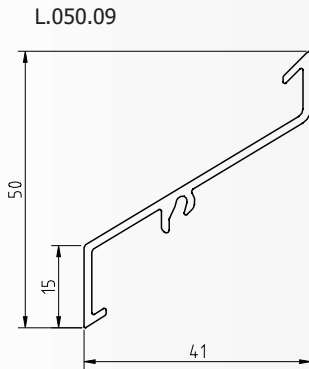
- Pitch: 50 mm
- Depth: 41,0 mm
- Height: 56,0 mm
- K-Factor*: 12,57
- Visual Free Area*: 70%
- Phys. Free Area*: 49%
- Max. unsupported span between mullions*: 1200 mm

* Definition see p. 32
maximum span depends on local situation

EXTRUDED ALUMINIUM BLADE



4. BLADE TYPES - REF. L.050HF



Description

Heavy duty extruded aluminium profile at 50 mm pitch with very high air flow. Often to be found where the blade pitch reflects the aesthetic of the overall project design.

MATERIALS

Aluminium extrusion to EN 573-3, alloy EN AW 6063 T66

FINISHES

- Anodised (20 microns) SAA and Euras colour range C31-34
- Polyester powdercoating (60-70 microns) RAL-colours

GUARDS

Fixed to rear of support structure

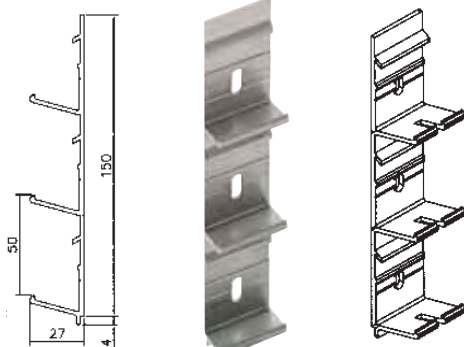
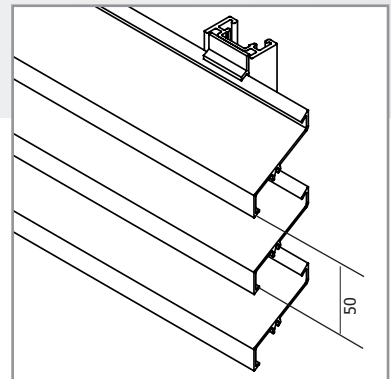
DOORS

Available; single & double doorsets with RENSON standard furniture
Doors are pivot hung (see p. 46 - 48)

BLADE SUPPORT

Single blade support: L.050.11

Double blade support for thermal expansion (blade joint): L.050.12



L.050.11

L.050.12

TECHNICAL CHARACTERISTICS L.050HF

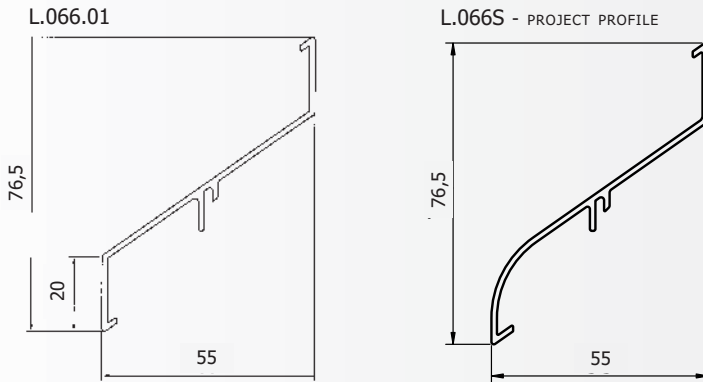
- Pitch: 50 mm
- Depth: 41,0 mm
- Height: 50,0 mm
- K-Factor*: 8,03
- Visual Free Area*: 70%
- Phys. Free Area*: 60%
- Max. unsupported span between mullions*: 1200 mm

* Definition see p. 32
maximum span depends on local situation

EXTRUDED ALUMINIUM BLADE



4. BLADE TYPES - REF. L.066



Description

Heavy duty extruded aluminium profile at 66 mm pitch having high air flow. The largest of the «small» format louvres retaining high air flow characteristics whilst providing a significant degree of weatherability.

MATERIALS

Aluminium extrusion to EN 573-3, alloy EN AW 6063 T66

FINISHES

- Anodised (20 microns) SAA and Euras colour range C31-34
- Polyester powdercoating (60-70 microns) RAL-colours

GUARDS

Fixed to rear of support structure

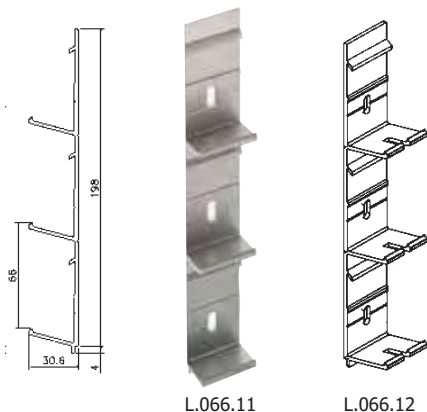
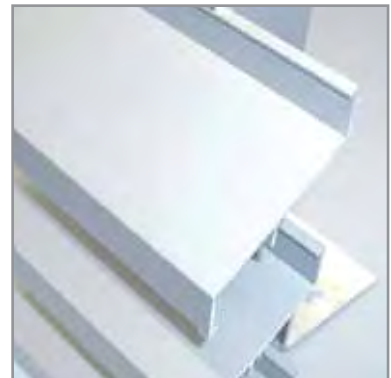
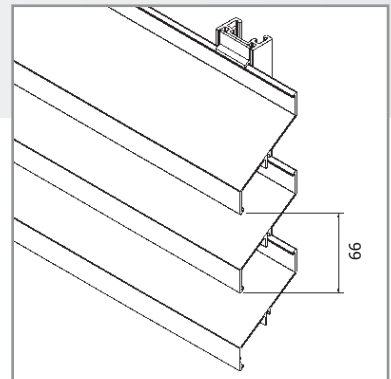
DOORS

Available; single & double doorsets with RENSON standard furniture
Doors are pivot hung (see p. 46 - 48)

BLADE SUPPORT

Single blade support: L.066.11

Double blade support for thermal expansion (blade joint): L.066.12



L.066.11

L.066.12

TECHNICAL CHARACTERISTICS L.066

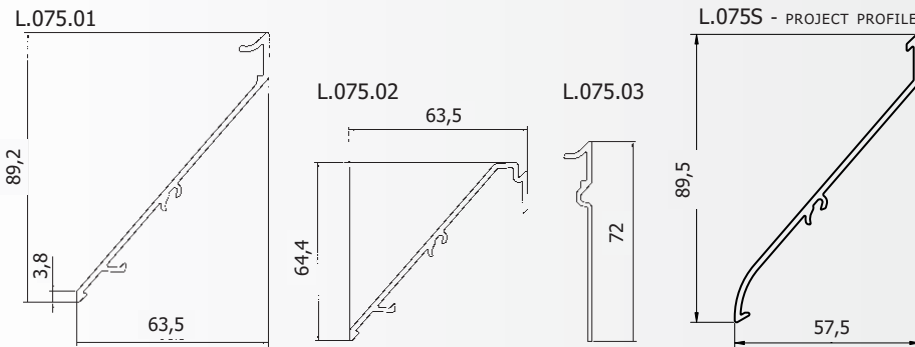
- Pitch: 66 mm
- Depth: 55,0 mm
- Height: 76,5 mm
- K-Factor*: 13,62
- Visual Free Area*: 70%
- Phys. Free Area*: 47%
- Max. unsupported span between mullions*: 1400 mm

* Definition see p. 32
maximum span depends on local situation

EXTRUDED ALUMINIUM BLADE



4. BLADE TYPES - REF. L.075



Description

Extra heavy duty extruded aluminium profile pitched at 75 mm and optimised air flow. This latest innovation within the RENSON range is provided with a choice of integral soffit mounted guards to suit the performance parameters. Category 'A' classification BSRIA/HEVAC weathering test, can be achieved.

MATERIALS

Aluminium extrusion to EN 573-3, alloy EN AW 6063 T66

FINISHES

- Anodised (20 microns) SAA and Eurac colour range C31-34
- Polyester powdercoating (60-70 microns) RAL-colours

GUARDS

Inserted between blades, or fixed to rear of support structure (see p. 42)

FEATURES

- Topblade L.075.02 optimises pitch continuity
- Bottom blade L.075.03 cut to size to provide clean cill definition
- Framed trim (see p. 51)
- Flanged trim (see p. 51)

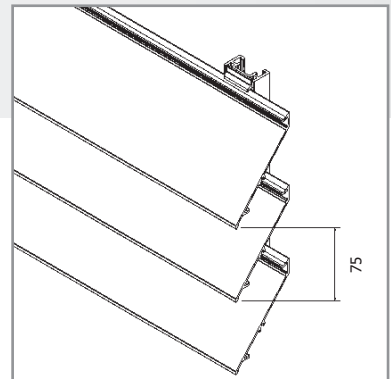
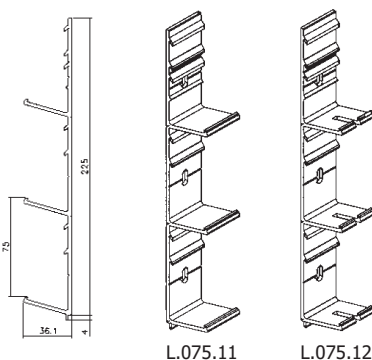
DOORS

Available; single & double doorsets with RENSON standard furniture
Doors are pivot hung (see p. 46 - 48)

BLADE SUPPORT

Single blade support: L.075.11

Double blade support for thermal expansion (blade joint): L.075.12



TECHNICAL CHARACTERISTICS L.075

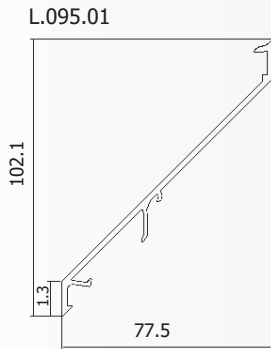
- Pitch: 75 mm
- Depth: 63,5 mm
- Height: 89,2 mm
- K-Factor*: 16,52
- Visual Free Area*: 94%
- Phys. Free Area*: 43%
- Max. unsupported span between mullions*: 1500 mm

* Definition see p. 32
maximum span depends on local situation

EXTRUDED ALUMINIUM BLADE



4. BLADE TYPES - REF. L.095



Description

Extra heavy duty extruded aluminium profile pitched at 95 mm and extra high air flow. Primarily used for industrial applications.

MATERIALS

Aluminium extrusion to EN 573-3, alloy EN AW 6063 T66

FINISHES

- Anodised (20 microns) SAA and Euras colour range C31-34
- Polyester powdercoating (60-70 microns) RAL-colours

GUARDS

Inserted between blades or fixed to rear of support structure (see p. 42)

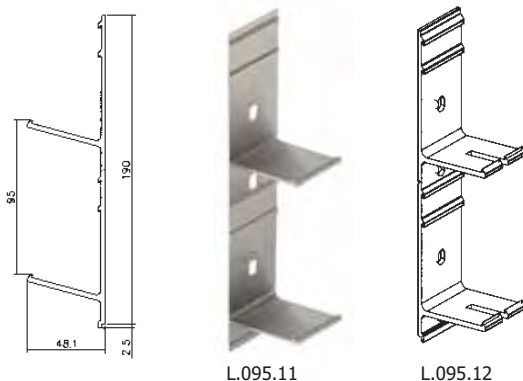
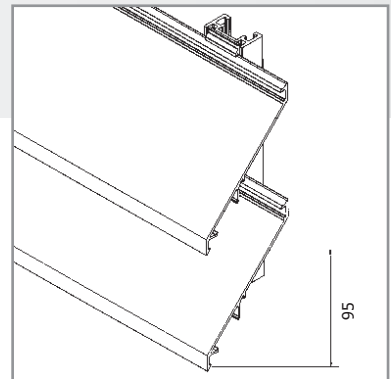
DOORS

Available; single & double doorsets with RENSON standard furniture
Doors are pivot hung (see p. 46 - 48)

BLADE SUPPORT

Single blade support: L.095.11

Double blade support for thermal expansion (blade joint): L.095.12



TECHNICAL CHARACTERISTICS L.095

Pitch: 95 mm
Depth: 77,5 mm
Height: 102,1 mm
K-Factor*: 11,41
Visual Free Area*: 86%
Phys. Free Area*: 50%
Max. unsupported span between mullions*: 1500 mm

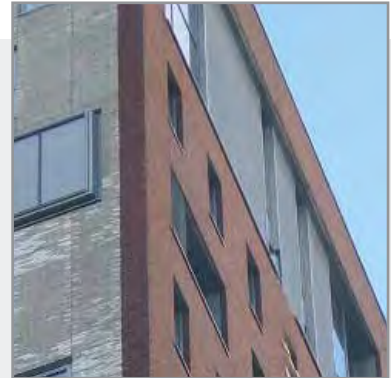
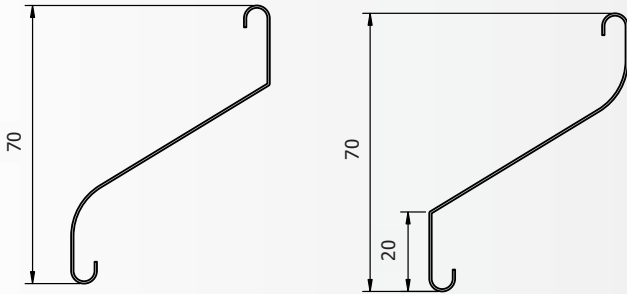
* Definition see p. 32
maximum span depends on local situation

EXTRUDED ALUMINIUM BLADE



4. BLADE TYPES - REF. L.065AL - REF. L.065GL - REF. L.065StS

Typ L.065 : can also be assembled inverted



Description

Light duty roll-formed profile from aluminium (L.065AL), steel (L.065GL) or stainless steel (L.065StS) coil with pitch 65 mm with conventional weathering. To be used for screening purposes and where an entry level product is desired. Mounted in a soft flowing appearance.

MATERIALS

Aluminium coil to EN AW 3005-H18
Steel coil to EN 10142
Stainless Steel coil

FINISHES

- Polyester powdercoating (60-70 microns) within
- RAL-colours only for blade L.065AL (aluminium)

GUARDS

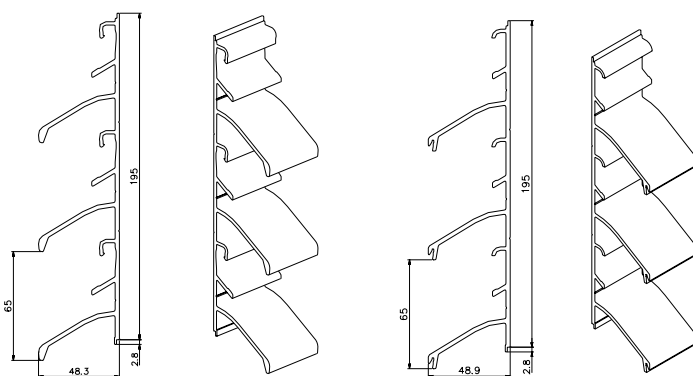
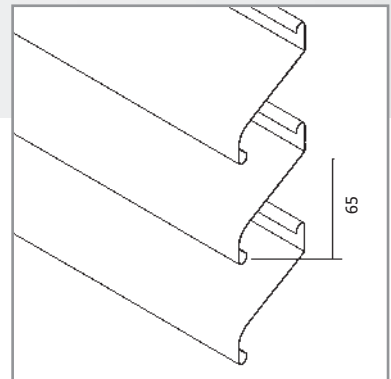
Fixed to support structure

DOORS

Not recommended

BLADE SUPPORT

Type L.065.11 also for thermal expansion, blade joint



L.065AL.11
L.065StS.11

L.065GL.11

TECHNICAL CHARACTERISTICS

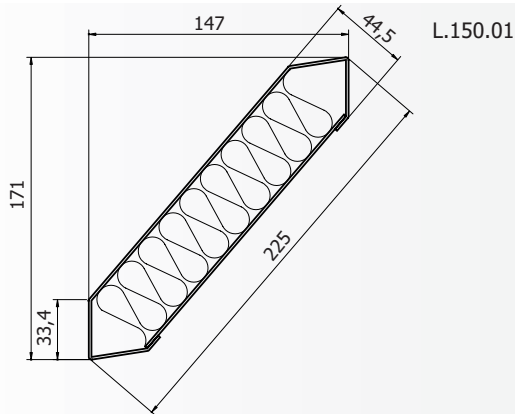
L.065AL, GL & StS

- Pitch: 65 mm
- Depth: 50,0 mm
- Height: 70,0 mm
- K-Factor*: 13,32
- Visual Free Area*: 70%
- Phys. Free Area*: 56%
- Max. unsupported span between mullions*: 1400 mm

* Definition see p. 32
maximum span depends on local situation



4. BLADE TYPES - REF. L.150AC



Description

Sheet aluminium blade with 150 mm pitch and perforated underside. Blades packed with inorganic mineral wool for acoustic performance. Developed to provide an aesthetic solution to noise reducing continuous louvre applications. Depth provides good weatherability.

MATERIALS

Aluminium sheet metal
Mineral wool with density of 50kg/m³

FINISHES

Polyester powdercoating (60-70 micron) within RAL- colours

GUARDS

Fixed to rear of blades

FEATURES

Aesthetic screening with optimum acoustic performance
Maximum blade length 2500 mm

DOORS

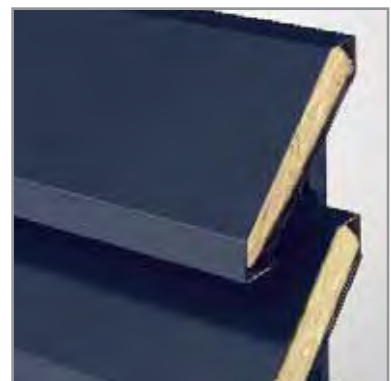
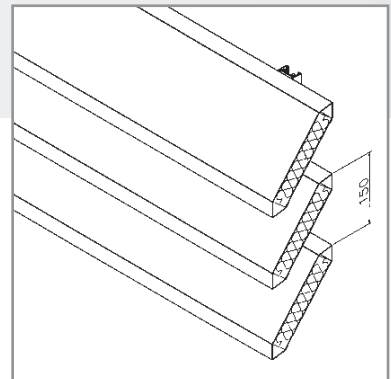
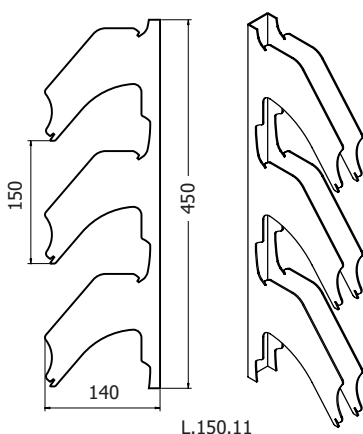
Not recommended

ACOUSTIC PROPERTIES

$R_w (C; C_{tr}) = 11 (0; -1)$ dB

BLADE SUPPORT

Type L.150.11



TECHNICAL CHARACTERISTICS L.150AC

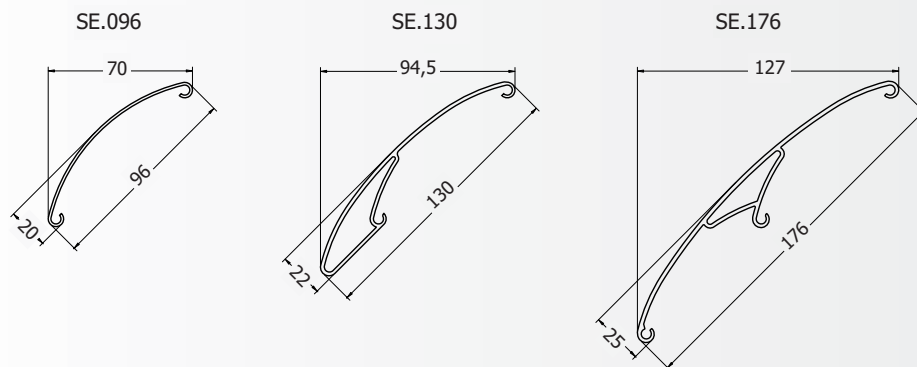
Pitch: 150 mm
Depth: 147 mm
Height: 171 mm
K-Factor*: 14,24
Visual Free Area*: 78%
Phys. Free Area*: 37%
Max. unsupported span
between mullions*: 1200 mm

* Definition see p. 32
maximum span depends on local situation

ACOUSTIC BLADES



4. BLADE TYPES - REF. SUNCLIPS® Evo



Description

SUNCLIPS® blades composed of extruded aluminium profiles applicable as sunshading, cladding or visual barrier. SUNCLIPS® Classic SC.096 is ideal for straight solutions. SUNCLIPS® Evo range encounters more design and aerodynamics. SUNCLIPS® Evo has a choice of 3 blades SE.096, SE.130 and SE.176 with an overall width of 96, 130 and 176mm.

MATERIALS

Aluminium extrusion alloy EN AW-6063 T66

FINISHES

- Anodised (20 microns) SAA and Euras colours range C31-C34
- Polyester powder coating (60-70 micron) RAL-colours

GUARDS

Fixed to the rear of the support structure

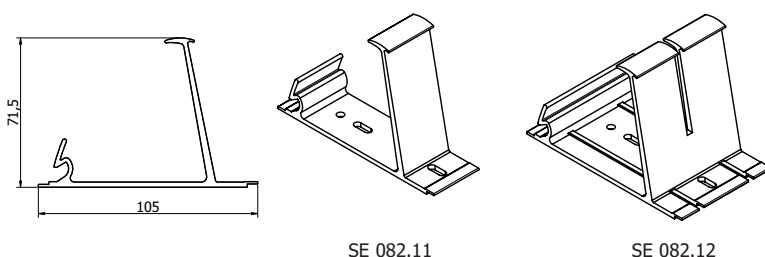
DOORS

Available: single & double door sets with Renson standard furniture
Doors are pivot hung (see p. 46 - 48)

BLADE SUPPORT

Single blade support: Type SE 082.11

Double blade support for thermal expansion (blade joint) : SE 082.12



TECHNICAL CHARACTERISTICS

SUNCLIPS® Evo

Pitch: changeable (min. 100mm)	
Depth and height: Evo 96	70 mm
Evo 130	94.5 mm
Evo 176	127 mm
Max. unsupported span between mullions:	
Evo 96	1400 mm
Evo 130	1600 mm
Evo 176	2000 mm

* Definition see p. 32
maximum span depends on local situation

EXTRUDED ALUMINIUM BLADE



5. SELECTION GUIDE

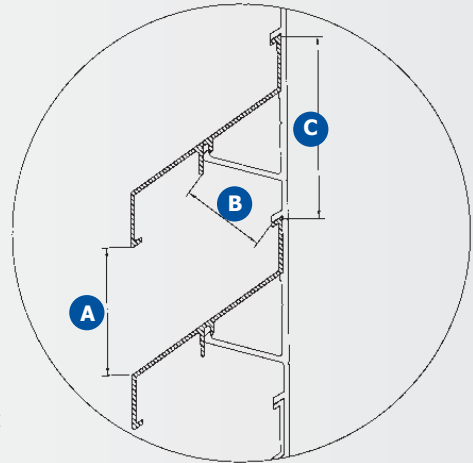
This chapter offers you assistance with selecting the ideal RENSON louvre ventilation system. A few definitions, well-known in the field of natural ventilation, are explained.

DEFINITION 1 : VISUAL FREE AREA (*)

Visual Free Area is determined by the ratio between the face distance between two blades (A) and the pitch of the blade (C).

DEFINITION 2 : PHYSICAL FREE AREA (*)

Physical Free Area is determined by the ratio between the smallest gap between two blades (= throat) (B) and the pitch of the blade (C).



(*) Both definitions of the free area do not take into account the influence of top blades and bottom blades.

- A** Face Free Area
- B** Throat Free Area
- C** The pitch of the blade

DEFINITION 3 : K-FACTOR

The K-factor is a value describing the aerodynamic resistance to air flow. Contrary to the free area it describes the relationship between the air flow through the louvre and the pressure drop over it.

For exact interpretation purposes, the calculation will be derived stepwise below.

To find the resistance to air flow, due to the insertion of a louvre into an opening, a K-factor must be used. This factor is only found by test.

Free area should not be used for calculating pressure drop or sizing louvres where specific volumes or velocities are known. RENSON recommend the use of K-factors which are established by factual testing of a louvre. Louvres with the same free area can have different K-factors, which is caused by small differences in the form of the profiles. Free area should be used in cases where regulations suggest an open area which is equal to a particular percentage of floor area.

Before the pressure loss can be considered, the *velocity* must be found via the ratio:

$$\text{VELOCITY} = \frac{\text{AIR FLOW RATE}}{\text{FACE AREA}} \quad (\text{a})$$

Air Flow Rate = m³/s the volume of air to pass through the louvre

Face Area = m² the size of the louvre (overall face area)

Velocity = m/s the speed of the approaching air at the face of the louvre. (Not wind speed.)

This calculation can be transposed and two elements must be known or estimated.

To calculate the *pressure drop*, the simplest equation uses the K-factor from the tables on page 29.

$$\text{PRESSURE DROP} = K \times 0.6 \times \text{VELOCITY}^2 \quad (\text{b})$$

To size louvres, find volumes, velocities or pressure drops, the ratios and equations can be transposed.

How to use the K-factor method

METHOD 1: IDENTIFY SUITABLE LOUVRE TYPE FOR A CERTAIN OPENING SIZE

1. Determine the required air flow rate
2. Determine the available opening size (louvre size)
3. Determine the maximum allowable pressure drop
4. Identify the suitable louvre type by means of the K-factor

METHODE 2 : DETERMINE REQUIRED LOUVRE SIZE WHEN LOUVRE TYPE IS ALREADY CHOSEN

1. Choose preferred louvre type
2. Determine the velocity at the face of the louvre by means of the K-factor and the maximum pressure drop
3. Determine the required air flow rate
4. Determine the minimum louvre size

Example of method 1

Which louvre type is suitable to achieve a required ventilation volume of 15.28 m³/s with a maximum allowable pressure drop of 25 Pa for an opening dimension of 10 m²?

Calculation:

Using formula (a)
Air flow rate = 15.28 m³/s
Louvre size = 10 m²

$$\text{Velocity} = 15.28 \text{ m}^3/\text{s} / 10 \text{ m}^2 = 1.53 \text{ m/s}$$

Using formula (b)
Pressure drop = 25 Pa
Velocity = 1.53 m/s

$$\text{K-factor} = 25 / (0.6 \times 1.53^2) = 17.80$$

Therefore a louvre with a K-factor less than 17.80 is acceptable.
For this example all blades except L.033 and L.033V can be recommended.

Example of method 2

Louvre type L.050 is preferred. What area is needed to have a maximum pressure drop of 30 Pa, when the air flow rate is 2.78 m³/s ?

$$\text{Velocity} = \sqrt{\frac{30}{0,6 \times 12,57}} = 1,99 \text{ m/s}$$

Calculation using formula (b) :

K = 7,84

$$\text{Area} = \frac{2,78 \text{ m}^3/\text{s}}{1,99 \text{ m/s}} = 1,39 \text{ m}^2$$

This is the minimum area of louvre type L.050 which is required to have a pressure drop lower than 30 Pa at an air flow rate of 2.78 m³/s. Assuming height is fixed at 950 mm; width will be 1,160 mm.

SUMMARY TABLE

BLADE N°	L.033	L.033V	L.050	L.050	L.050HF	L.065AL	L.065GL/StS	L.066
PITCH	33.3	33.3	50	50	50	65	65	66
MATERIAL	alu	alu	alu	alu	alu	alu	galv. or stainless	alu
GUARD	rear	rear	rear	L.050.33	rear	rear	rear	rear
				insert				
CURVED	yes	no	yes	no	no	no	no	no
DOOR	yes	yes	yes	yes	yes	yes	no	yes
MITRED CORNERS	yes	yes	yes	yes	yes	yes	no	jyes
VISUAL FREE AREA %	59	60	70	70	92	70	70	70
PHYSICAL FREE AREA %	43	43	49	23	60	56	56	47
K-FACTOR								
SUPPLY WITHOUT GUARD	19.04	61.04	12.57	-	8.03	13.32	13.32	13.62
SUPPLY WITH GUARD	22.68	66.10	13.42	14.79	-	13.92	13.92	14.24
EXHAUST WITHOUT GUARD	25.08	61.04	8.91	-	8.75	17.08	17.08	14.91
EXHAUST WITH GUARD	26.43	66.10	9.35	12.94	-	17.22	17.22	14.91

BLADE N°	L.075	L.075	L.075	L.075	L.095	L.095	L.150AC
PITCH	75	75	75	75	95	95	150
MATERIAL	alu	alu	alu	alu	alu	alu	alu
GUARD	yes	L.075.32	L.075.33	L.075.34	rear	L.095.33	rear
		rear	rear	rear		rear	
CURVED	no	no	no	no	no	no	no
DOOR	yes	yes	yes	yes	yes	yes	no
MITRED CORNERS	yes	yes	yes	yes	yes	yes	yes
VISUAL FREE AREA %	94	94	94	94	86	86	78
PHYSICAL FREE AREA %	43	23	43	30	50	49	37
K-FACTOR							
SUPPLY WITHOUT GUARD	16.52	-	-	-	11.41	-	14.24
SUPPLY WITH GUARD	-	41.62	19.75	30.52	-	15.38	-
EXHAUST WITHOUT GUARD	17.65	-	-	-	11.65	-	14.24
EXHAUST WITH GUARD	-	35.43	19.93	32.65	-	14.79	-

To calculate the exact height of the louvre system, use the following formula. N = number of blades.

$$\text{Louvre height} = (N - 1) \times \text{pitch} + \text{blade height}$$

BLADE TYPE	L.033	L.033V	L.050	L.050HF	L.065 AL	L.065 GL	L.065StS	L.066	L.075	L.095	L.150 AC
PITCH	33.3	33.3	50	50	65	65	65	66	75	95	150
BLADE HEIGHT	38	38	56	50	70	70	70	76	90	102	171

6. SUPPORT STRUCTURE



A mullion based “stick system”, manufactured from extruded aluminium carries aluminium blade support clips and blades.

The entire homogeneous structure is designed in accordance with CEN/TC250/SC9 Eurocode 9/BS8118, structural use of aluminium. Mullion centres and spans are determined in accordance with CEN/TC250/SC1 Eurocode 1/BS6399 Part 2: 1997 and all relevant best practices.

CALCULATION OF THE HEIGHT SPAN ACCORDING TO BS6399: 2 EXAMPLES



DESIGN CRITERIA

	EXAMPLE 1	EXAMPLE 2
Location of the building	LONDON AREA	NORTHERN SCOTLAND
Wind speed (V)	20 m/s	26 m/s
Altitude factor (S_a)	1 (approx. at sea level)	1.1 (100 m above sea level)
Direction factor (S_d)	0.74 (east)	1 (south south west)
Seasonal factor (S_s)	1	1
Probability factor (S_p)	1	1
Terrain and building factor (S_b)	1.36 (height = 5 m, closest distance to the sea > 100 km)	1.82 (height = 15 m, closest distance to the sea 10 - 100 km)
Louvre type factor (f) by BBRI	0.7	0.7

CALCULATION

$$\text{Design Pressure} = f \times 0.613 \times 1.5 \times (V \times S_a \times S_d \times S_s \times S_p \times S_b)^2$$

Design pressure example 1 = 260 Pa

Design pressure example 2 = 1,750 Pa

CONCLUSION

With a distance between the mullions of 800 mm and a maximum deflection of 1/100, the span of the support profile type LD.0460 is 2,750 mm in example 1. In example 2, the span would be 1,300 mm if the stress in the aluminium is limited to 80 N/mm².

Consequently, the height span depends on the local situation and applicable standards. It should also be pointed out that the second example does not represent the worst case scenario.



LD.0065

Description

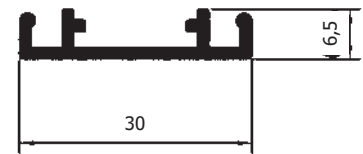
Light duty extruded aluminium profile to be fixed directly onto an existing wall or steel back structure.

MATERIALS

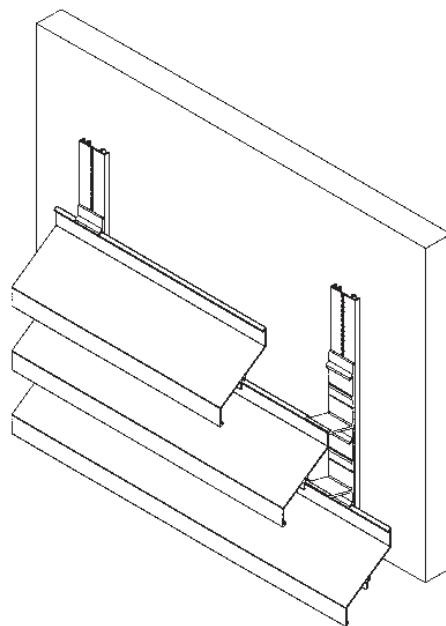
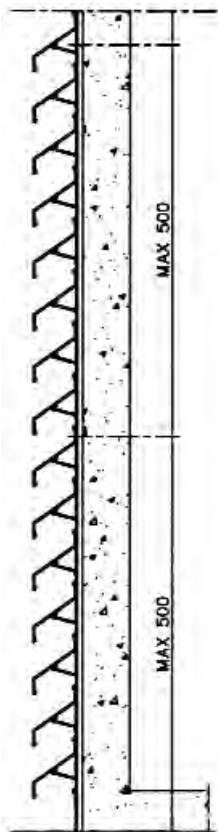
Aluminium extrusion to EN 573-3,
alloy EN AW-6063

FINISHES

- Anodised (20 microns) SAA and Euras colour range C31-34
- Polyester powdercoating (60-70 microns) within RAL-colours



LD.0065



TECHNICAL CHARACTERISTICS TYPE LD.0065

Profile depth: 6,5 mm

Profile with: 30 mm

Moment of inertia: 260 mm⁴

Section modulus: 59 mm³

Recommended for fixing to solid structures



LD.0195

Description

Medium duty extruded aluminium profile to be fixed directly onto an existing wall or steel substructure. Type LD.0195 is used to span between sheeting rails up to a span height of +/- 600 mm. Type LD.0995 can be used to increase height to +/- 2,800 mm. Both are fixed to the structure with appropriate mechanical fasteners.

MATERIALS

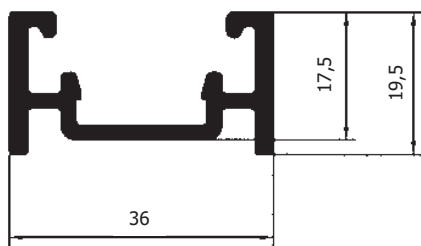
Aluminium extrusion to EN 573-3, alloy EN AW-6063

FINISHES

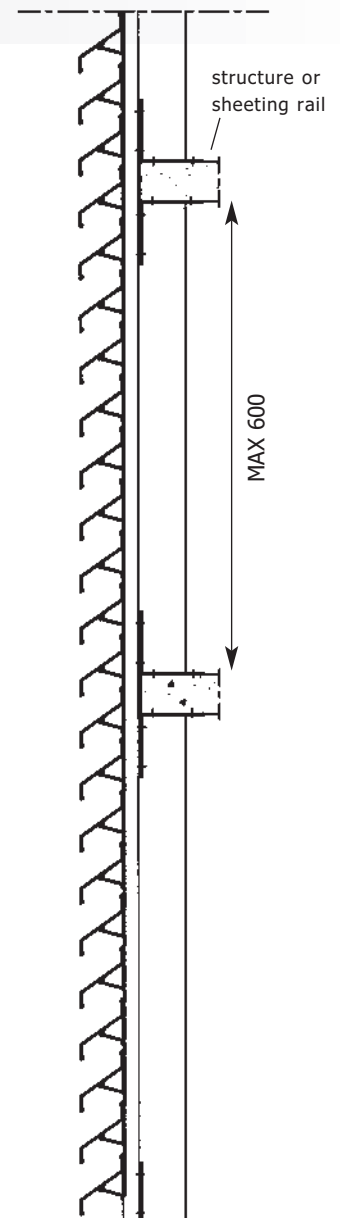
- Anodised (20 microns) SAA and Euras colour range C31-34
- Polyester powdercoating (60-70 microns) within RAL-colours

FEATURE

Can be used to build type LD.0995.



LD.0195



TECHNICAL CHARACTERISTICS TYPE LD.0195

Profile depth: 19,50 mm

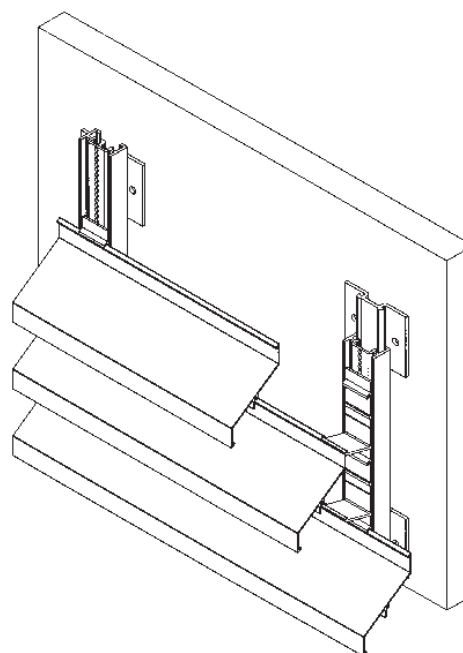
Profile with: 36 mm

Moment of inertia: 6.560 mm⁴

Max. height span: ± 600 mm

Section modulus: 607 mm³

(Max. height span calculated at centre distance between mullions of 800 mm and depends on local situation and applicable standards; moments of inertia is a universal norm)



LD.0460

Description

General duty flanged extruded aluminium profile to be used to span up to +/- 2,000 mm.

MATERIALS

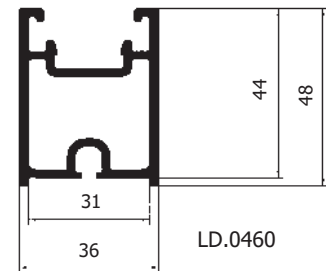
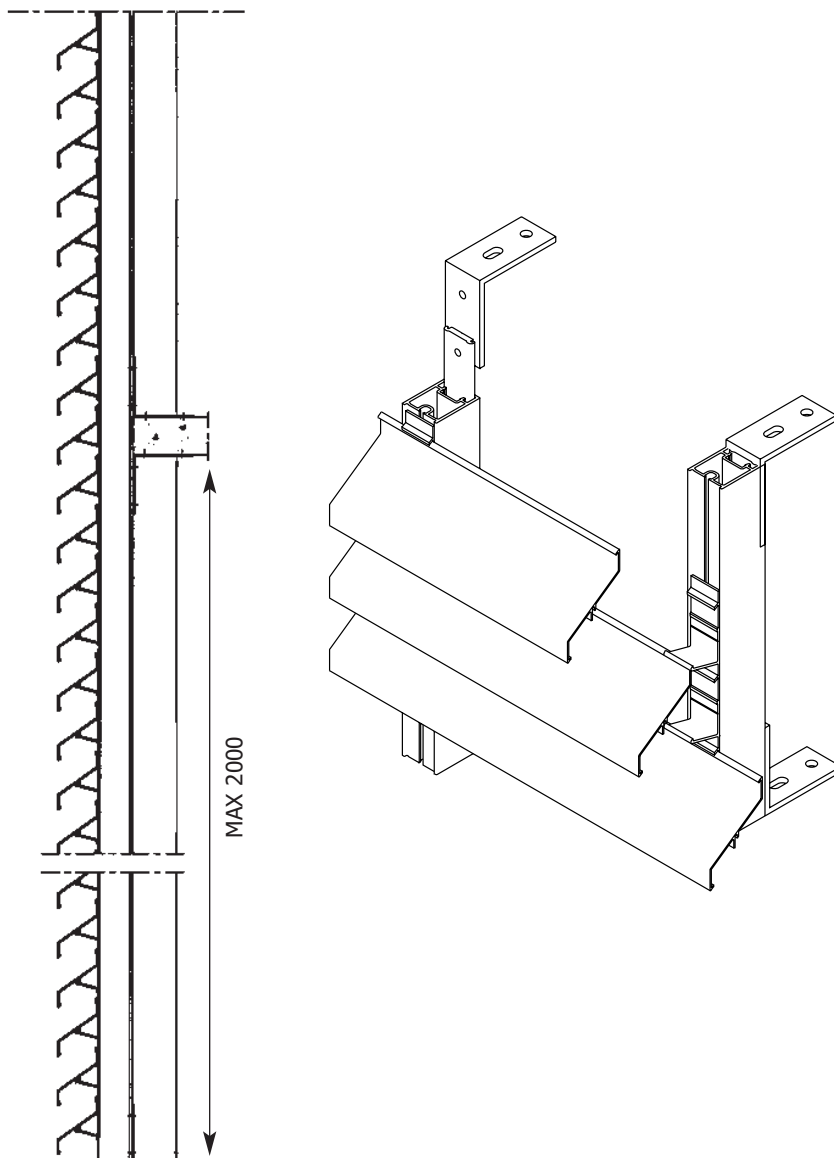
Aluminium extrusion to EN 573-3, alloy EN AW-6063

FINISHES

- Anodised (20 microns) SAA and Euras colour range C31-34
- Polyester powdercoating (60-70 microns) within RAL-colours

FEATURE

Can be used to build type LD.1260



TECHNICAL CHARACTERISTICS

TYPE LD.0460

Profile depth: 46 mm
Profile width: 36 mm
Moment of inertia: 81.900 mm⁴
Max. height span: ± 2.000 mm
Section modulus: 3426 mm³

(Max. height span calculated at centre distance between mullions of 800 mm and depends on local situation and applicable standards; moments of inertia is a universal norm)



LD.0995

Description

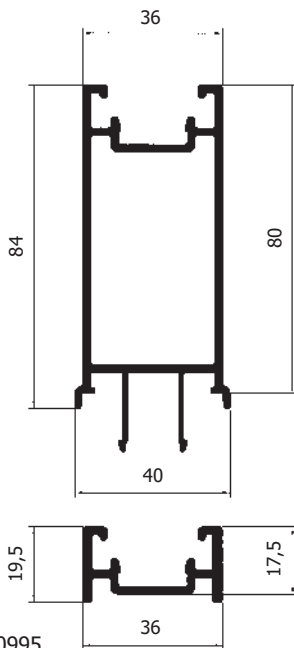
Heavy duty extruded aluminium profile to be used for spans up to 2,800 mm.

MATERIALS

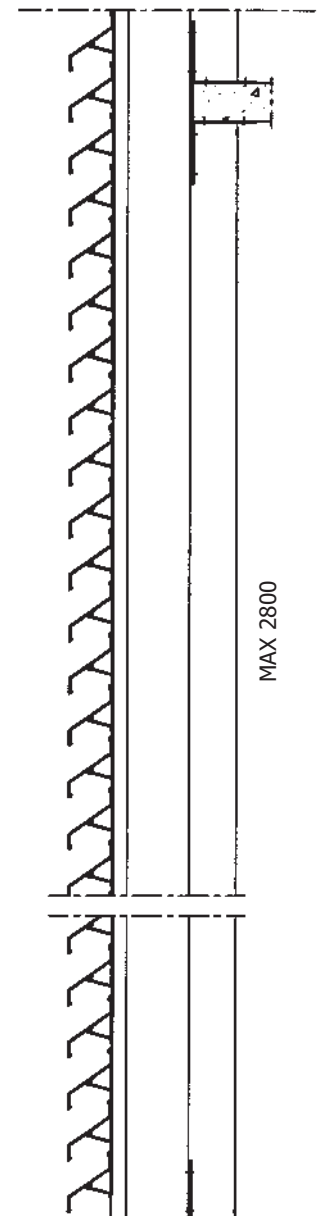
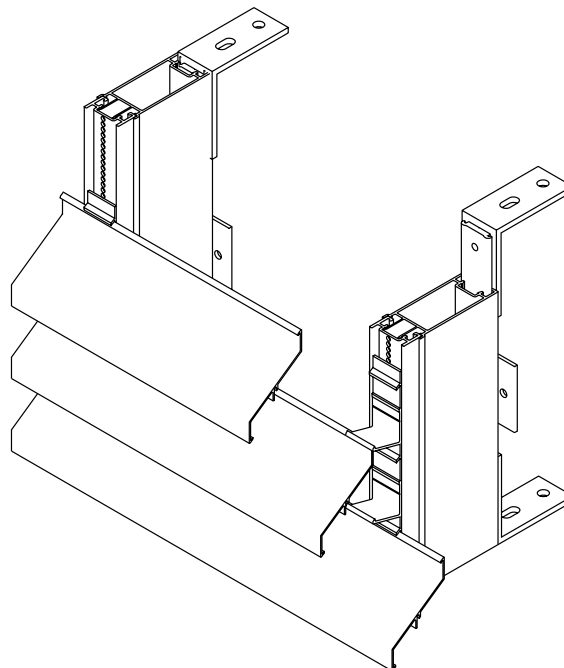
Aluminium extrusion to EN 573-3, alloy EN AW-6063

FINISHES

- Anodised (20 microns) SAA and Euras colour range C31-34
- Polyester powdercoating (60-70 microns) within RAL-colours



LD.0995



TECHNICAL CHARACTERISTICS TYPE LD.0995

Profile depth: 99,50 mm

Profile width: 40 mm

Moment of inertia: 481.949 mm⁴

Max. height span: ± 2.800 mm

Section modulus: 11,197 mm³

(Max. height span calculated at centre distance between mullions of 800 mm and depends on local situation and applicable standards; moments of inertia is a universal norm)

LD.1260

Description

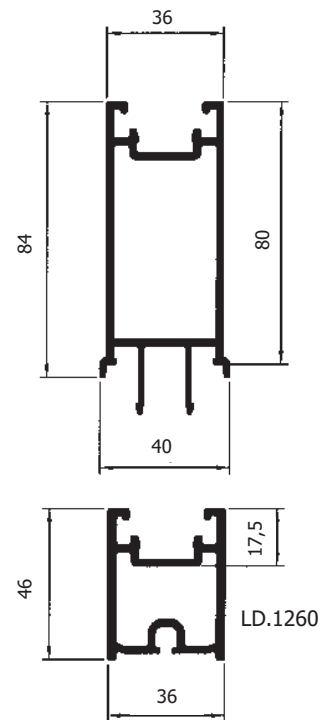
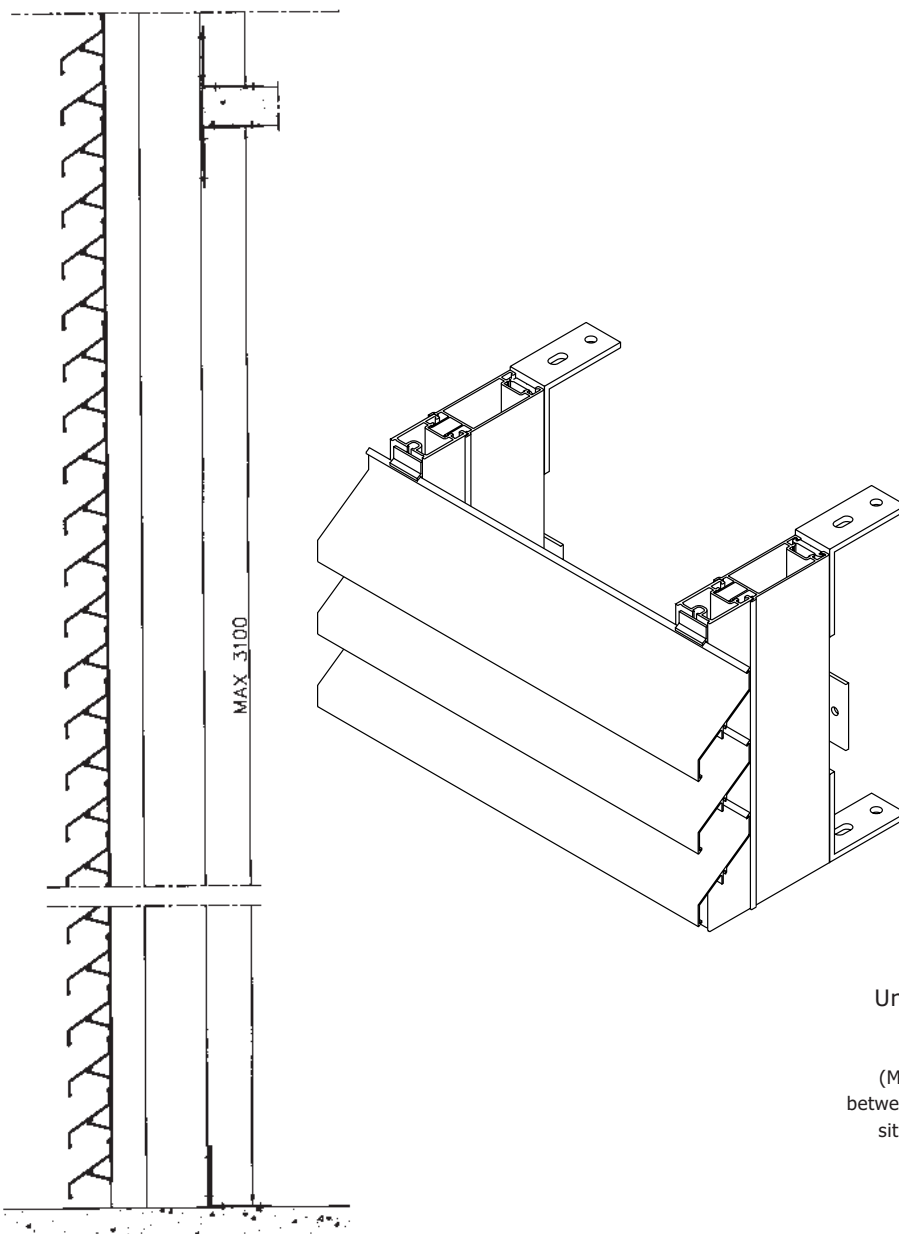
Heavy duty extruded aluminium profile to be used for spans up to 3,100 mm.

MATERIALS

Aluminium extrusion to EN 573-3, alloy EN AW-6063

FINISHES

- Anodised (20 microns) SAA and Euras colour range C31-34
- Polyester powdercoating (60-70 microns) within RAL-colours



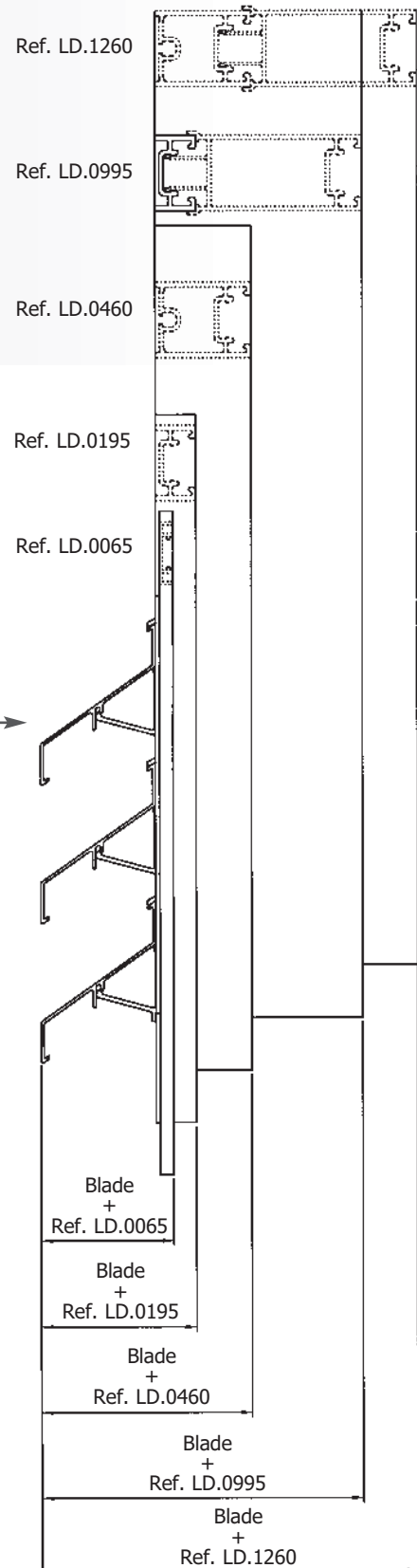
TECHNICAL CHARACTERISTICS TYPE LD.1260

Profile depth: 126 mm
Profile width: 40 mm
Moment of inertia: 560000 mm⁴
Unsupported height span: ± 3100mm
Section modulus: 12,913 mm³

(Max. height span calculated at centre distance between mullions of 800 mm and depends on local situation and applicable standards; moments of inertia is a universal norm)

SYSTEM DEPTH

- Blade ref. L.033
- Blade ref. L.033V
- Blade ref. L.050
- Blade ref. L.050HF
- Blade ref. L.066
- Blade ref. L.075
- Blade ref. L.095
- Blade ref. L.065AL
- Blade ref. L.065GL
- Blade ref. L.065StS
- Blade ref. L.150AC
- Blade ref. Evo 96
- Blade ref. Evo 130
- Blade ref. Evo 176



TOTAL DEPTH OF LOUVRE SYSTEM IN MM

	Ref. LD.0065	Ref. LD.0195	Ref. LD.0460	Ref. LD.0995	Ref. LD.1260
Ref. L.033	29	40	66.5	120	146.5
Ref. L.033V	48.1	59.1	85.6	139.1	165.6
Ref. L.050	49.5	60.5	87	140.5	167
Ref. L.050HF	49.5	60.5	87	140.5	167
Ref. L.066	63.5	74.5	101	154.5	181
Ref. L.075	72	83	109.5	163	189.5
Ref. L.095	86	97	123.5	177	203.5
Ref. L.065AL	58.5	69.5	96	149.5	176
Ref. L.065GL	58.5	69.5	96	149.5	176
Ref. L.065StS	58.5	69.5	96	149.5	176
Ref. L.150AC	176.5	187.5	214	267.5	294
Ref. Evo 96	81,8	92,8	119,3	172,8	199,3
Ref. Evo 130	106,2	117,2	143,7	197,2	223,7
Ref. Evo 176	138,2	149,2	175,7	229,2	255,7

SUNCLIPS® MULLIONS - SD.014 - SD.054 - SD.100



Description of the support profiles SUNCLIPS®

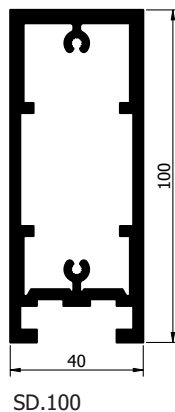
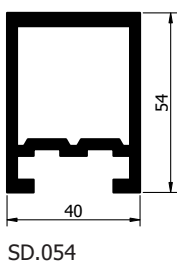
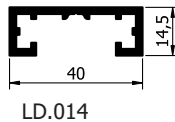
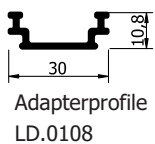
Extruded aluminium profiles, type SD, are preferably used as mullions in a horizontal application. For more info, see SUNCLIPS® literature.

MATERIALS

Aluminium extrusion alloy EN AW-6063 T66.

FINISH

- Anodised (20 microns) SAA and Euras colour range C31 – C34
- Polyester powdercoating (60 – 70 micron) RAL-colours



TECHNICAL

CHARACTERISTICS TYPE SD.

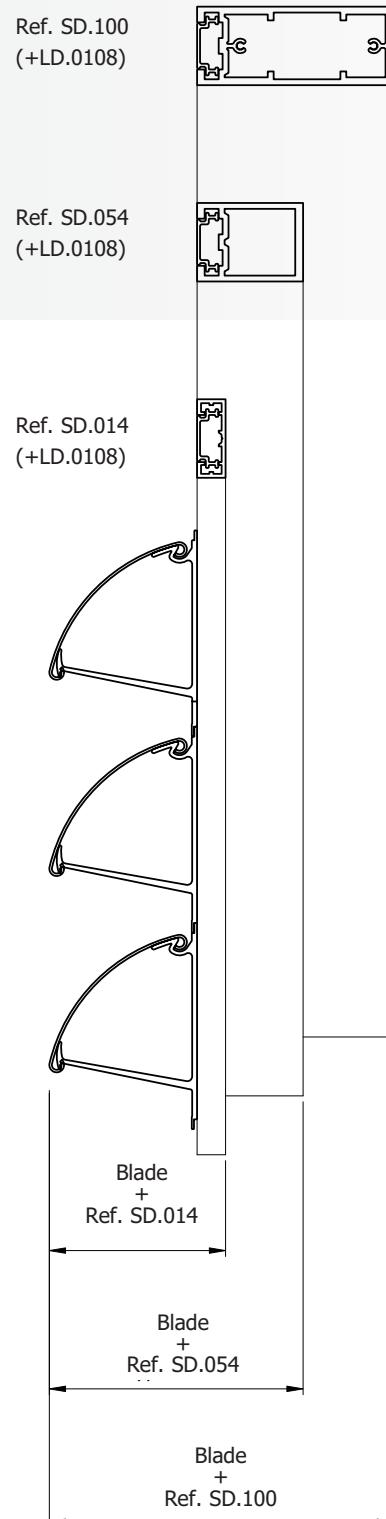
- Profile depth: SD.014 = 14,5 mm
 SD.054 = 54 mm
 SD.100 = 100 mm
- Profile width: SD.014/54/100 = 40 mm
- Moment of inertia: SD.014 = 4.506 mm⁴
 SD.054 = 208.600 mm⁴
 SD.100 = 1.248.321 mm⁴
- Section modulus: SD.014 = 495 mm³
 SD.054 = 7.371 mm³
 SD.100 = 24.381 mm³
- Max. height span: SD.014 +/- 600 mm
 SD.054 +/- 2100 mm
 SD.100 +/- 3800 mm

(max. height span calculated at centre distance between mullions of 800 mm and depends on local situation and applicable standards)

SYSTEM DEPTH

SD MULLIONS ALWAYS IN COMBINATION WITH LD.0108

	Ref. SD.014	Ref. SD.054	Ref. SD.100
Ref. L.033	37,0	76,5	122,5
Ref. L.033V	56,1	95,6	141,6
Ref. L.050	57,5	97,0	143,0
Ref. L.050HF	57,5	97,0	143,0
Ref. L.066	71,5	111,0	157,0
Ref. L.075	80,0	119,5	165,5
Ref. L.095	94,0	133,5	179,5
Ref.L.065AL	66,5	106,0	152,0
Ref. L.065GL	66,5	106,0	152,0
Ref. L.065StS	66,5	106,0	152,0
Ref. L.150AC	184,5	224,0	270,0
Ref. Evo 96	89,8	129,3	175,3
Ref. Evo 130	114,2	153,7	199,7
Ref. Evo 176	146,2	185,7	231,7



7. FIXING BRACKETS

The support structure is fixed to an existing structure by means of brackets. Usually brackets are used to fix the mullions at the bottom and the top. Intermediate brackets are necessary to increase strength on high spans. The intermediate brackets slide within the extrusion for flexibility and accuracy of fixing.

The brackets type LZ.4206, LZ.4203 and LZ.4206 are the Renson standard solution to most site conditions.

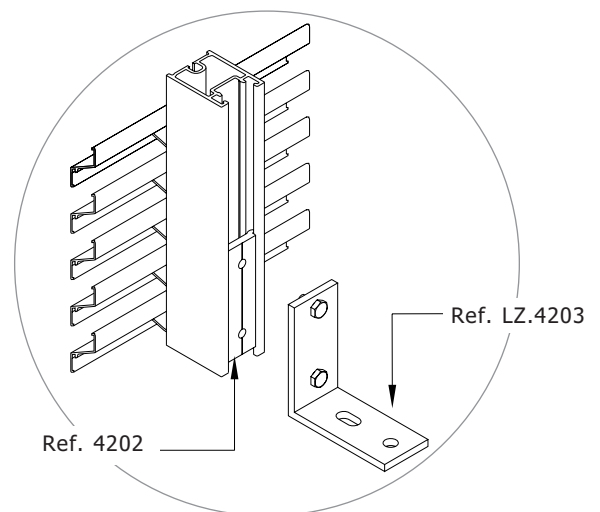
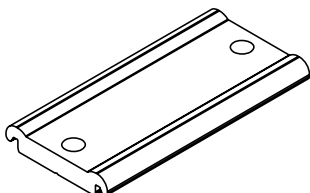
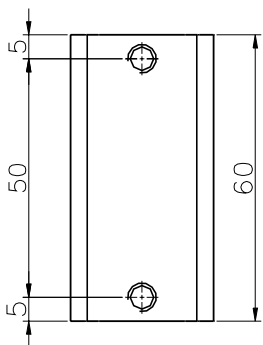
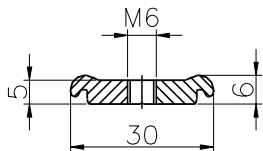
Type LZ.4202 is a bracket with flanged screwholes and can be moved up and down, it can be mechanically fixed to LZ.4203s or any similar solution.

Type LZ.4203 is an angle, fixed onto the type LZ.4202 and to structure.

Type LZ.4202 fits in the grooves on the rear of the support mullion and can be moved up and down.

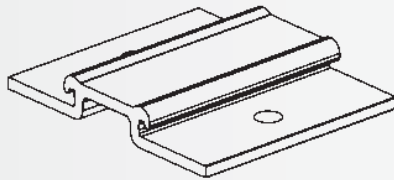


FIXING BRACKET - TYPE LZ.4202

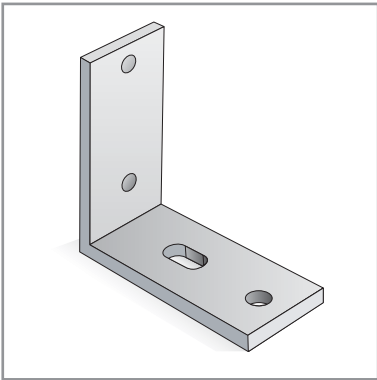
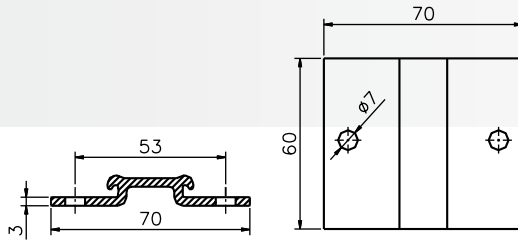
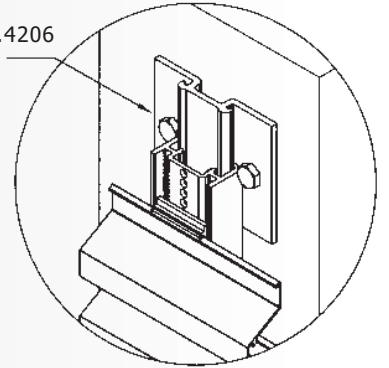




SLIDING BRACKET - TYPE LZ.4206

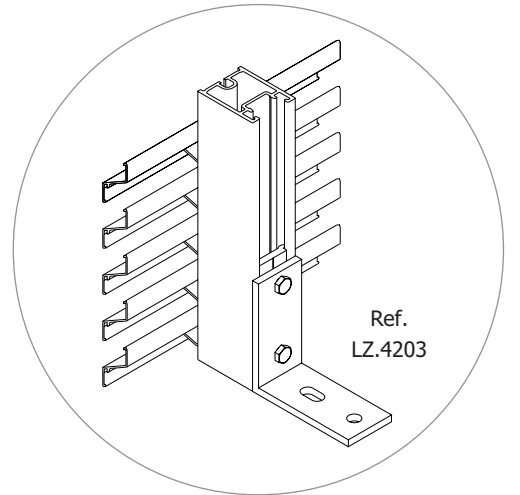


Ref. LZ.4206

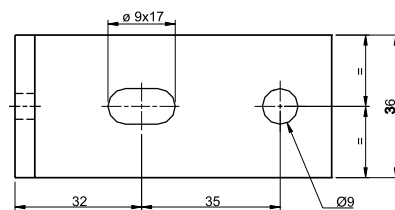
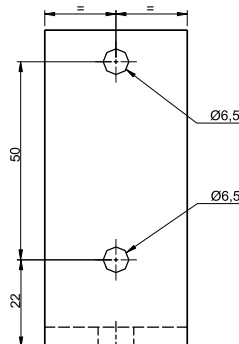
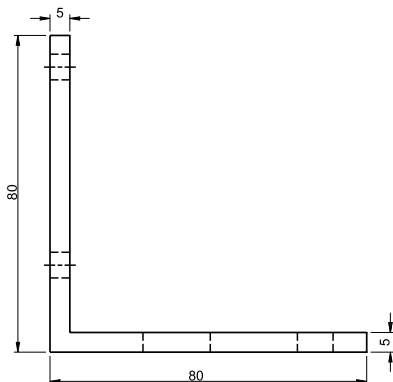


ANGLE BRACKET - TYPE LZ.4203

Where necessary, project specific bracketry can be designed and provided by the RENSON approved fabricator/installer.



Ref. LZ.4203



8. ACCESORIES

The continuous louvre system can be equipped with

- Access doors
- Guards to prevent the entry of insects, vermin, birds, ...
- Peripheral cills or trims, extra to the closing of the opening

A. Doors

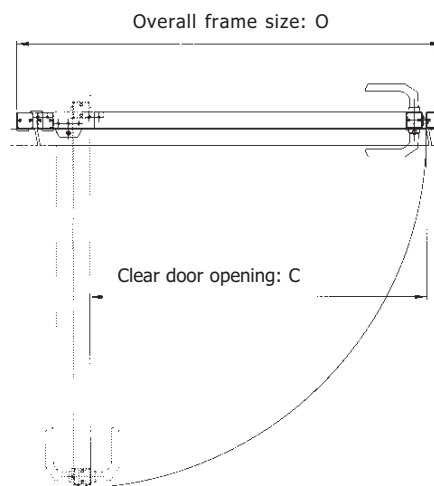
RENSON offers single or double doors in custom made sizes, opening internally or externally. In some cases, access behind the continuous louvre system is required for example to maintain and service the (hidden) industrial appliances. The doors are equipped with locks, pivots, handles and restraining chain upon specification (it can also be designed as a stand close door into structure).



DIFFERENCE BETWEEN OVERALL FRAME SIZE (O) AND CLEAR DOOR OPENING (C):

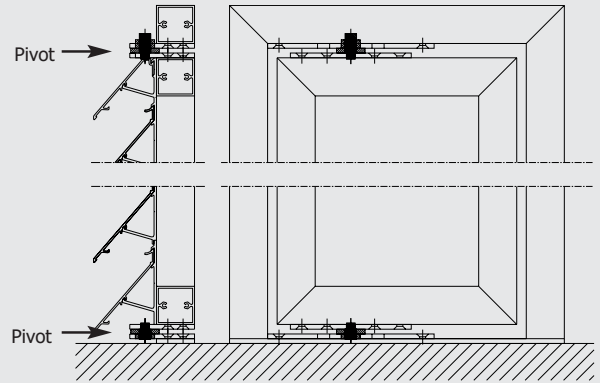
O - C (mm)	L.033		L.050		L.066		L.075		L.095	
	Single	Double	Single	Double	Single	Double	Single	Double	Single	Double
Opening outwards	219.5	359	219.5	359	219.5	359	239	398	239.5	399
Opening inwards	178	276	198.5	317	212.5	345	241	402	235	390

Be aware that the clear opening size (C) is smaller than the actual door size (O) due to the pivoting mechanism. The position of the pivot will depend in turn on the total load of the louvre door. RENSON can assist you in determining the correct sizes.

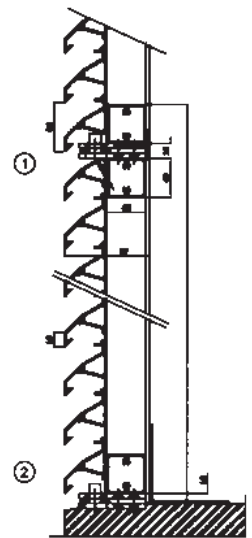
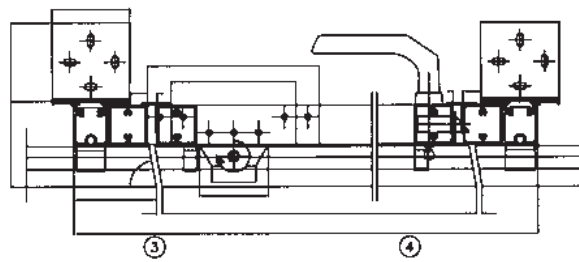




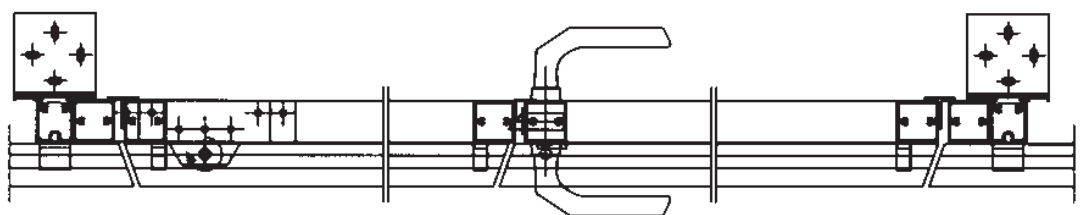
PIVOTS



SINGLE DOOR



DOUBLE DOOR

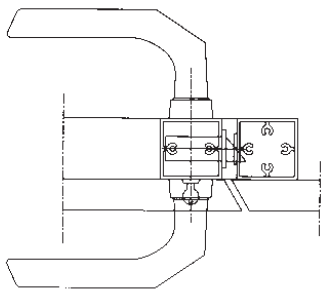


HANDLES AND LOCKS

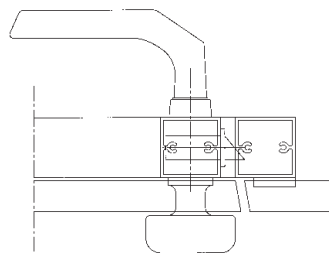
One has the choice to put a single or double handle or no handle at all (the key of the lock allows you to open/close the door). The handle can be a turning knob or a standard handle. Alternative knob furniture or locks should be referred, with full technical data, to RENSON for consideration.



STANDARD SOLUTION



SINGLE HANDLE

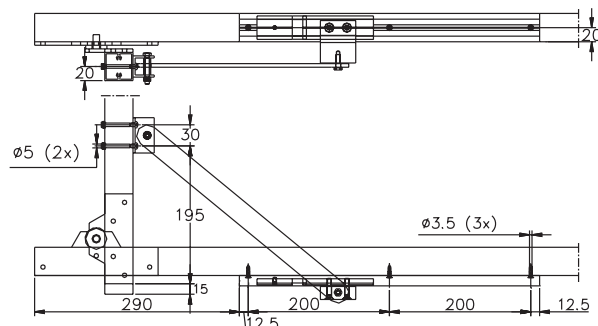
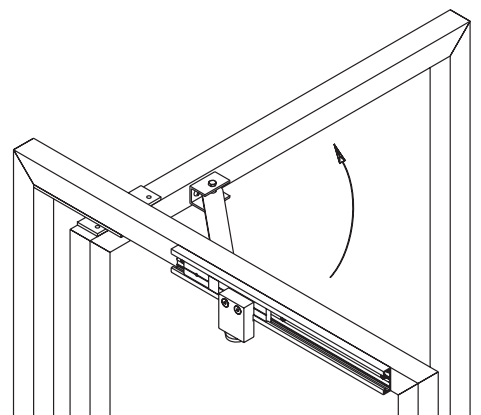


Yale® cylinder is the only approved option. Other proposals can be considered if full technical data is provided to RENSON for consideration. Other types are available on request.

Accessories such as door stops, guarded chain, ... are available on request.

DOOR RESTRICTOR

Door restrictor is available as an option.

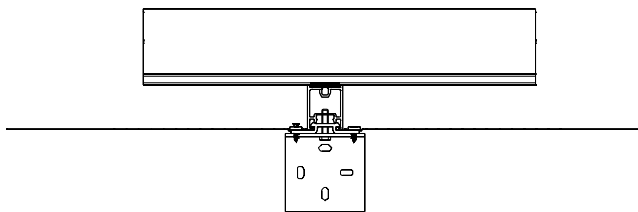
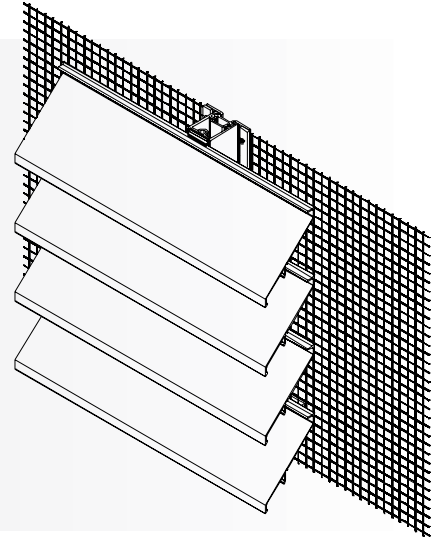


B. Exclusion guards

To prevent the entry of insects, birds or vermin behind the continuous louvres system, RENSON offers various types of mesh.

1. MESH CAN BE RIVETED ONTO THE REAR OF THE CONTINUOUS LOUVRE SYSTEM

Various types of stainless steel mesh of different sizes are available in rolls:



Bracket LZ.4206
 Insect: 2.3 mm x 2.3 mm (ss)
 Bird: 6 mm x 6 mm (ss)
 Vermin: 20 mm x 20 mm (ss)

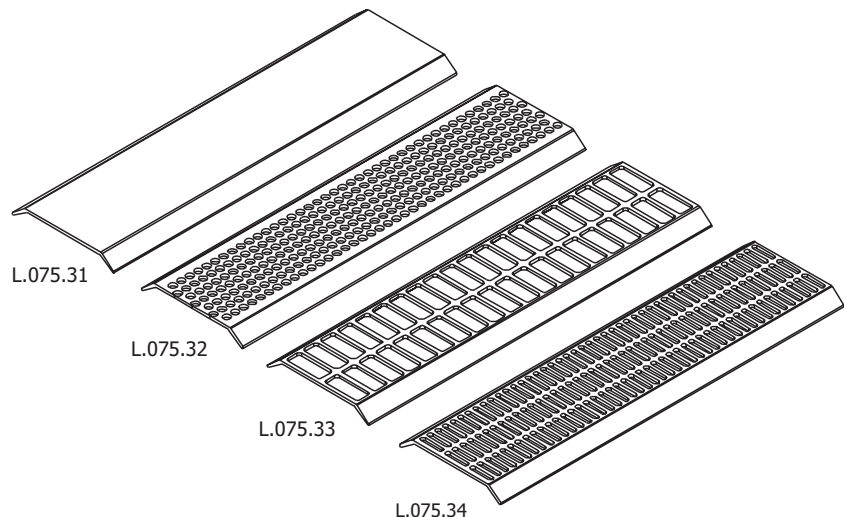
2. MESH CAN BE INSERTED BETWEEN THE BLADES. THIS IS AVAILABLE FOR BLADE TYPE L.075, L.050, L.095.

Guards can be inserted between the blades.

For blade type L.075.01, the 4 types of guards are following:

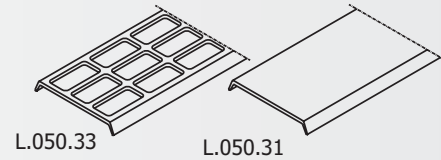
- Blanking off plate (BOP) L.075.31
- Hurricane grid: insect mesh L.075.32
- Exclusion grid: bird mesh L.075.33
- Exclusion grid: insect mesh L.075.34
- K-factor = 42.72
- Phys. Free Area = 23,5%
- K-factor = 19.73
- Phys. Free Area = 42%
- K-factor = 30.52
- Phys. Free Area = 28%

Material: hard PVC, black self colour



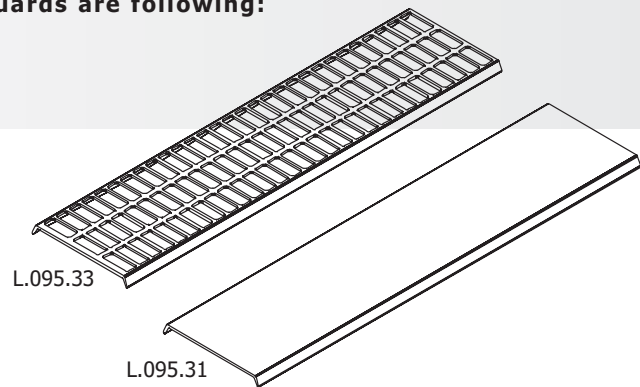
For blade type L.050.01, the 2 types of guards are following:

- Blanking off plate (BOP) L.075.31
- Exclusion grid: bird mesh L.075.33
 - K-factor = 19.73
 - Phys. Free Area = 42%



For blade type L.095.01, the 2 types of guards are following:

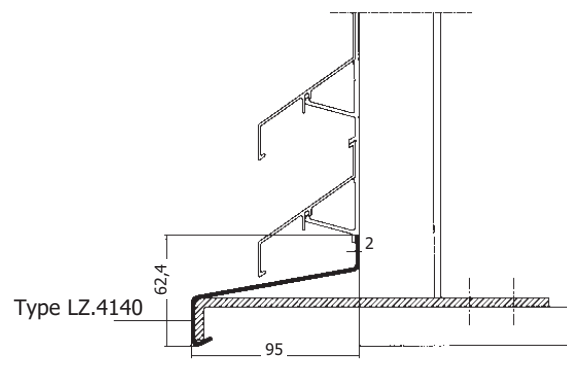
- Blanking off plate (BOP) L.075.31
- Exclusion grid: bird mesh L.075.33
 - K-factor = 19.73
 - Phys. Free Area = 42%



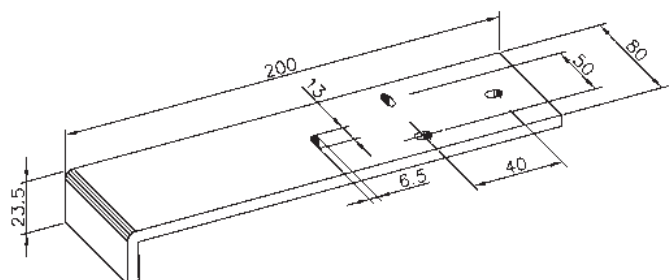
C. Cills

A cill (ref. LZ.4140) is available for the continuous louvre system.

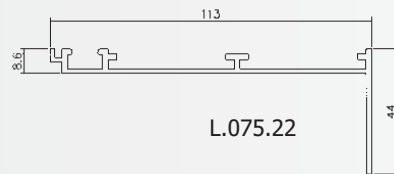
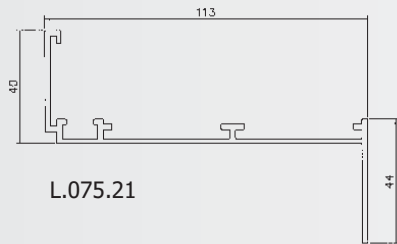
Fixing bracket for cill ref. LZ.4201



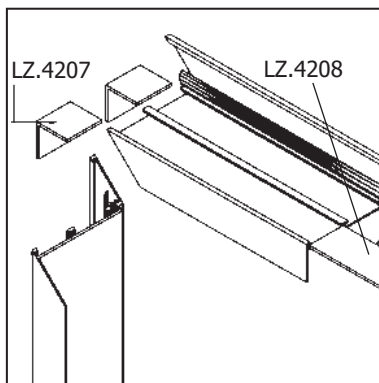
Instead of a cill, trims can be used for system L.075 (see page 51).



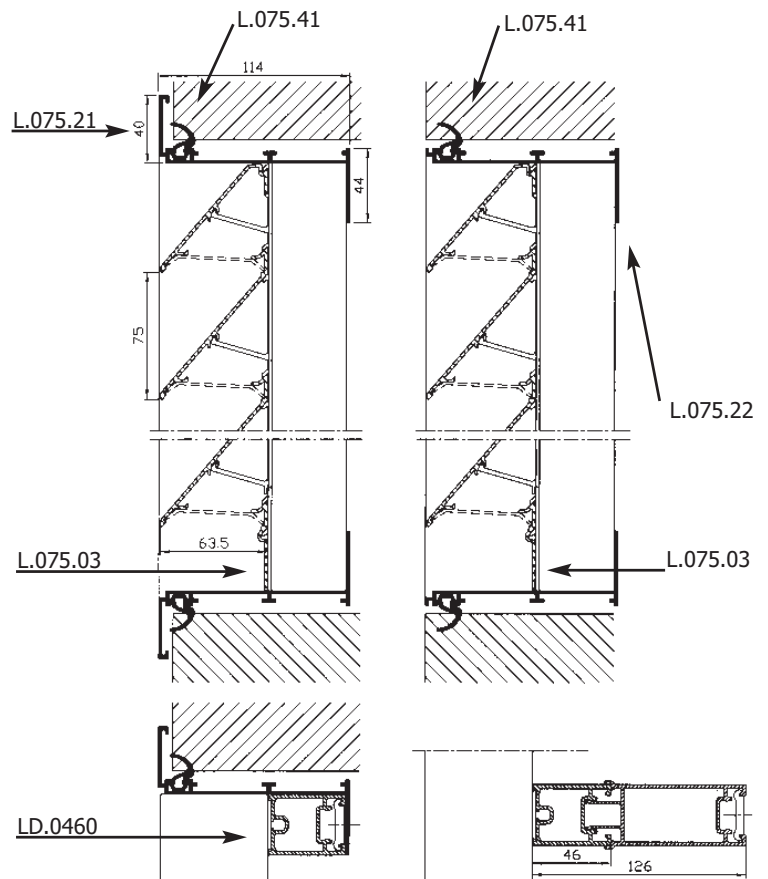
D. Trims



The louvre system type L.075 has been designed with the specific feature that it can offer a flanged or a framed periphery. A sealing gasket option can negate the need for final pointing.



LZ.4207: Corner trim connector
LZ.4208: Intermediate trim connector



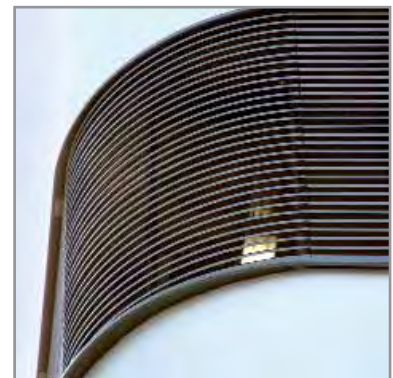
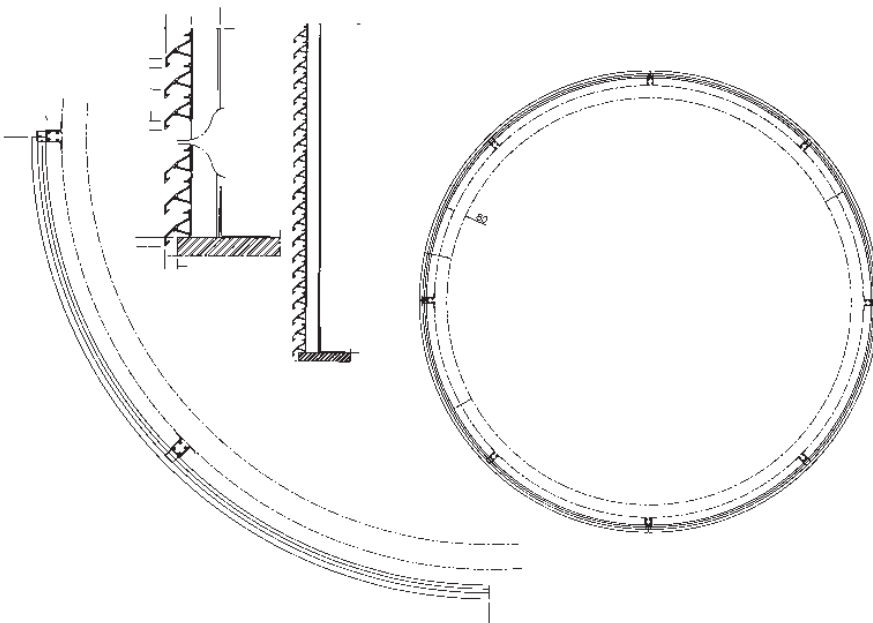
9. SPECIALS

A. Curved blades

Today's designs often call for expression in the shape of a building. RENSON has developed a curved assembly system that allows the architect's creativity to be transformed into reality.

Types L.033 and L.050 can be curved to a minimum radius of 800 mm.

All such designs must be referred to RENSON Technical department for appraisal well ahead of the construction process.



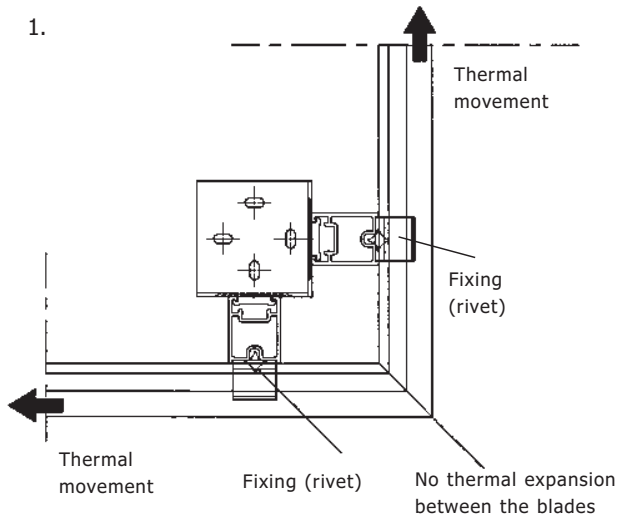


B. Mitred corners

At corners, the aluminium profiles are cut to the exact corner angle.

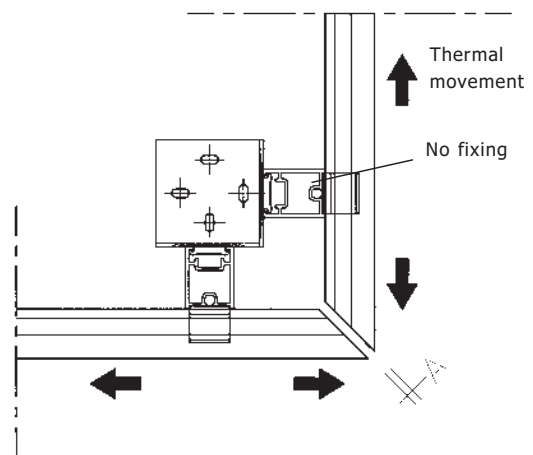
ALTERNATIVE CORNER SOLUTIONS

1.



Expansion away from corner
Position mullions as close as possible to corner

2.



Distance for thermal expansion included at mitre
Position mullions as close as possible to corner

C. Shapes and circles

RENSON has looked beyond the borders of straightforward rectangular or square louvre designs and has continuously invented new solutions to accommodate specific applications, usually to add aesthetic value to the building but also to meet a functional demand within design parameters.

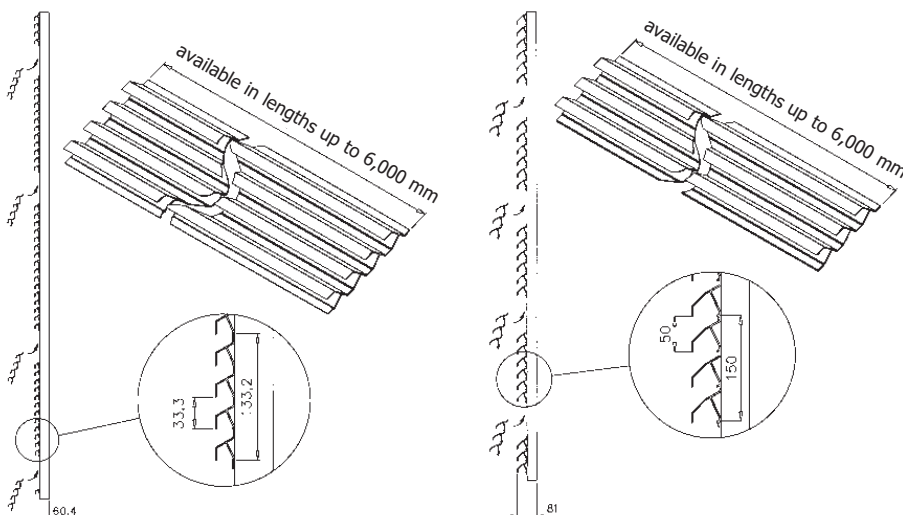
The RENSON Technical Department is at your disposal to advise and discuss the feasibility of for example raked jambs, heads and cills. To enhance the installation, accurate shop drawings will be provided.

D. Block blade L.033.05 and L.050.05

This type of blade offers a fast & easy assembly and has enhanced security capacity. The blades can only be used for riveting or screw-fixing to an existing full backstructure or sheeting rail matrix. They can be banked vertically, maintaining pitch continuity.

The extruded profiles are available in type L.033.05 or L.050.05. Type L.033.05 consists of 4 blades extruded together whereas type L.050.05 consists of 3 blades extruded together. The profiles exist in punched (ventilated) and unpunched (blanked off) versions.

The block blades can be used in conjunction with the standard blades.

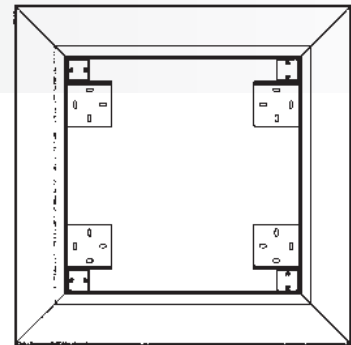
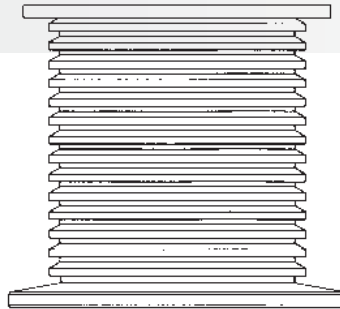




E. Turrets

A turret is placed on the rooftop of buildings to cover up industrial appliances (plant exhausts etc,...).

RENSON supplies the complete construction including roof and cill up to a maximum 1,100 mm one direction. Greater spans must be referred to RENSON for design input.



F. Louvre grilles

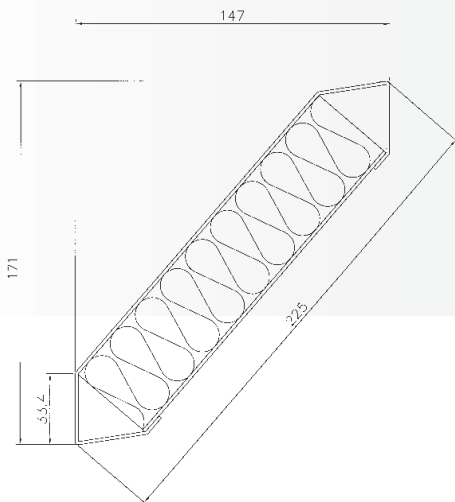
It is possible to manufacture custom made louvre panels using the blades of the continuous louvres systems. These louvres consist of an aluminium frame, blades at your discretion related to the required air flow or aesthetics, and is provided with an insect screen in stainless steel. As a consequence, the louvres and the continuous louvres can be used in one aesthetical package.



The louvres can be made to measure in all different shapes, dimensions and RAL colours. Up to your request all louvres are available in glazed-in version and can be made controllable by means of sliding vents. Louvres with adjustable blades, in a sliding panel, removable louvres for nightcooling solutions, ... are also possible.

More information about the louvre panels can be found in RENSONS louvres literature.

G. Acoustic applications



Noise nuisance is an environmental pollutant. National governments as well as RENSON are fully aware of this issue.

RENSON offers a solution with an acoustic louvre system in order to avoid noise pollution and to meet the existing standards. This acoustic louvre system will allow an air passage but reduced noise passage.

The RENSON Technical Department is at your disposal to advise and discuss the suitable acoustic construction.

In order to determine the ideal solution, the following factors are important:

- the desired dB noise level
- the noise level of the source
- the distance and location of the noise
- the required air flow

The acoustic continuous louvre system consists of a support structure, an acoustic blade and a blade support.

The acoustic blade is filled with sound absorbing and non-combustible mineral wool. The perforated plate keeps the material in position on the underside. The noise moves through the perforations and is absorbed by the mineral wool.

A special blade support is required to install the acoustic blade.

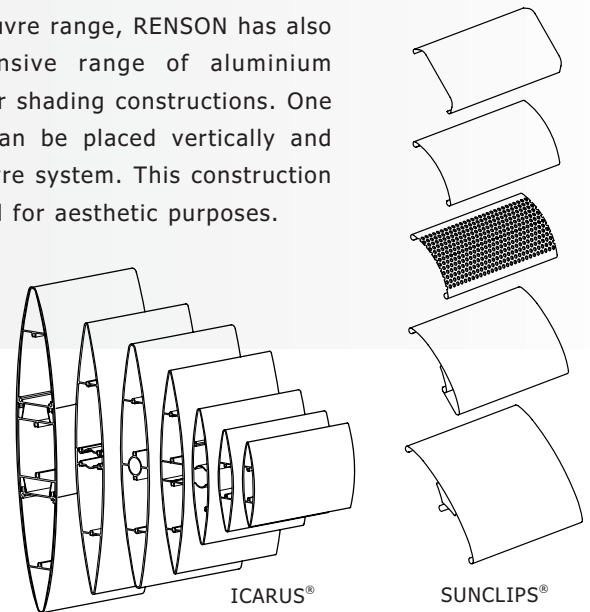
Applications: Industrial applications, ventilation systems, cooling or heating installations.





H. Aesthetic cladding with SUNCLIPS® and ICARUS® blades

Next to its continuous louvre range, RENSON has also developed a comprehensive range of aluminium profiles, suitable for solar shading constructions. One of these constructions can be placed vertically and acts as a continuous louvre system. This construction is primarily recommended for aesthetic purposes.



For more info, please consult the SUNCLIPS® and ICARUS® literature.

10. FIXING AND MAINTENANCE

Care of equipment and materials

To avoid deformation of extrusions etc., it is imperative that 'soft handling' methods are deployed to off-load and store materials. Palletised deliveries with peripheral stacking facility must not be lodged more than two high in order to minimise risk to others on site.

Bundles should be placed on bearers, avoiding sag, dampness etc. The proximity of other plant, equipment and materials should be considered to ensure that no damage is caused by accidental contact from other parties.

Paint and anodic finishes etc. need to be considered in accordance with processor's recommendations.

The components are packed in wooden crates protecting the material from damage and deformation. Parcels, bundles and cartons are labelled with a note of their contents. The label contains a bar code which is linked to the internal computer system. Where possible this is cross-referenced to any manufacturing drawings, which can be included in the consignment.

Distribution should be planned so as to facilitate the correct materials and elements being in the right site location and in the preferred order of usage!

General information

1. DOORS

When installing a door within a continuous louvres construction, the pivot of the door has to be installed slightly slanting in comparison with the frame.

The condition of the floor level is determinant for the height level of the door.

The bottom pivots allow a small difference in height (possibility for adjustment). A large discrepancy needs to be addressed to the site management, taking into account the normal building tolerances.



2. THE STAINLESS STEEL INSECT MESH

Placed on the backside of the doors, these meshes are generally supplied in roll form. Fixation of the mesh, by means of the screws and the flat profile, on the support profile.

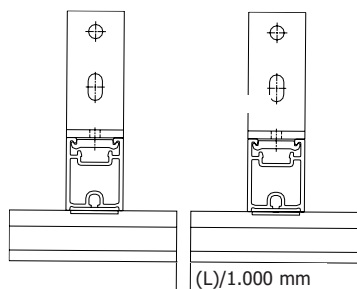
3. THE DILATATION

Respect the dilatation of 1 mm per metre and the fixation of the blades on the doors, foreseen of the support of the dilatation.

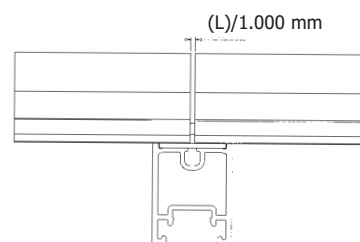
4. MAINTENANCE OF THE PRODUCTS

Please use suitable cleaning-materials. These are neutral (pH between 6 and 8), synthetic and non-abrasive means. Rinse the thus treated materials thoroughly with clean water.

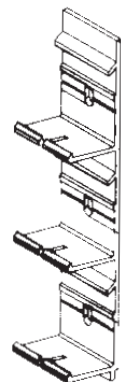
Thermal expansions



2 Standard supports



Double support



5. FREQUENCY OF THE CLEANING

When the aluminium-elements are rained upon in a regular way, and are placed in a neutral atmosphere, they need to be cleaned thoroughly once or twice a year. Aluminium components situated in a city- or industrial environment need to be cleaned at least twice a year. For Coastal areas or areas with a strongly polluted atmosphere this number should be increased. The cleaning of not rained components must be more frequent.



SHORT FORMAT SPECIFICATION RENSON CONTINUOUS LOUVRES SYSTEMS

Product description

The continuous louvre is assembled from sections of extruded Aluminium AIMgSi 0.5 and finished to the architect's specification.

The louvres are built up with the vertical profiles of the **type** for structural stability and are fixed with aluminium brackets **type** .

The extruded blades are fixed to the vertical profile through blade supports, which are riveted to the vertical profile.

The blades have a depth of and have a pitch of .

The total louvre zone depth is .

The distance between the vertical mullions needs to be calculated according to the relevant plans.

The continuous louvre will be fitted by the relevant contractor.

Technical values

Visual Free Area: .

Phys. Free Area: .

K-factor: .

Finish

The continuous louvre will be finished

.

Conditional technical changes

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RENSON: YOUR PARTNER IN NATURAL VENTILATION AND SOLAR SHADING

RENSON, WITH ITS RICH TRADITION IN INNOVATION AND EXPERIENCE SINCE 1909, IS PROFILING ITSELF AS AN UNDISPUTED MARKET LEADER IN NATURAL VENTILATION AND SOLAR SHADING. SINCE 2003, OUR HEAD QUARTERS HAVE BEEN LOCATED NEXT TO THE E17 KORTRIJK - GENT MOTORWAY IN WAREGEM (BELGIUM). THIS REMARKABLE BUILDING IS A REAL AND WORKING MODEL OF OUR HEALTHY BUILDING CONCEPT AND IS A PROTOTYPE EXHIBITING OUR TECHNOLOGICAL STRENGTHS.

A HEALTHY INTERNAL CLIMATE IS RENSON'S PRIORITY AND THIS IS FAR MORE THAN JUST A TREND. WE DEVELOP AND COMMERCIALISE PRODUCTS THAT CONTRIBUTE TO LOWER ENERGY CONSUMPTION. IN THIS WAY, RENSON PROVIDES AN IMPORTANT LINK TOWARDS THE REGULATION APPLICATIONS FROM THE KYOTO CLIMATE TREATY

RENSON HAS IT ALL

- Our multidisciplinary R&D department is co-operating with leading European research organizations. The outcome is a complete range of innovative concepts and products.
- Our automatically powder coating installation, anodisation unit, PVC injection installation, PVC mould construction, assembly department and warehouse facilities are spread over a surface area of 50.000 m². Thanks to its consequent vertical integration, RENSON delivers high quality products.
- RENSON's head quarters, sales and marketing department are in Belgium, but we also have plants and offices in France and the UK. RENSON also has a sales structure beyond the European borders.
- The diversity and capability from RENSON's project team are our warranty for correct solutions for each individual building project. The creation of constructive long term relationships with construction specialists is our priority.



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