ATRIA®

HOLISTIC OUTDOOR DESIGN


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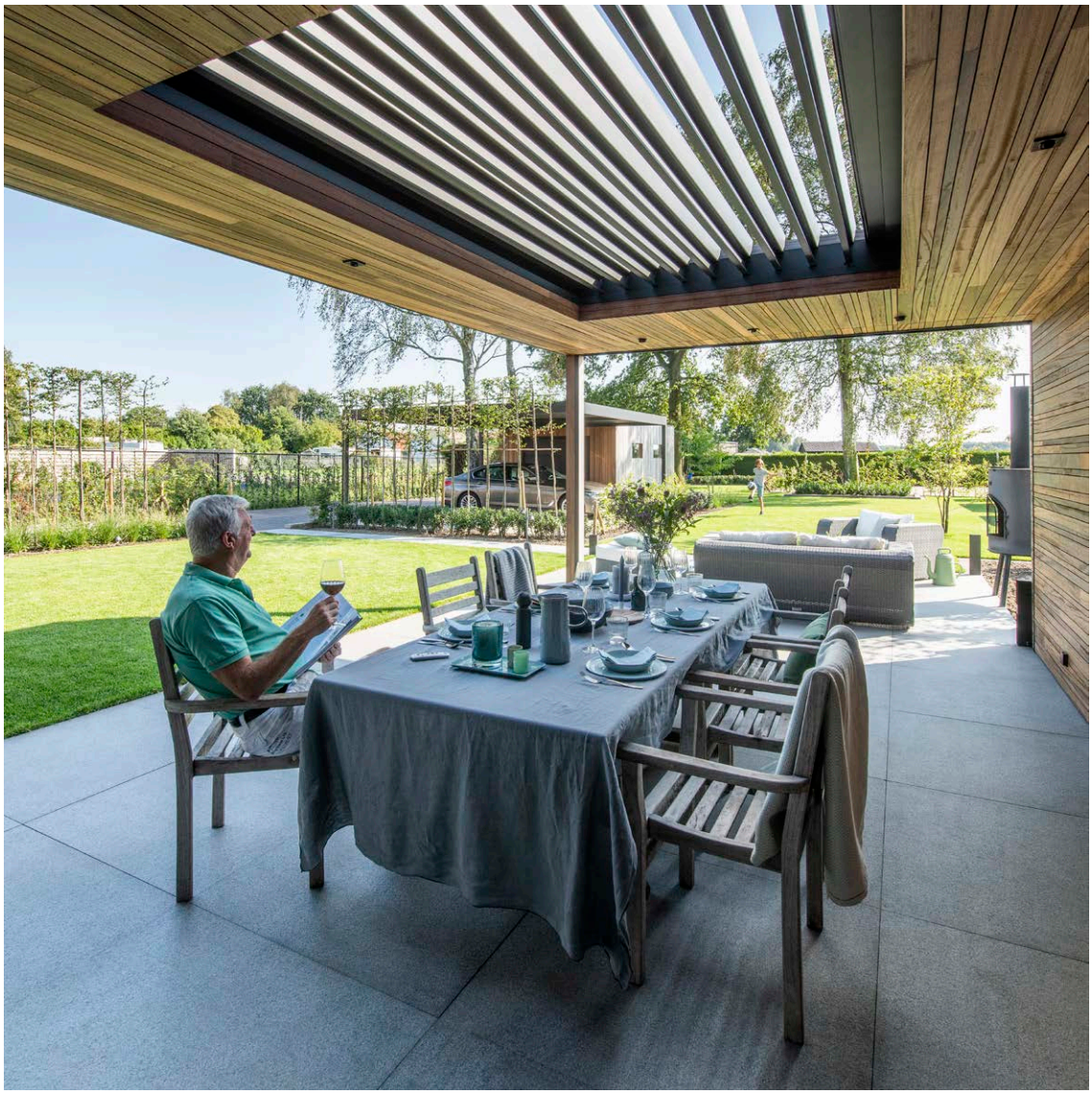
RENSON®

AMBASSADOR

# **AERO LINE**
# ARCHITECT BINDER



English I 2021

RENSON®
Creating healthy spaces

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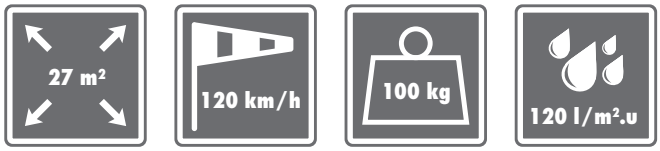
# AERO®

## Horizontal, waterproof sun protection roof with rotatable blades that can be integrated perfectly into new or existing structures

- Minimalist design for subtle integration
- Matches all architectural styles
- Customised with millimetre precision
- Can be expanded up to 6 x 6 m




One roof section

**AERO LINE**

**SUN PROTECTION**

**VENTILATING**

**WATER-RESISTANT**

## TECHNICAL DATA

| | |
|---|---|
| **Dimensions** | |
| Span - Single | Min. 800 mm - max. 4500 mm |
| Span - Coupled | Min. 1600 mm - max. 6000 mm |
| Pivot | Min. 680 mm - max. 6055 mm |
| Passage height | N/A |
| Total height with blades closed | 230 mm |
| Total height with blades 90° open | 230 mm + 95 mm |
| Blade rotation | Max. 150° |
| Customisation | Span and pivot: mm precision |
| **Testing and certificates** | |
| Wind guarantee of roof with blades closed | Up to 120 km/h |
| Wind guarantee of closed Fixscreen | N/A |
| Max. wind speed for roof or Fixscreen operation | Up to max. 50 km/h |
| Water drainage flow | 120 l/m²/h |
| Load-bearing capacity | 100 kg/m² |
| **Warranty** | |
| Structure | 7 years |
| Motors and controls | 2 years |
| Somfy motors (Fixscreens) | N/A |
| Aluminium profile paintwork | 10 years |
| Colour and shine | 15 years* |
| Fixscreen technology | N/A |
| **Operating methods** | |
| Somfy RTS | ✓ |
| Somfy IO | ✓ |
| Somfy Connexoon | ✓ |
| Somfy Tahoma | ✓ |
| Renson App control | ✓ |

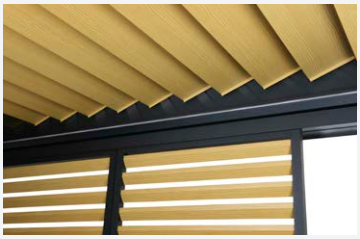
** Subject to registration of extended warranty and annual cleaning using the Renson® Maintenance Set*

## ACCESSORIES OVERVIEW

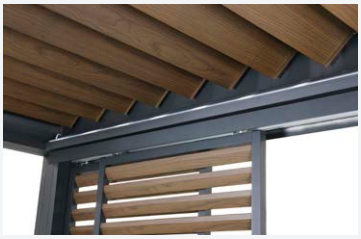
| | |
|---|---|
| **Lighting** | |
| Lineo LED blade | ✓ |
| UpDown LED | ✓ |
| **Heating & sound** | |
| Beam Heat & Sound | ✓ |
| **Blades** | |
| Translucent Lineo Luce blades | ✓ |
| Wooddesign | ✓ |
| Lockable gutter (Protecto) | ✓ |

## WOODDESIGN

White oak



Natural oak



Walnut

## OPTIONS WITHOUT SURCHARGE

- Bicolor
- Seaside quality A
- Without water drainage holes
- Letting light in while opening the blades
- Lateral drainage

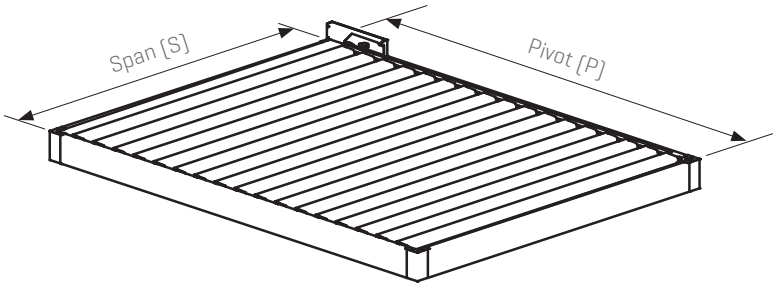
## OPTIONS WITH SURCHARGE

- UpDown LED
- Beam Heat & Sound
- Translucent blades Lineo Luce
- Wooddesign blades

# 1. SUPPORT STRUCTURE

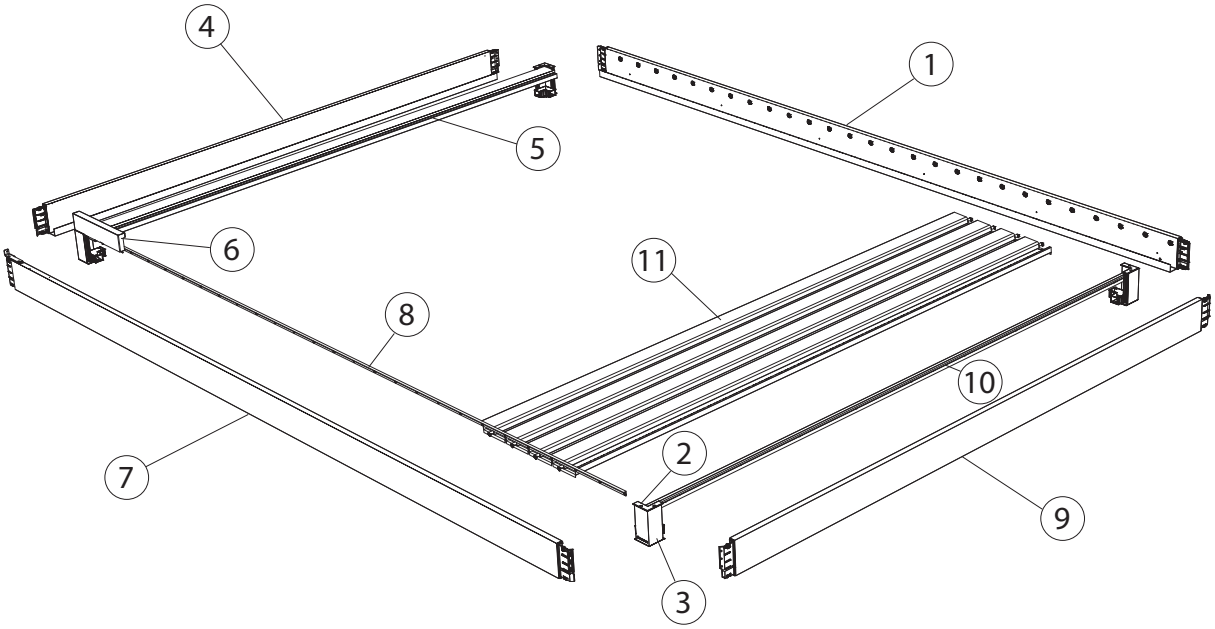
**Consists of:**

- Span and Pivot adjustable based on the mm.
- Without columns.
- Integrated water drainage points.
- All textured RAL Top 100 colours.
- Radio-controlled linear motor.
- Diffuser to minimise splashing water.




*Pivot side: Side where the blades rotate*
*Span side: Side parallel to the blades (Span)*

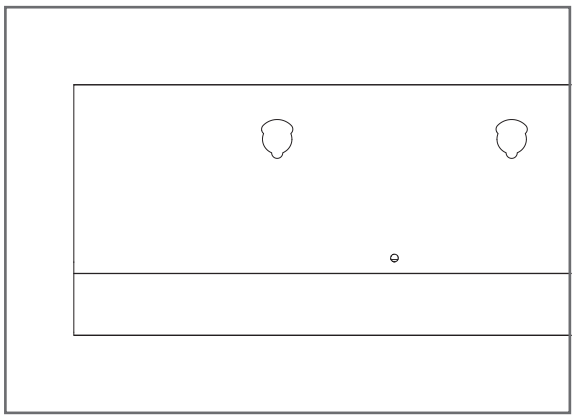
| | |
|---|---|
| 1 | Pivot beam 1 |
| 2 | Top cover cap |
| 3 | Inner cover cap |
| 4 | Span beam 2 |
| 5 | Fixed blade |
| 6 | Motor + cover |
| 7 | Pivot beam 2 |
| 8 | Driving profile |
| 9 | Span beam 1 |
| 10 | Sealing profile |
| 11 | blade |

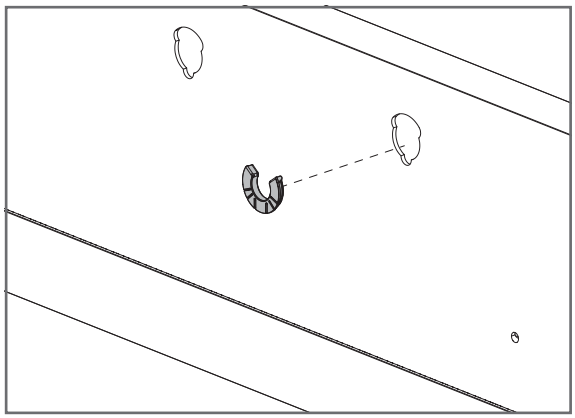


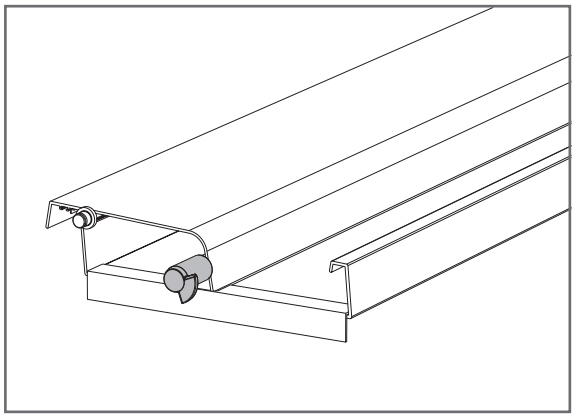
# 2. BLADES

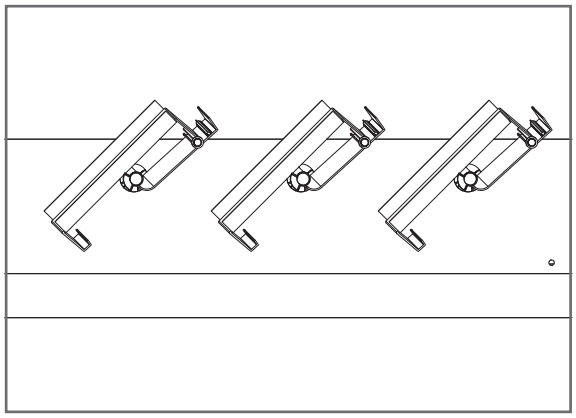
Every blade is securely fastened to the frame. The holes for the blade axles in the Pivot profiles have a special shape. This is equipped with a plastic bearing.
The blade axles have a locking pin.

This means that the blades can only be mounted in the frame in one direction. During operation, the blade never returns to this position, so we have a locking device at each position of the blade.





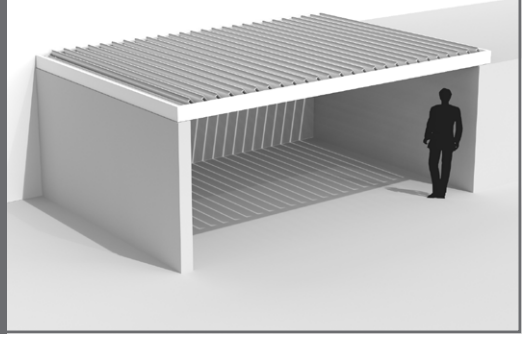




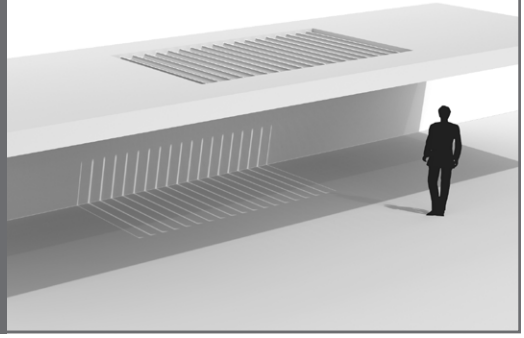
# 3. CONSTRUCTION OPTIONS

- Surface-mounted or integrated
- Single or coupled (coupled from Span > 4500 mm)

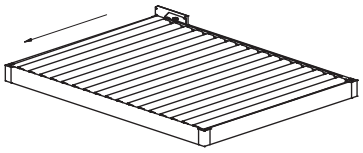
Surface-mounted



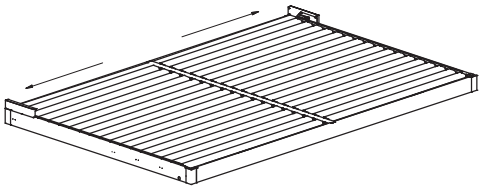
Integration



Single



Coupled



# 4. DIMENSIONS

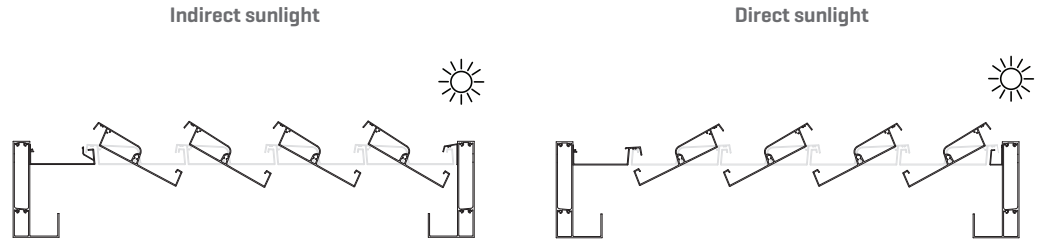
| | | |
|---|---|---|
| **Span dimensions** | Minimum | 800 mm |
| | Maximum | 4500 mm |
| **Pivot dimensions** | Minimum | 1110 mm |
| | Maximum | 6055 mm |

The **Span** is always to be chosen based on the **mm**.
You can choose the **Pivot** based on either the **blade pitch** or the **mm**.

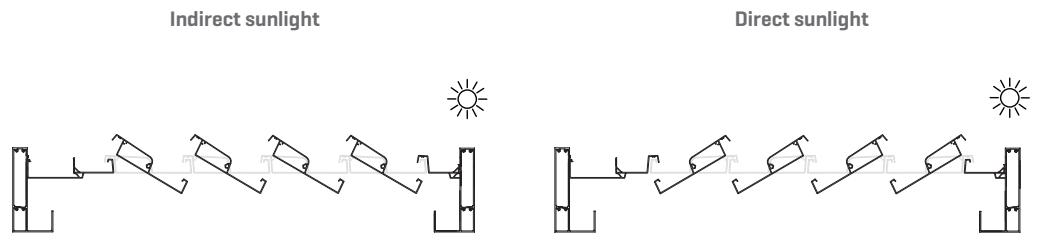
There is an important aesthetic difference for the Pivot between the blade pitch or the mm. If the Pivot is based on the mm, we will use the Camargue's residual blade. If you work with a Pivot dimension on the blade pitch, you don't have an extra residual blade next to the fixed blade in which the controls are located.

We clarify this difference using the drawings below.

**Pivot on blade pitch**



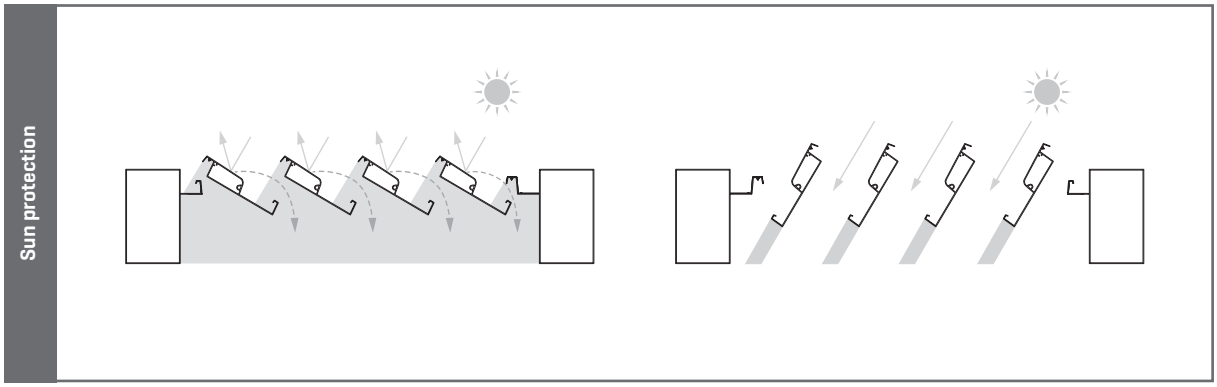

**Pivot, mm precision**



# 5. BLADE ORIENTATION

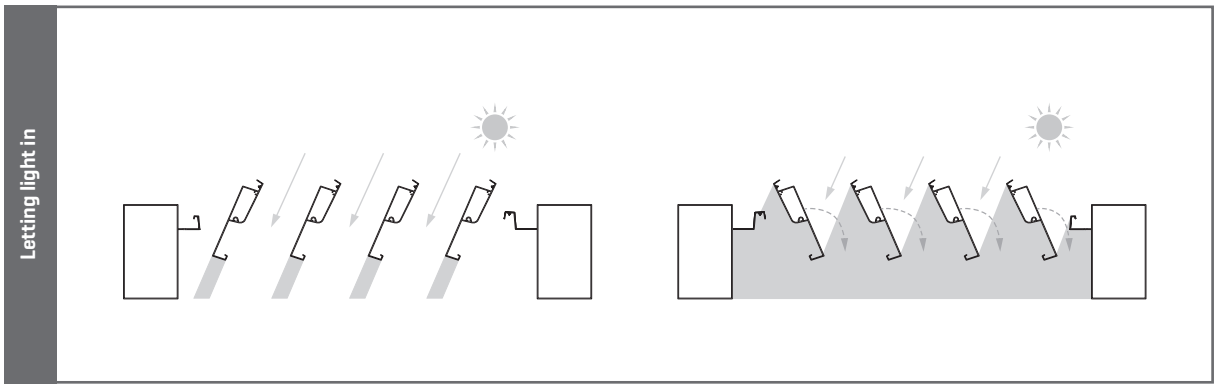
**Sun protection**

The blades rotate to the extent that the southern sunlight (Span side 1) is blocked when opening the blades.




**Letting light in**

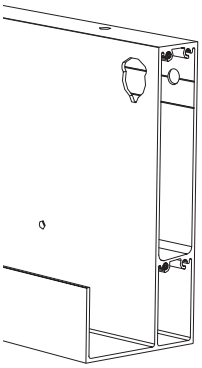
The blades rotate to the extent that the southern sunlight (Span side 1) is allowed ingress when opening the blades.



# 6. FIXATION OF THE STRUCTURE

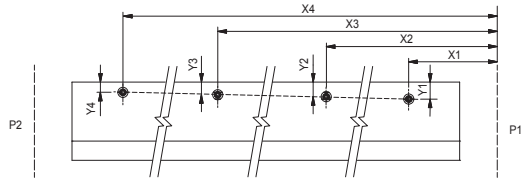
For the Aero, you must select the construction situation for each side (Span (S) – Pivot (P)) when ordering.
You can choose between surface-mounted or integrated.
Lateral fixation holes have been provided for **'integrated'**.
**No** lateral fixation holes have been provided for **'surface-mounted'**.

The number and position of fixation holes on each side varies according to the size of the structure.
You can find out the position of the holes using a calculation tool (Excel file). In this way, the roof structure can already be adapted to this.

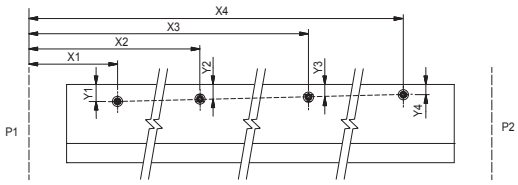


*Fixation hole when choosing 'integrated'*

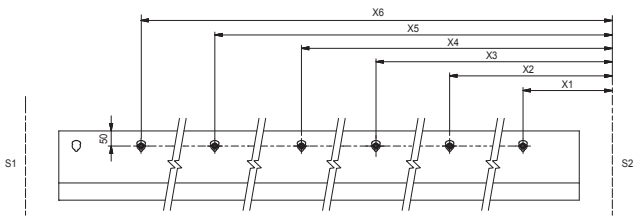
**Span side S1**



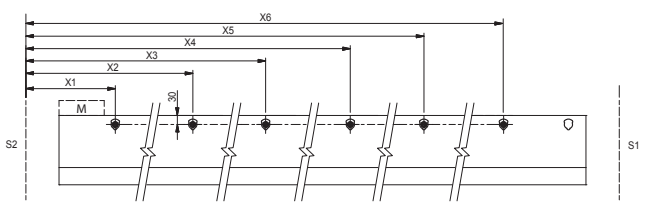

**Span side S2**




**Pivot side P1**



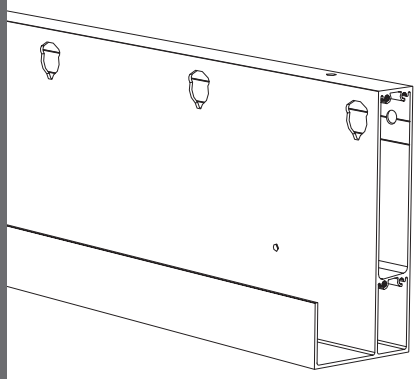

**Pivot side P2**



- **Pivot side:** the fixation holes are at the level of the blade axles, so they are not visible at a later stage.
- **Span side:** the fixation holes are at the level of the fixed blade, so they are not visible at a later stage.

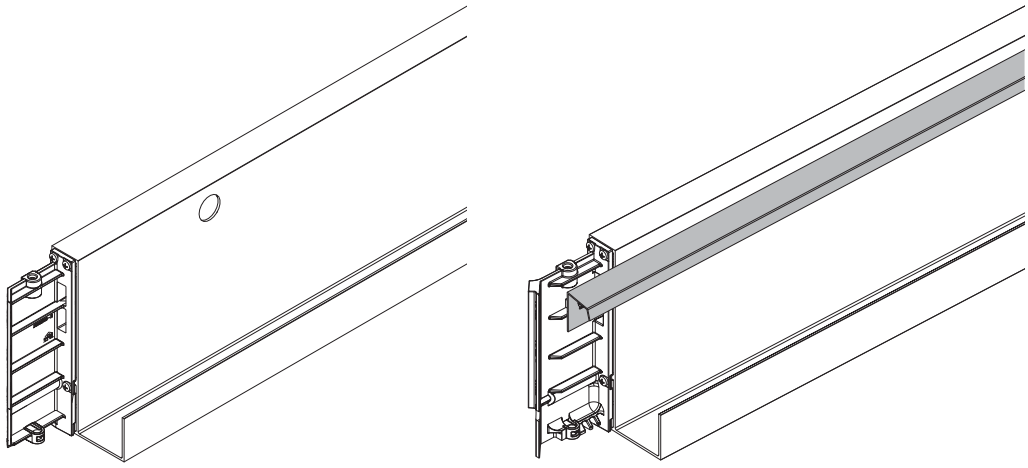
The fixation holes in the structure are 12 mm in diameter. Equipped to thread through bolt M10.

Pivot beam



| Number of fixation holes on Pivot | |
|---|---|
| 0 – 2000 | 2 x M10 |
| 2001 – 3000 | 3 x M10 |
| 3001 – 4000 | 4 x M10 |
| 4001 – 5000 | 5 x M10 |
| 5001 – 6055 | 6 x M10 |

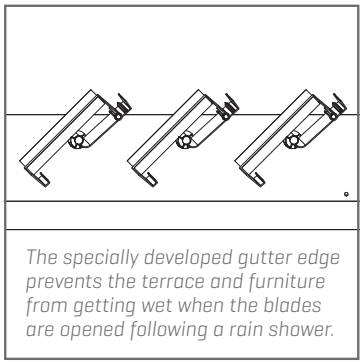
Span beam



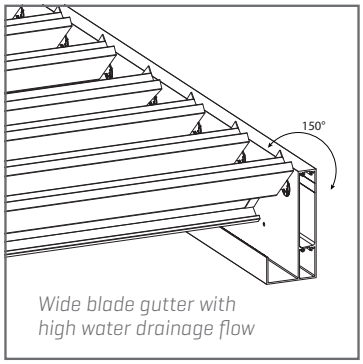
# 7. WATER DRAINAGE

## 7.1 WATER DRAINAGE DIRECTION

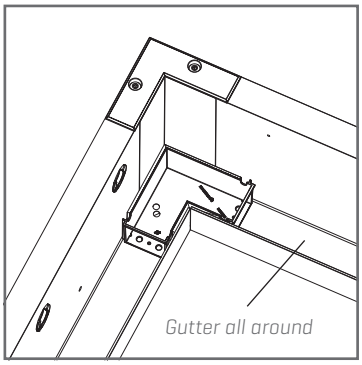
The blades are double-walled. Part of it serves as a gutter. The blades are situated on a slope of 2 cm.
The water drains from the wide blade gutter mainly to the lowest side and flows into the integrated gutters of the structure. The structure is provided with an integrated gutter all around.



*The specially developed gutter edge prevents the terrace and furniture from getting wet when the blades are opened following a rain shower.*

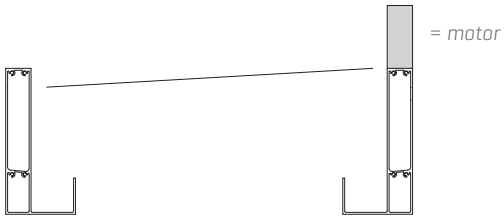



*Wide blade gutter with high water drainage flow*



*Gutter all around*

The water drainage direction of the blades is away from the motor side.
On request, however, this direction can also be to the motor side. This results in a different driving profile.

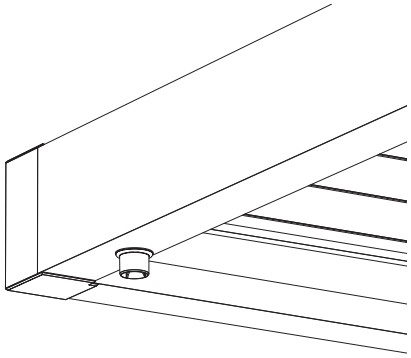


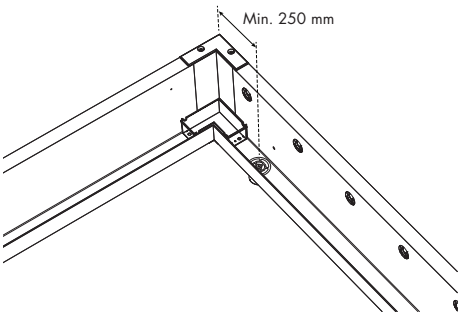
## 7.2 WATER DRAINAGE TYPES

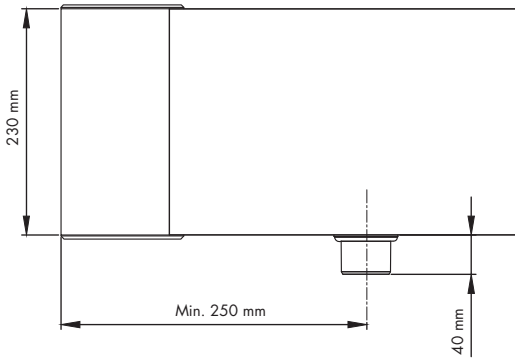
There are 3 drainage types available:

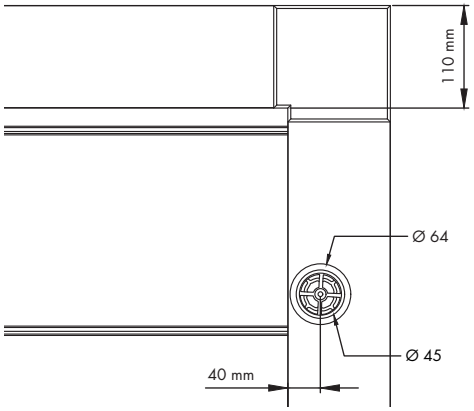
- Through the gutter
- In the corner
- Lateral

**Through the gutter**

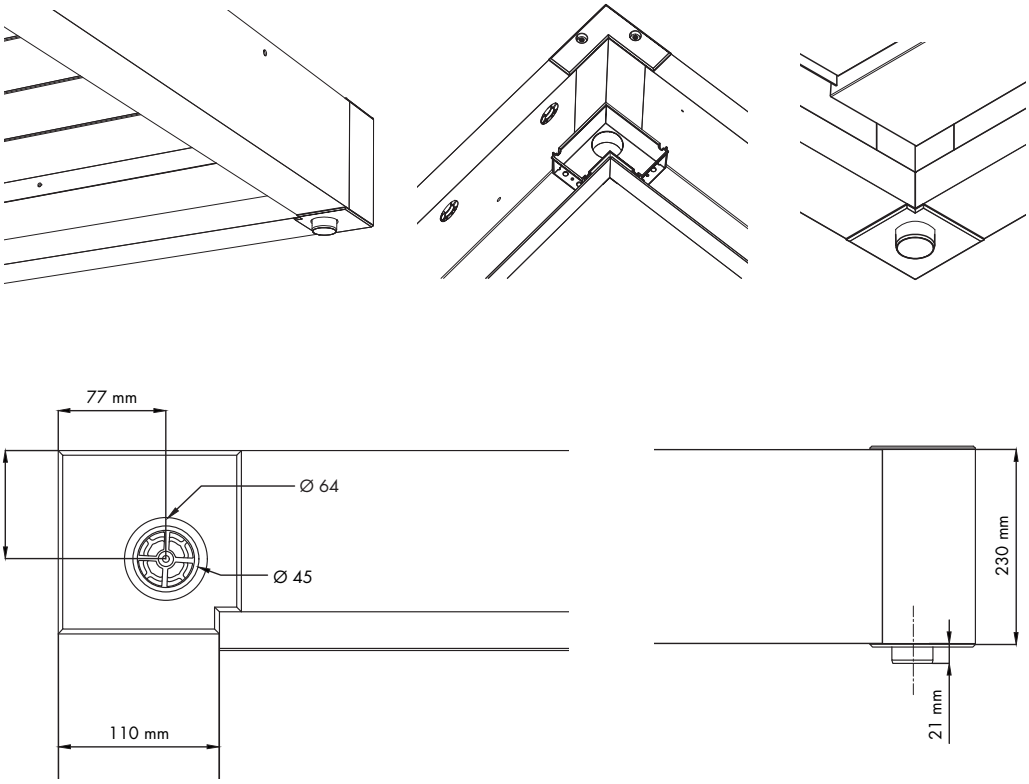




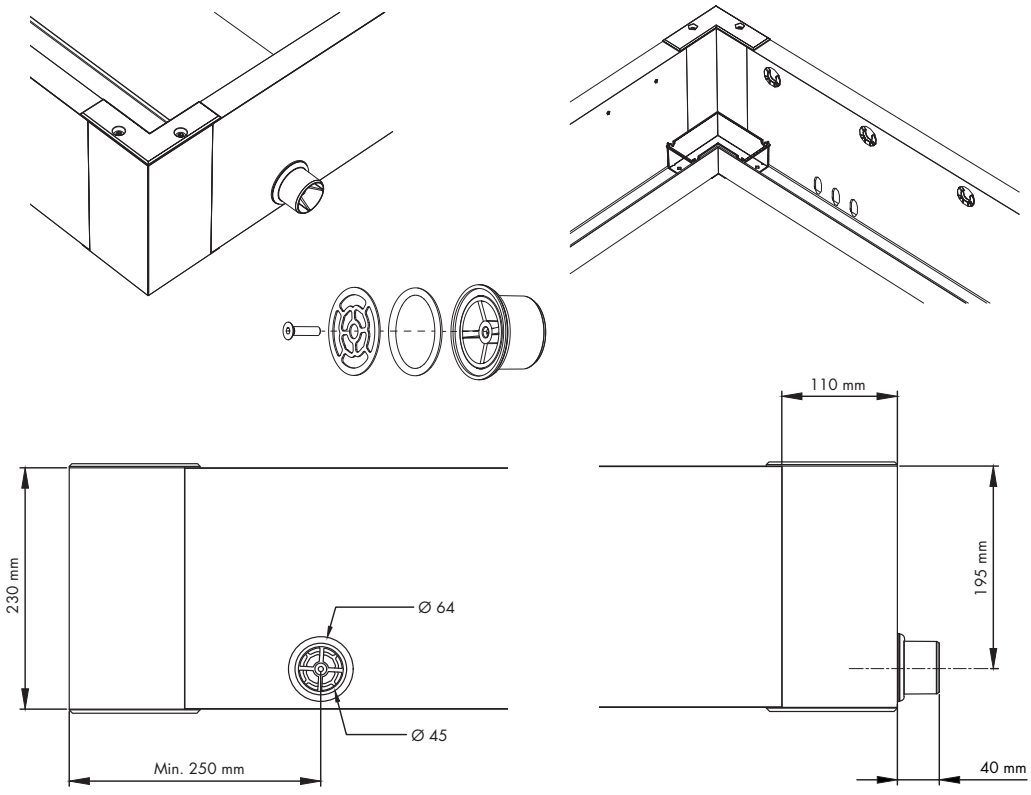



## In the corner

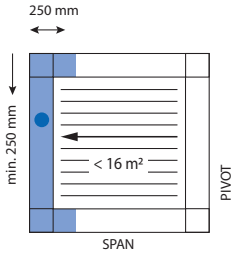



## Lateral

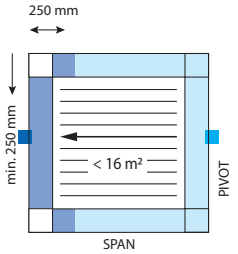


## 7.3 NUMBER OF WATER DRAINS

### *7.3.1 Surface area < 16 m²*

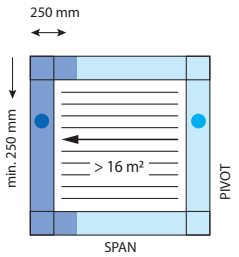



**1 vertical drain:**
- 1 on the lower side (in the corner or through the gutter)

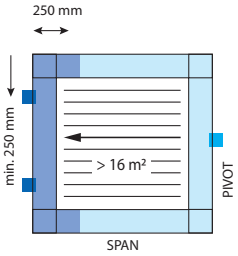



**2 lateral drains:**
- 1 on the lower side
- 1 at the place of your choosing

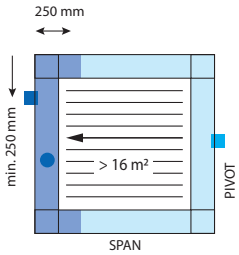
### *7.3.2 Surface area > 16 m²*




**2 vertical drains:**
- 1 on the lower side (in the corner or through the gutter)
- 1 at the place of your choosing




**3 lateral drains:**
- 2 on the lower side
- 1 at the place of your choosing



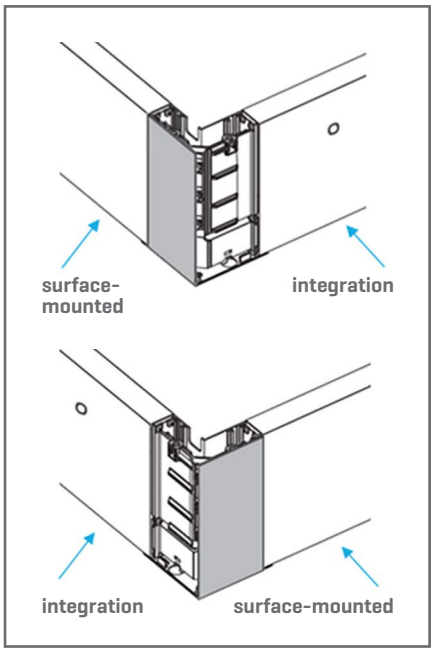

**1 vertical drain +**
**2 lateral drains:**
- 2 on the lower side (in the corner, through the gutter, or laterally)
- 1 at the place of your choosing

# 8. FINISHING CAPS

## 8.1 OUTSIDE CORNER FINISHING CAP

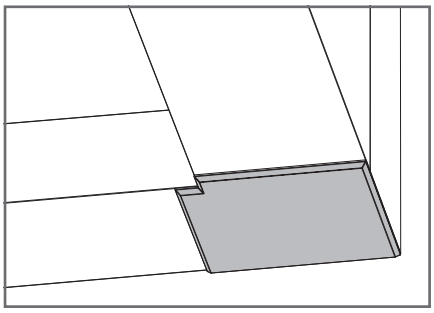
When ordering, please specify the construction situation for each Span and Pivot side.
There is also an important difference between the 2 construction situations for the supplied finishing caps on the outside corner.

- **Surface-mounted:** including finishing cap on that side
- **Integrated:** no finishing cap on that side



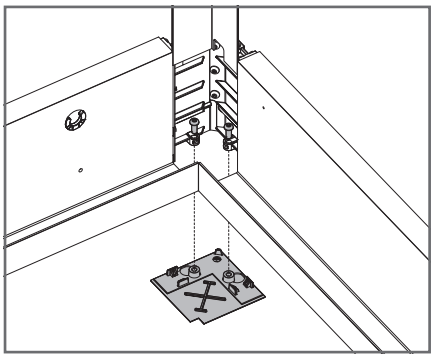

## 8.2 BOTTOM FINISHING CAP

The bottom finishing cap protrudes a few mm from the underside of the structure.
If you place the Aero on a different construction, you have the option of doing this without the bottom finishing cap.
In this way, the bottom of the profiles fit nicely against the construction.

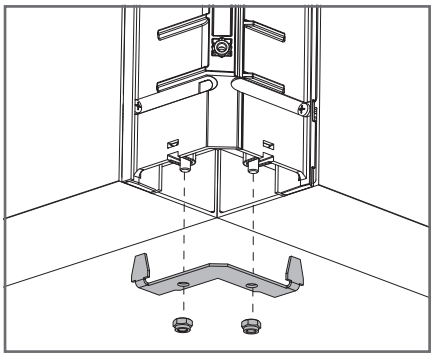


In the **example to the side**, the bottom finishing cap cannot be omitted because the bottom of the profiles are also partially visible. But then we don't get a perfect connection.

If the bottom of the frame profiles is still being finished with another material and is ultimately no longer visible, you should not place the finishing cap at the bottom corners.



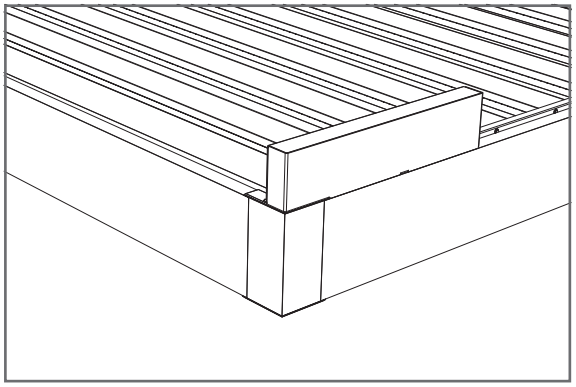
If you have a situation where you wish to install the outer corner cap, but do not have a bottom corner cap, you must first install an **additional bracket**. This allows you to install the outer corner cap without the bottom corner cap.

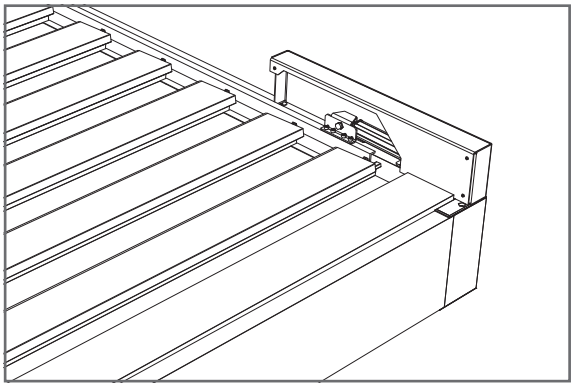


# 9. CONTROL

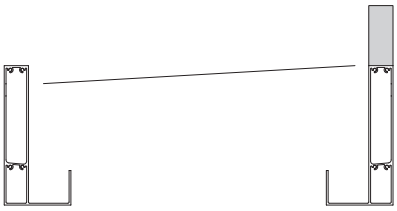
## 9.1 MOTOR

The blades are driven by a linear motor. This motor is visible to the eye on the Aero structure. It is controlled via Radio Technology Somfy (RTS), an external Somfy control platform that is implemented in the motor control unit.





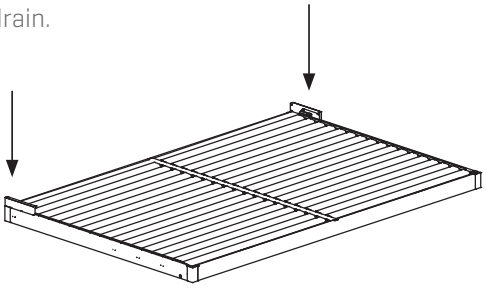
The motor stands on top of the frame and is covered with a lacquered aluminium cover cap in the colour of the structure.




As standard, the motor is always on the high side of the blades.
Draining water away from the motor.
An exception can be made in certain cases.

**Remark:** the low Pivot side must always be provided with a water drain.

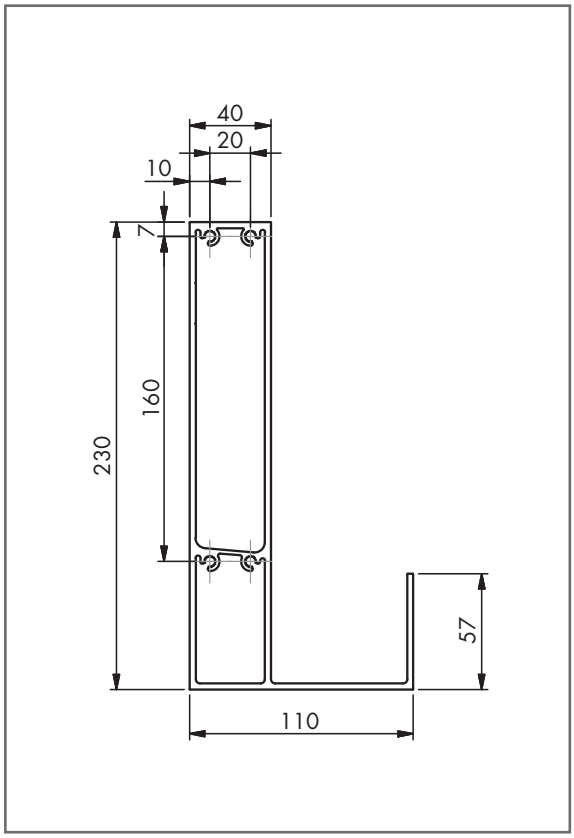
The motor position in a coupled version is fixed.
Both motors are always on the outer Pivot beams.



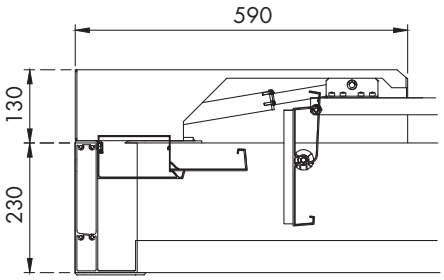
## 9.2 POWER SUPPLY

Check to see where the motor will be mounted.
Provide a power cable closest to the motor.

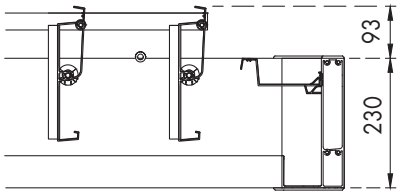
# 10. FRAME AND BLADE DIMENSIONS



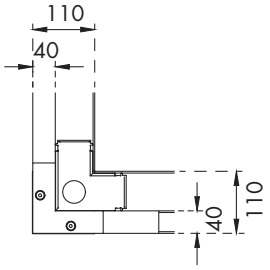

Motor height




Blade height in open roof position




Top view



# 11. AERO WEIGHT

| | | Span (mm) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Pivot (mm) | # blades | 1800 | 2000 | 2200 | 2400 | 2600 | 2800 | 3000 | 3200 |
| 2615 | 11 | 145 | 155 | 164 | 175 | 185 | 194 | 204 | 213 |
| 2830 | 12 | 154 | 163 | 174 | 185 | 195 | 205 | 215 | 226 |
| 3045 | 13 | 162 | 173 | 184 | 194 | 205 | 216 | 227 | 238 |
| 3260 | 14 | 171 | 181 | 193 | 204 | 215 | 227 | 238 | 250 |
| 3475 | 15 | 180 | 190 | 202 | 214 | 226 | 238 | 250 | 262 |
| 3690 | 16 | 188 | 198 | 211 | 223 | 236 | 249 | 261 | 274 |
| 3905 | 17 | 197 | 206 | 220 | 233 | 246 | 260 | 273 | 287 |
| 4120 | 18 | 205 | 215 | 229 | 243 | 257 | 271 | 285 | 299 |
| 4335 | 19 | 214 | 223 | 238 | 252 | 267 | 282 | 297 | 312 |
| 4550 | 20 | 222 | 232 | 247 | 262 | 278 | 293 | 309 | 324 |
| 4765 | 21 | 230 | 240 | 256 | 273 | 288 | 304 | 320 | 336 |
| 4980 | 22 | 239 | 248 | 266 | 282 | 299 | 315 | 332 | 348 |
| 5195 | 23 | 247 | 258 | 275 | 292 | 309 | 326 | 343 | 360 |
| 5410 | 24 | 257 | 266 | 284 | 302 | 319 | 337 | 355 | 372 |
| 5625 | 25 | 265 | 275 | 298 | 311 | 330 | 348 | 366 | 384 |
| 5840 | 26 | 274 | 283 | 302 | 321 | 340 | 359 | 378 | 398 |
| 6055 | 27 | 282 | 292 | 311 | 331 | 350 | 370 | 390 | 410 |

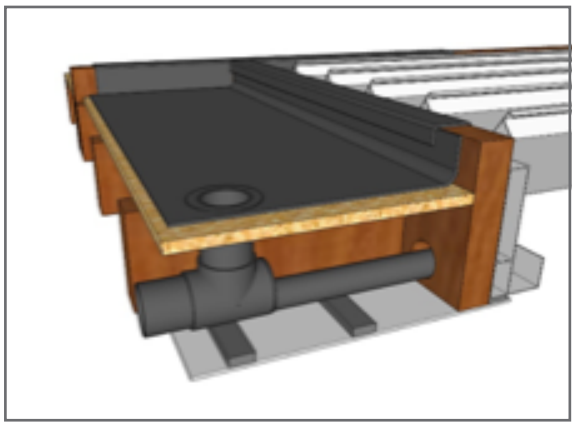
| | | Span (mm) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Pivot (mm) | # blades | 3400 | 3600 | 3800 | 4000 | 4200 | 4400 | 4500 |
| 2615 | 11 | 223 | 233 | 242 | 252 | 261 | 272 | 277 |
| 2830 | 12 | 236 | 246 | 256 | 266 | 278 | 288 | 293 |
| 3045 | 13 | 249 | 259 | 270 | 282 | 293 | 304 | 309 |
| 3260 | 14 | 261 | 273 | 285 | 297 | 308 | 320 | 325 |
| 3475 | 15 | 274 | 287 | 299 | 311 | 323 | 335 | 342 |
| 3690 | 16 | 288 | 301 | 313 | 326 | 339 | 351 | 358 |
| 3905 | 17 | 301 | 314 | 327 | 341 | 354 | 367 | 374 |
| 4120 | 18 | 313 | 327 | 341 | 355 | 369 | 383 | 390 |
| 4335 | 19 | 326 | 341 | 355 | 370 | 384 | 399 | 406 |
| 4550 | 20 | 339 | 354 | 369 | 384 | 400 | 415 | 423 |
| 4765 | 21 | 352 | 367 | 383 | 399 | 415 | 432 | 440 |
| 4980 | 22 | 364 | 381 | 397 | 414 | 431 | 448 | 456 |
| 5195 | 23 | 377 | 394 | 411 | 429 | 446 | 463 | 472 |
| 5410 | 24 | 390 | 409 | 426 | 444 | 462 | 479 | 488 |
| 5625 | 25 | 404 | 422 | 440 | 459 | 477 | 495 | 504 |
| 5840 | 26 | 416 | 435 | 454 | 473 | 492 | 511 | 520 |
| 6055 | 27 | 429 | 449 | 468 | 488 | 507 | 527 | 537 |

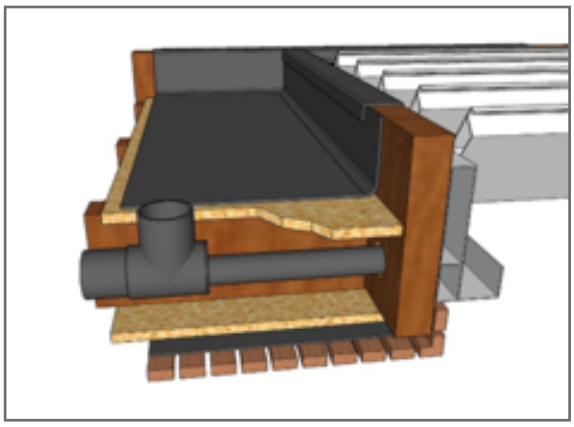
# 12. WIND RESISTANCE

The blades can be operated at wind speeds up to 50 km/h.
With blades in closed position, the aero can handle wind speeds of 120 km/h.

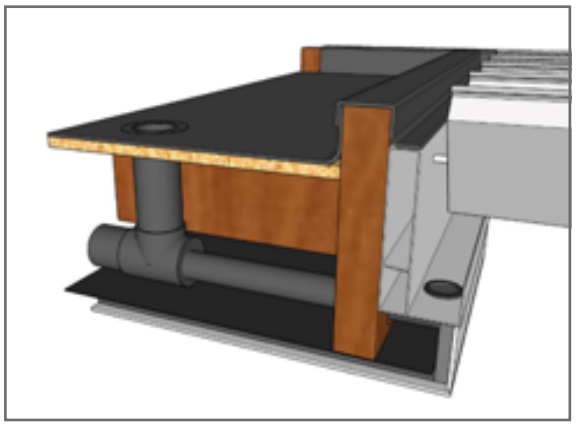
# 13. INSTALLATION POSSIBILITIES

## 13.1 INTEGRATION (lateral drain)

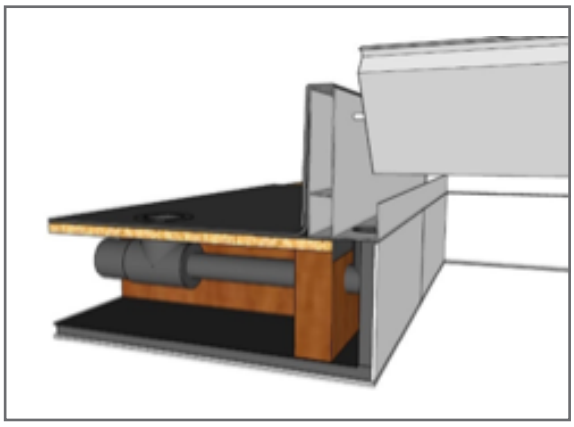




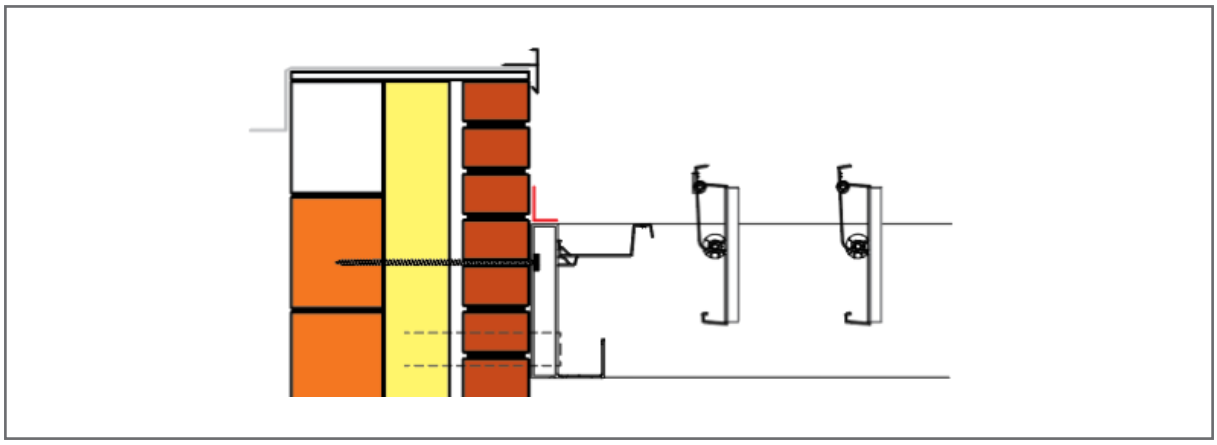
## 13.2 INTEGRATION (vertical drain)



## 13.3 SURFACE-MOUNTED (vertical drain)



## 13.4 INTEGRATION BETWEEN 2 WALLS (lateral drain)



# 14. DETERMINATION OF ACTING FORCES

**For example Aero with dimensions of 6000 x 4000 mm**

Load on the blades (net weight + snow load) = 1.24 kN/m$^2$
For a roof surface area of 6000 x 4000 mm, that becomes: 6 x 4 x 1.24 = 27.76 kN

The net weight of the frame, consisting of 2 Span and 2 Pivot profiles, is:
2 x (5.714 kg/m* x 6 + 3.910 kg/m** x 4) = 99.85 kg = 0.979 kN***

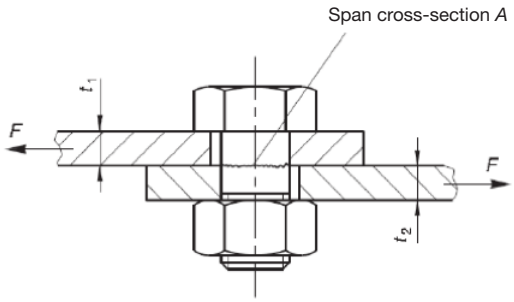
Total load on the Aero 6 x 4 m = 27.76 + 0.979 = 28.74 kN
Total load per bolt = 28.74 kN / number of bolts

** weight of Pivot profile/m*
*** weight of Span profile/m*
**** 1 kg = 9.80665 N*

| Bolt classes | 4.6 | 5.6 | 6.8 | 8.8 | 10.9 |
|---|---|---|---|---|---|
| Flow Limit | 240 | 300 | 480 | 640 | 900 |
| Tensile strength | 400 | 500 | 600 | 800 | 1000 |
| Sliding factor | 0.6 | 0.6 | 0.5 | 0.6 | 0.5 |

| | Hole diameter $d_0$ (mm) | Shank cross-section (mm$^2$) | Span cross-section (mm$^2$) |
|---|---|---|---|
| M12 | 13 | 113 | 84,3 |
| M16 | 18 | 201 | 157 |
| M20 | 22 | 314 | 245 |
| M24 | 26 | 452 | 352 |

**Load on the bolt by shearing**




$$F_{v,Rd} = \frac{[\alpha_v \cdot f_{u,b} \cdot A]}{\Upsilon_{m2}}$$

$F_{v,Rd}$ = the maximum permissible shear force
$\alpha_v$ = 0.6 → safety factor for shearing
$f_{u,b}$ = nominal tensile strength
A = Span cross-section
$\Upsilon_{m2}$ = partial safety factor = 1.25

Example: Bolt M12 class 4.6 → maximum shear force on the bolt = (0.6 * 400 * 84.3) / 1.25 → 16.19 kN.

# 15. DRAINAGE CONNECTION

The lateral drain and the other drains can be connected to standard PVC pipes.

# 16. AERO SEAL

### 16.1 Against brick facade

With waterproof flashing tape (available in different colours).

### 16.2 Integrated into a wooden roof structure

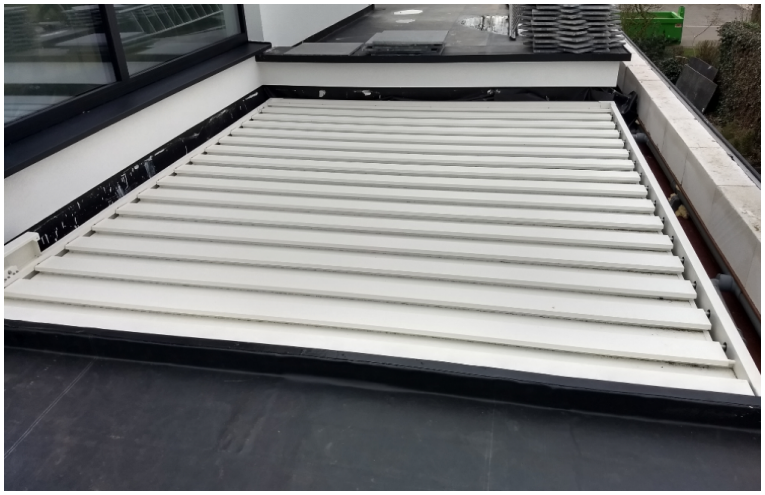
EPDM should always be fitted up to the Aero (Span + Pivot) frame beams.

### 16.3 On the motor side, attach the EPDM or the flashing tape until it reaches under the motor/cover cap

Mount the motor cap all the way to the end.

# 17. EXAMPLE OF INSTALLATION DURING SURFACE MOUNTING

**Integrated into roof overhang**



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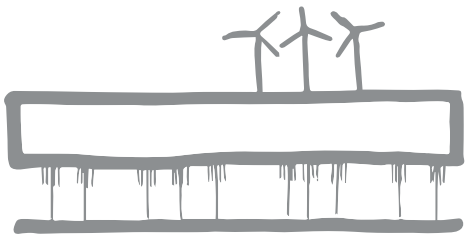

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