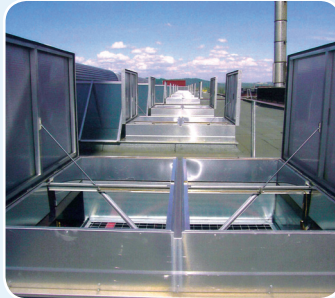
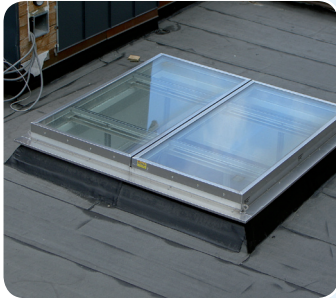


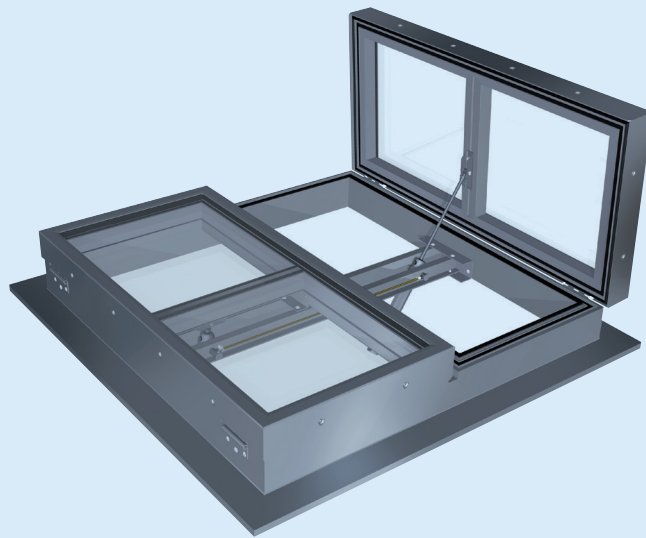


# Brakel® DuoTherma



## Twin flap ventilator

The Duo Therma is a twin flap system suited for both smoke & heat extraction and daily ventilation. This system is certified in accordance with the EN 12101-2 standard, while it is also highly air and watertight. The countless options available in terms of the base and flaps, as well as numerous operating systems and accessories, enable the creation of a functional solution for any type of building: From industrial properties to cold stores, and from commercial centres to theatres and offices premises. The system is also available as a single flap version, which is known as the Mono Therma.



The cold bridge-free Duo Therma TG fitted with a thermally separated base and flaps offers a high level of durability. It minimises condensation forming and offers advanced comfort features. In the event that sound insulation is also required, two fully acoustic versions of the Duo Therma TG model are available, which have  $R_w$  values of 34 dB and 44 dB, and are fully compliant with the EN 12101-2 standard.

## Green Building Products

As a leading partner in its field, Brakel endeavours to remain a forerunner in the area of corporate social responsibility. Given that with our products, we let in the best that nature has to offer, it is only natural that we also care greatly for the environment. We therefore seek to integrate sustainable solutions in our working methods, products and services, wherever possible.

We have categorised our highly extensive product range according to the levels of sustainability and comfort applicable. The many energy efficient products and systems in the range can be recognised by the butterfly icons that they bear.

We classify our products, ranging from functional to sustainable, as follows:



functionally applicable in accordance with current qualifications / standards



compliant with raised sustainability requirements



compliant with high sustainability requirements

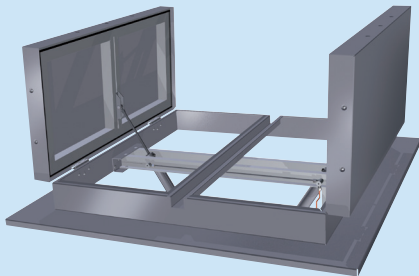


entirely in keeping with a sustainable solution

### Duo Therma AT uninsulated



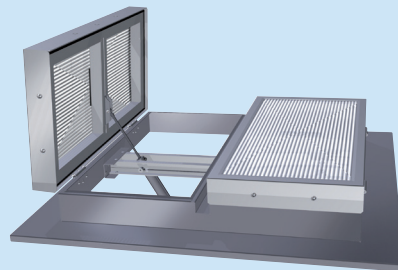
- Sea water and corrosion-resistant aluminium EN AW 5754 (AlMg3)
- High air and watertightness
- Considerable flexibility in terms of dimensions and flange type
- Convenient installation



### Duo Therma AT insulated











- Optional transparent polycarbonate flaps allow daylight entrance
- Broad range of operating systems and accessories available
- Suitable for all types of buildings and roof applications



## Specifications Duo Therma

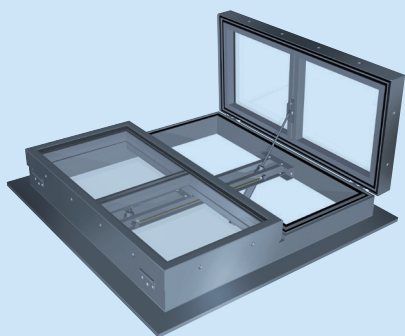
EN 12101-2 CERTIFIED

| Specifications<br>Duo Therma |                                    |                      |                        |          |                                 | Duo Therma AT<br>(un)insulated  |                     |  |                                  | Duo Therma TG<br>Thermally broken   |  |                            |                    |
|------------------------------|------------------------------------|----------------------|------------------------|----------|---------------------------------|---|---------------------|--|----------------------------------|---|--|----------------------------|--------------------|
|                              |                                    |                      |                        |          |                                 |   /   |                     |  |                                  |     |  |                            |                    |
|                              |                                    |                      |                        |          |                                 | Weight (kg)   |                     |  |                                  |   |  |                            |                    |
| Type                         | Throat size<br>width x length (mm) | Geometric surface m² | Aerodynamic surface m² | Cv-value | Height mm<br>TG Acoustic =250mm | Uninsulated aluminium   | Insulated aluminium | Transparent multi-wall<br>polycarbonate Isolux | Single laminated<br>safety glass | Insulated aluminium   | Transparent multi-wall<br>polycarbonate Isolux | Laminated insulation glass | Acoustic insulated |
| 1010                         | 1000 x 1000                        | 1,00                 | 0,60                   | 0,60     | 200                             | 31  | 41                  | 32   | 63                               | 44  | 43   | 72                         | 88                 |
| 1015                         | 1000 x 1500                        | 1,50                 | 0,90                   | 0,60     | 200                             | 38  | 49                  | 39   | 80                               | 53  | 51   | 93                         | 120                |
| 1020                         | 1000 x 2000                        | 2,00                 | 1,20                   | 0,60     | 200                             | 45  | 57                  | 46   | 98                               | 62  | 59   | 115                        | 153                |
| 1025                         | 1000 x 2500                        | 2,50                 | 1,50                   | 0,60     | 200                             | 52  | 65                  | 53   | 116                              | 72  | 68   | 137                        | 185                |
| 1510                         | 1500 x 1000                        | 1,50                 | 0,90                   | 0,60     | 200                             | 37  | 48                  | 37   | 81                               | 53  | 51   | 94                         | 119                |
| 1515                         | 1500 x 1500                        | 2,25                 | 1,35                   | 0,60     | 200                             | 44  | 57                  | 45   | 103                              | 64  | 60   | 122                        | 163                |
| 1520                         | 1500 x 2000                        | 3,00                 | 1,80                   | 0,60     | 200                             | 52  | 67                  | 53   | 126                              | 75  | 69   | 150                        | 206                |
| 1525                         | 1500 x 2500                        | 3,75                 | 2,25                   | 0,60     | 200                             | 60  | 76                  | 61   | 148                              | 86  | 78   | 179                        | 250                |
| 2010                         | 2000 x 1000                        | 2,00                 | 1,30                   | 0,65     | 200                             | 42  | 55                  | 43   | 98                               | 63  | 59   | 115                        | 151                |
| 2015                         | 2000 x 1500                        | 3,00                 | 1,95                   | 0,65     | 200                             | 51  | 66                  | 51   | 126                              | 75  | 69   | 151                        | 205                |
| 2020                         | 2000 x 2000                        | 4,00                 | 2,60                   | 0,65     | 200                             | 60  | 77                  | 60   | 153                              | 88  | 79   | 186                        | 260                |
| 2025                         | 2000 x 2500                        | 5,00                 | 3,25                   | 0,65     | 200                             | 69  | 88                  | 68   | 181                              | 100   | 88   | 221                        | 315                |
| 2510                         | 2500 x 1000                        | 2,50                 | 1,63                   | 0,65     | 200                             | 48  | 61                  | 48   | 116                              | 73  | 67   | 137                        | 182                |
| 2515                         | 2500 x 1500                        | 3,75                 | 2,44                   | 0,65     | 200                             | 58  | 74                  | 57   | 149                              | 87  | 78   | 179                        | 248                |
| 2520                         | 2500 x 2000                        | 5,00                 | 3,25                   | 0,65     | 200                             | 68  | 86                  | 66   | 181                              | 100   | 88   | 222                        | 314                |
| 2525                         | 2500 x 2500                        | 6,25                 | 4,06                   | 0,65     | 200                             | 78  | 99                  | 75   | 214                              | 114   | 99   | 264                        | 379                |

Comment: The Cv-value of the Duo Therma is tested in combination with wind baffles. Deviations can be made depending on the situation in which it is installed.  
Also available with a single flap: Mono Therma (from 1000 x 1000mm to 1250 x 2500mm).

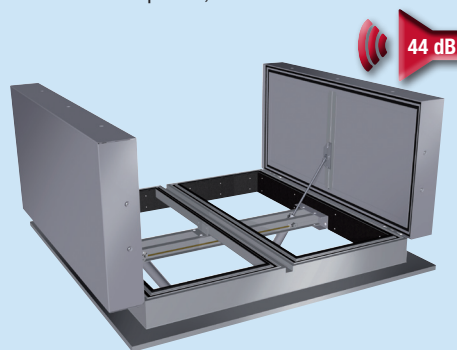
### Duo Therma TG thermally separated

- Entirely thermally separated base and flaps
- Extensive choice of flap types
- Standard noise reduction (Rw) of 31 dB
- Increased level of comfort, with U-values of up to 1.0 W/m<sup>2</sup>K
- Air and watertightness tested accordance NEN EN 1026 / 1027 and DIN EN 12208



### Duo Therma TG thermally separated / acoustically insulated

- Thermally separated base and flaps, with additional acoustic insulation
- Available in two EN 12101-2 / EN ISO 140-3 certified types, with Rw-values of 34 dB and 44 dB
- Compliant with highly stringent acoustic requirements
- U-values of up to 0,9 W/m<sup>2</sup>K



## Materials

**Base and flanges:** Sea water and corrosion-resistant EN AW 5754 (AlMg3) sheet aluminium is used in the Duo Therma AT models; the Duo Therma TG models are made of EN AW 606035 (AlMgSi0,5) extruded profile sections which are thermally separated.

**Sealing:** All-round, using coated EPDM rubbers, which prevent freezing while guaranteeing a high level of airtightness.

**Hinges:** Stainless steel.

**Flaps:** With or without thermal separator

Choice of: uninsulated or mineral wool-insulated aluminium flap, 16 to 55 mm transparent multi-wall polycarbonate filler, single safety glass, insulated safety glass, or a high quality acoustically insulated flap.

**Finishing:** Standard blank aluminium or coated in a standard RAL colour.

## Controls

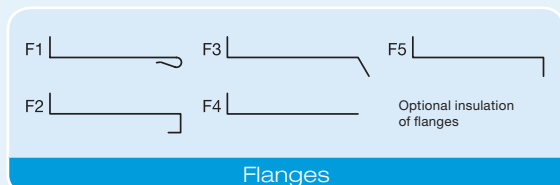
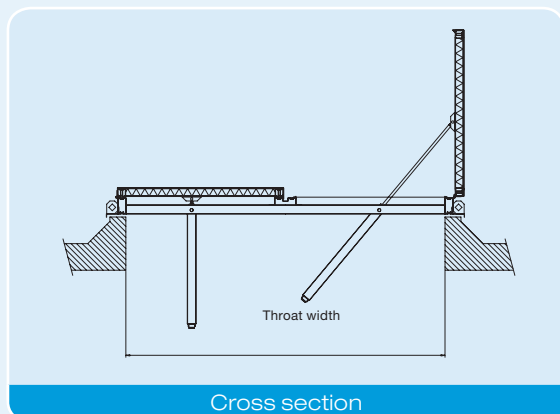
**P2:** Double-action compressed air operation

**M:** Motor operation

Optional: **B:** including fire function **FS:** failsafe

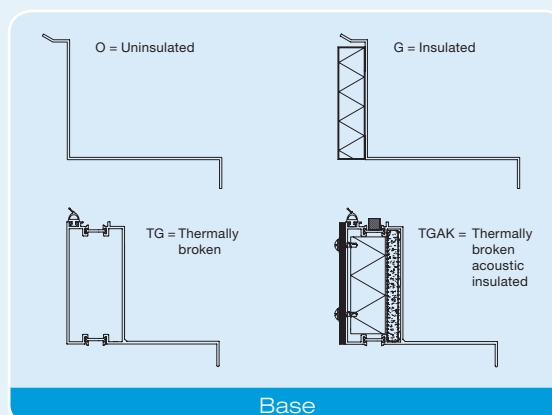
## Accessories

- Bird or insect mesh
- Fall protection
- Burglary prevention features
- Insulated flanges
- RAL colour / Anodised



| AT-flaps |   | U-value W/m² K |
|----------|---|----------------|
|          | Uninsulated                                 | 6,0            |
|          | Single laminated glass                      | 5,7            |
|          | Insulated                                   | 2,0            |
|          | Isolux 16 mm                                | 1,8 - 2,3      |
| TG-flaps |   | U-value W/m² K |
|          | Thermally broken insulated                  | 2,0            |
|          | Thermally broken Isolux 16 mm               | 1,8 - 2,3      |
|          | Thermally broken laminated insulation glass | 1,1 - 2,8      |
|          | Thermally broken Isolux 55 mm               | 1,0            |
|          | Thermally broken acoustic insulated         | 0,9            |

Flaps



For further information, go to our website: [www.brakel.com](http://www.brakel.com)