

# Dome rooflight upstands and roof connection systems

**VELUX®**
**Commercial**


The safe and secure connection to the roof for new construction and refurbishment

## The products

### Metal upstands

- the material-specific solution for steel trapezoidal sheet roofs and other roof designs or constructions
- the perfect solution for every roof membrane and type of connection

### GFRP upstands

- roof connections with bituminous and plastic roof membranes, trapezoidal and/or corrugated profiles and ISO roofs are possible by utilising corresponding flange constructions

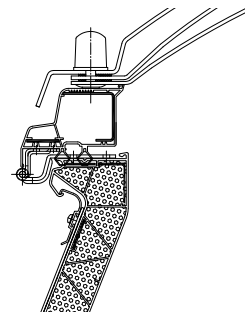
### PVC upstands

- system and standard compliant connection with OPTIMAL

### Roof connection systems

- provide the solution for professional connection for every roof membrane and type of connection

## OPTIMAL roof connection system



*PVC upstand,  
15 cm high with  
OPTIMAL roof  
connection system  
(option)*

*Connection example:  
bituminous roof  
membrane*



*Metal upstand, 30 cm  
high with OPTIMAL  
roof connection  
system (option)*

*Connection example:  
PVC plastic roof  
membranes*

## Metal upstands

Metal upstand RAK Model 30/40 cm high with OPTIMAL roof connection system, specially designed for use as a smoke extraction with increased extraction capacity (Aa value); safe and secure connection not only for bituminous but also high-polymer roof membranes.

### Thermal insulation

30 mm mineral wool (A1 according to DIN 4102)

### Thermal transfer coefficient

$U_{up,30} = 1.89 \text{ W/m}^2\text{K}$  according to DIN EN 1873

$U_{up,40} = 1.66 \text{ W/m}^2\text{K}$  according to DIN EN 1873

Metal upstand ISO-THERM Model 30/40/50/60 cm high, utilising PVC shiplap frames, free of thermal bridges and insulating upper upstand connection with E-clamping rail that can be mechanically screwed to the roof membrane in the upstand inclines.

- Use as SHEV possible

### Thermal insulation

60 mm mineral wool (A1 according to DIN 4102)

### Thermal transfer coefficient

$U_{up,30} = 0.77 \text{ W/m}^2\text{K}$  according to DIN EN 1873

$U_{up,40} = 0.70 \text{ W/m}^2\text{K}$  according to DIN EN 1873

$U_{up,50} = 0.66 \text{ W/m}^2\text{K}$  according to DIN EN 1873

$U_{up,60} = 0.63 \text{ W/m}^2\text{K}$  according to DIN EN 1873

With minimised requirement for the roof insulation:

Metal upstand TE Model 30/40/50 cm high with E-clamping rail for the mechanically screwed fixing for the roof membrane in the upstand inclines.

- Use as SHEV possible

### Thermal insulation

30 mm mineral wool (A1 according to DIN 4102)

### Thermal transfer coefficient

$U_{up,30} = 1.81 \text{ W/m}^2\text{K}$  according to DIN EN 1873

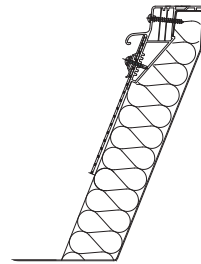
$U_{up,40} = 1.56 \text{ W/m}^2\text{K}$  according to DIN EN 1873

$U_{up,50} = 1.41 \text{ W/m}^2\text{K}$  according to DIN EN 1873



Metal upstand RAK Model, 40 cm high with OPTIMAL roof connection system

Connection example:  
High-polymer roof membranes



Metal upstand ISO-THERM Model, 30 cm high with E-clamping rail

Connection example:  
High-polymer roof membranes



Metal upstand TE Model, 40 cm high with E-clamping rail

Connection example:  
PVC plastic roof membranes

## Steel aluminium composite upstands

Steel inside and aluminium outside with thermal separating strip and flat adhesive base flange 30/40 cm high for SHEV RAK Model.

### Thermal insulation

30 mm mineral wool (A1 according to DIN 4102)

### Thermal transfer coefficient

$U_{up,30} = 1.89 \text{ W/m}^2\text{K}$  according to DIN EN 1873

$U_{up,40} = 1.66 \text{ W/m}^2\text{K}$  according to DIN EN 1873

### AK Model:

### Thermal insulation

60 mm mineral wool (A1 according to DIN 4102)

### Thermal transfer coefficient

$U_{up,30} = 1.52 \text{ W/m}^2\text{K}$  according to DIN EN 1873

$U_{up,40} = 1.25 \text{ W/m}^2\text{K}$  according to DIN EN 1873

$U_{up,50} = 1.09 \text{ W/m}^2\text{K}$  according to DIN EN 1873

A construction height of 40 cm can be provided for creating an on-site thermal flange



Steel aluminium composite upstand for SHEV RAK Model, 30 cm high

Connection example:  
bituminous roof membranes



Steel aluminium composite upstand AK model 40 cm high

Connection example:  
bituminous roof membranes, 1 layer

## GRP upstands

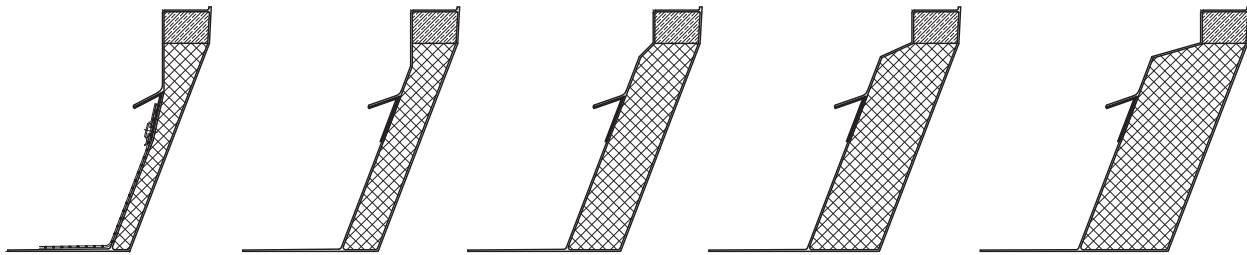
GRP upstand 15/30/50 cm high, safe and secure connection; not only for bituminous but also high-polymer roof membranes by utilising circumferential adhesive fixing flange

- Upstand cheeks with thermal insulation: 20 mm
- Alternative insulation thicknesses: 40, 60, 80 and 100 mm
- Optionally available with protruding strips
- Use as SHEV possible

### Thermal transfer coefficient

	Insulation thickness [mm]				
	20	40	60	80	100
$U_{up,15}$ acc to DIN EN 1873 [W/m <sup>2</sup> K]	1.50	1.12	0.99	0.95	0.94
$U_{up,30}$ acc to DIN EN 1873 [W/m <sup>2</sup> K]	1.21	0.85	0.68	0.59	0.55
$U_{up,50}$ acc to DIN EN 1873 [W/m <sup>2</sup> K]	1.12	0.76	0.58	0.49	0.43

## GRP upstand 30 cm high, connection example: bituminous roof membranes



Insulation thickness 20 mm

Insulation thickness 40 mm

Insulation thickness 60 mm

Insulation thickness 80 mm

Insulation thickness 100 mm

## GRP RAK 30/45 cm high, special upstand geometry for improving the $A_a$ -Values for smoke extraction

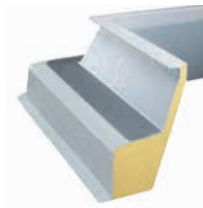
### Thermal transfer coefficient

$U_{up,30} = 1.36$  W/m<sup>2</sup>K according to DIN EN 1873

$U_{up,45} = 1.54$  W/m<sup>2</sup>K according to DIN EN 1873

### Supplementary insulation via

- thermally insulated base flange for upstand heights of 30 or 50 cm. Thermal insulation thicknesses from 100 up to 200 mm are possible
- doubling up the lateral cheeks' thermal insulation



GRP AK, 30 cm high  
with 120 mm thermal flange construction



GRP RAK for SHEV  
with optional GFRP apron (protruding strips)

## PVC upstands

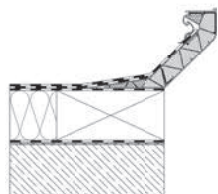
PVC AK 15/30 cm high, double-walled with sturdy internal K-bracing geometry, circumferential shaped nose for hanging in the OPTIMAL roof connection system (optional), PVC roof membranes can be connected to the upstand flange in a source welding process.

- PVC AK 30 cm high available for use as SHEV

### Thermal transfer coefficient

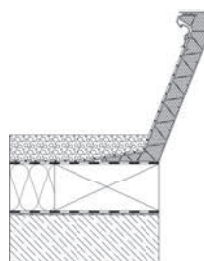
$U_{up,15} = 1.53$  W/m<sup>2</sup>K according to DIN EN 1873

$U_{up,30} = 1.25$  W/m<sup>2</sup>K according to DIN EN 1873



PVC AK upstand, 15 cm high with  
OPTIMAL roof connection system (option)

Connection example:  
bituminous roof membranes



PVC AK upstand, 30 cm high with  
OPTIMAL roof connection system

(option) Connection example:  
high-polymer roof membranes

## Application possibilities for the dome rooflight upstands

Upstands	Construction height	Connection on roof membrane				
	cm	Bituminous roof membrane	Plastic roof membrane	Trapezoidal and/or corrugated profiles	Standing seam profile	ISO roof
PVC upstand	15/30	•	•	-	-	-
GRP upstand	15/30/50	•	•	-	-	-
GRP RAK upstand <sup>1</sup>	30/45	•	•	-	-	-
GRP AK with TRP-slanted sides	15/30/50	-	-	•	•	•
GRP RAK upstand with TRP-slanted sides	30	-	-	•	•	•
GRP AK upstand with plinth flange	15/30/50	•	•	•	•	•
GRP upstand RAK corrugated profile <sup>1</sup>	25/30	-	-	•	•	-
GRP upstand AK corrugated profile <sup>1</sup>	20/30	-	-	•	•	-
GRP AK upstand with thermal flange	30/50	•	•	-	-	-
GRP RAK upstand with thermal flange	30/45	•	•	-	-	-
GRP aluminium composite TRP RAK upstand <sup>1</sup>	30	-	-	•	•	•
GRP aluminium composite TRP upstand <sup>1</sup>	15/30/50	-	-	•	•	•
ISO-THERM AK upstand	30/40/50/60	•	•	-	-	-
Metal RAK upstand	30/40/50	•	•	-	-	-
Metal AK upstand TE Model	30/40/50	•	•	-	-	-
Metal AK upstand type SE-AS <sup>1</sup>	40/50	-	-	•	•	•
Steel aluminium integrated upstand	30	-	-	•	•	-
Steel aluminium integrated upstand with TRP-slanted sides <sup>1</sup>	30	-	-	•	•	-
Steel aluminium integrated upstand with thermal flange preparation	40	-	-	•	•	-
Steel aluminium integrated RAK upstand	30	-	-	•	•	-
Steel aluminium integrated RAK upstand with TRP-slanted sides	30	-	-	•	•	-
Steel aluminium integrated RAK upstand with thermal flange preparation	40	-	-	•	•	-
Steel aluminium integrated TRP AK upstand <sup>1</sup>	30	-	-	•	•	-
Steel aluminium integrated TRP RAK upstand <sup>1</sup>	30	-	-	•	•	-
Aluminium TRP AK upstand <sup>1</sup>	15/30	-	-	•	•	-
Aluminium TRP RAK upstand <sup>1</sup>	30	-	-	•	•	-
Aluminium thermal TRP AK upstand <sup>1</sup>	15/30	-	-	-	-	•
Aluminium thermal TRP RAK upstand <sup>1</sup>	30	-	-	-	-	•

• = utilisable  
- = not utilisable

**Note:**  
1) Also refer to separate product information