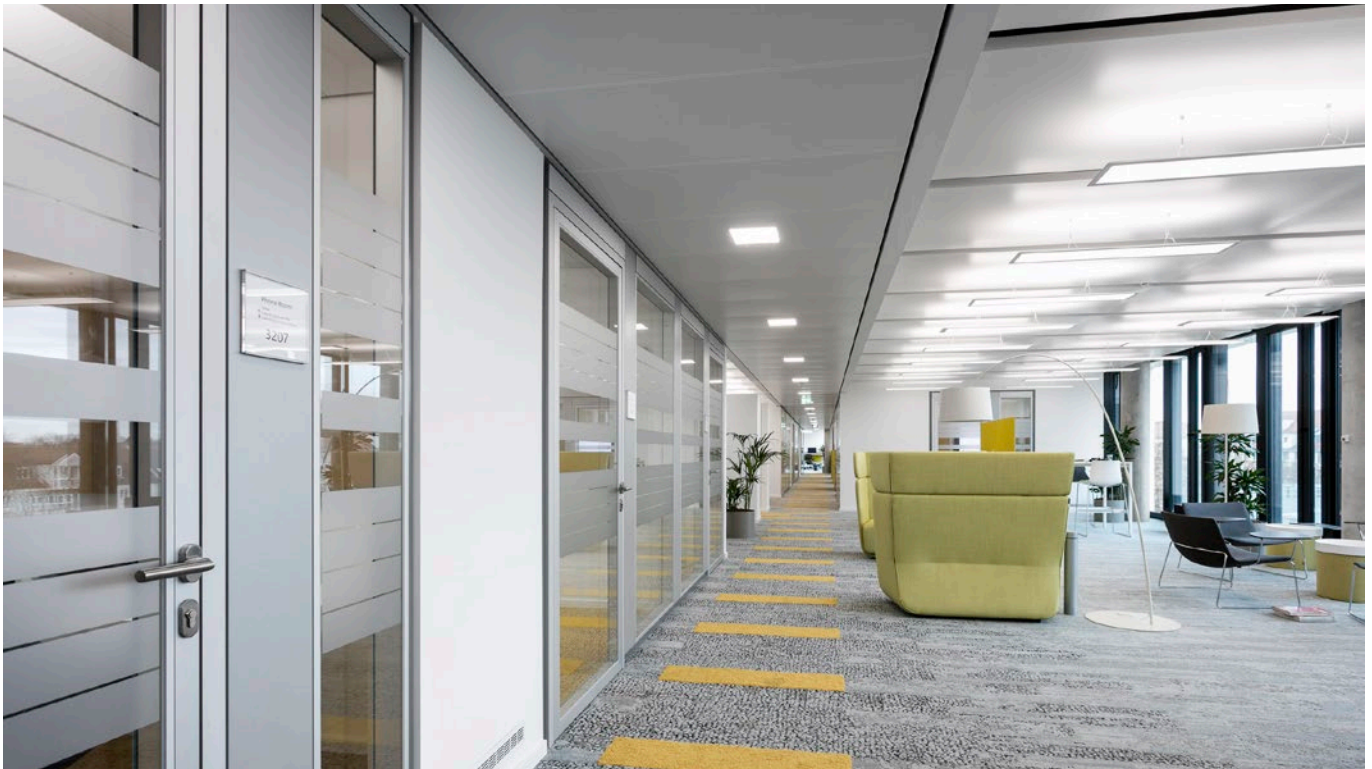


USE

Sound attenuating transfer unit



QUICK FACTS

- Transfer unit with integrated sound absorption for installation in drywalls
- Available in Z- or T-shaped design
- Enables air flow between rooms where duct routing is limited, e.g. lack of suspended ceiling
- Lined with sound-absorbing material class B1 (melamine resin) or A2 (mineral wool)
- Available without diffuser face for shadow gap installation

T-shape with diffuser face (neck height C: 45 mm)				
Length	Height	$D_{n,e,w}$ (dB)	R_w (dB)*	R_w (dB)**
500	350	45	19	27
1000	350	43	20	28
T-shape without diffuser face (neck height C: 25 mm)				
Length	Height	$D_{n,e,w}$ (dB)	R_w (dB)*	R_w (dB)**
500	350	48	19	30
1000	350	45	19	30

Z-shape with diffuser face (neck height C: 45 mm)				
Length	Height	$D_{n,e,w}$ (dB)	R_w (dB)*	R_w (dB)**
500	350	40	14	22
1000	350	37	14	22
Z-shape without diffuser face (neck height C: 25 mm)				
Length	Height	$D_{n,e,w}$ (dB)	R_w (dB)*	R_w (dB)**
500	350	43	14	25
1000	350	40	14	25

R_w^* : Weighted sound reduction index in relation to the wall opening.

R_w^{**} : Weighted sound reduction index in relation to the length x height of the air transfer element.

$R_w = D_{n,e,w} + 10 \times \log(S/A_0)$.

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Technical description

Design

The USE air transfer unit with integrated sound attenuation is designed for installation in drywall constructions. The product is available in a Z-shaped or T-shaped variant. The internal surfaces are lined with sound-absorbing material made from melamine resin (building material class B1).

The transfer unit is available with several different diffuser faces, or without for a shadow gap installation.

USE provides an air passage between two rooms, such as an office and a hallway, when conventional duct routing is not possible, for example due to the absence of a suspended ceiling. The air transfer unit is specifically engineered to minimize the transmission of speech sound through walls.

Material and surface treatment

Transfer unit

- Made of galvanised steel.
- Lined with sound-absorbing, abrasion-resistant absorption material in building material class B1 according to DIN 4102-1.

Diffuser face

- Made of galvanised steel.
- Standard colour:
 - RAL 9003, signal white, gloss 70
- Alternative standard colours:
 - RAL 9010, pure white, gloss 70
 - RAL 9006, white aluminium, gloss 70
 - RAL 9005, jet black, gloss 70
 - RAL 7035, light grey, gloss 70

Adaptation

- Other colours available on request.
- Sound-absorbing, abrasion-resistant absorption material in building material class A2.

Installation

Diffuser face is fastened using clamping springs through the panel of the perforation.

Accessories

- Dust protection for interior fittings.



USE, T-shape.



USE, T-shape with diffuser face.

Technical data

Acoustic data

T-shape

With diffuser face (neck height 45 mm)

Length	Height	$D_{n,e,w}$ (dB)	R_W (dB)*	R_W (dB)**
500	350	45	19	27
1000	350	43	20	28

Without diffuser face (neck height 25 mm)

Length	Height	$D_{n,e,w}$ (dB)	R_W (dB)*	R_W (dB)**
500	350	48	19	30
1000	350	45	19	30

Z-shape

With diffuser face (neck height 45 mm)

Length	Height H	$D_{n,e,w}$ (dB)	R_W (dB) ¹⁾	R_W (dB) ^{**}
500	350	40	14	22
1000	350	37	14	22

Without diffuser face (neck height 25 mm)

Length	Height	$D_{n,e,w}$ (dB)	R_W (dB) ¹⁾	R_W (dB) ^{**}
500	350	43	14	25
1000	350	40	14	25

$D_{n,e,w}$: Standard sound level difference according to DIN EN ISO 717-1 is a measure of the sound insulation between two rooms that is independent of the acoustic properties of the receiving room.

$$D_{n,e,w} = L_1 - L_2 + 10 \times \log(A_0/A)$$

R_W^* : Weighted sound reduction index in relation to the wall opening

R_W^{**} : Weighted sound reduction index in relation to the length x height of the air transfer unit

$$R_W = D_{n,e,w} + 10 \times \log(S/A_0)$$

L_1 : Sound pressure level in the transmission room in dB

L_2 : Sound pressure level in the receiving room in dB

A: Equivalent absorption area of the receiving room in m²

A_0 : Reference absorption area 10 m²

S: Test surface of the component

Calculating the resulting sound reduction index $R_{W, res}$ of a total area

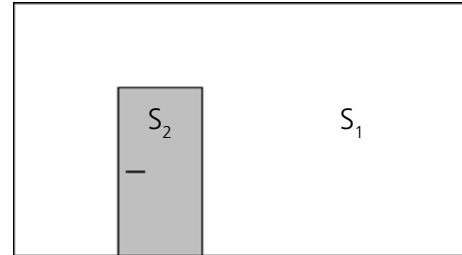
Specified sound reduction index $R_{W,1}$ for wall (53 dB) and door (35 dB) in accordance with DIN 4109.

Example 1: Resulting sound reduction index $R_{W, res}$ for a wall including door.

- The following formula is used to calculate the resulting sound reduction index. S_1 stands for the wall area, S_2 for the door area and S_{ges} for the total area.

$$R_{W, res} = -10 \log \left[\frac{1}{S_{ges}} * \left(S_1 * 10^{\left(\frac{-R_{W,1}}{10}\right)} + S_2 * 10^{\left(\frac{-R_{W,2}}{10}\right)} \right) \right]$$

Size	Resulting sound reduction index $R_{W, res}$ Wall + door	
	S (m ²)	R_W (dB)
Wall (S_1)	8	53
Door (S_2)	2	35
$R_{W, res}$		42

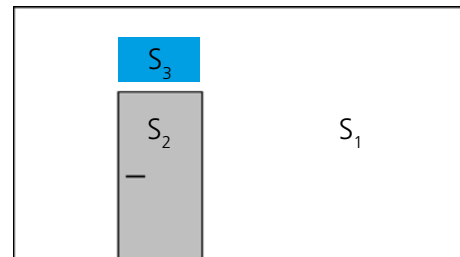


Example 2: Resulting sound reduction index $R_{W, res}$ for a wall including door and installed air transfer unit.

- The following formula is used to calculate the resulting sound reduction index. S_1 stands for the wall area, S_2 for the door area, S_3 for the outlet area and S_{ges} for the total area.

$$R_{W, res} = -10 \log \left[\frac{1}{S_{ges}} * \left(S_1 * 10^{\left(\frac{-R_{W,1}}{10}\right)} + S_2 * 10^{\left(\frac{-R_{W,2}}{10}\right)} + S_3 * 10^{\left(\frac{-R_{W,3}}{10}\right)} \right) \right]$$

Size	Resulting sound reduction index $R_{W, res}$ Wall + door + USE	
	S (m ²)	R_W (dB)
Wall (S_1)	7.82	53
Door (S_2)	2	35
USE - T-shape 500 x 350 (S_3)	0.175	27
$R_{W, res}$		40



Dimensions

USE			Diffuser face		Wall opening	
Nominal length L (mm)	Height H (mm)	Neck height C (mm)	Length L+18 (mm)	Neck height C+20 (mm)	L1 (mm)	C1 (mm)
500	350	25	518	45	508	35
1000	350	25	1018	45	1008	35

Other nominal lengths, heights or neck heights on request.
 Can be used in other wall thicknesses with optional neck length.

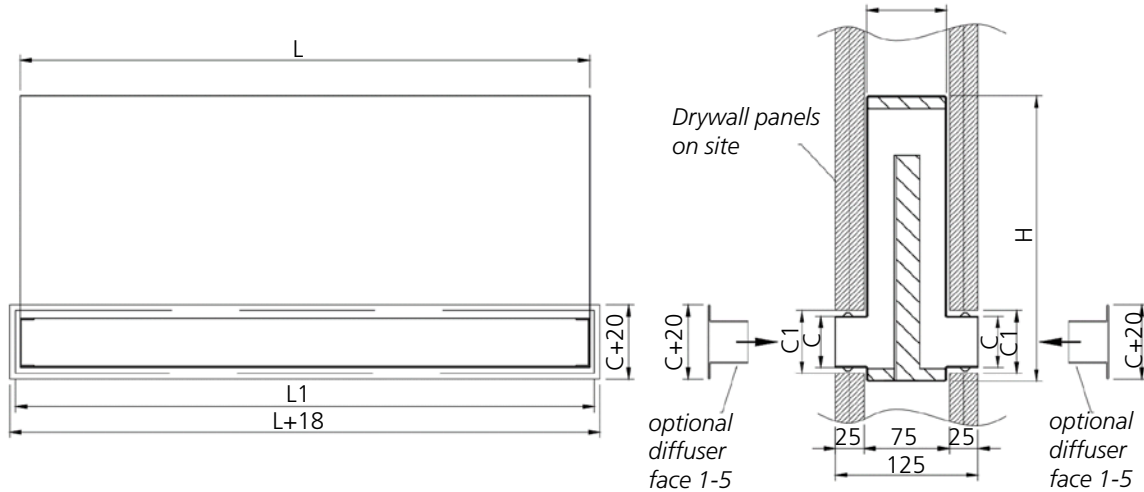


Figure 1. Dimensions, T-shape (mm).

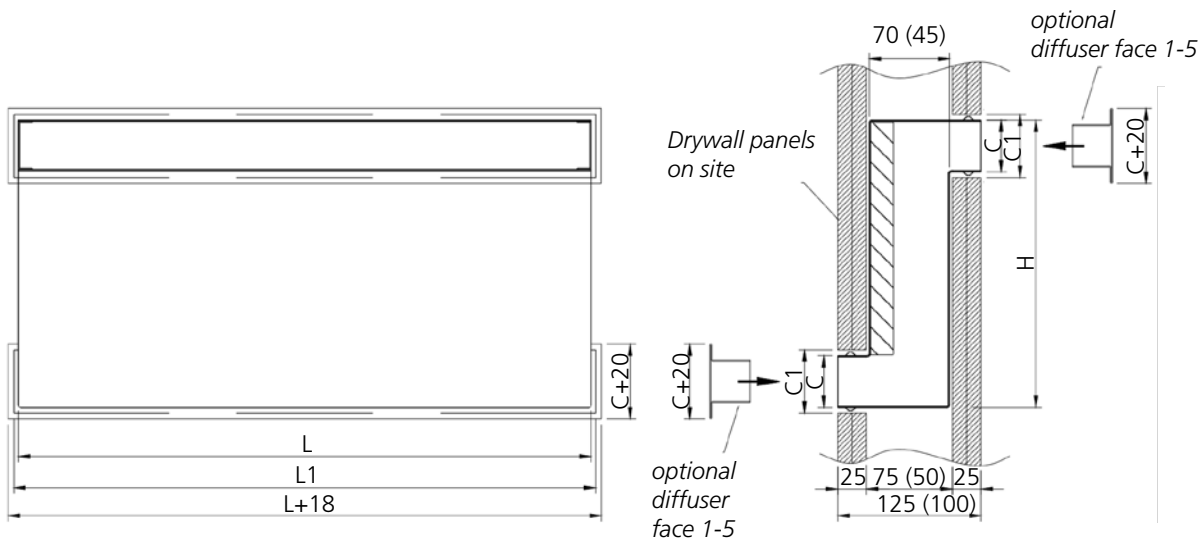


Figure 2. Dimensions, Z-shape (mm).

Diffuser faces

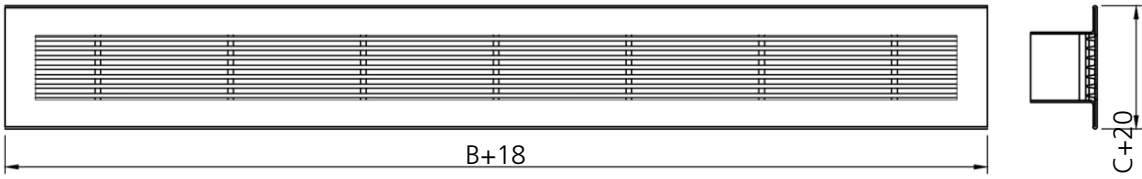


Figure 3. Diffuser face - DSM 28S/Q35.

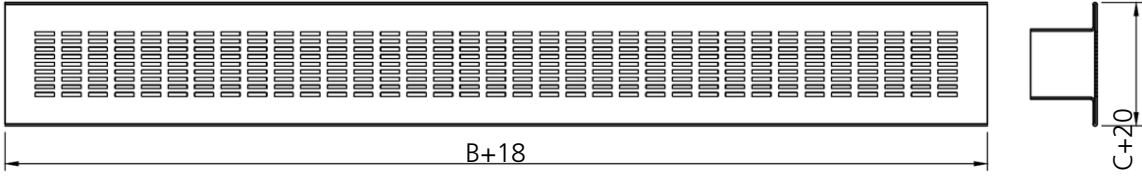


Figure 4. Diffuser face 2 - Lg 10/2 - 14/4.

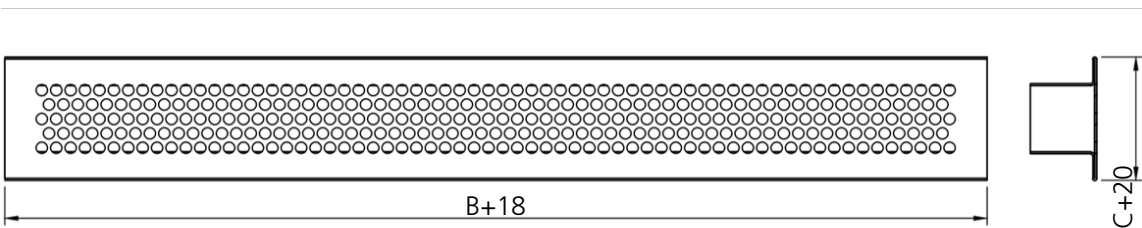


Figure 5. Diffuser face 3 - Rv 6.1 / 7.6.

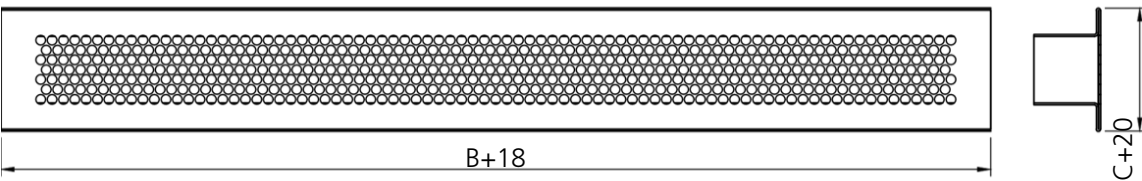


Figure 6. Diffuser face 4 - Rv 5/6.

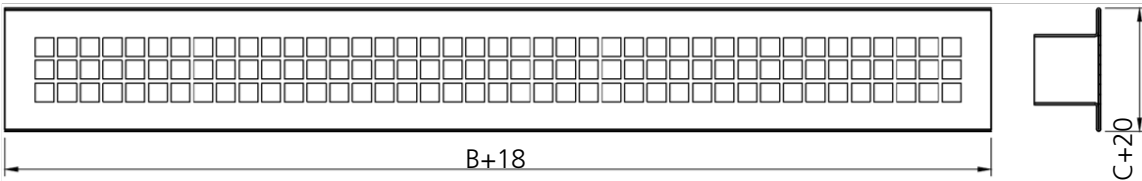


Figure 7. Diffuser face 5 - Qg 10/12.

Specification

For ordering, contact your local Swegon sales office.

Specification text

USE air transfer unit with integrated sound attenuation and the following features:

- For installation in drywalls.
- Available in a T- or Z-shape.
- Made of galvanised steel.
- Lined with sound-absorbing material, building material class B1 or A2.
- Diffuser faces made of galvanised steel, fastened using clamping springs.
 - Standard colour white RAL 9003, other colours available on request.
- Can be used without a diffuser face as shadow gap installation.