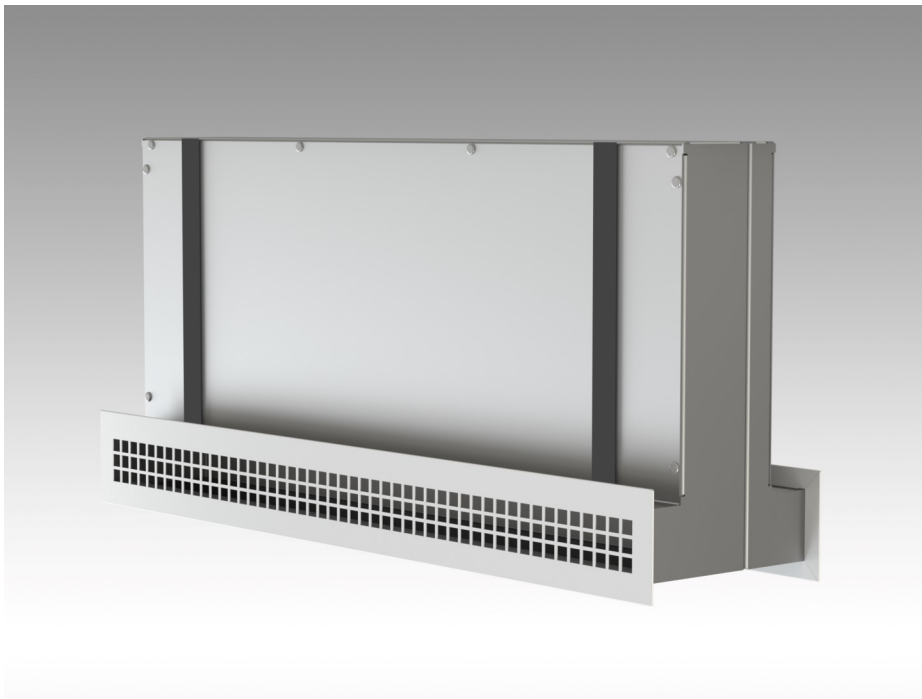


Technical Information

Sound absorbing Transfer Grilles INDUSILENT



- Quick and easy installation
- For flush partition wall installation
- High input attenuation
- Low pressure losses
- Incombustible sound insulation lining

- Features..... 3
- Dimensions / types..... 4
- Accessories - Neck extension..... 9
- Technical data..... 10
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Architecture

- The transfer grille INDUSILENT consists of a plenum box with integrated sound attenuation that is installed flush with the wall. The slot visible from the room is lined with a beautiful deco-frame (type R) or can be formed alternatively as an open shadow joint (type G). This version TS is specially developed for the installation in system partition walls.

Technology

- Transfer grille with high sound attenuation values, equipped with an acoustically highly effective inner lining. The lining has the building materials class A2 according to DIN 4102 (incombustible).
- A dust protection prevents the transfer grille from soiling during inner construction of the transfer grille. The dust protection is to be removed after terminating dust generating tasks.
- Volume flow rates up to 140 m³/hm at pressure losses < 10 Pa.
- High sound attenuation value R_w over entire frequency band at low construction height.
- Test certificate for the evaluated regulation noise-level difference $D_{n,e,w}$ by the Fraunhofer-Institut.
- Deliverable in lengths up to 1.200 mm.
- Structure-borne noise attenuated version.

Application range

- The energy saving regulations require air-tight building shells and a minimum of ventilation heating demand. To prevent damages to buildings such as mould formation and to supply building users with the required amount of outdoor air, a ventilation system is necessary.
- If the ventilation technology concept provides for free flow-over from one room to the other, then cross-talk silencers are necessary to prevent noise interference. Space is not available for conventional cross-talk silencers so that the transfer grille must assume the sound attenuation function.
- The optimum solution for such systems is offered by INDUSILENT, a compact transfer grille for the partition wall installation with integrated cross-talk silencer.

Installation

- The transfer grille is mounted during the construction of the dry wall between the wall partition pieces.
- After completing dry construction wall and paintwork the dust protection must be removed from the air slots.
- **Type...R** is fitted with a deco-frame on both sides.
- **Type..G** leaves the opening as a shadow gap. The connection to the plasterboard wall can optionally be covered with a frame.
- **Type TS** is intended for installation in system partition walls. In this case, a corresponding joint have to be provided in the planking.
- For adaptation to other wall thicknesses, an attachable neck extension is optionally available for the **types TR, TG, SR, SG**.

Transfer grille type TR

For installation in a double skin partition wall – made of 12.5 mm board panels – with a free minimum internal measurement of 75 mm (corresponds to 125 mm wall thickness).

Transfer grille made of galvanized sheet steel with highly effective sound proof, abrasion resistant, incombustible interior lining of building materials class A2 according to DIN 4102. A full lamination ensures a fibre-free lining. Both sides with deco-frame made of galvanized sheet steel, colour treated in RAL colours as desired (RAL-9010 is standard).

Deco-frames stamped to nominal length, selective with hole pattern Qg 8-10 or Rv 5-6 (see Page 14).

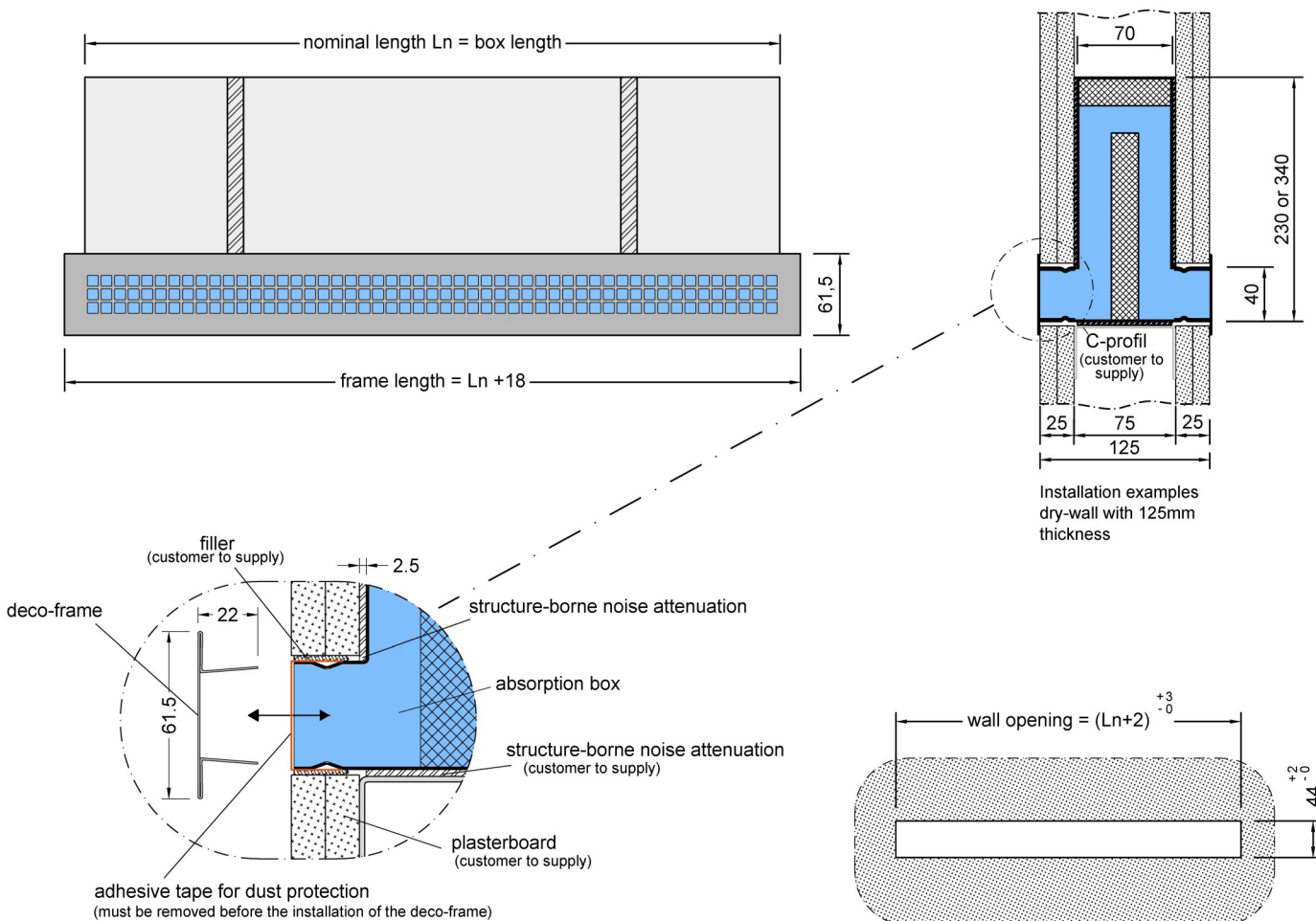
Installation/dismounting of deco-frame via a spring connector, without additional tools.

Dimensions

Nominal length L_n [mm]	500	800	1.000	1.200
Box length [mm]	500	800	1.000	1.200
Frame length [mm]	518	818	1.018	1.218

Note:

- Other nominal lengths on request.
- Possible to use in other wall thicknesses with optional neck extension.



Note:

- Gaps to be sealed on site to prevent noise bypass.
- We supply products that comply with machine and equipment manufacturing standards where dimensional tolerances are in accordance with DIN ISO 2768 Part 1 and 2.

Transfer grille type SR

For installation in a double skin partition wall – made of 12.5 mm plasterboard sheets – with a free minimum internal measurement of 50 mm (corresponds to 100 mm wall thickness).

Transfer grille made of galvanized sheet steel with highly effective sound proof, abrasion resistant, fibre-free, incombustible interior lining of building materials class A2 according to DIN 4102. Both sides with deco-frame made of galvanized sheet steel, colour treated in RAL colours as desired (RAL-9010 is standard).

Deco-frames stamped to nominal length, selective with hole pattern Qg 8-10 or Rv 5-6 (see Page 15).

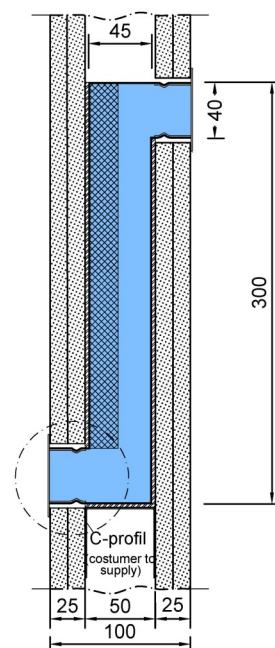
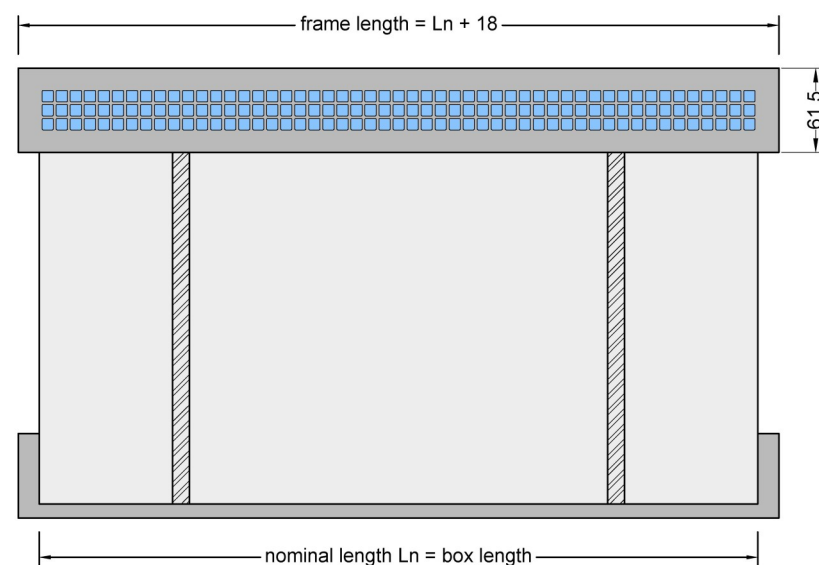
Installation/dismounting of deco-frame via a spring connector, without additional tools.

Dimensions

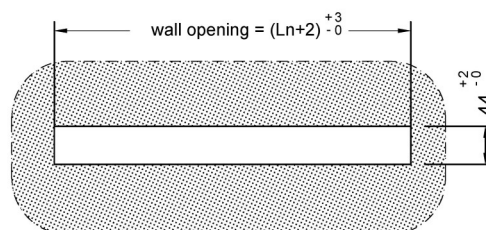
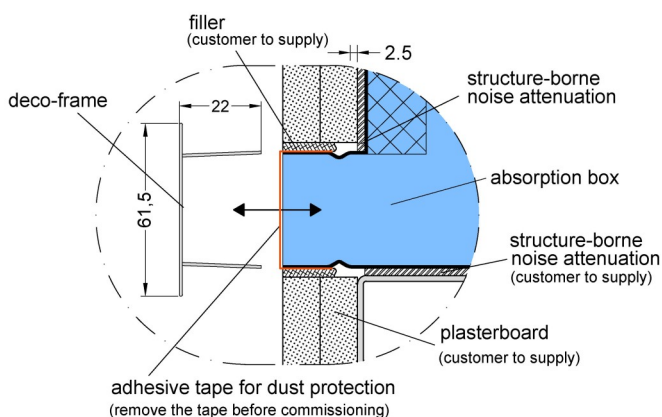
Nominal length L_n [mm]	500	800	1.000	1.200
Box length [mm]	500	800	1.000	1.200
Frame length [mm]	518	818	1.018	1.218

Note:

- Other nominal lengths on request.
- Possible to use in other wall thicknesses with optional neck extension.



Installation examples in a dry-wall with 100mm thickness



Note:

- Gaps to be sealed on site to prevent noise bypass.
- We supply products that comply with machine and equipment manufacturing standards where dimensional tolerances are in accordance with DIN ISO 2768 Part 1 and 2.

Transfer grille type SG

For installation in a double skin partition wall – made of 12.5 mm plasterboard sheets – with a free minimum internal measurement of 50 mm (corresponds to 100 mm wall thickness).

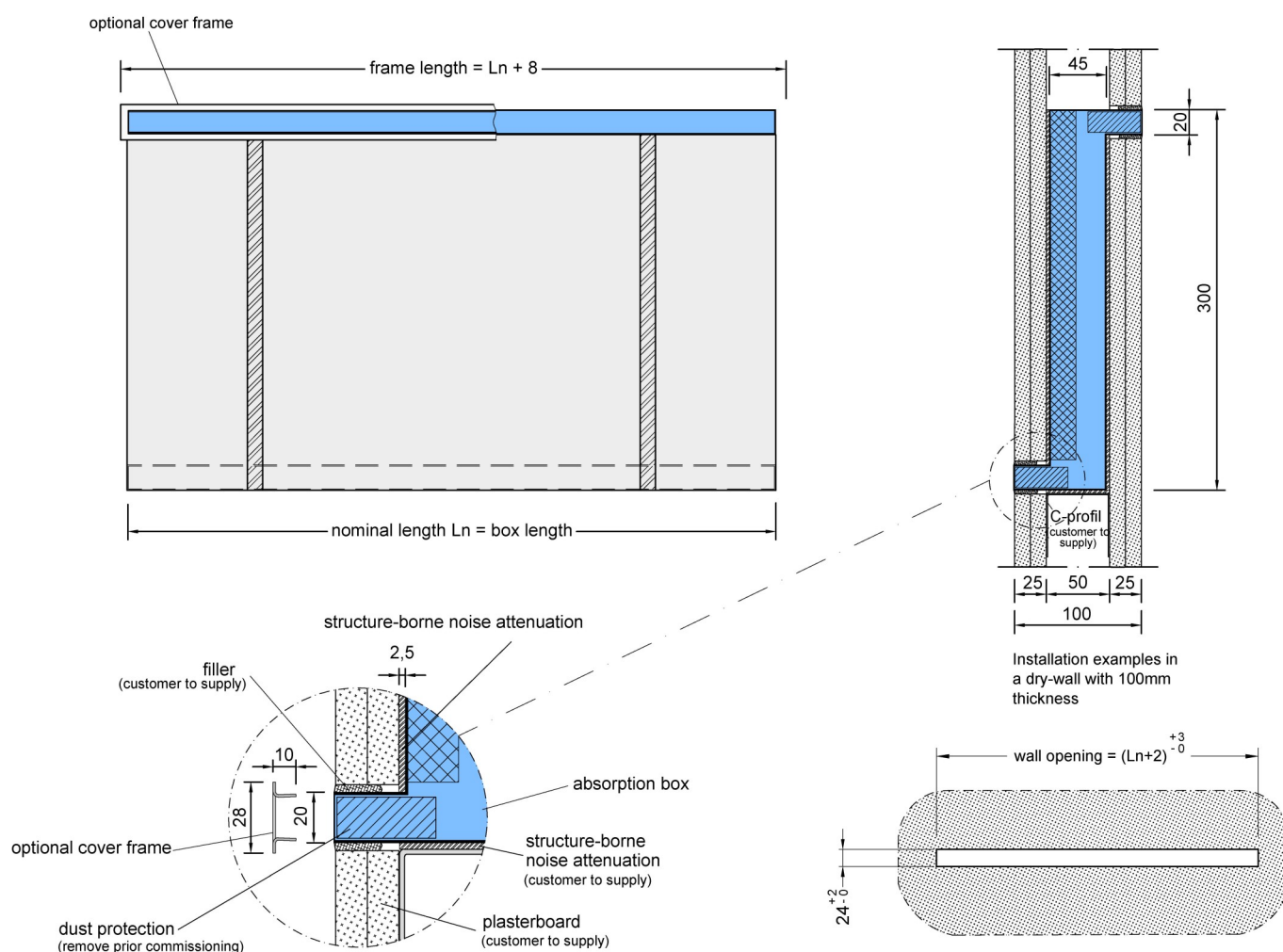
Transfer grille made of galvanized sheet steel with highly effective sound proof, abrasion resistant, fibre-free, incombustible interior lining of building materials class A2 according to DIN 4102 with openings for flush-wall installation.

Dimensions

Nominal length L_n [mm]	500	800	1.000	1.200
Box length [mm]	500	800	1.000	1.200

Note:

- Other nominal lengths on request.
- Possible to use in other wall thicknesses with optional neck extension.



Note:

- Gaps to be sealed on site to prevent noise bypass.
- We supply products that comply with machine and equipment manufacturing standards where dimensional tolerances are in accordance with DIN ISO 2768 Part 1 and 2.

Transfer grille type TS

In narrow type for the installation in system partition walls and other wall constructions.

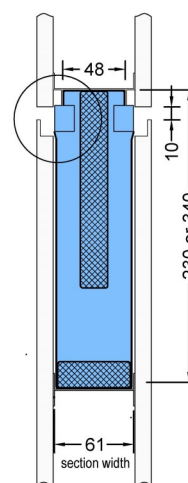
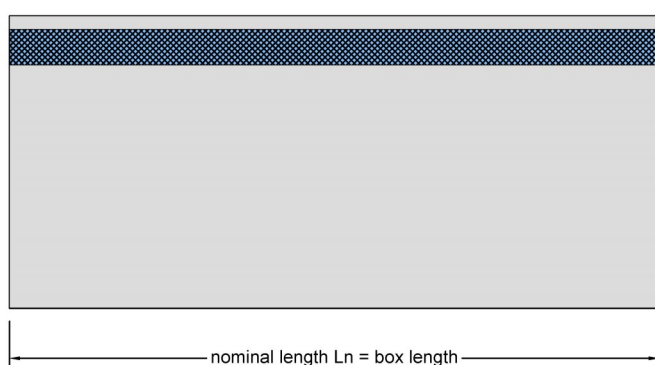
Transfer grille made of galvanized sheet steel with highly effective sound proof, abrasion resistant, incombustible interior lining of building materials class A2 according to DIN 4102. A full lamination ensures a fibre-free lining.

Dimensions

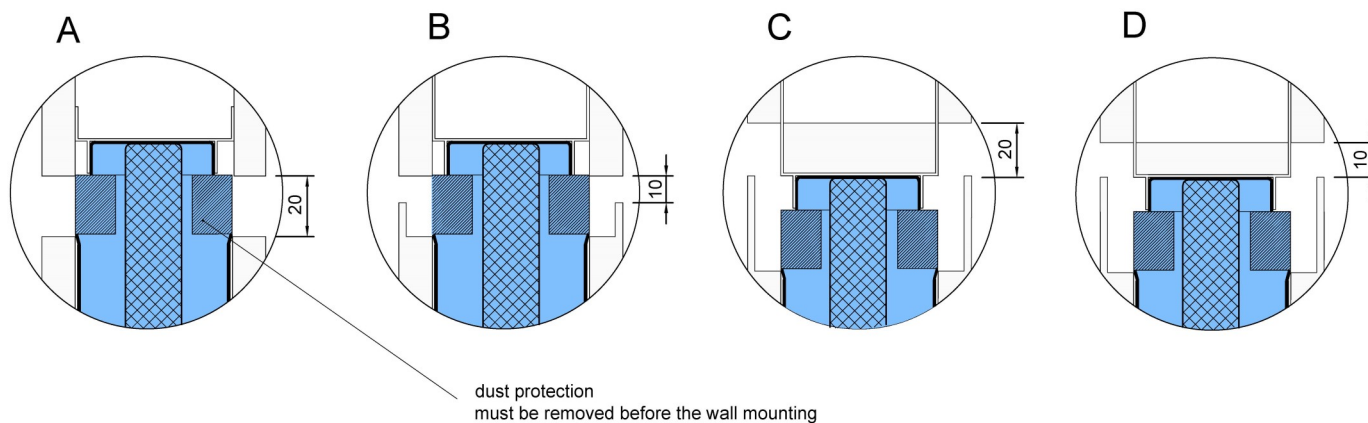
Nominal length L_n [mm]	500	800	1.000	1.200
Box length [mm]	500	800	1.000	1.200

Note:

- Other dimensions on request.



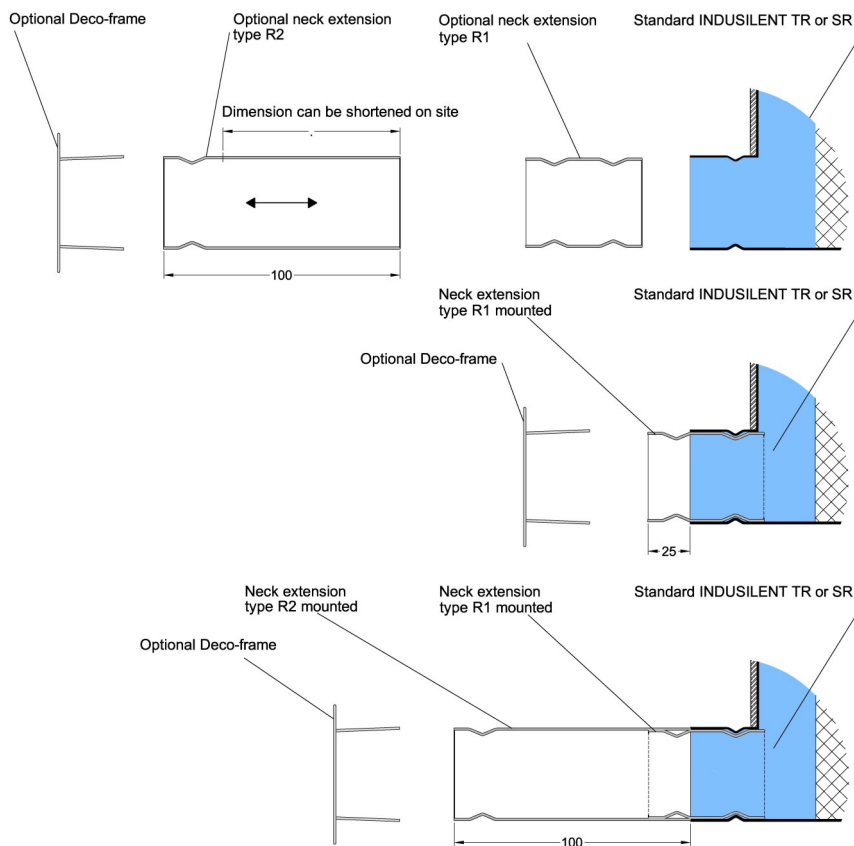
Installation examples



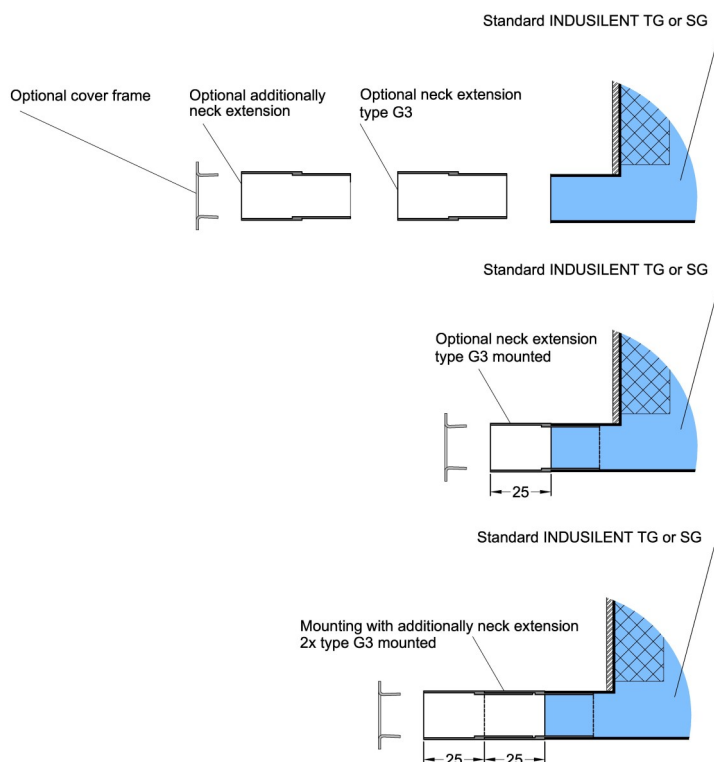
Note:

- Gaps to be sealed on site to prevent noise bypass.
- We supply products that comply with machine and equipment manufacturing standards where dimensional tolerances are in accordance with DIN ISO 2768 Part 1 and 2.

INDUSILENT TR or SR neck extension



INDUSILENT TG or SG neck extension



Proven sound attenuation value R_w and standard sound level difference $D_{n,e,w}$ according to DIN EN ISO 10140 and DIN EN ISO 717-1

Type TR 230					
Nominal length	[mm]	500	800	1000	1200
Installation height	[mm]	230	230	230	230
Reference plane	[m²]	0.115	0.184	0.230	0.276
R_w	[dB]	22	22	22	22
$D_{n,e,w}$	[dB]	41.4	39.4	38.4	37.6

Type SG 300					
Nominal length	[mm]	500	800	1000	1200
Installation height	[mm]	300	300	300	300
Reference plane	[m²]	0.150	0.240	0.300	0.360
R_w	[dB]	25	25	25	25
$D_{n,e,w}$	[dB]	43.6	41.6	40.6	39.8

Type TR 340					
Nominal length	[mm]	500	800	1000	1200
Installation height	[mm]	340	340	340	340
Reference plane	[m²]	0.170	0.272	0.340	0.408
R_w	[dB]	27	27	27	27
$D_{n,e,w}$	[dB]	44.4	42.4	41.4	40.6

Type TS 230 (Wall type B and D)					
Nominal length	[mm]	500	800	1000	1200
Installation height	[mm]	230	230	230	230
Reference plane	[m²]	0.115	0.184	0.230	0.276
R_w	[dB]	27	27	27	27
$D_{n,e,w}$	[dB]	46.7	44.7	43.7	42.9

Type TG 230					
Nominal length	[mm]	500	800	1000	1200
Installation height	[mm]	230	230	230	230
Reference plane	[m²]	0.115	0.184	0.230	0.276
R_w	[dB]	24	24	24	24
$D_{n,e,w}$	[dB]	43.8	41.8	40.8	40.0

Type TS 340 (Wall type A and C)					
Nominal length	[mm]	500	800	1000	1200
Installation height	[mm]	340	340	340	340
Reference plane	[m²]	0.170	0.272	0.340	0.408
R_w	[dB]	31	31	31	31
$D_{n,e,w}$	[dB]	48.9	46.9	45.9	45.1

Type TG 340					
Nominal length	[mm]	500	800	1000	1200
Installation height	[mm]	340	340	340	340
Reference plane	[m²]	0.170	0.272	0.340	0.408
R_w	[dB]	29	29	29	29
$D_{n,e,w}$	[dB]	47.0	45.0	44.0	43.2

Type TS 340 (Wall type B and D)					
Nominal length	[mm]	500	800	1000	1200
Installation height	[mm]	340	340	340	340
Reference plane	[m²]	0.170	0.272	0.340	0.408
R_w	[dB]	35	35	35	35
$D_{n,e,w}$	[dB]	52.9	50.9	49.9	49.1

Type SR 300					
Nominal length	[mm]	500	800	1000	1200
Installation height	[mm]	300	300	300	300
Reference plane	[m²]	0.150	0.240	0.300	0.360
R_w	[dB]	21	21	21	21
$D_{n,e,w}$	[dB]	39.7	37.7	36.7	35.9

Example for calculating the resultant sound attenuation value $R_{W \text{ res}}$ for jointed components

Dimensions

Room width	5.4 m
Room height	3.0 m
Total wall surface area (incl. door) A_{tot}	16.2 m ²
Area of door A_{Door}	2.0 m ²

Selected data

$R_{W \text{ Wall}}$	=	55.0 dB	(typical range 40 - 58 dB)
$R_{W \text{ Door}}$	=	35.0 dB	(typical range 30 - 40 dB)

Formula for calculating the resultant sound attenuation value

$$R_{W \text{ res}} = -10 \cdot \log [1/A_{\text{ges}} \cdot (A_1 \cdot 10^{-R_{W1}/10} + A_2 \cdot 10^{-R_{W2}/10} + A_3 \cdot 10^{-R_{W3}/10})]$$

Calculation of jointed wall without INDUSILENT

	Without INDUSILENT	
	R_W [dB]	A [m ²]
Wall	55.0	14.200
Door	35.0	2.000
$R_{W \text{ res}}$	43.8	

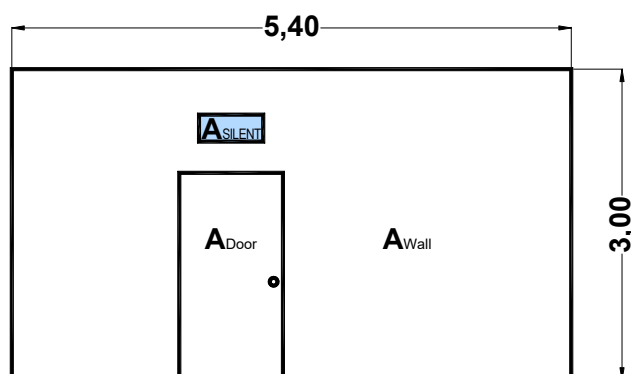
Calculation of jointed wall without INDUSILENT

	Type TG 230 - 500		Type TG 340 - 500		Type TR 230 - 500		Type TR 340 - 500	
	R_W [dB]	A [m ²]	R_W [dB]	A [m ²]	R_W [dB]	A [m ²]	R_W [dB]	A [m ²]
Wall	55.0	14.085	55.0	14.030	55.0	14.085	55.0	14.030
Door	35.0	2.000	35.0	2.000	35.0	2.000	35.0	2.000
INDUSILENT	24.0	0.115	29.0	0.170	22.0	0.115	27.0	0.170
$R_{W \text{ res}}$	41.5		42.6		40.6		42.0	

	Type SG 300 - 500		Type SR 300 - 500		Type TS 230 - 500		Type TS 340 - 500	
	R_W [dB]	A [m ²]	R_W [dB]	A [m ²]	R_W [dB]	A [m ²]	R_W [dB]	A [m ²]
Wall	55.0	14.050	55.0	14.050	55.0	14.085	55.0	14.030
Door	35.0	2.000	35.0	2.000	35.0	2.000	35.0	2.000
INDUSILENT	25.0	0.150	21.0	0.150	27.0	0.115	35.0	0.170
$R_{W \text{ res}}$	41.5		39.4		42.5		43.5	

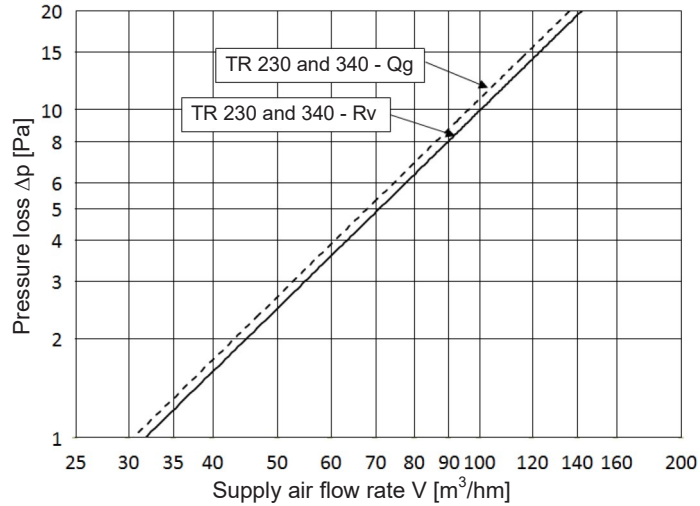
Wall without INDUSILENT

Wall with INDUSILENT

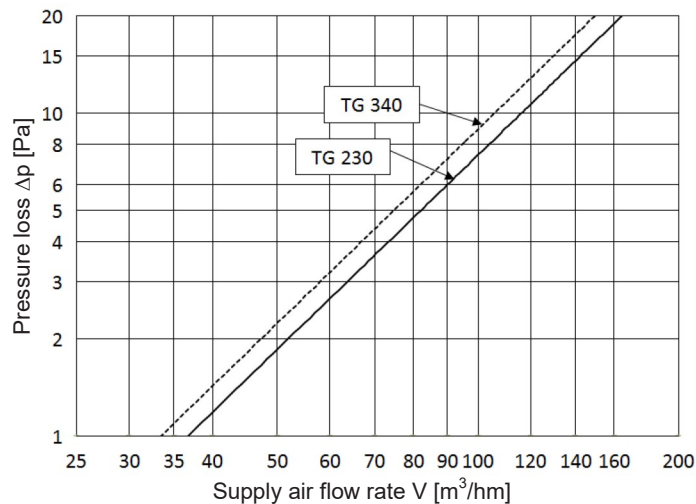


Pressure loss

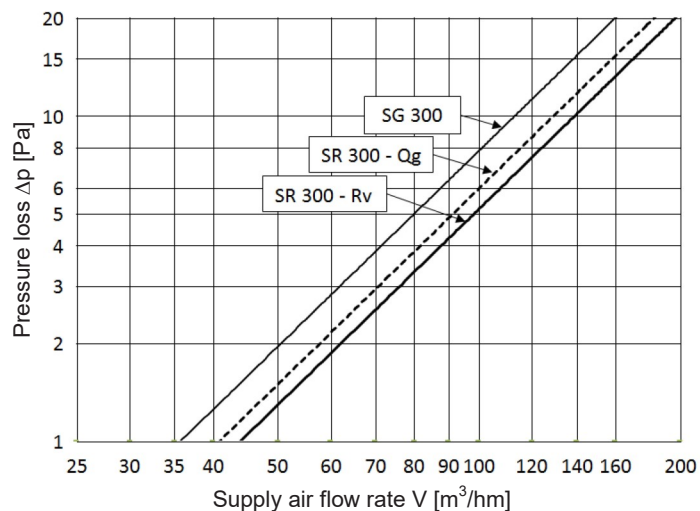
INDUSILENT TR



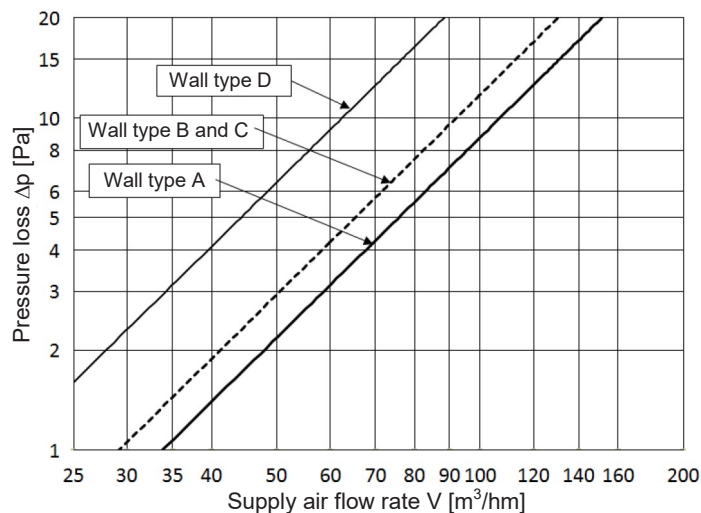
INDUSILENT TG



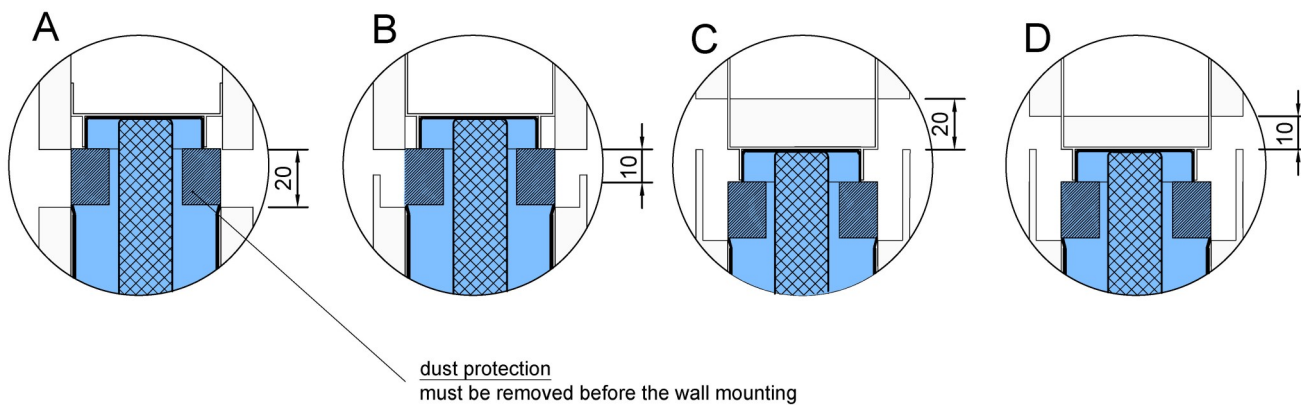
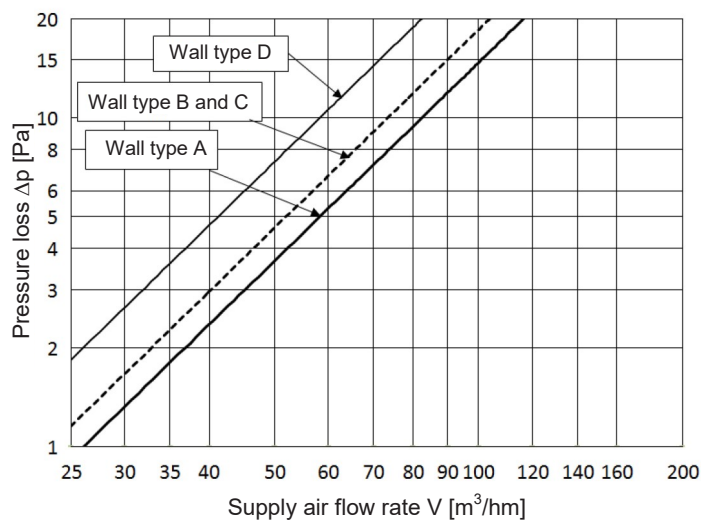
INDUSILENT SR and SG



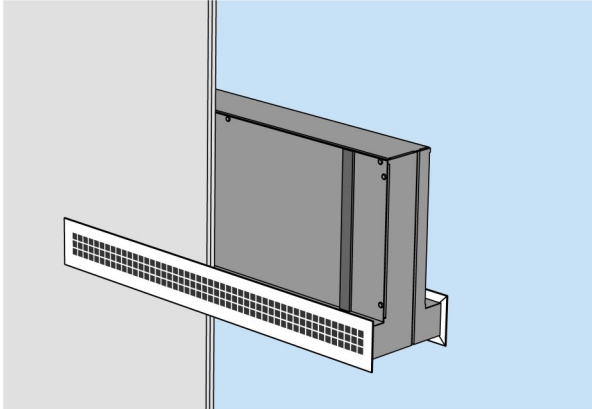
INDUSILENT TS 230



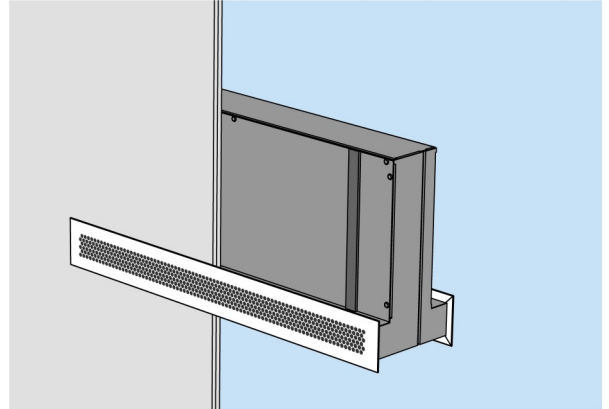
INDUSILENT TS 340



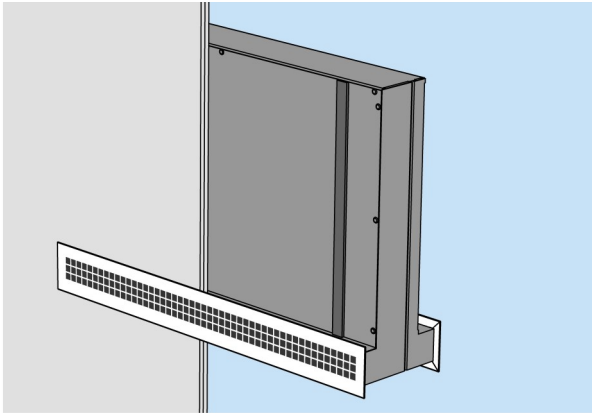
Type TR 230 Qg 8-10 with deco-frame (square)



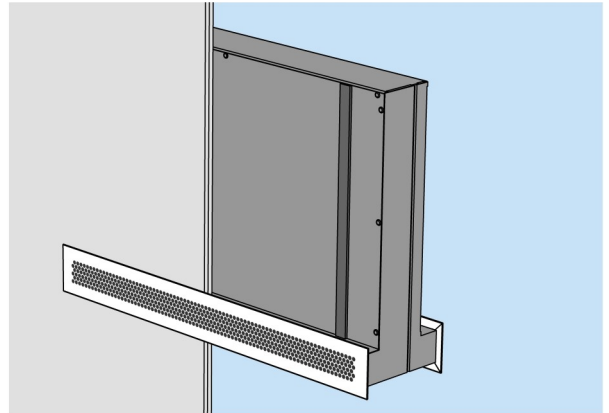
Type TR 230 Rv 5-6 with deco-frame (round)



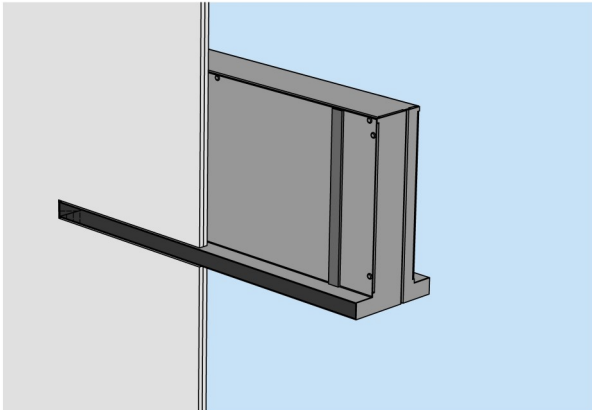
Type TR 340 Qg 8-10 with deco-frame (square)



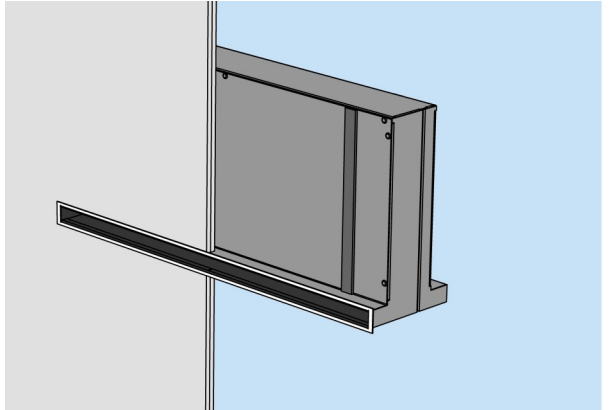
Type TR 340 Rv 5-6 with deco-frame (round)



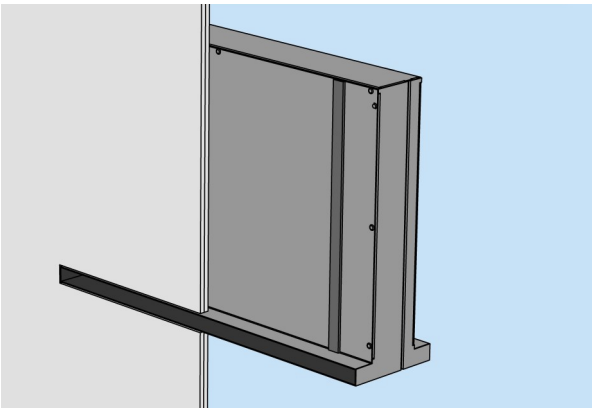
Type TG 230



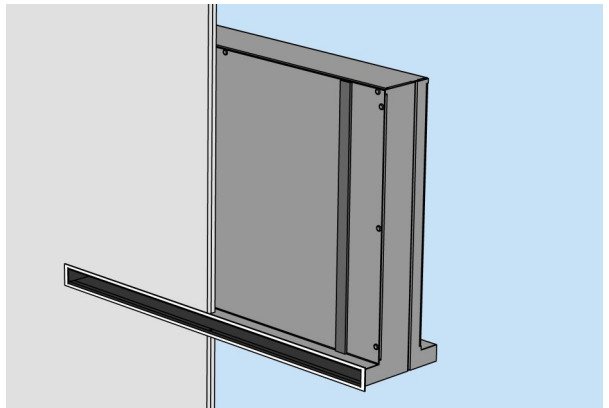
Type TG 230 with cover-frame



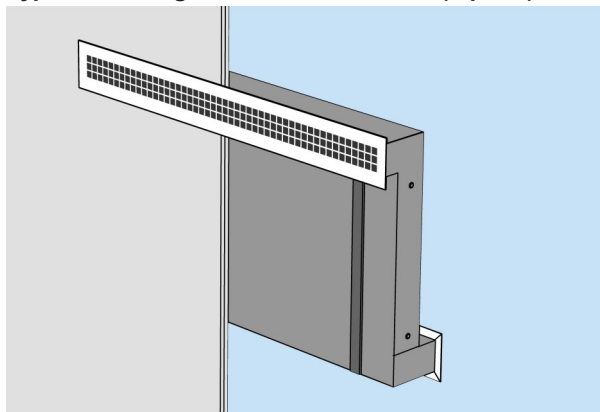
Type TG 340



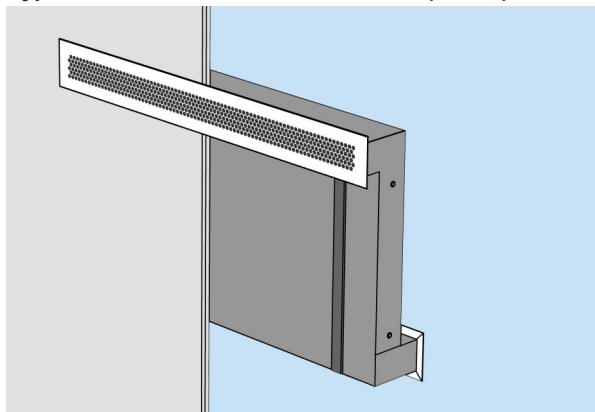
Type TG 340 with cover-frame



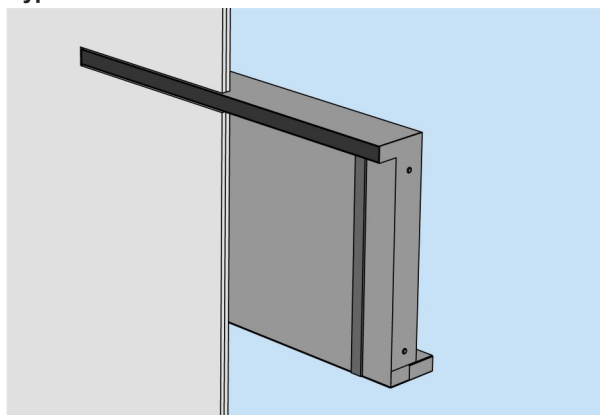
Type SR 300 Qg 8-10 with deco-frame (square)



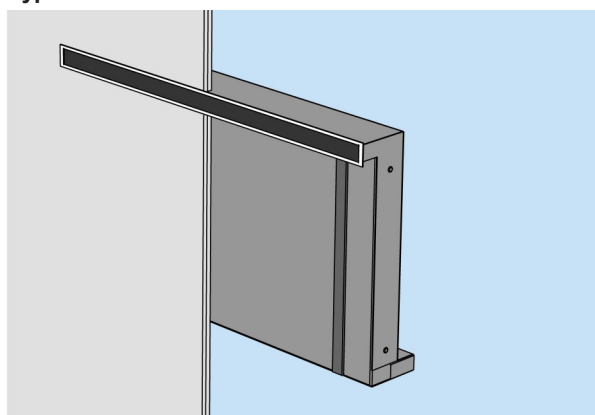
Type SR 300 Rv 5-6 with deco-frame (round)



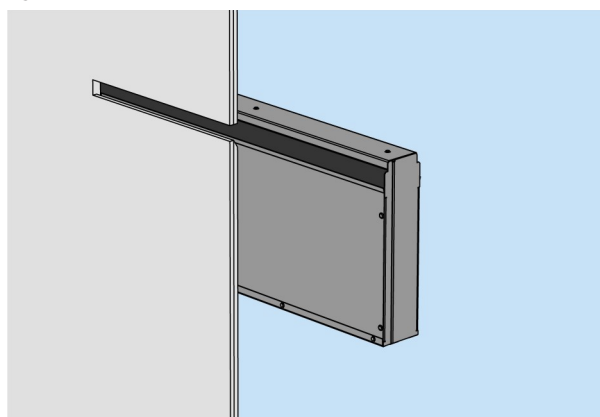
Type SG 300



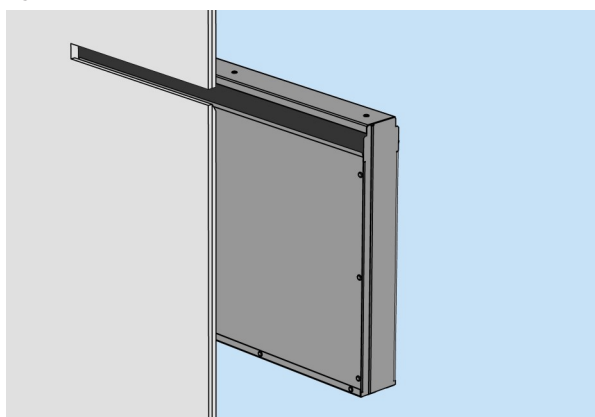
Type SG 300 with cover-frame



Type TS 230



Type TS 340



Sound absorbing Transfer Grilles INDUSILENT

for surface flush installation in wall constructions with fitting depths of 100 and/or 125 mm. Low pressure loss and high sound attenuation value. Suitable for volume flow rates of up to 140 m³/hm.

High sound attenuation value over entire frequency band. Tested by Fraunhofer-Institute.

Air diffuser comprising:

- Transfer grille made of galvanized sheet steel with highly effective sound proof, abrasion resistant inner lining of incombustible building materials. The lining has the building material class A2 according to DIN 4102 and is fibre-free because of a full lamination.
- Deco-frame made of galvanized sheet steel with round or square hole. Surface is painted in RAL 9010. Mounting by clipping into the overflow element (only for type TR, SR).
- Dust protection by preventing soiling during the design phase according to VDI 6022.

Type:

☐ TG 230 ☐ TG 340 ☐ TR 230 ☐ TR 340 ☐ SG 300 ☐ SR 300

Nominal length Ln:

☐ 500 ☐ 800 ☐ 1000 ☐ 1200

Hole pattern of Deco-frame (only for Type TR, SR)

- ☐ Square hole Qg 8-10
☐ Round hole Rv 5-6

Accessories:**Cover frame (only with Type SG, Type TG)**

☐ Cover frame

Neck extension

- ☐ TR...SR – Usage R1
☐ TR...SR – Usage R2
☐ TG...SG – Usage G3

Manufacturer: Kiefer Klimatechnik GmbH

Series: Sound absorbing Transfer Grilles

Type: INDUSILENT

Sound absorbing Transfer Grilles INDUSILENT TS

in narrow type for installation in system partition walls and constructions available with small fitting depth. Low pressure loss and high level of sound attenuation. Suitable for volume flow rates of up to 140 m³/hm. High sound attenuation value over entire frequency band. Tested by Fraunhofer Institute.

Air diffuser comprising:

- Transfer grille made of galvanized sheet steel with highly effective sound proof, abrasion resistant inner lining of incombustible building materials. The lining has the building material class A2 according to DIN 4102 and is fibre-free because of a full lamination.
- Dust protection by preventing soiling during the design phase according to VDI 6022.

Type:

☐ TS 230 ☐ TS 340

Nominal length Ln:

☐ 500 ☐ 800 ☐ 1000 ☐ 1200

Manufacturer: Kiefer Klimatechnik GmbH

Series: Sound absorbing Transfer Grilles

Type: INDUSILENT TS

Product Range

Components:

Linear, wall, ceiling and air outlet diffusers, chilled ceiling panels, recirculation coolers, cross-flow units, concrete core cooling with air. Axial and radial ventilators, hot-gas ventilators, plastic ventilators.

Systems:

Air conditioning plants of all kinds for comfort (office, administration, shopping centres, hospitals, libraries, museums, etc.) and industrial applications (machine construction, high-tech, textile, plastics, chemicals, automotive, soft drinks, food industry, etc.).

Services

Consulting and planning:

We provide advice concerning all aspects of our systems and create system analyses and cost estimates based on cooling load / pipe network / energy cost / efficiency calculations. We also develop proposals concerning suggested layouts for air distribution, lighting and ceiling systems; and compile lighting-related data using the latest software tools, as well as developing and implementing control-technology related concepts in our own MSR division.

We are furthermore able to draw on a wealth of experience from previous projects when it comes to designing innovative products and new projects.

Services

Laboratory:

Certificates, 1:1 room airflow laboratory analyses; acoustic and aerodynamic analyses of air-conditioning modules. Development of innovative air conditioning components. Caloric performance measurements of air and water-related components on test stands. On-site comfort measurements to assess thermal comfort and indoor air quality.

Maintenance and servicing:

All kinds of air-conditioning and climate control systems as part of maintenance and service contracts.