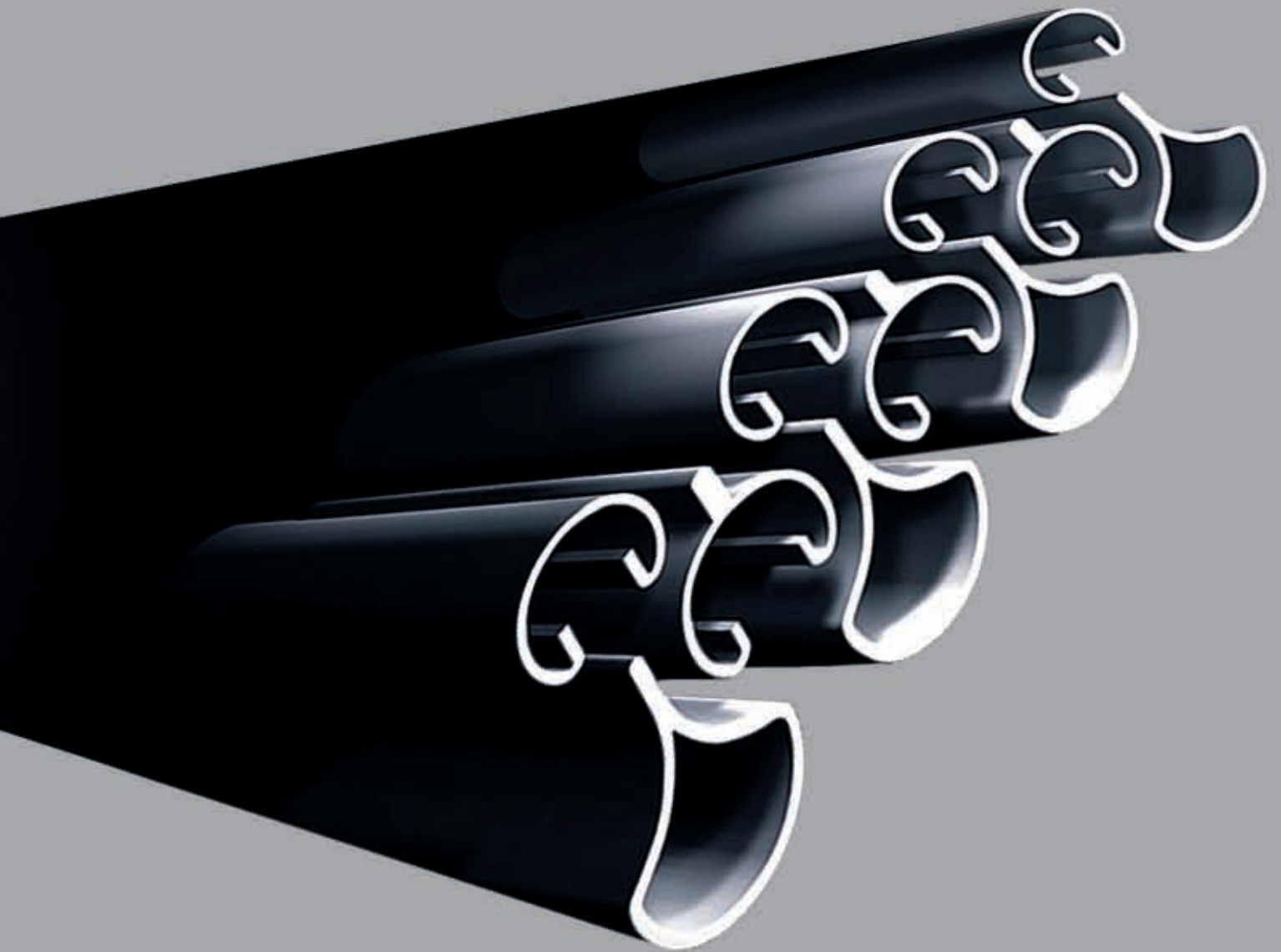


SGW

Werder GmbH & Co. KG



**Centrifugal Force
Sediment Separator (FSA)**

Centrifugal Force Sediment Separator (FSA)

Areas of application

The areas in which the new mechanical centrifugal force sediment separators can be used are:

- Ventilation
- Heating
- Air conditioning
- Recycling
- Environmental protection

The centrifugal force sediment separators can be used to separate out dust, droplets and snow. Their advantages include:

- Low energy requirements due to small pressure loss
- Low acoustic pressure level
- Maintenance free / low maintenance if used for extreme load applications
- Low weight due to use of aluminium profiles
- Variable shapes and sizes
- Vibrationally stable
- Universal usage of roof, wall and underfloor applications

Our air intake and exhaust grilles have proven their quality in numerous applications in Europe, Asia, Africa and North and Central America.

FSA Designs

A positioning plate is used to configure the intake profile and separators 1, 2 and 3 in dimensional intervals to form a grille. The lateral distance from one profile to the next is called the grid dimension. The depth of the assembly is determined by the width of the positioning plate.

Operating principle

Rounded intake profiles admit the air stream to be cleaned through the intake openings. The direction of travel here is for the most part irrelevant.

As it rushes in, the air is backed up by separator 1 and separator 2 and its direction reversed. The effects of inertia now cause particulate matter to enter the hollow sections of the profiles. Those areas of the hollow sections where the current is slow become the separation areas, where the target particulate matter settles downward due to gravity. A separation area below the hollow sections traps the particulate matter and prevents it from being sucked in by secondary air (fig. 1).

Fig. 1

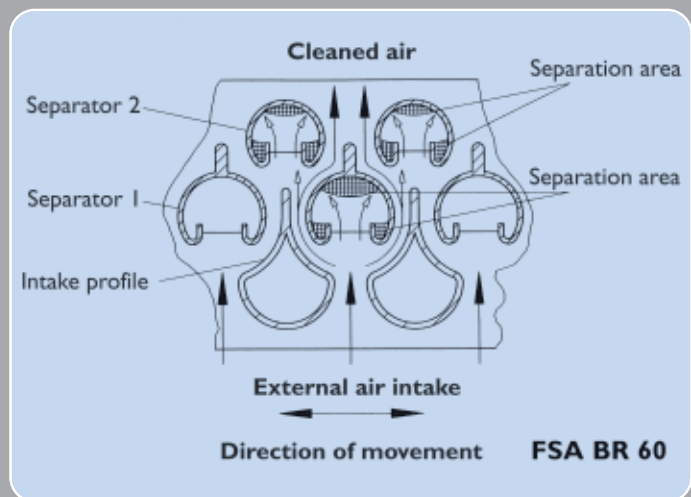
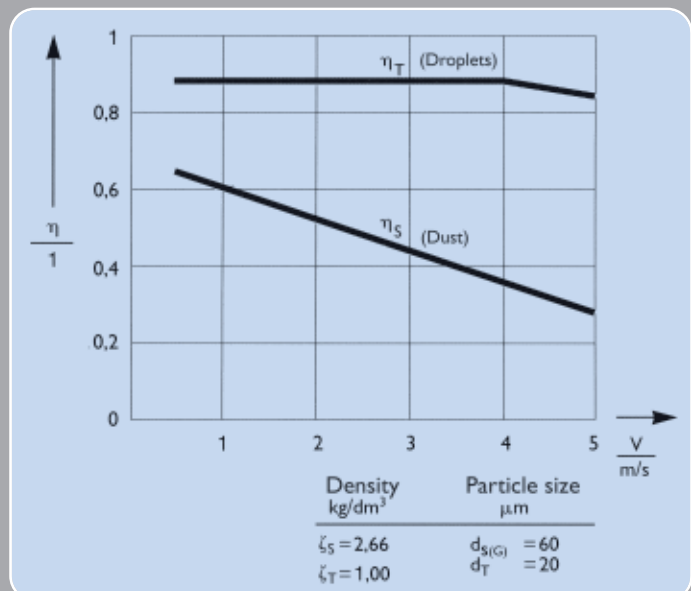


Fig. 2



Grille configurations

FSA BR 60: Depth = 64 mm, grid dimension = 32 mm, other dimensions are determined by customer's choice, T = Division

- Front intake profile, round for 32 mm grid, extruded aluminium profile
- Separators 1 and 2 as extruded aluminium profile
- Separation area optionally with cover; with plugs or without special separation area
- Separation area fixed beneath grille according to design requirements
- Flange and screw hole patterns by agreement

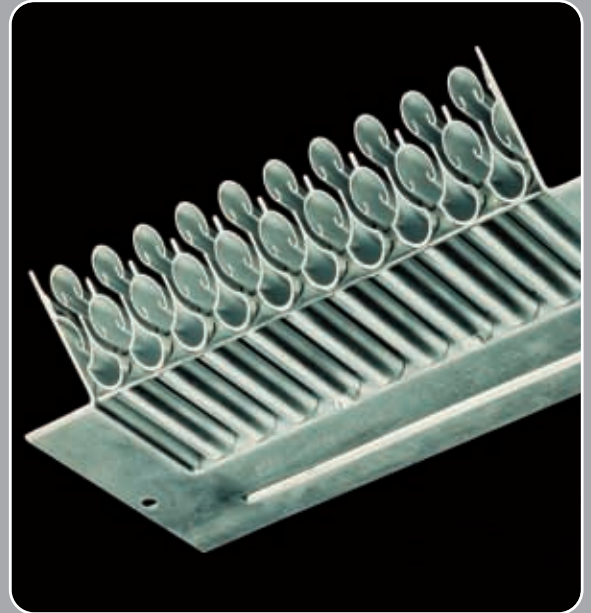


Fig. 3

Fittings

1. For use as built-in filter (fig. 13)
 - Perforated plate at front (Qg8 DIN 24042) optional
 - Gasket (CR-50 Shore), self-adhesive, optional
 - Heater (electrical - intake profile and separator 1) optional (fig. 4)

2. For suction box application, aluminium construction
 - Grille in side walls standard
 - Grille in rear wall optional
 - Perforated plates, gasket, separator box, soundproofing, heater, flow sensors are optional

3. For use as container
 - As with suction box
 - Stainless steel construction of container to customer specification

4. The FSA, FSAW and LG grilles can be made into filters by fitting a filter mat downstream of the grille. We offer this configuration in consultation with our customers (fig. 5).
For air duct adaptations we can also manufacture tube attachments to customer specifications. The vent grille/protective grille can be produced with either a perforated plate or wire screen attachment. It is also possible to obtain wire screening as a retrofit kit. The grilles can be optionally fitted with flat gaskets or other seals/gaskets.



Fig. 5



Centrifugal Force Sediment Separator (FSAW)

This design demonstrates the proven properties of the FSA separator while providing improved performance in separating water and sand, even when installed in an inclined position.

This dual-profile separator grille features new engineering and technological solutions that guarantee effective and economical application.

Height: Up to 1500 mm, units over 600 mm have reinforcements to prevent profiles from vibrating

Width: Up to 1900 mm

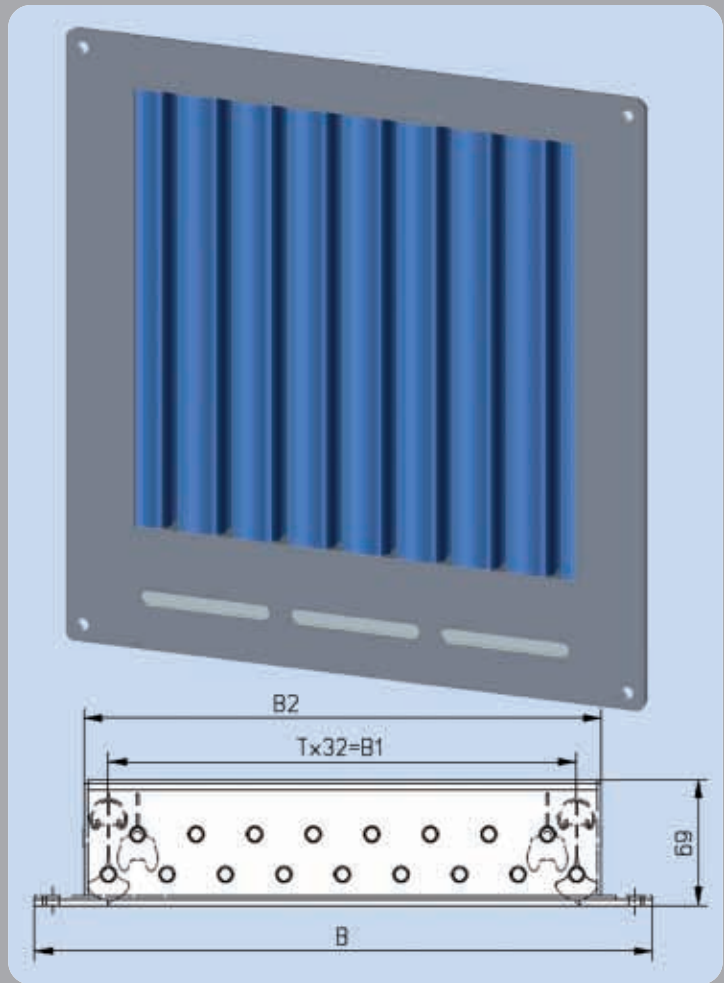


Fig. 6
FSAW design inserted

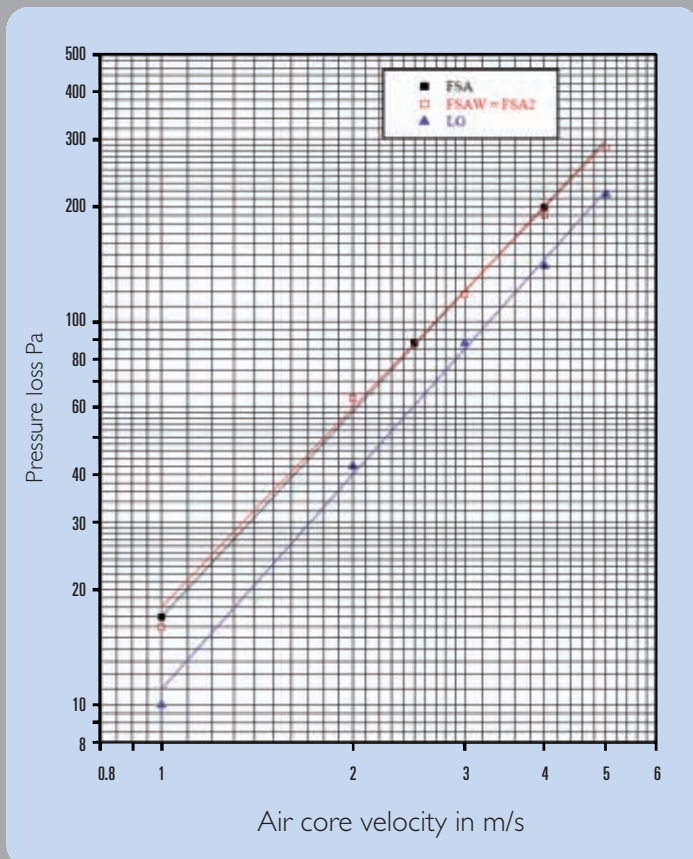


Fig. 7
Pressure loss

Tested to EN standards

Technical Research Centre of Finland
RST Rail System Testing / Germany

Registered as utility model

with support of the state of
Brandenburg and the EU

Vent grille (LG)

This new development has been designed to meet demands for extensive air intake and exhaust grilles.

The high stability and mechanical strength of these grilles ensure large volumes of air flowing through with minimum pressure loss. Furthermore, this system is characterized by a water separation performance rate of nearly 100%.

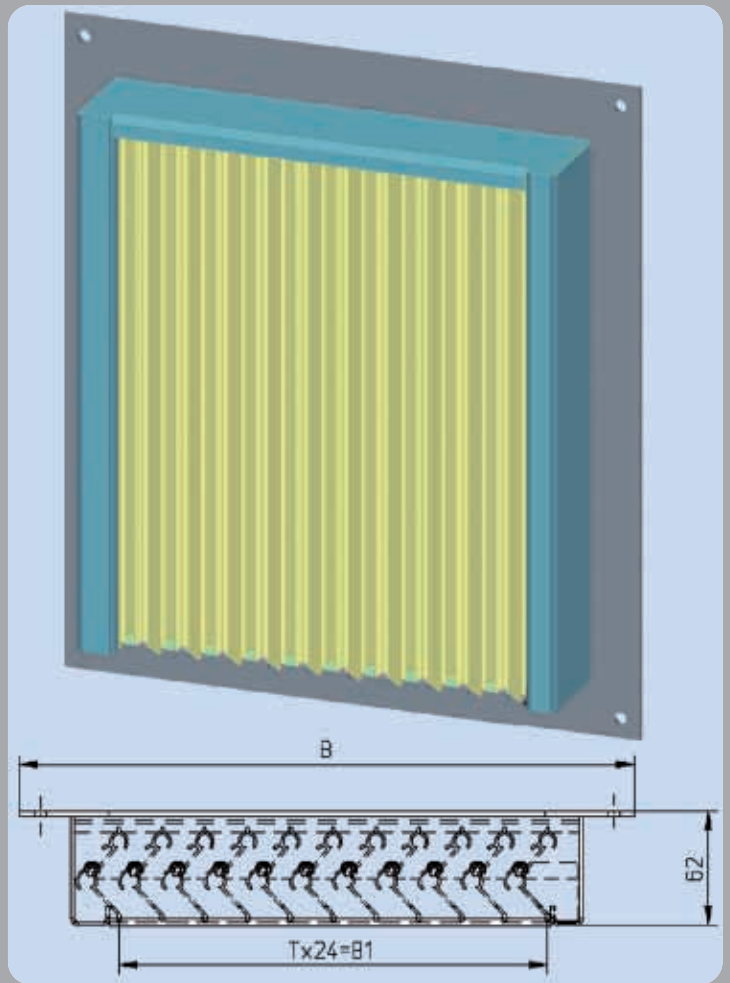


Fig. 8
Vent grille attached

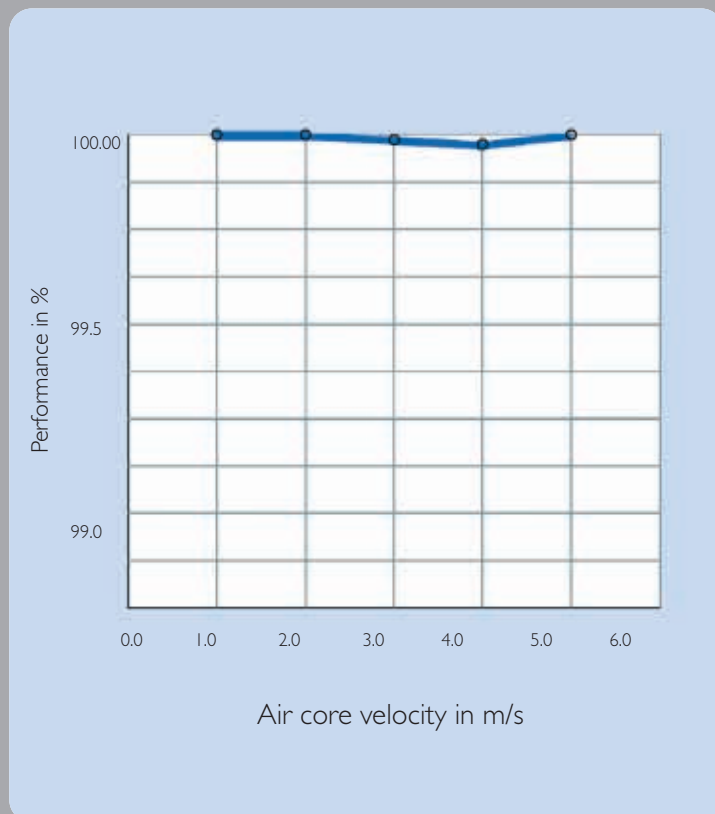


Fig. 9
Water separation

Tested to EN standards

Technical Research Centre of Finland
RST Rail System Testing / Germany

Registered as a utility model

with support of the state of
Brandenburg and the EU

Installation options

Roof area

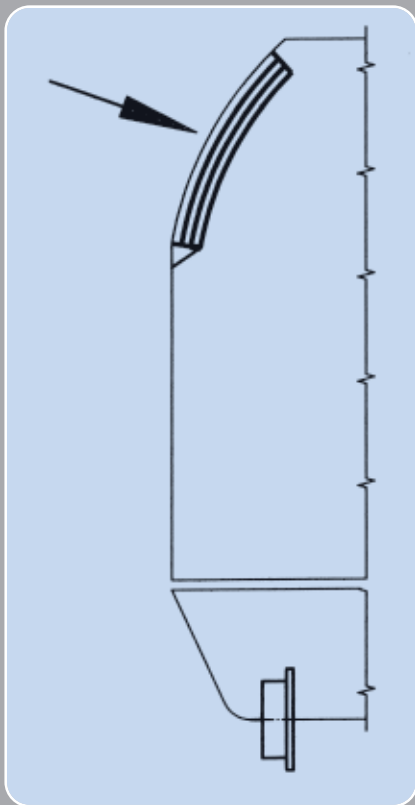


Fig. 10

Side wall area

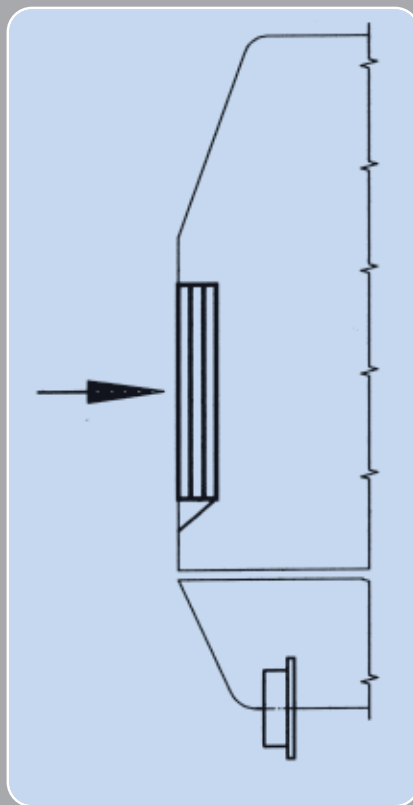


Fig. 11

Underfloor area

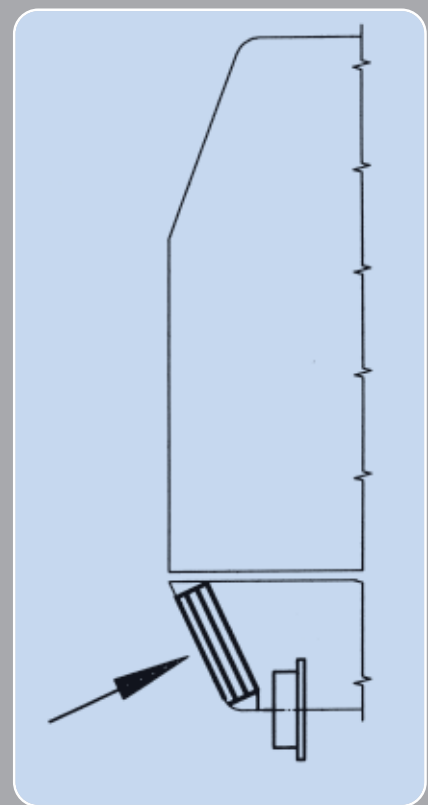


Fig. 12

Surface

- Plain etched aluminium
- Aluminium paint to customer specification, e.g. epoxide metal primer; polyurethane top coat
- Anodically oxidized aluminium, FSA only
- Immersion coating, cathaphoretic painting
- Chromating and powder coating
- Stainless steel for container is plain etched and passivated

Soundproofing

Measured in resting state using a standard sound source, B & K Type 4205, broadband noise 100 Hz-10 kHz, standard sound source 95 dB.

Soundproofing / FSA
66 mm depth = 1.7 dB (LIN)

The test results, which vary depending on how the tests are designed, showed normal noise emissions and good soundproofing values.

Cleaning

Only required for particularly high levels of usage. To be cleaned with compressed air or with water during operator's regular maintenance cycle.

Test certificates

- Sand separation performance for FSA / FSA W / LG certified to EN 13181
- Rain separation performance for FSA / FSA W / LG certified to EN 13030
- Degree of protection against water impact certified to EN 60529 for FSA / FSA W
- Vibration and shock test certified to EN 61373 for FSA / FSA W
- Ice and snow impact when heaters used for FSA
- Intake performance of FSA when obstructed
- Air intake flow into FSA in case of tangential cross flow at high velocity

Construction

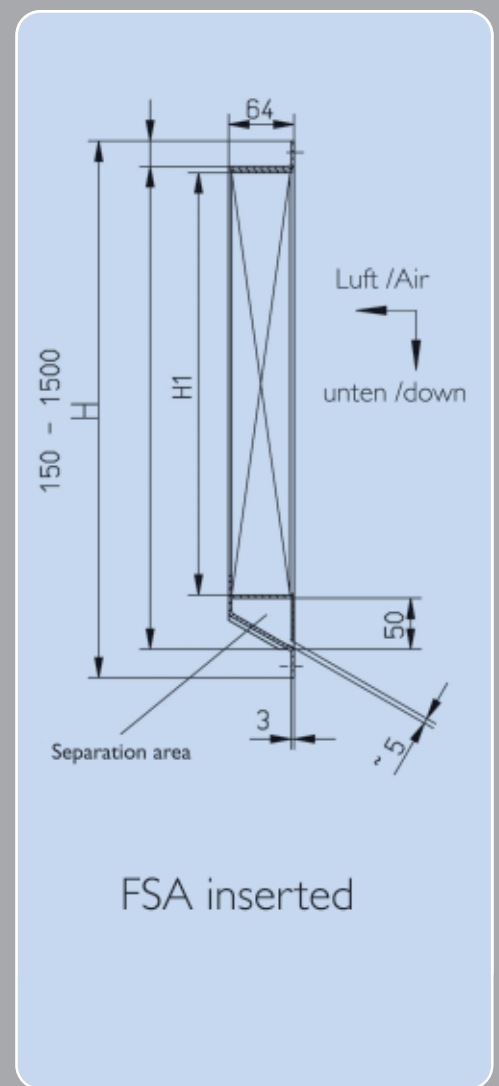
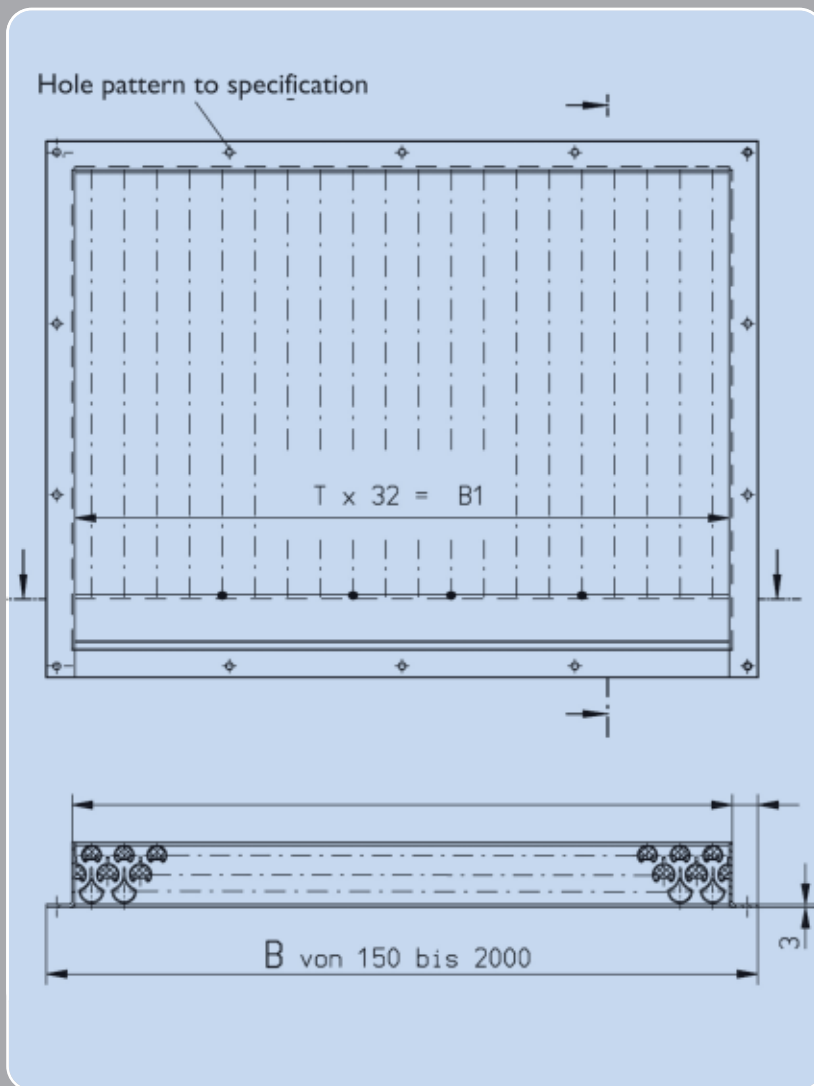


Fig. 13

Example of FSA grille configuration

- Nominal air flow volume ▶ 1.0 m³/s
- Intake area $B1 \times H1$ ▶ 800 mm × 500 mm = 0,4 m²
- Intake flow velocity ▶ 2.5 m/s
- Pressure loss as in fig. 7 ▶ $\Delta P = 90$ Pa

Please contact the manufacturer for advice in specific cases.



SGW Werder GmbH & Co.KG
Am Zernsee 13
14542 Werder/Havel, Germany

Phone +49 (0) 3327 - 4853
Fax +49 (0) 3327 - 40 418
info@sgw-werder.de
www.sgw-werder.de