

# 5



**558** 5.1 MACHINE PROTECTION



**563** 5.2 SAVEGUARD

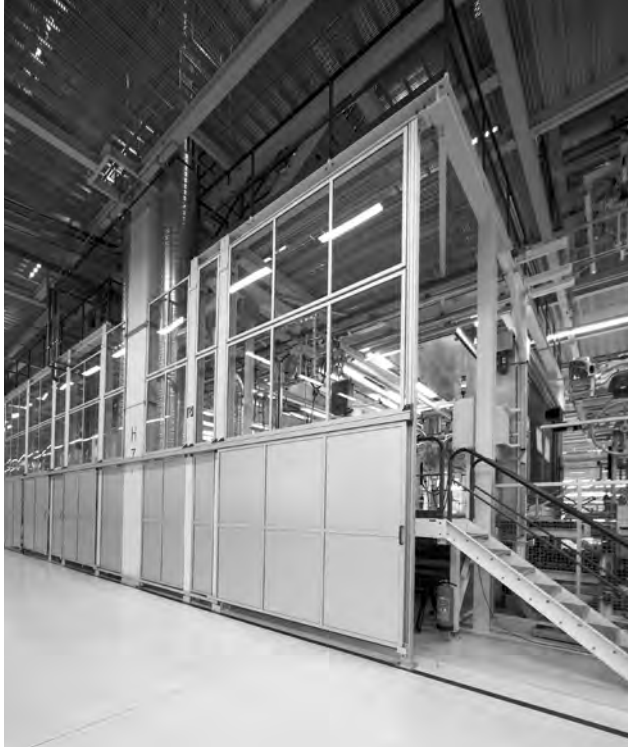


**575** 5.3 NOISE PROTECTION

**SAFETY SYSTEMS**  
SAFETY SYSTEMS

## MACHINE PROTECTION

### EXAMPLES



# MACHINE PROTECTION

## EXAMPLES

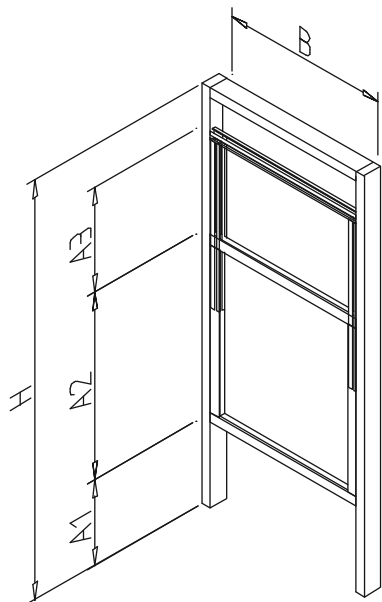


## MACHINE PROTECTION

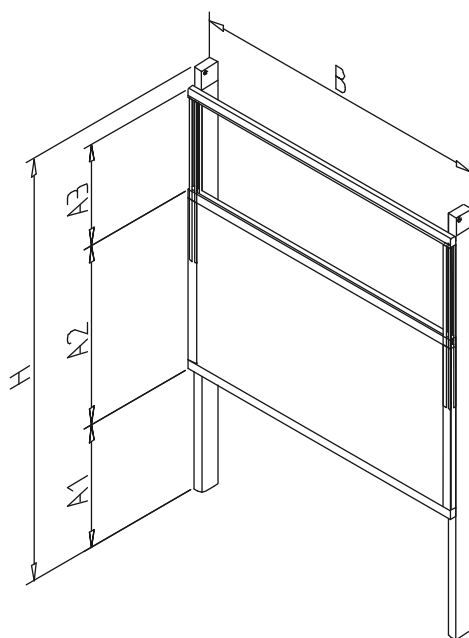
### LIFTING DOOR

Completely assembled and ready for installation on your premises. Vertical profiles with 2 counterweights and cable pulleys.

#### Lifting door for workstation



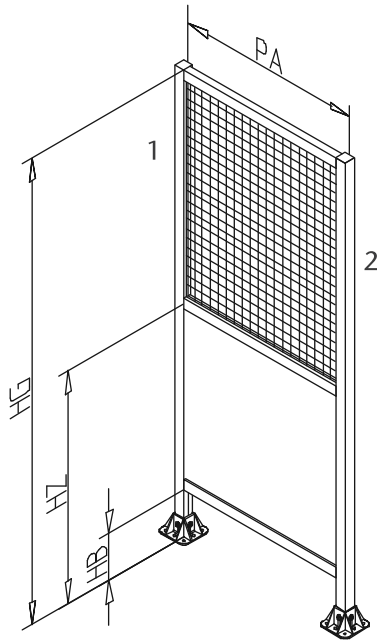
#### Lifting door for machine protection



## MACHINE PROTECTION

## GUARD UNIT FOR MACHINE PROTECTION

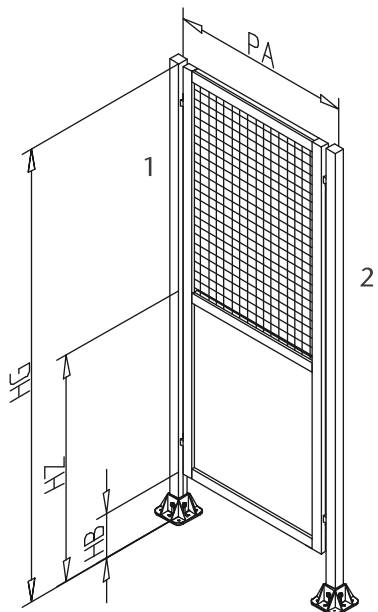
## Guard unit with integrated frame

**Items supplied:**

- 1 vertical pillar profile (1)
- 2 horizontal clamp profiles
- 1 panel element, assembled:
- Corrugated mesh, mesh 40 mm, wire size 4 mm, zinc plated

The vertical profile (2) belongs to the next unit.  
When used as a single element order one additional vertical profile.

## Guard unit with exchangeable panel element

**Items supplied:**

- 1 framed panel element, assembled:  
corrugated mesh, mesh 40 mm, wire size 4 mm, zinc plated
- 1 vertical pillar profile (1) with floor-fixing and 2 guard unit fixing angles.

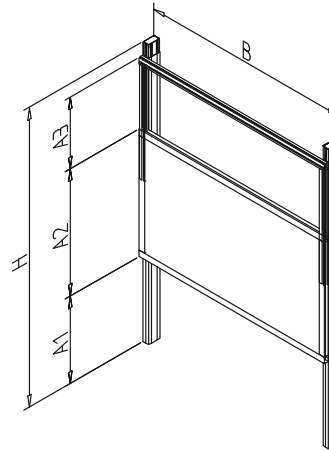
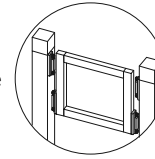
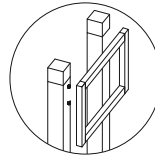
The vertical profile (2) belongs to the next unit.  
When used as a single element, order one additional vertical profile.

# MACHINE PROTECTION

## REQUEST LIFTING DOOR REQUEST GUARD UNIT

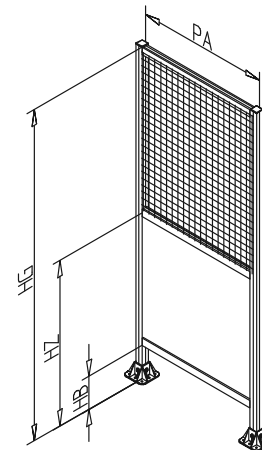
### Lifting door

- Lifting door arrangement  Outside  Inside
- Lifting field width  mm
- Lifting field height A2  mm
- Stroke A3  mm
- Stand-up dimension A1  mm
- Actuation  Manual  Pneumatic
- Panel element  part no.
- Strokes per hour
- Additional fixed element  
 Top  yes  no  
 Bottom  yes  no



### Guard unit

- Protective field frame  Fixed  Changeable frame
- Total height HG  mm
- Clearance from floor HB  mm
- Post spacing PA  mm
- Intermediate strut  yes  no
- High strut HZ  mm
- Panel element, top  part no.
- Panel element, bottom  part no.
- Feet  Base foot  Base plate  Without




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### Contact details

- Company   Please call me back
- Contact person   Please send me an offer
- Phone no.
- Fax no.
- E-Mail



# SAFETY SYSTEM SAVEGUARD

## SAFETY SYSTEM SAVEGUARD SAFETY DISTANCES

### Safety system SaveGuard

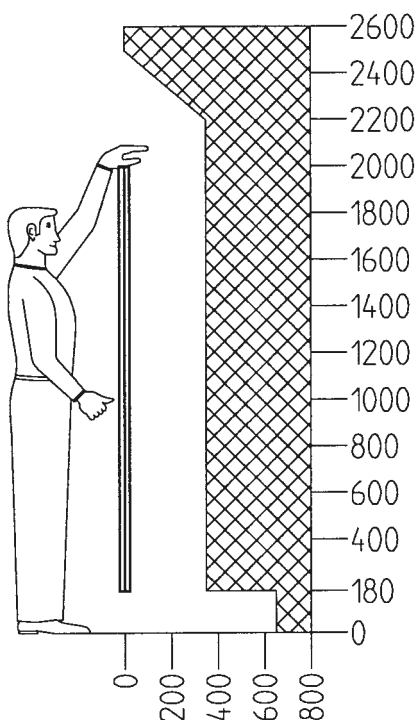


Individual safety installations are a frequent application for the versatile MiniTec profile system. Our MiniTec CADmenu design software allows you to design and calculate safety installations within the shortest time. They are precisely adjusted to customer's needs, with high demands made on safety standards visual appearance. All components for designing individual protection perimeter guards, doors, lifting doors, sliding doors etc. are specified in our MiniTec Profile System main catalogue. The same components were used to develop our standardised modules which provide cost-effective solutions that incorporate the standards 98/37/EG, EN ISO 12100-1 / EN ISO 12100-2 and EN 953. All components used meet the requirements of DIN EN ISO 10218-1.

Safety installations must prevent access to the source of danger and at the same time protect against projectiles, moving parts of machines and squirting liquids. The installation must be designed in such a way that it cannot be removed without tools. However, the dimensioning of the safety installation must at any rate be preceded by a risk assessment in accordance with EN ISO12100-1 by the manufacturer of the equipment.

However, the dimensioning of the safety installation must be preceded by a risk assessment in accordance with EN ISO12100-1 by the manufacturer of the equipment.

### Safety Distances



If corrugated mesh with a mesh width of 40 mm is used, then appropriate safety distances from the source of danger must be observed. The resulting distances are different if solid panel elements are used. The necessary safety distances for upper extremities are defined in EN 13857.

#### Protection field

Height: 2000 mm  
Distance to dangerous area: 350 mm

The safety distances for the lower extremities are defined in EN 811. The safety distance to the source of danger depends on the ground clearance of the protection field:

#### Protection field

Ground clearance: 180 mm  
Distance to dangerous area: 665 mm

## SAFETY SYSTEM SAVEGUARD

MAX. LOAD  
THE GRID SYSTEM

## Max. Load

The load of the standard protection fields was determined in empirical trials. In the centre of the field, a 200 mm x 200 mm plate was statically loaded until the corrugated mesh was pressed out of the clamping profile. The specified values apply to protection fields made of clamping profile 32 x 32 with corrugated mesh, steel zinc plated, 40 mm x 40 mm x 4 mm.

Field height HS mm	Field size B mm	Load F N
1820	500	1200
1820	750	1200
1820	1000	1000
1820	1250	1000
1820	1500	1200
1820	1750	1100
1820	2000	1000

The dynamic load rating of the protection fields was determined by TÜV-Saarland in pendulum impact tests using a mass of 100 kg. All parameters required by the machine directive 98/37 EG and DIN EN 775:1993 and DIN EN 953:1987 were complied with.



## The Grid System

The standardised SaveGuard system is an especially economic and quick solution for most applications. Individual heights, field sizes, special designs for noise protection or splash water protection and optional fastening types are available for special tasks.

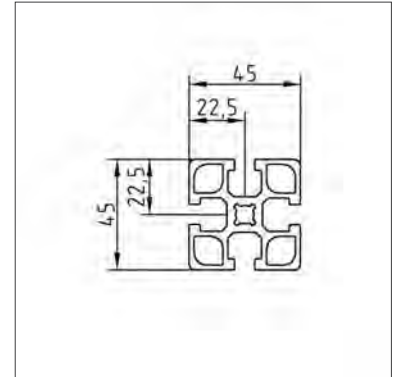
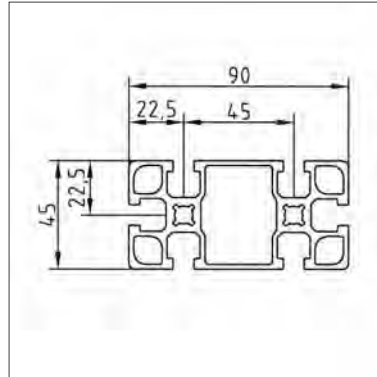
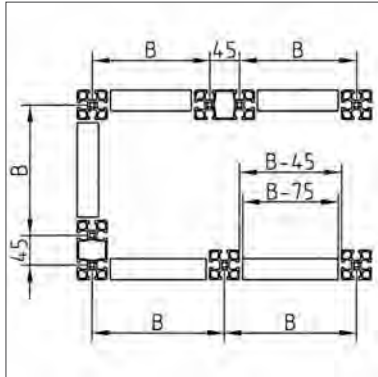




# SAFETY SYSTEM SAVEGUARD

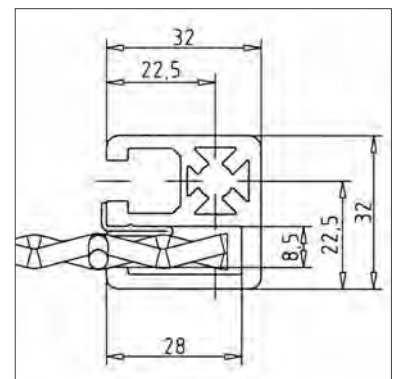
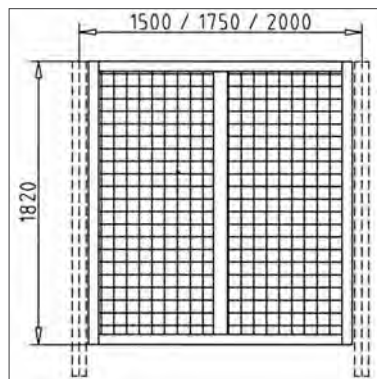
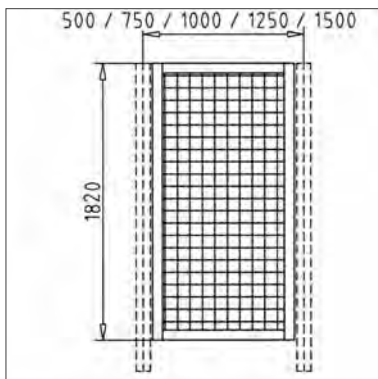
## EXAMPLE FOR ASSEMBLY

### Widths Safety Fencing Center To Center Distance of T-Slots „B”

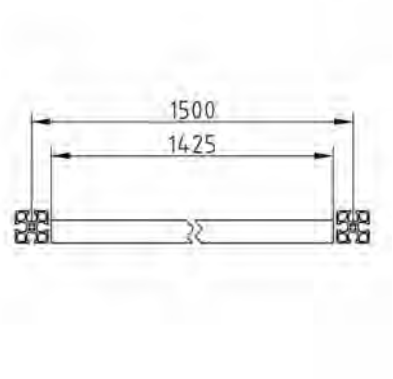
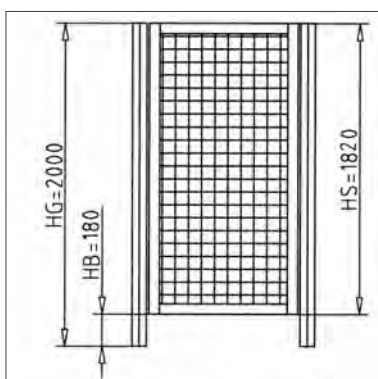


**Standard widths** 500, 750, 1000, 1250, 1500 mm  
 1500, 1750, 2000 mm with additional vertical strut

The SaveGuard frames consist of special designed clamp-profiles 32 x 32 mm. High stability through deep T-slots for panel elements and distance profile. For add-on piece fastening all components of the MiniTec profile system can be used.



**Height**  
**Standard** Total height „HG”= 2000 mm,  
**Height Safety Fencing HS** 1800 mm, 200 mm ground clearance for easy cleaning



## SAFETY SYSTEM SAVEGUARD

## ASSEMBLY

The preassembled fields can be mounted on site by just one person. With stable feet, the posts are fastened to the ground by means of heavy-duty dowels. The posts are equipped with angles into which the protection fields are hung up and screwed tight. The fields can be aligned in any direction. Elongated holes in the angles enable spacing tolerances of the posts to be equalised.



## SAFETY SYSTEM SAVEGUARD

## FIELD SG 500/750/1000/1250/1500

**Techn. data / items supplied**

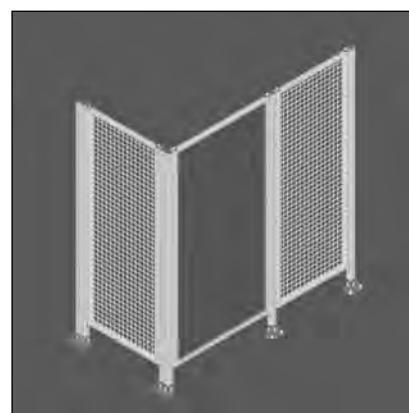
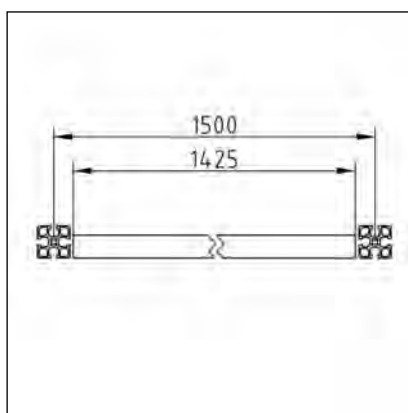
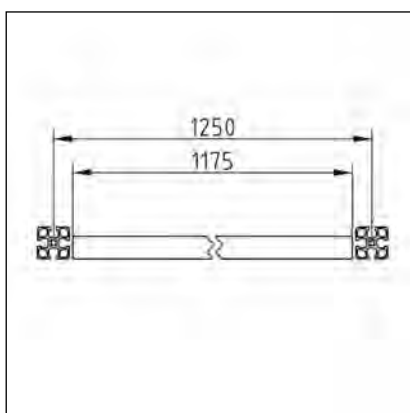
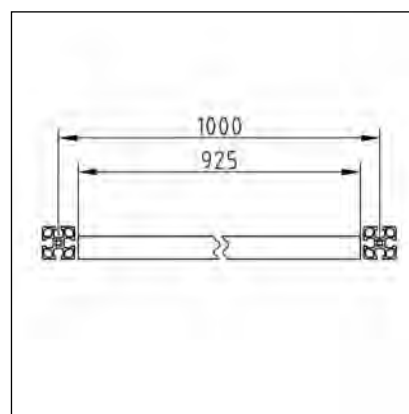
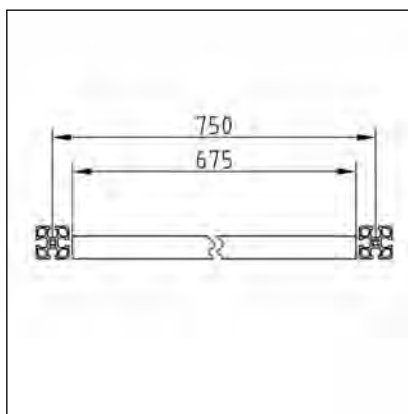
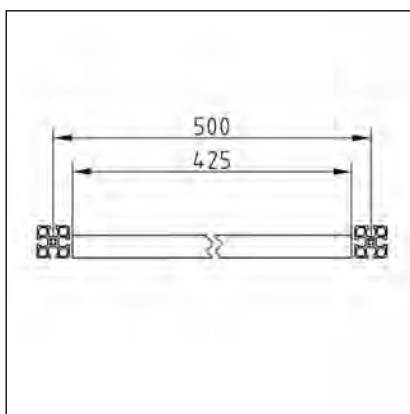
- Made of clamping profile 32 x 32 UL, completely preassembled
- With corrugated mesh 40 x 40 x 4 mm, galvanised steel or with PETG5
- Standard height HS: 1820 mm

**Application**

- Separation of dangerous areas
- As machine protection

**Assembly**

- Mount protection field to protection field post using fastening kit 19 part no. 23.0010/0 or mount fastening set for SG fields part no. 23.0011 / 0 on protection field post



Field size B	Corrugated mesh part no.	PETG5 part no.
500	23.0102/0	23.0112/0
750	23.0103/0	23.0113/0
1000	23.0104/0	23.0114/0
1250	23.0105/0	23.0115/0
1500	23.0109/0	23.0119/0

## SAFETY SYSTEM SAVEGUARD

### FIELD SG 1500/1750/2000

#### Techn. data / items supplied

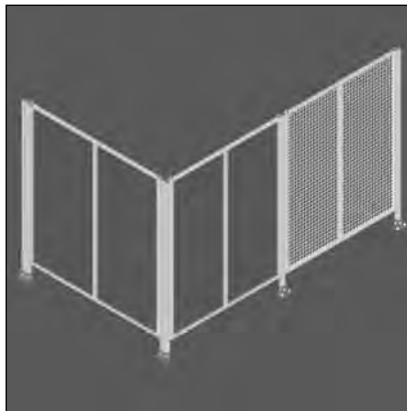
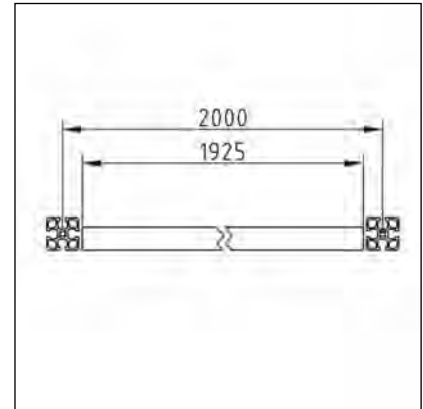
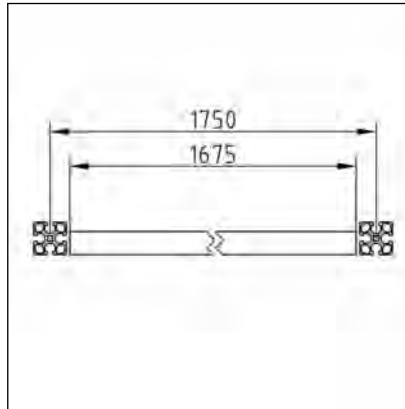
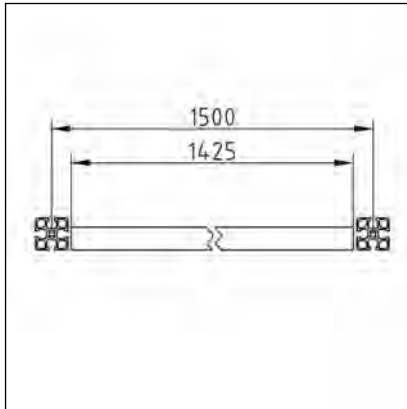
- Made of clamping profile 32 x 32 UL
- Completely preassembled
- With corrugated mesh 40 x 40 x 4 mm, galvanised steel or with PETGS
- Standard height HS: 1,800 mm
- Vertical brace, clamp profile 45x32
- Additional vertical strut

#### Application

- Separation of dangerous areas
- As machine protection

#### Assembly

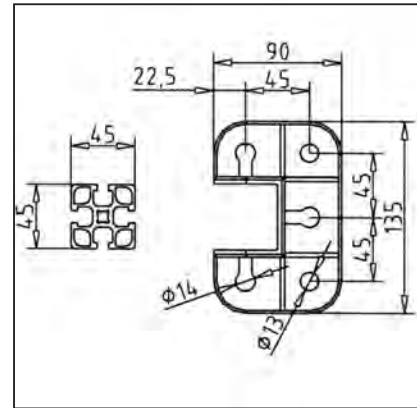
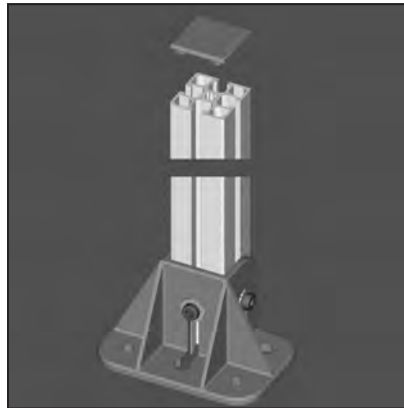
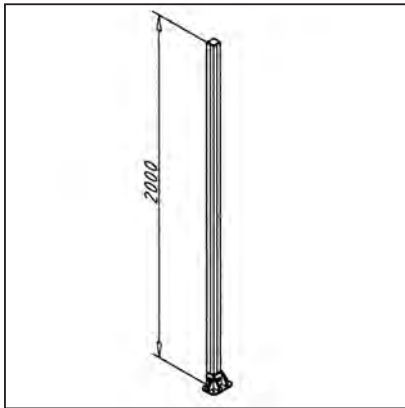
- Mount protection field to protection field post using fastening kit 19 Part-Nr. 23.0010/0.n



Field width B	Corrugated mesh part no.	PETGS part no.
1500	23.0106/0	23.0116/0
1750	23.0107/0	23.0117/0
2000	23.0108/0	23.0118/0

**POST SG 45 X 45**

part no. 23.0030/0

**TECHN. DATA / ITEMS SUPPLIED**

- Made of profile 45 x 45 F
- Foot 45 GD preassembled
- Without ground anchor

**APPLICATIONS**

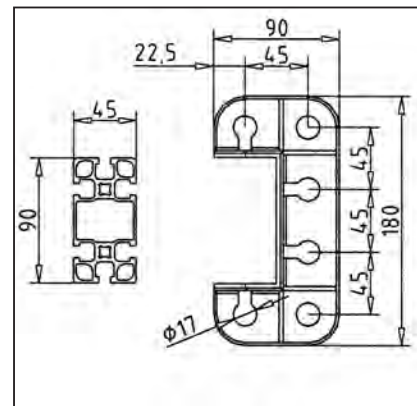
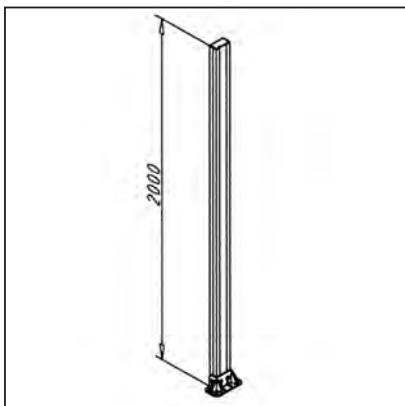
- As posts for protection fields and doors

**ASSEMBLY**

- Position foot as appropriate
- Mark the position of the drillings on the ground
- Install and tighten the ground anchor

**POST SG 45 X 90**

part no. 23.0060/0

**TECHN. DATA / ITEMS SUPPLIED**

- Made of profile 45 x 90 F
- Foot 90 GD preassembled
- Without ground anchor

**APPLICATIONS**

- As corner post for protection fields or in case of greater lateral loads of normal fields

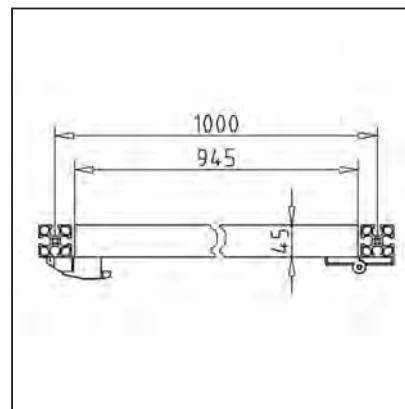
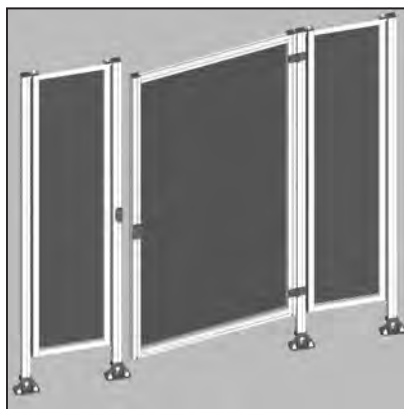
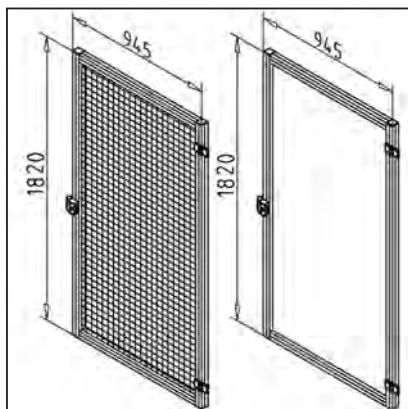
**ASSEMBLY**

- Position foot as appropriate
- Mark the position of the drillings on the ground
- Install and tighten the ground anchor



## DOOR SG 1000

part no. 23.1404/0



### TECHN. DATA / ITEMS SUPPLIED

- Made of profile 45 x 45 F
- Completely preassembled with lock and hinges
- With polycarbonate 5, **part no. 23.1414/0**
- Further constructions on demand

### APPLICATIONS

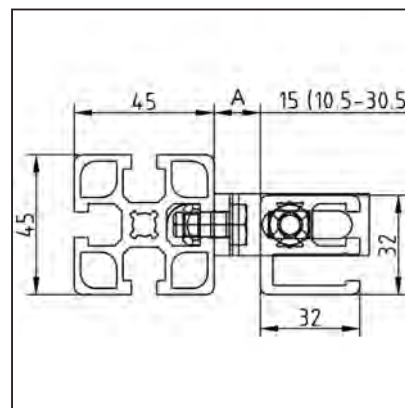
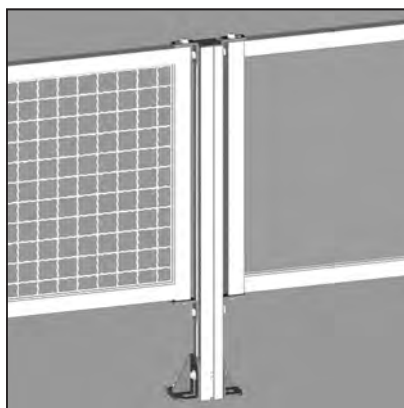
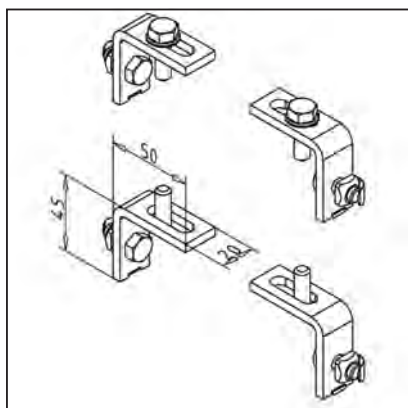
- As access to enclosures e.g. for maintenance

### ASSEMBLY

- Install between two posts with groove spacing 1000mm
- Install lock fitting in post with two drillings
- Usable for left and right attempt

## FASTENING KIT 19 FOR PROTECTION FIELDS

part no. 23.0010/0



### TECHN. DATA / ITEMS SUPPLIED

- 4 protection field suspensions, galvanised steel
- With fastening kit
- Weight/Piece 0,091 kg

### APPLICATIONS

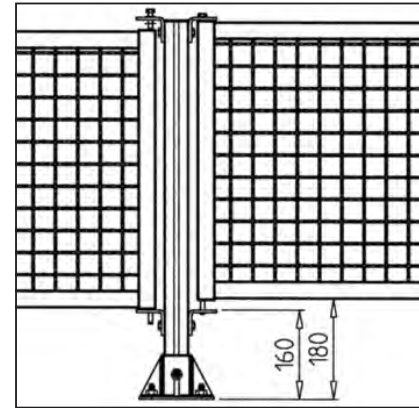
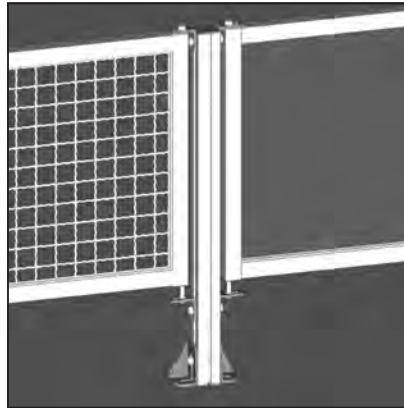
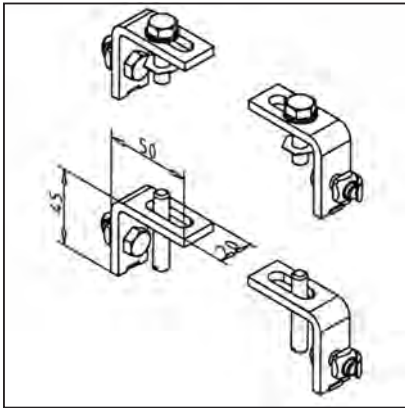
- Fastening of protection fields made of clamping profile 32x32, 45x32 or standard profiles
- Fastening of protection fields at any angle

### ASSEMBLY

- Insert protection field into preassembled suspension. Tighten with screws included in delivery
- A = 10,5 mm - 30,5 mm

## FASTENING KIT FOR PROTECTION FIELDS SG

part no. 23.0011/0



### TECHN. DATA / ITEMS SUPPLIED

- 4 protection field suspensions, galvanised steel
- With fastening kit
- With label: Maintenance panel
- Upper screws are in a captive design
- Weight 0,366 kg

### APPLICATIONS

- Fastening safety fields that are removed for servicing purposes. The screws to be loosened here are in a captive design.
- For clamping profile 32 x 32 and 45 x 32
- Fastening of protection fields at any angle

### ASSEMBLY

- Insert protection field into preassembled suspension. Tighten with screws included
- A = 10,5 mm - 30,5 mm

## SAFETY SYSTEM SAVEGUARD

### REQUEST FOR FITTING FIELD

Height of protection field HS  mm (standard 1820 mm)

Width of protection field B-75  mm

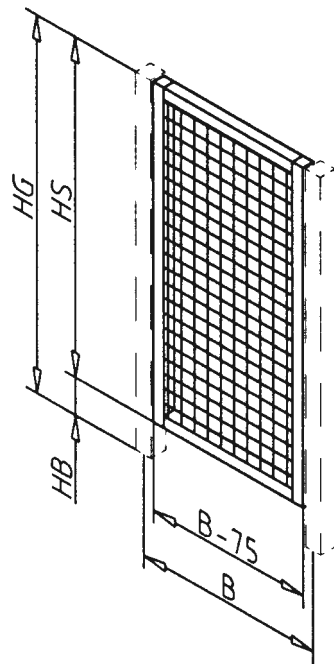
or

Height total HG  mm (standard 2000 mm)

Ground clearance HB  mm (standard 180 mm)

Groove centre spacing B  mm

Panel element  Corrugated mesh  PETG5



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#### Contact details

Company   Please call me back

Contact person   Please send me an offer

Phone no.

Fax no.

E-Mail

# SAFETY SYSTEM SAVEGUARD

## REQUEST FOR SLIDING DOOR

Post spacing B  mm (standard 1000 mm)

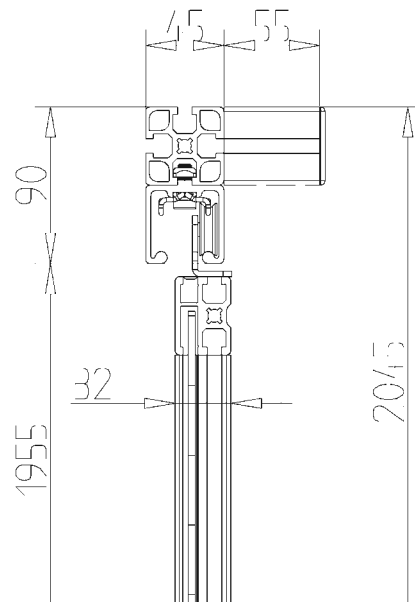
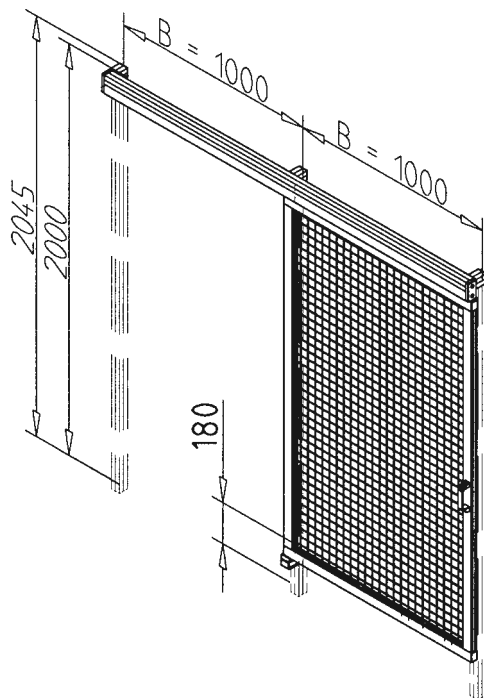
Post height HG  mm (standard 2000 mm)

Handle  one side  both sides

Panel element  Corrugated mesh  PETG5

Additional field fixed  
right  yes  no

left  yes  no



### Contact details

Company

Please call me back

Contact person

Please send me an offer

Phone no.

Fax no.

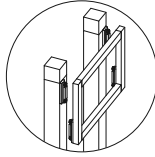
E-Mail

# SAFETY SYSTEM SAVEGUARD

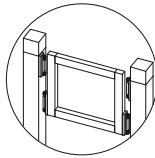
## REQUEST FOR LIFTING DOOR

Lifting door arrangement

outside



inside



Groove centre spacing B

mm

Lifting field height A2

mm

Lift A3

mm

Stand-up dimension A1

mm

Actuation

manual  pneumatic

Panel element

Corrugated mesh  PETG5

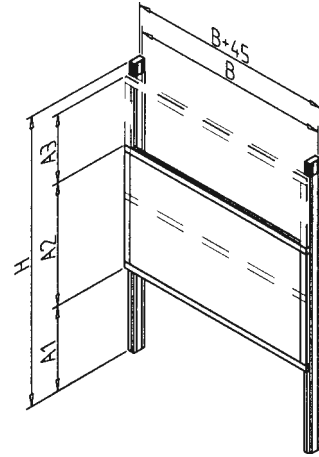
Liftings per hour

Additional field fixed top

yes  no

bottom

yes  no




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**Contact details**

Company

Please call me back

Contact person

Please send me an offer

Phone no.

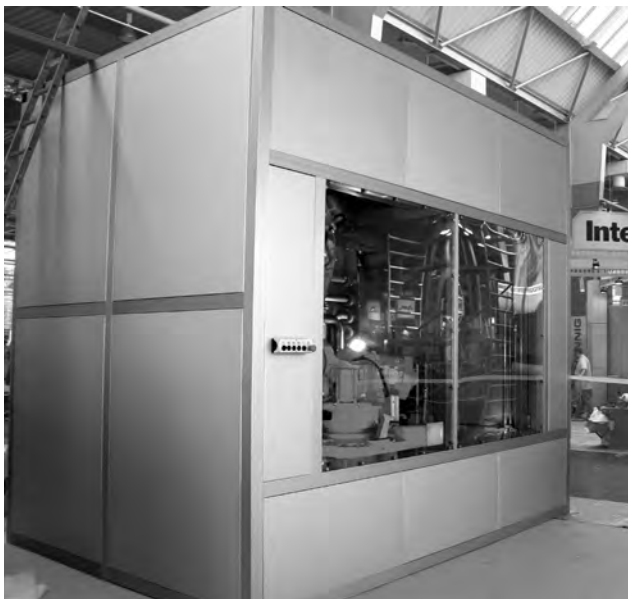
Fax no.

E-Mail



## NOISE PROTECTION

### EXAMPLES



## NOISE PROTECTION

## 2033/10/EG – EUROPEAN HEALTH AND SAFETY REGULATION REGARDING NOISE

One solution for passive noise protection is to provide hearing protectors, but that affects other things such as difficult communication, unable to recognise audible warning signals and can be uncomfortable to wear. An active noise protection solution such as noise emission or guard units at the source provide a better solution for everyone. There are guidelines regulated by law for prevention of noise exposure and for employers to take appropriate actions according to the newest standards.

The new system for enclosures and noise reducing guard units were developed in cooperation with noise control specialist, Scharenberg, situated in Tarmstedt, Germany.

This new system is based on the well proven MiniTec profile system combined with 20 mm thick noise reducing mats and 34 mm thick noise reducing panels.

An excellent design makes it easy to assemble and give you easy access to the machines. If the guard unit in layout p34 is used properly you can reach a noise reduction of 25 dB(A) on a regular basis.



## NOISE PROTECTION

### NOISE CAUSES HEALTH PROBLEMS



Depending on the intensity and duration of noise exposure, there can be acute and long-term damages to health, capacity and general well-being to your employees.

- Psychological effects such as lapses of concentration, nervousness, irritability and aggressiveness.
- Physiological damage such as hearing disorder, high blood pressure, hypertension, cardiovascular diseases and headaches.
- Loss of efficiency and higher risk of injuries, impaired communication, incorrect decisions due to misunderstandings, higher error rate and demotivating working environment.

**Because of the rising costs of occupational health and the consequential production downtimes, it is important to think about noise reduction. Improvements made to reduce noise in the working environment often increases productivity.**



#### Key benefits of MiniTec noise reduction solutions

- efficient noise reduction
- cost-effective due to the use of the MiniTec profile system
- standard panels provide simple and assembly construction
- optimal accessibility through doors, lift gates, control windows
- easy removable walls
- optional also working with heat rejection

## NOISE PROTECTION

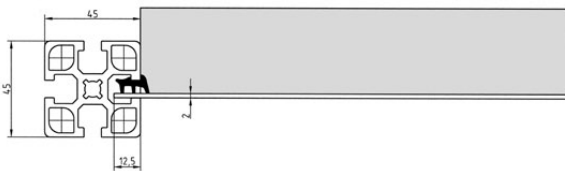
### COMPONENT & REMARKS

#### Layout "p20"

- base frame using MiniTec aluminium profiles
- panel element
- sound-absorbing panel, PU-foam 20 mm thick, black, part nr. 21.1879/0, for bonding and sealing on panel elements

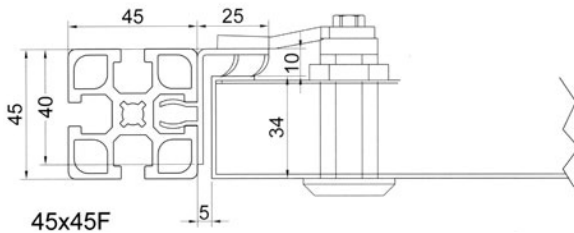
#### Options for panel elements

- aluminium panel 2 mm, anodized, part nr. 21.1011/0
- built-in with Insert seal 2, part nr. 22.1083/0
- steel panel 1 to 2 mm, varnished or zinc-plated, built-in with Insert seal 2, part nr. 22.1083/0
- chipboard 8 mm, double-coated white, part nr. 21.1815/2
- chipboard 8 mm, double-coated light-grey, part nr. 21.1855/0

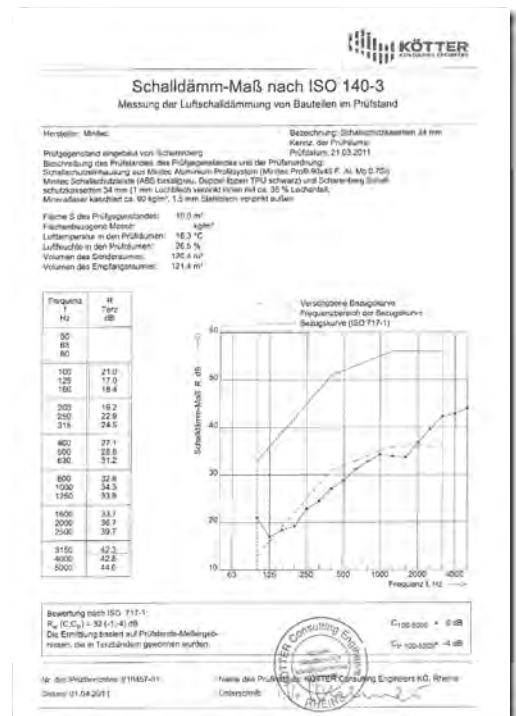
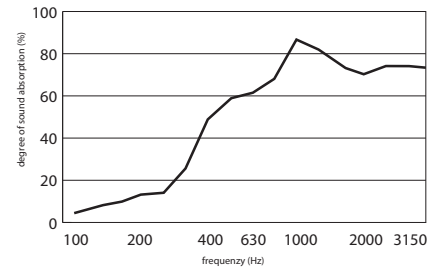


#### Layout „p34“

- base frame using MiniTec aluminium profiles
- noise reduction strip, part nr. 22.1130/1
- noise reduction panel 34 mm thick
- internal side perforated plate
- filling: premium mineral wool, with glass non-woven as trickle protection, non-flammable according to DIN 4102, building material class A2
- exterior sheet panel zinc-plated optional varnished in RAL colour



Degree of sound absorption measurement (DIN-EN-ISO 103534-2)



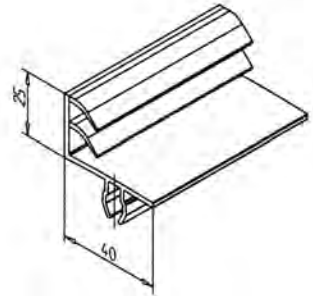


## NOISE PROTECTION

## COMPONENT &amp; REMARKS

**Noise reduction strip (part no. 22.1130/1)**

- material: ABS grey
- with two side-fed sealing lips
- weight: 0,232 kg/m
- no tools and screws needed for attachment
- backfitting/retrofitting possible
- easy handling and easy removal
- less assembly-time
- sealed panels, door catches
- no mitre-cut necessary

**Noise reduction panel " p34"**

- Thickness 34 mm
- 1,5 mm steel panel zinc-plated, optional finish in RAL
- Insulation: mineral fibre, laminated, approx. 90 kg/m<sup>3</sup>
- 1,0 mm perforated plate inside, zinc-plated. approx. 35 % holes
- sound insulation certified according to ISO 140-3
- weight of panel 27 kg/m<sup>2</sup>

**Layout**

- panel firmly bolted together
- panel fixed with bolt lock
- door with handle

**Options**

- windows, single or double
- finished according RAL
- panel sound absorber
- conduit sound absorber
- ventilator with thermostat
- sliding doors
- rain cover/shield

*panel firmly bolted together**panel fixed with bolt lock**door with handle*



## NOISE PROTECTION

## COMPONENT &amp; REMARKS

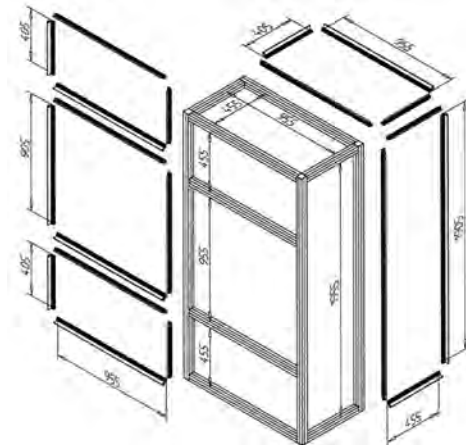
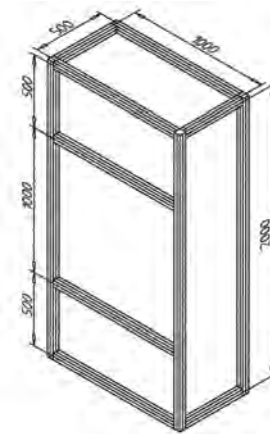
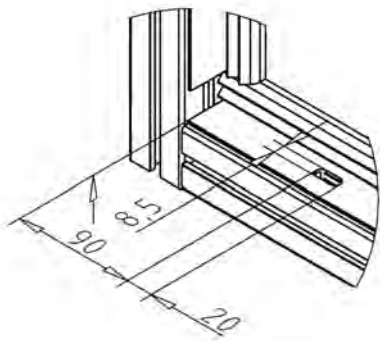
## EXAMPLE FOR A BASE FRAME

## 1. Construction

- Please use the standard groove centre distance N from 250 to 2000 mm for constructing the carrier framework

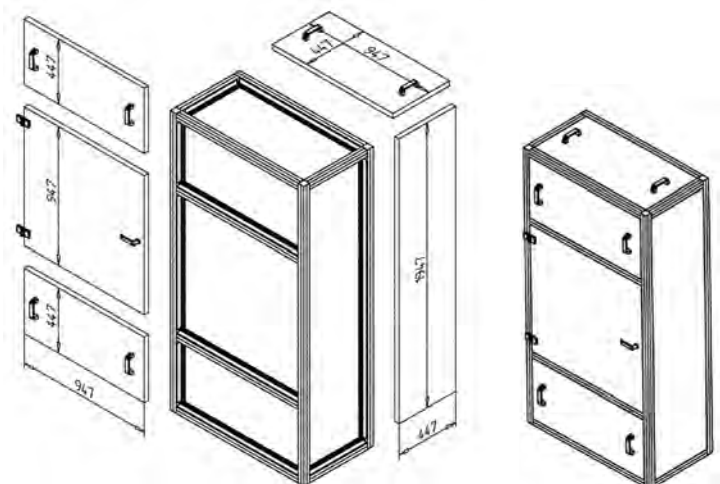
## 2. Insertion of noise reduction strip

- calculation of length for noise reduction strip  
Horizontal N -45 mm, vertical N -95 mm
- cutting strips and inserting strips
- When using removable elements use an additional one on the bottom drill 2 long holes diameter 8,5x20, use snap bolt 25, part no 21.1758/0, put together with square-nuts



## 3. Insertion and fastening of the noise reduction elements

- firmly bolted elements to be fixed from the backside
- removable elements will be inserted into snap bolts from underneath, then swivel it into the base frame and secure it
- door elements and shutter to be fixed from the front



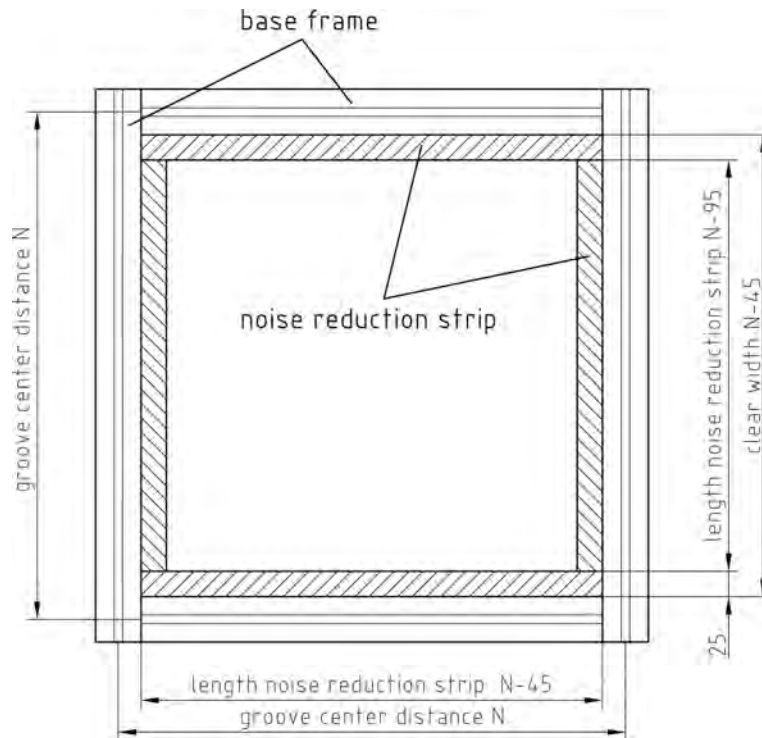
NOISE PROTECTION

COMPONENT & REMARKS

Preferential noise reduction panel sizes p34

Groove centre distance N mm	Panel size mm	Panel firmly bolted together part no.	Door part no.
250 x 250	197 x 197	56.0011/0	56.0013/0
500 x 250	447 x 197	56.0021/0	56.0023/0
1000 x 250	947 x 197	56.0031/0	56.0033/0
250 x 500	197 x 447	56.0041/0	56.0043/0
500 x 500	447 x 447	56.0051/0	56.0053/0
1000 x 500	947 x 447	56.0061/0	56.0063/0
250 x 1000	197 x 947	56.0071/0	56.0073/0
500 x 1000	447 x 947	56.0081/0	56.0083/0
1000 x 1000	947 x 947	56.0091/0	56.0093/0
250 x 2000	197 x 1947	56.0101/0	56.0103/0
500 x 2000	447 x 1947	56.0111/0	56.0113/0
1000 x 2000	947 x 1947	56.0121/0	56.0123/0

Calculation of length for noise reduction strip and panel size



## NOISE PROTECTION

### REQUEST

#### Dimensions of the machine

Width  mm

Length  mm

Height  mm

Machine type

Current noise emission  dB(A)

Noise reduction you are looking for?  dB(A)

Frequency range if known  Hz

Heat rejection required?  yes  no

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#### Contact details

Company   Please call me back

Contact person   Please send me an offer

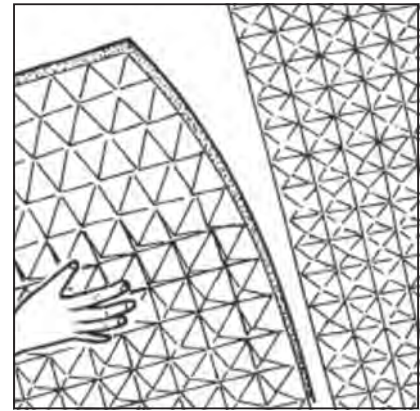
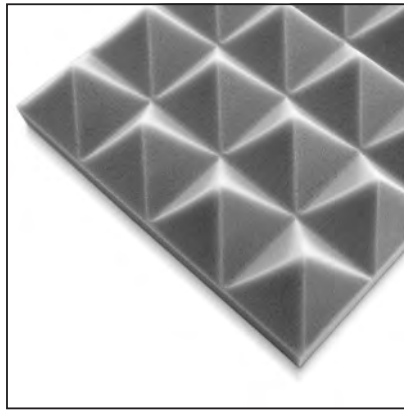
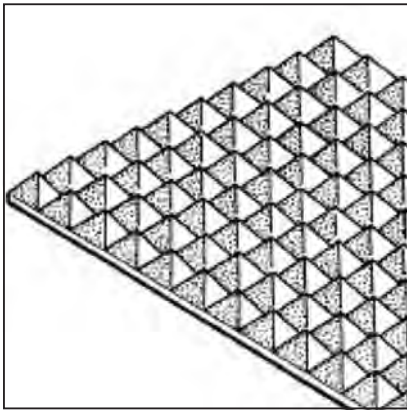
Phone no.

Fax no.

E-Mail

**ACOUSTIC ABSORPTION BOARD PYRAMID**

part no. 21.1819/0

**TECHN. DATA / ITEMS SUPPLIED**

- Material: PUR-foam, anthracite, 70mm
- Fire protection classification 3
- Heat co-efficient at 0°C     0,032 W/mK
- Weight                             1,5 kg/m<sup>2</sup>
- Board size                         1000 x 1000 mm
- **Other strenghts and performances on request**

**APPLICATIONS**

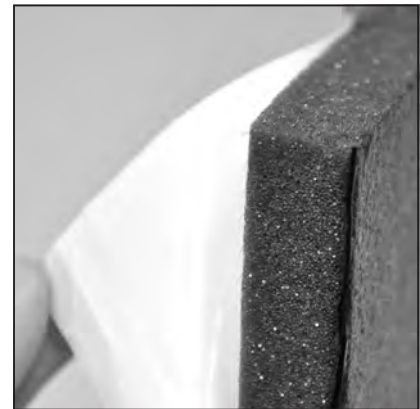
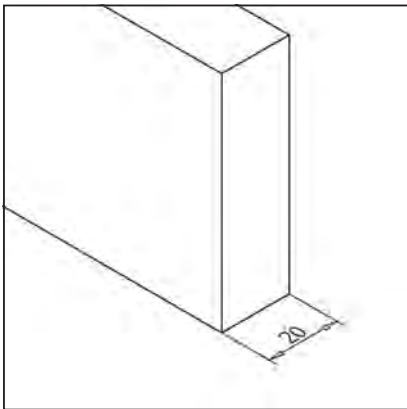
- Primary noise insulation through enclosure of noise source
- Secondary noise insulation in common rooms, master offices etc.

**ASSEMBLY**

- Fixation through conglutination with the underground
- According to underground suitable glue on request

**ACOUSTIC ABSORPTION BOARD 20 MM**

part no. 21.1879/0

**TECHN. DATA / ITEMS SUPPLIED**

- Material: Pu-foam, 20mm, black, adhesive
- Temperature resistance -40 bis +100°C
- Weight                             0,650 kg/m<sup>2</sup>
- Board size max. 2000x1000mm

**APPLICATIONS**

- Through the black PU-skin immune to pollution

**ASSEMBLY**

- Lamination sheet pull down and glue on

