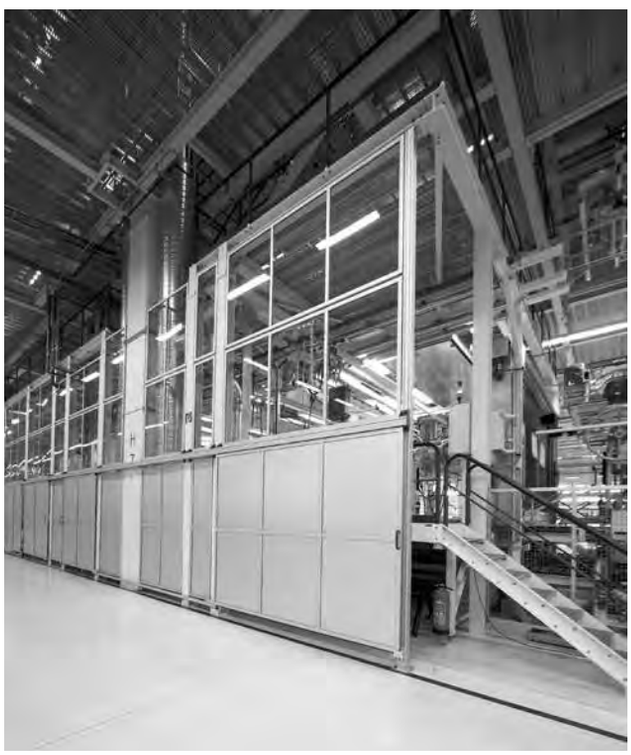
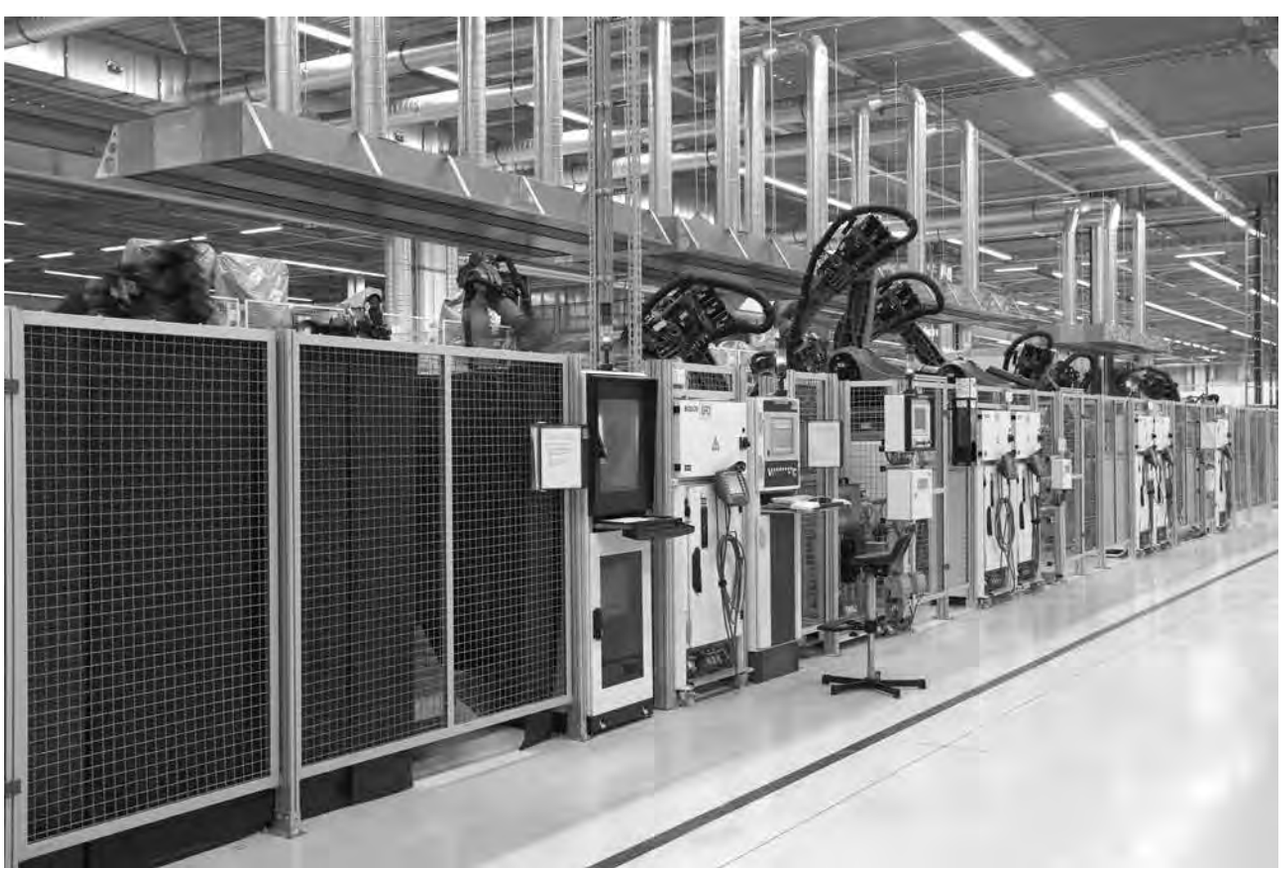
MACHINE PROTECTION

EXAMPLES





MACHINE PROTECTION

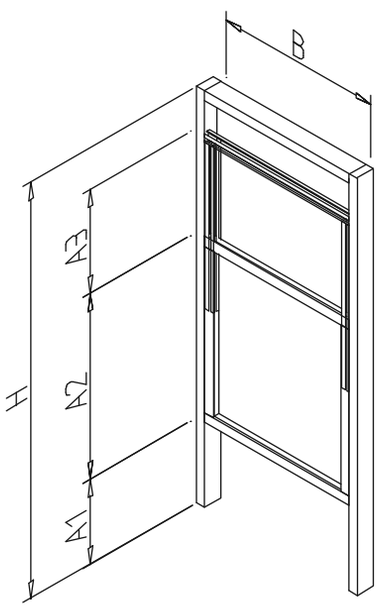
EXAMPLES

MACHINE PROTECTION

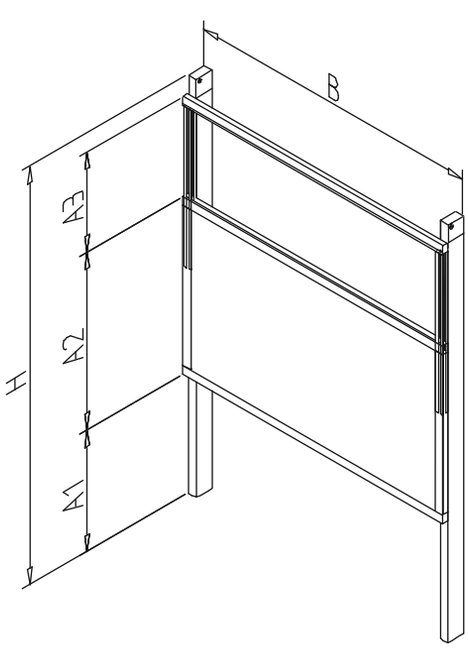
LIFTING DOOR

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

Lifting door for workstation



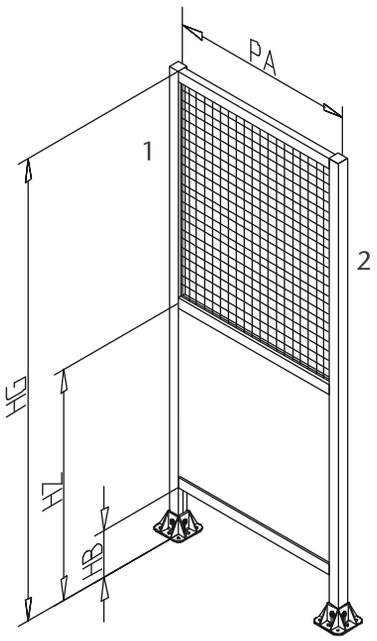
Lifting door for machine protection



MACHINE PROTECTION

GUARD UNIT FOR MACHINE PROTECTION

Guard unit with integrated frame

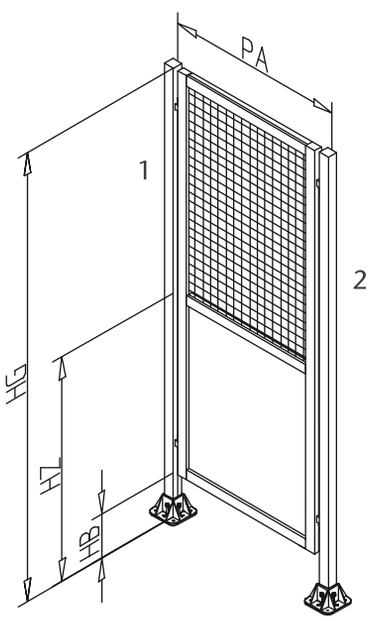


Items supplied:

- 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:

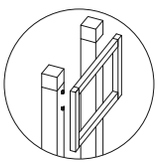
- 1 framed panel element, assembled: corrugated mesh, mesh 40 mm, wire size 4 mm, zinc plated
- 1 vertical pillar profile (1) with floor-fixing and 2 guard unit fixing angles.

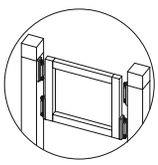
The vertical profile (2) belongs to the next unit.
When used as a single element, order one additional vertical profile.

MACHINE PROTECTION

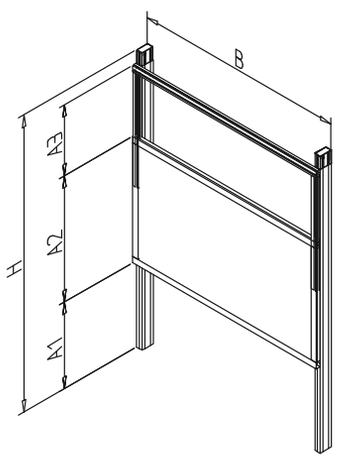
REQUEST LIFTING DOOR
REQUEST GUARD UNIT

Lifting door



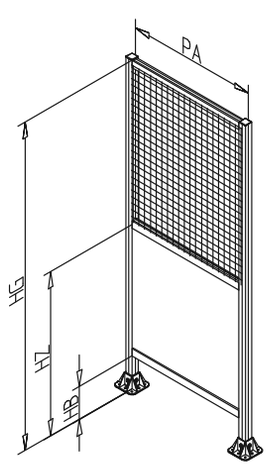


Lifting door arrangement	☐ Outside	☐ Inside
Lifting field width		mm
Lifting field height A2		mm
Stroke A3		mm
Stand-up dimension A1		mm
Actuation	☐ Manual	☐ Pneumatic
Panel element		part no.
Strokes per hour		
Additional fixed element	Top ☐ yes	☐ no
	Bottom ☐ yes	☐ no



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



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

TÜV SAARLAND

Zertifikat

über die Prüfung einer trennenden Schutzeinrichtung

Auftraggeber:	MiniTec Maschinenbau GmbH & Co. KG Nickelsweiher 11 66914 Waldmohr
Prüfobjekt:	Schutzzaun mit verzinktem Stahl-Weißdraht 40 x 40 x 4; seitliche Stützpfosten aus Profil 45 x 90; Breite 2000mm; Höhe 2000mm
Prüfgrundlagen:	Maschinenrichtlinie 98/37 EG DIN EN 775: 1993 und DIN EN 953: 1987
Sachverständiger:	Dipl.-Ing. (FH) Thomas Gaertner
Prüfungsdurchführung:	Es wurde ein Pendelschlagversuch mit einem Sandsack mit einer Masse von 100kg durchgeführt. Der Pendelschlag wurde mit einer Energie von 1600J ausgeführt. Der Pendelschlag erfolgte auf die Feldmitte in einer Höhe von ca. 330 bis 350mm unterhalb der Oberkante des Schutzzaunes.
Prüfergebnis:	**Es entstanden keine Gefährdungen, die Prüfung wurde bestanden.**
Prüftag:	30. September 2004
Prüfbericht Nr.:	6042/4A/0253_A

Labor für Produkte

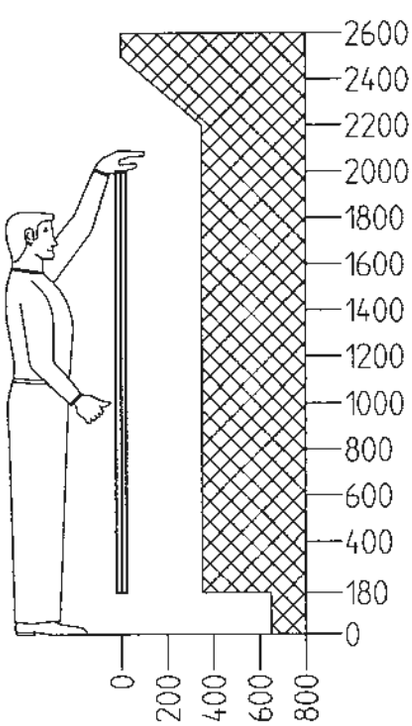
Thomas Gaertner

Individual safety installations are a frequent application for the versatile MiniTec profile system. Our MiniTec CADmenue design software allows you to design and calculate safety installations within the shortest time. They are precisely adjusted to customerës needs, with high demands made on safety standards visual appearance. All components for designing individual protection perimetre 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.

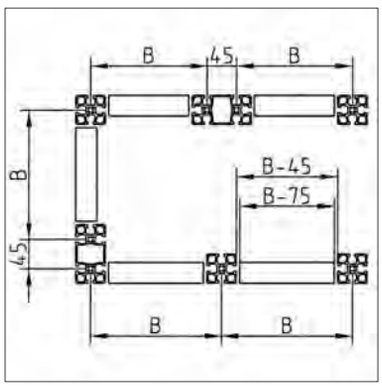
The Grid System

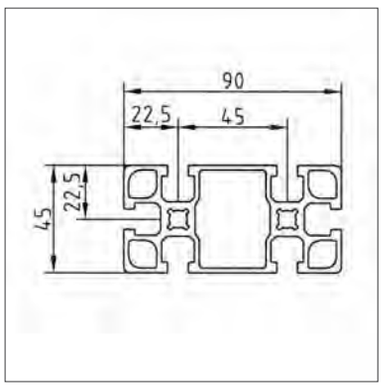
The standardised SaveGuard system is an especially economic and quick solution for most applications. Individual heights, field sizes, special designs for noise protection or splash water protection and optional fastening types are available for special tasks.

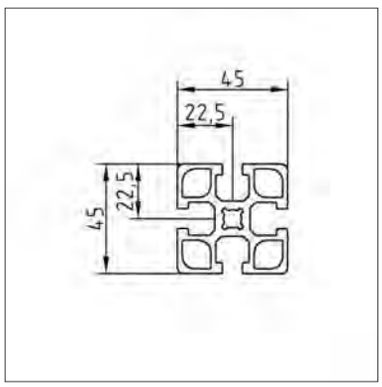
SAFETY SYSTEM SAVEGUARD

EXAMPLE FOR ASSEMBLY

Widths Safety Fencing *Center To Center Distance of T-Slots „B“*

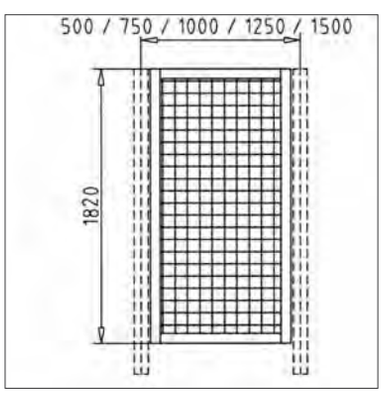


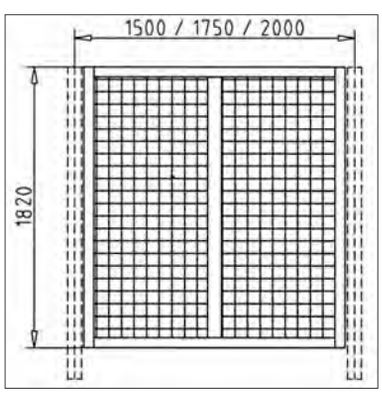


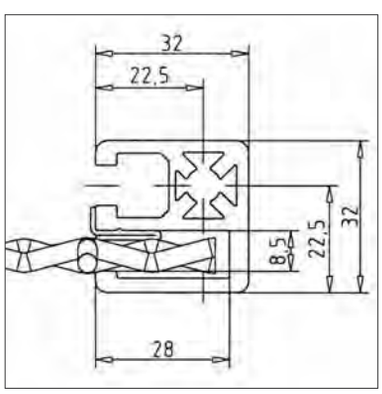


Standard widths *500, 750, 1000, 1250, 1500 mm*
1500, 1750, 2000 mm with additional vertical strut

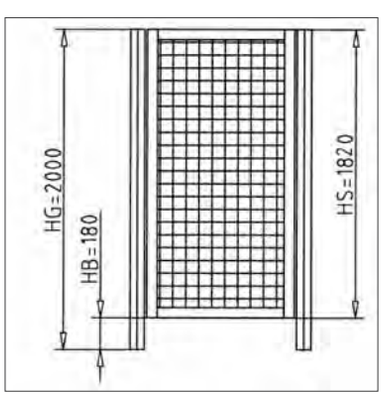
The SaveGuard frames consist of special designed clamp-profiles 32 x 32 mm.
Hight stability through deep T-slots for panel elements and distance profile.
For add-on piece fastening all components of the MiniTec profile system can be used.

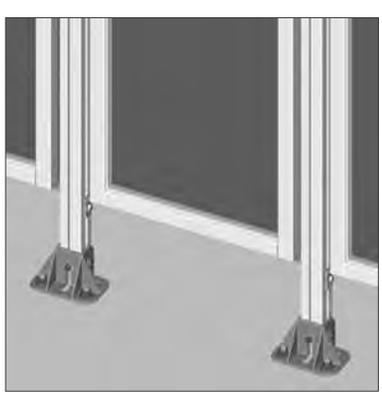


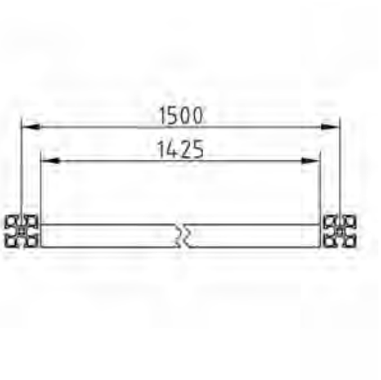




Height
Standard *Total height „HG“= 2000 mm,*
Height Safety Fencing HS *1800 mm, 200 mm ground clearance for easy cleaning*







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

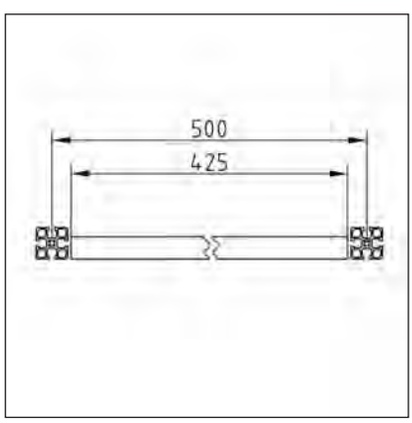
- Made of clamping profile 32 x 32 UL, completely preassembled
- With corrugated mesh 40 x 40 x 4 mm, galvanised steel or with PETG5
- Standard height HS: 1820 mm

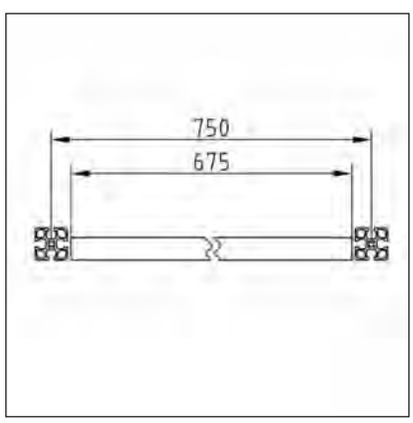
Application

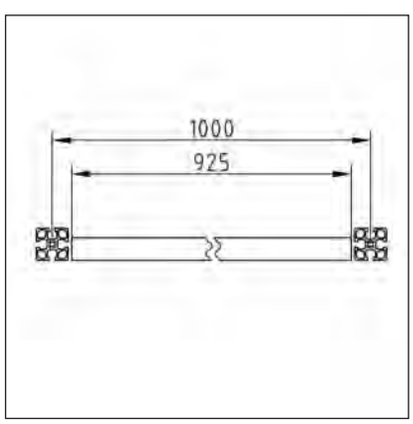
- Separation of dangerous areas
- As machine protection

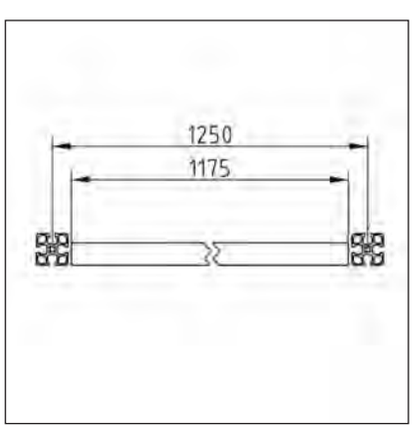
Assembly

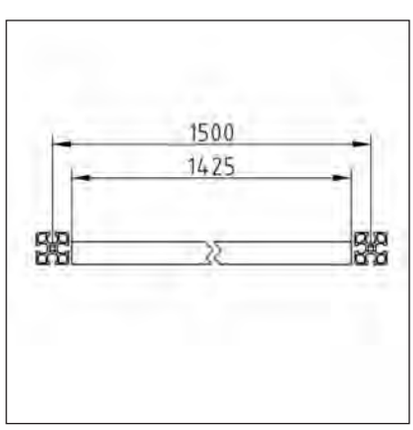
- Mount protection field to protection field post using fastening kit 19 part no. 23.0010/0 or mount fastening set for SG fields part no. 23.0011 / 0 on protection field post

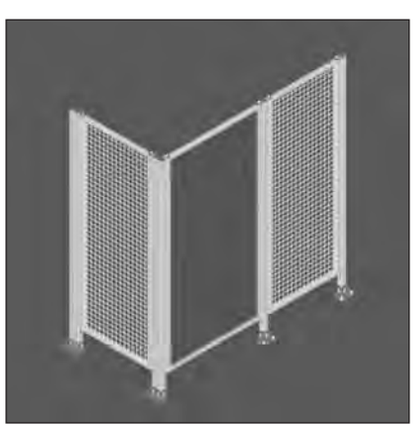












Field size B	Corrugated mesh part no.	PETG5 part no.
500	23.0102/0	23.0112/0
750	23.0103/0	23.0113/0
1000	23.0104/0	23.0114/0
1250	23.0105/0	23.0115/0
1500	23.0109/0	23.0119/0

SAFETY SYSTEM SAVEGUARD

FIELD SG 1500/1750/2000

Techn. data / items supplied

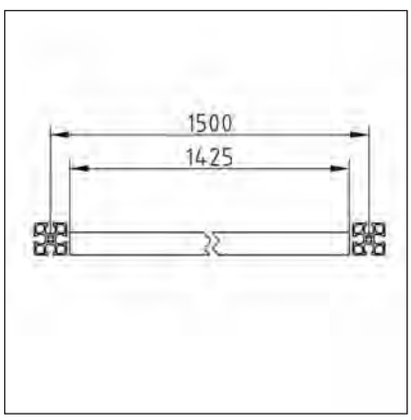
- Made of clamping profile 32 x 32 UL
- Completely preassembled
- With corrugated mesh 40 x 40 x 4 mm, galvanised steel or with PETG5
- Standard height HS: 1,800 mm
- Vertical brace, clamp profile 45x32
- Additional vertical strut

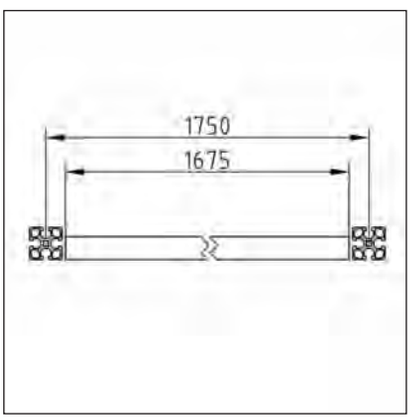
Application

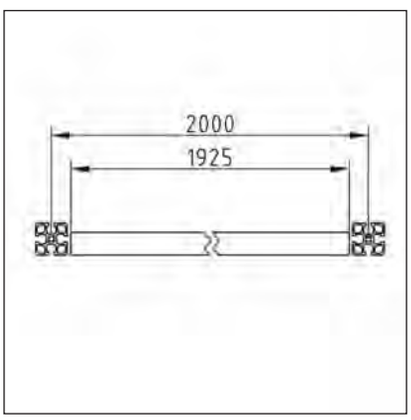
- Separation of dangerous areas
- As machine protection

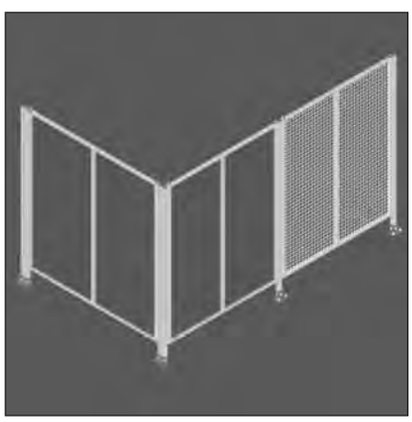
Assembly

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





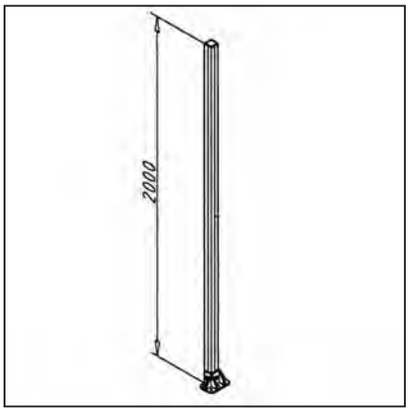


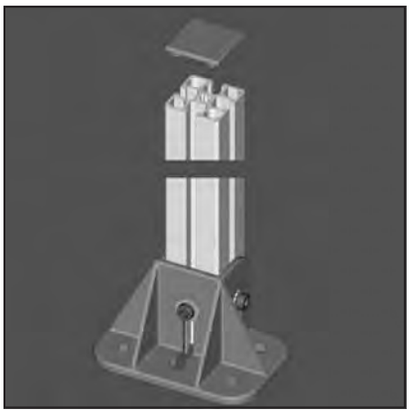


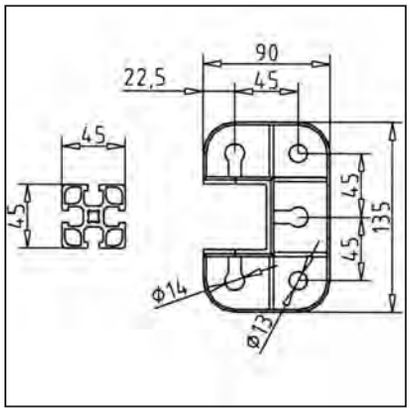
Field width B	Corrugated mesh part no.	PETG5 part no.
1500	23.0106/0	23.0116/0
1750	23.0107/0	23.0117/0
2000	23.0108/0	23.0118/0

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

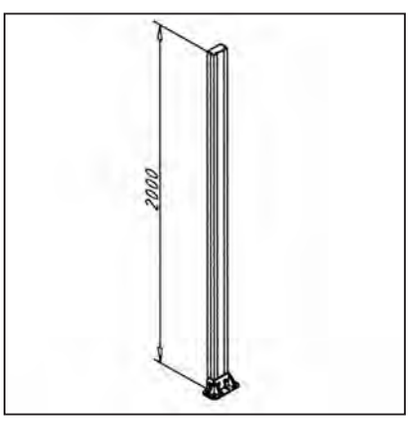
- As posts for protection fields and doors

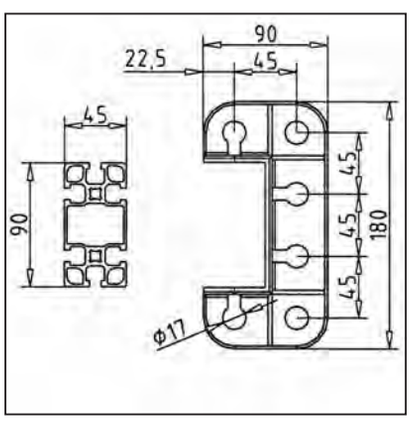
ASSEMBLY

- 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

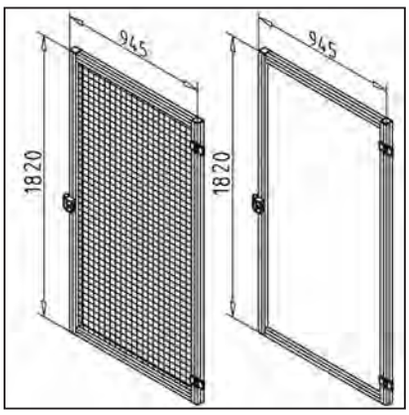
- As corner post for protection fields or in case of greater lateral loads of normal fields

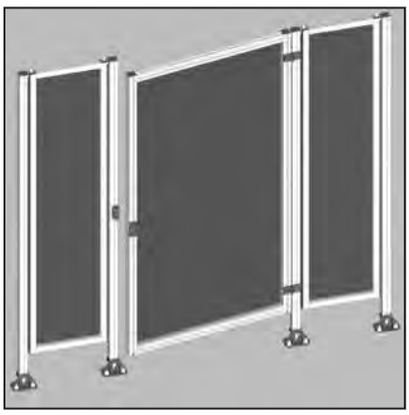
ASSEMBLY

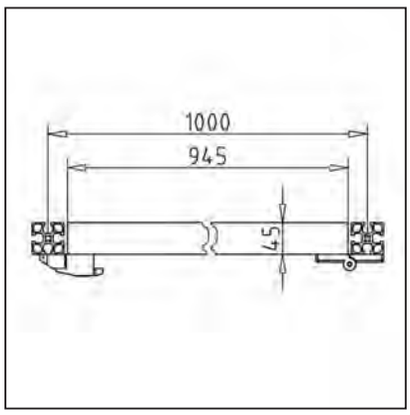
- Position foot as appropriate
- Mark the position of the drillings on the ground
- Install and tighten the ground anchor

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

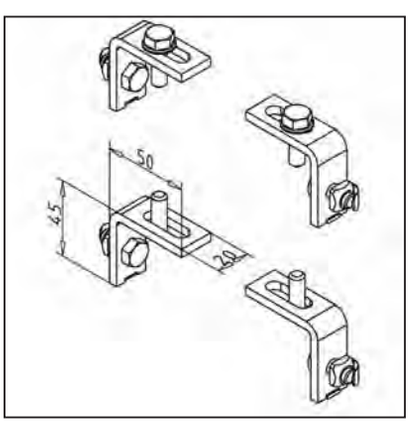
- As access to enclosures e.g. for maintenance

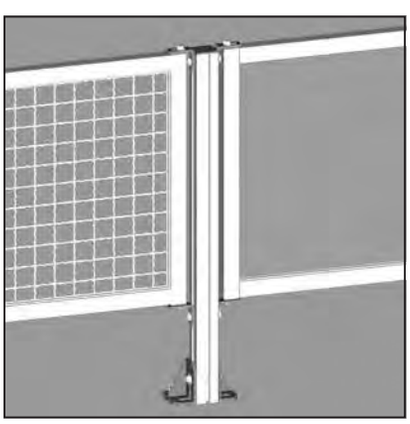
ASSEMBLY

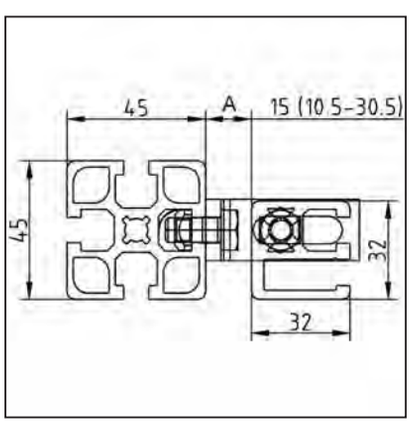
- Install between two posts with groove spacing 1000mm
- Install lock fitting in post with two drillings
- Usable for left and right attempt

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

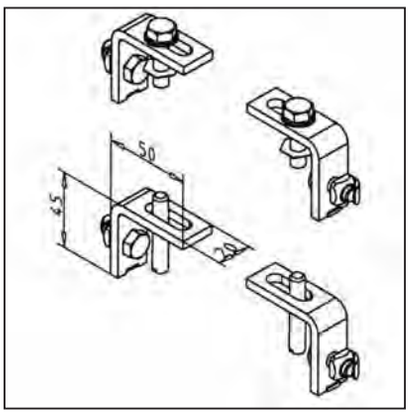
- Fastening of protection fields made of clamping profile 32x32, 45x32 or standard profiles
- Fastening of protection fields at any angle

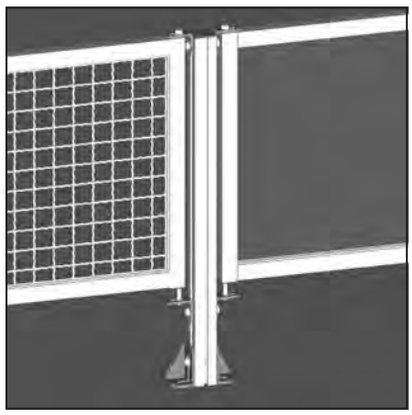
ASSEMBLY

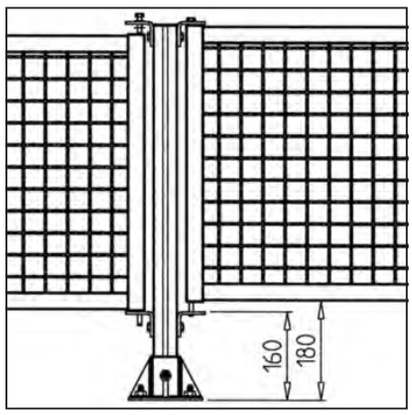
- Insert protection field into preassembled suspension. Tighten with screws included in delivery
- A = 10,5 mm - 30,5 mm

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**

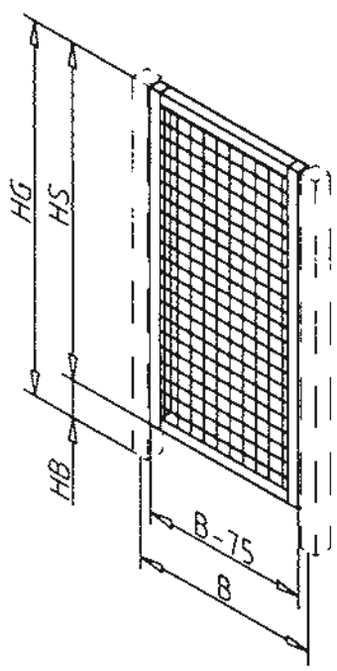
or

Height total HG _____ **mm (standard 2000 mm)**

Ground clearance HB _____ **mm (standard 180 mm)**

Groove centre spacing B _____ **mm**

Panel element ☐ **Corrugated mesh** ☐ **PETG5**



Contact details

Company _____ ☐ **Please call me back**

Contact person _____ ☐ **Please send me an offer**

Phone no. _____

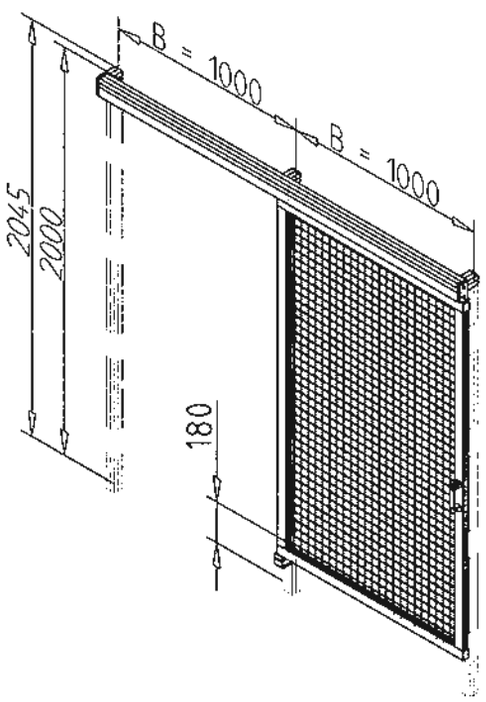
Fax no. _____

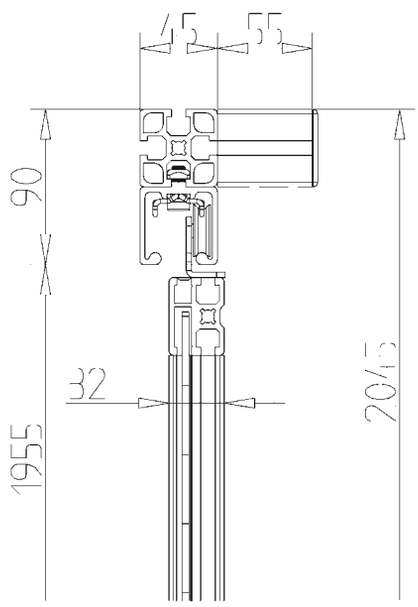
E-Mail _____

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**





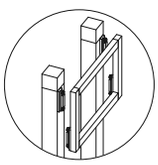
Contact details

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

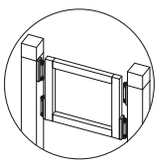
SAFETY SYSTEM SAVEGUARD

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

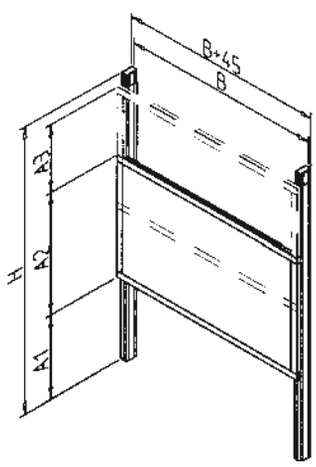
Actuation ☐ manual ☐ pneumatic

Panel element ☐ Corrugated mesh ☐ PETG5

Liftings per hour ____

Additional field fixed top ☐ yes ☐ no

bottom ☐ yes ☐ no



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 effects 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

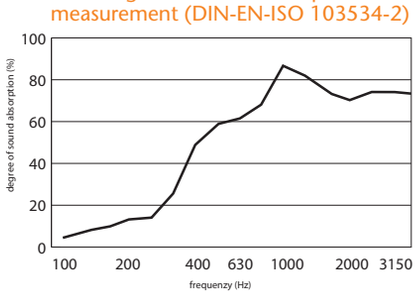
NOISE PROTECTION

COMPONENT & REMARKS

Layout "p20"

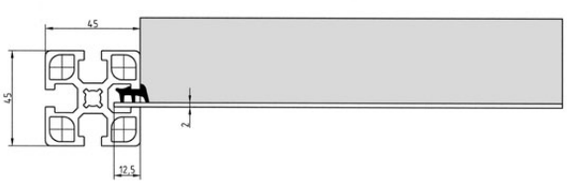
- base frame using MiniTec aluminium profiles
- panel element
- sound-absorbing panel, PU-foam 20 mm thick, black, part nr. 21.1879/0, for bonding and sealing on panel elements

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



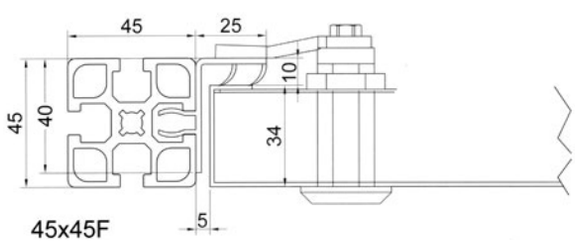
Options for panel elements

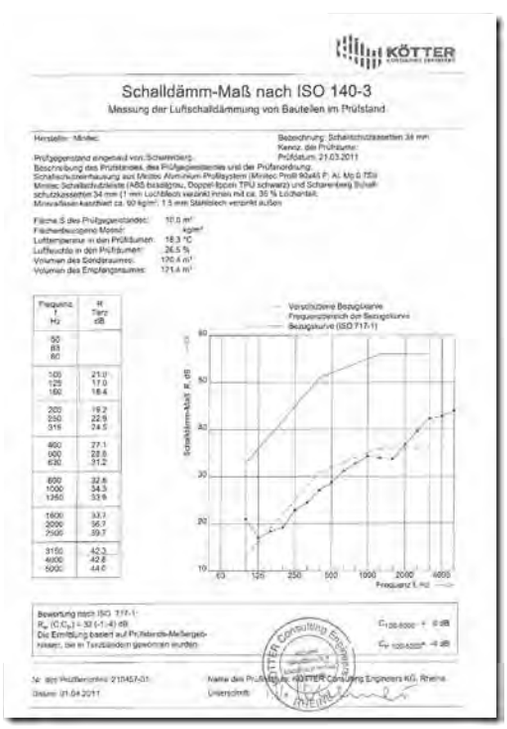
- aluminium panel 2 mm, anodized, part nr. 21.1011/0
- built-in with Insert seal 2, part nr. 22.1083/0
- steel panel 1 to 2 mm, varnished or zinc-plated, built-in with Insert seal 2, part nr. 22.1083/0
- chipboard 8 mm, double-coated white, part nr. 21.1815/2
- chipboard 8 mm, double-coated light-grey,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



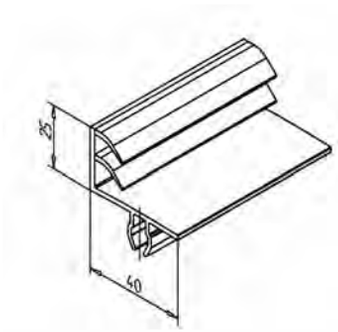


NOISE PROTECTION

COMPONENT & 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/m³
- 1,0 mm perforated plate inside, zinc-plated. approx. 35 % holes
- sound insulation certified according to ISO 140-3
- weight of panel 27 kg/m²

panel firmly bolted together

Layout

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

panel fixed with bolt lock

Options

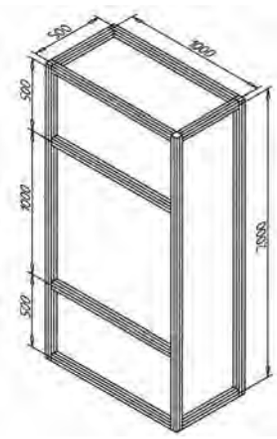
- windows, single or double
- finished according RAL
- panel sound absorber
- conduit sound absorber
- ventilator with thermostat
- sliding doors
- rain cover/shield

door with handle

NOISE PROTECTION

COMPONENT & REMARKS

EXAMPLE FOR A BASE FRAME

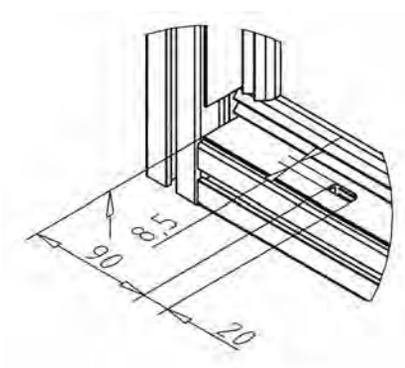


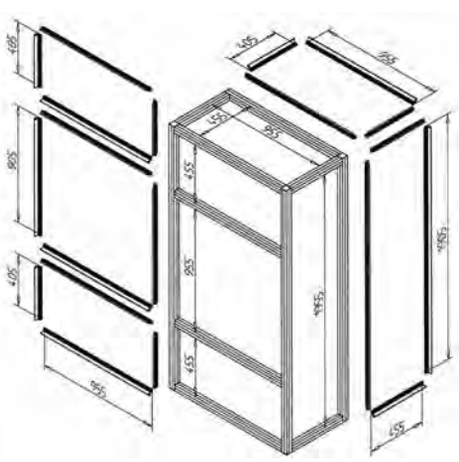
1. Construction

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

2. Insertion of noise reduction strip

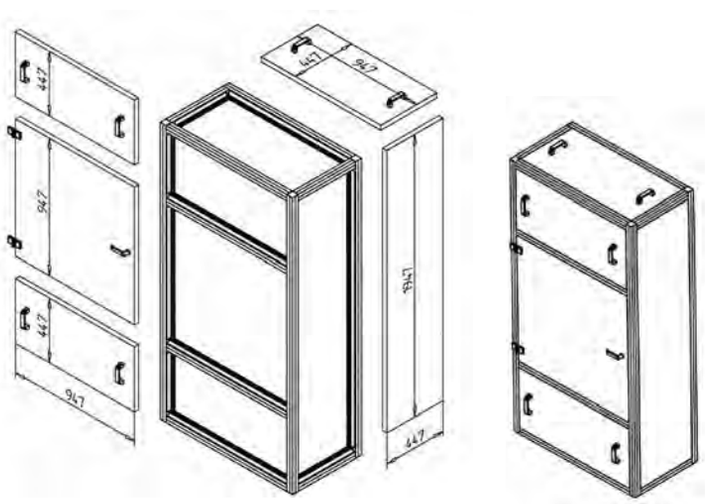
- calculation of length for noise reduction strip Horizontal N -45 mm, vertical N -95 mm
- cutting strips and inserting strips
- When using removable elements use an additional one on the bottom drill 2 long holes diameter 8,5x20, use snap bolt 25, part no 21.1758/0, put together with square-nuts





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



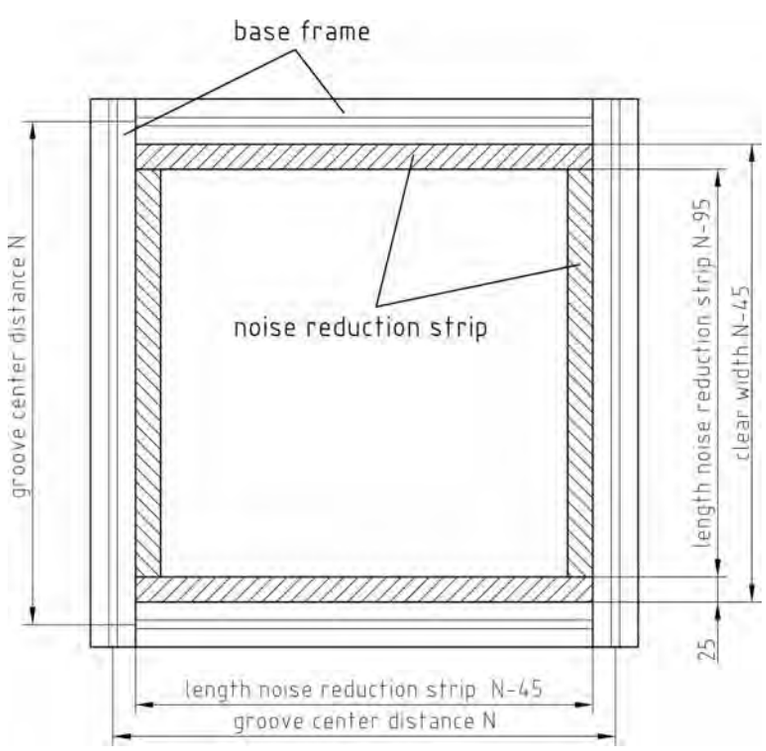
NOISE PROTECTION

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

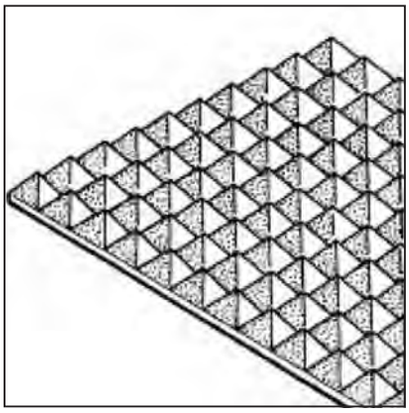
Width		mm
Length		mm
Height		mm
Machine type		
Current noise emission		dB(A)
Noise reduction you are looking for?		dB(A)
Frequency range if known		Hz
Heat rejection required?	☐ yes	☐ no

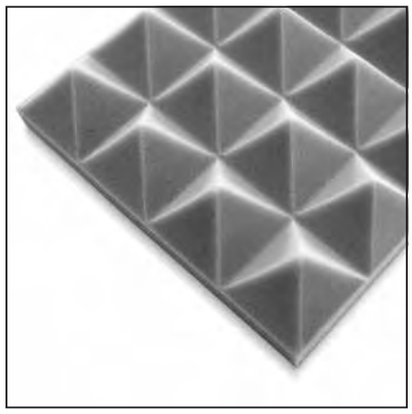
Contact details

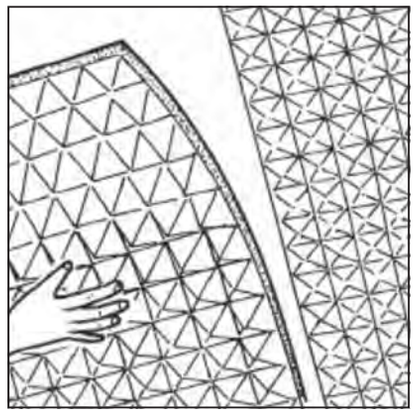
Company		☐ Please call me back
Contact person		☐ Please send me an offer
Phone no.		
Fax no.		
E-Mail		

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/m2
- Board size 1000 x 1000 mm
- **Other strenghts and performances on request**

APPLICATIONS

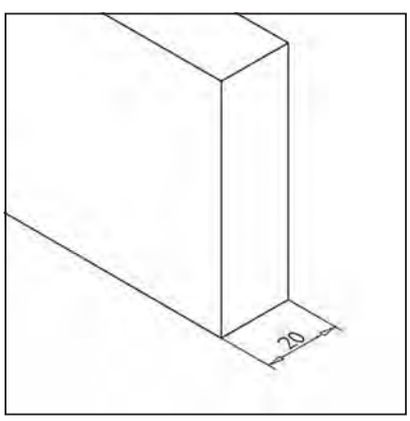
- Primary noise insulation through enclosure of noise source
- Secondary noise insulation in common rooms, master offices etc.

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/m2
- Board size max. 2000x1000mm

APPLICATIONS

- Through the black PU-skin immune to pollution

ASSEMBLY

- Lamination sheet pull down and glue on