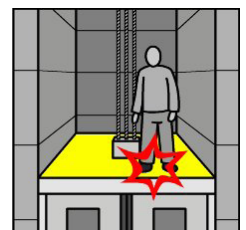
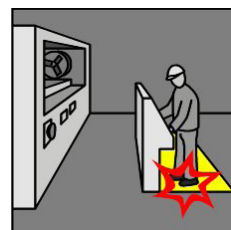
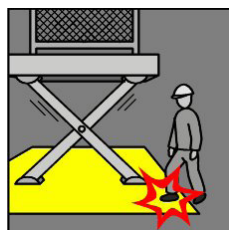
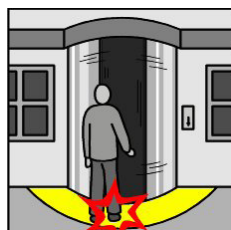
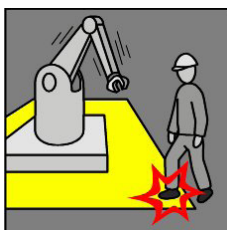


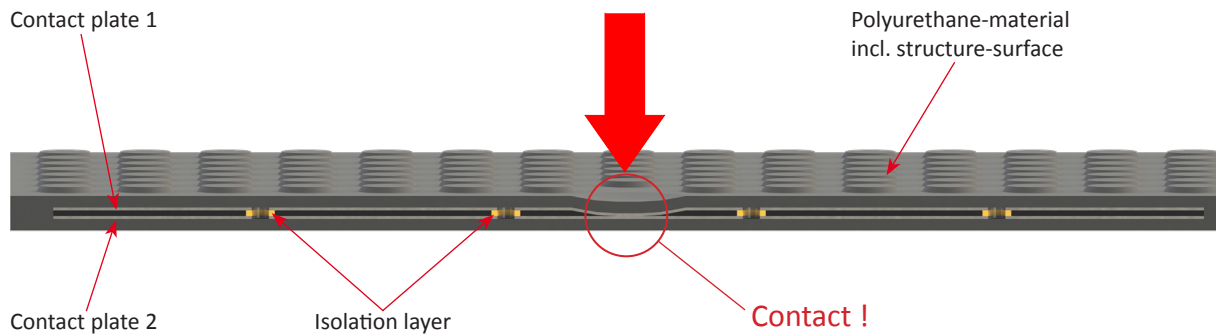
Data sheet ASO Safety Contact Mat



- Used for safeguarding of hazardous areas
- Prevents hazardous motion by triggering stop signals
- Material assures impermeability of oils, water and dirt
- Individual designs, various switching zones and full or partly colored mats are possible
- Additional checkered surface materials: High grade steel and aluminum
- Available as switch too



The main principle of an ASO Safety Contact Mat



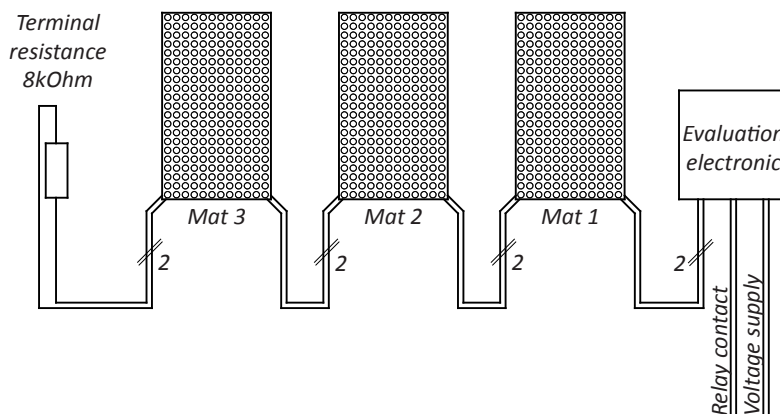
The structure

The basic design principle of the SENTIR mat consists of two conductive plates which are separated by a rasterized insulating layer. These plates are completely molded in a polyurethane material so they are impervious to oil, water and dirt.

The surface is composed slip resistant and provides excellent resistance against oil and grease. Cable exits can be placed up to your demands. Usually SENTIR mat is provided with corner cable exits and M8 male & female connectors. Either molded or aluminum ramp rails can be used to avoid tripping hazards. Furthermore, in addition to ramp rails, a fixing rail can be provided if necessary.

Signal processing

The SENTIR mat is usually fitted with twin- cables and offers the possibility of connecting several mats in series up to a maximum total area of 10 m². One end of the cable is connected to a safety relay and the terminal resistance is connected to the other end (set up by manufacturer). The safety relay provides monitoring for the entire circuit, including cabling and mats, by monitoring the terminal resistance. The two plates contact when stepped on and the resistance is bridged. This immediately causes a signal within the electronics that is then given as a potential free relay output. At the same time the entire switching circuit is wire fault or manipulation monitored. In case of special requirements the SENTIR mat can be produced for a 4-wire-monitoring.



Please pay attention to:

- Up to 10 Safety Contact Mats wired in series may be connected with one evaluation control unit. The maximum total area must not exceed 10 m²!
- The total cable length must not exceed 25m.
- The 8.2 K Ω terminal resistance must be connected to the last mat in series when several mats are connected!
- Please inquire separately for mats with recesses or special shapes.

Ramp rail RS 14

The ramp rail RS 14 provides secure mounting capability for the safety contact mat. The angled design reduces tripping and slipping when mounted to the mat. The integrated channel can be used for clean and safe installation of the connecting cable.

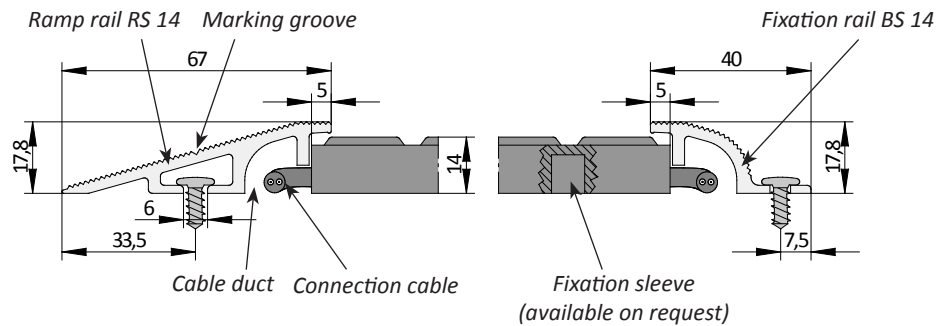
Fixation rail BS 14

The fixation rail BS 14 can be used to attach the safety contact mat in less accessible areas (for example at machines, shut-off positions, walls, etc.). Also the integrated channel can be used for clean and safe installation of the connecting cable.

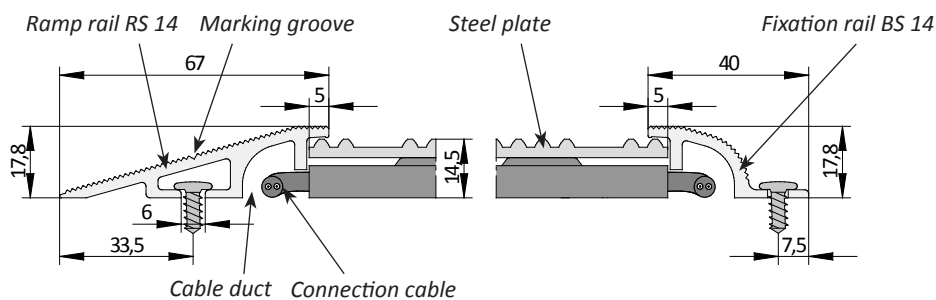
Fastening sleeve

Enables the safety contact mat to be fixed to the floor without additional space being needed. Different than the fixation rail BS 14, a fastening sleeve is implemented into the mat design.

SENTIR mat 14



SENTIR mat 14 ARB (SENTIR mat 14 TBV)

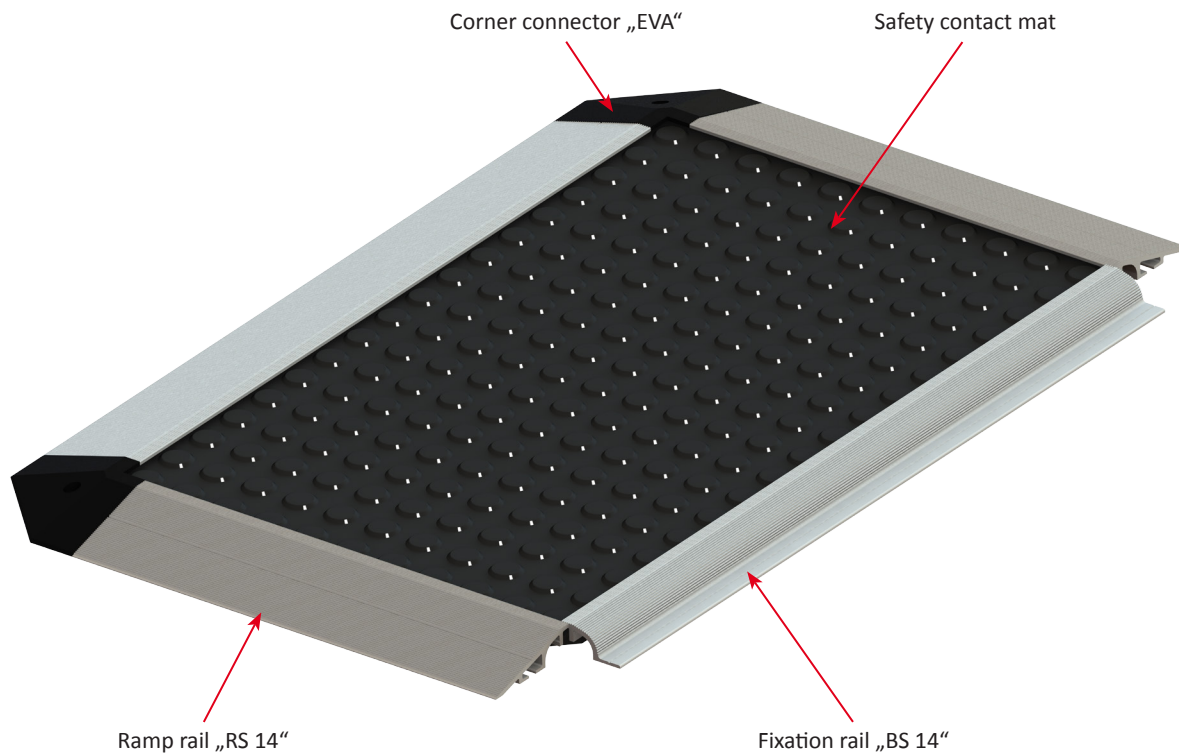


Technical specifications for Safety contact mats

	SENTIR mat 14 / 14 T / 14 U	SENTIR mat 14 ARB
Max. dimension	2350 mm x 1350 mm	2350 mm x 1350 mm
Standard dimensions available from stock	only SENTIR mat 14 T/U 1000 mm x 750 mm 1000 mm x 1000 mm 1000 mm x 1500 mm	
Construction height	14 mm with covering	14 mm with covering
Surface	Euro dot	checkered
Weight	approx. 17 kg/m ²	approx. 19 kg/m ²
Inactive edge	16 mm	0 mm
Switching pressure	Test piece Ø 80 mm = approx. 150 N	Test piece Ø 80 mm = approx. 150 N
Static load	max. 2000 N on Ø 80 mm *	max. 2000 N on Ø 80 mm *
Response time	< 25 ms *	< 25 ms *
Switching cycles	min. 1 mil. *	min. 1 mil. *
Electrical capacity	24 V 100 mA	24 V 100 mA
Material	PUR black, 68 +/- 5 Shore A	PUR black, 68 +/- 5 Shore A
Protection class	IP 65	IP 65
Temperature range	-10° to +55° C	-20 C to +55° C
Chem. resistance:		Aluminum
Oil	good	good
Petrol	resistant	good
Solvent	sufficient	good
Diluted acid	resistant	good
Diluted lye	resistant	good
Maintenance	Maintenance free. An annual test of safety function is recommended.	
Connection cable	Standard: Pluggable, 2 x 0,34 PU-cover black with M8 male/female plug, 120mm	
Fire and shock evaluation	UL 508 and CSA C22.2 no. 14 (no evaluation of protective safety function)	

* Tested according to DIN EN ISO 13856-1

Order key



1.	2.	3.	4.	5.	6.
SENTIR mat	-	14	1	T	4.X NP

1. Description

ASO-Safety Contact Mat

2. Construction Height

e.g. 14 mm

3. Number of switch zones within one mat

4. Materials ground plate

- A : Aluminium
- V : Stainless steel
- U : One compound mat
- T : With molded ramp rail
- F : For ARB- or TBV-cover

5. Cable versions

- 0 : 1x double-core cable connection
- 1 : 1x cable connection + internal end resistor
- 2 : 2x double-core cable connection
- 3 : 1x cable connection with external resistor
- 4.0 : 1x M8 connector male and 1x M8 connector female
- 4.2 : (like 4.0) with M8 connection cable 2,5 m
- 4.3 : (like 4.0) with 5 m cable, M8 connector female and M8 resistor plug
- 4.4 : (like 4.0) with 5 m cable, M8 connector male and 5 m cable, M8 connector female

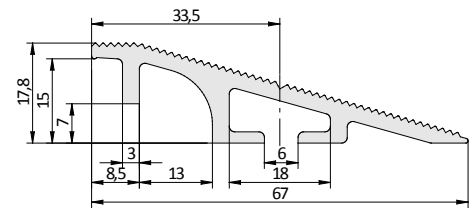
6. Surface

- ARB : Aluminum cover
- TBV : Stainless steel cover
- NP : Dot surface

Technical data of accessories

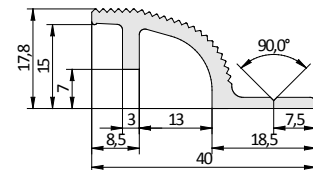
Ramp rail RS 14

Applicable to: SENTIR mat 14 ARB / 14 TBV / 14 NP
Artilel-No.: 603001
Material: Aluminum AlMgSi 0,5
Standard delivery length: 3 m / 6 m
Weight: Ca. 788 g/serial meter
Accessories: 3 sealing plugs/serial meter



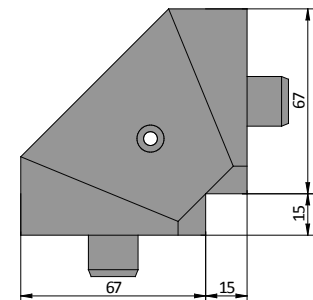
Fixation rail BS 14

Applicable to: SENTIR mat 14 ARB / 14 TBV / 14 NP
Artilel-No.: 603003
Material: Aluminum AlMgSi 0,5
Standard delivery length: 3 m / 6 m
Weight: Ca. 411 g/serial meter



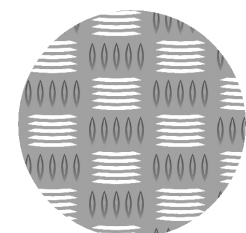
Corner connector EVA

Applicable to: SENTIR mat 14 ARB / 14 TBV / 14 NP
Artilel-No.: 603020
Material: PA 6 30% DV, black
Weight: Ca. 29 g/pc.



ARB surface

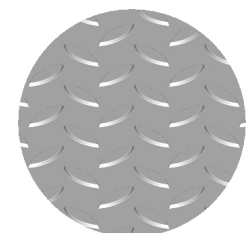
Applicable to: SENTIR mat 14 ARB
Artilel-No.: 1600028
Material: Aluminum 2,5 mm
 max. 2500 x 1400 mm
Weight: Ca. 7,0 kg/m²



Aluminum checkered plate

Stainless steel surface

Applicable to: SENTIR mat 14 TBV
Artilel-No.: 1600016
Material: Stainless steel 2,5 mm
 max. 2500 x 1250 mm
Weight: Ca. 11,6 kg/m²

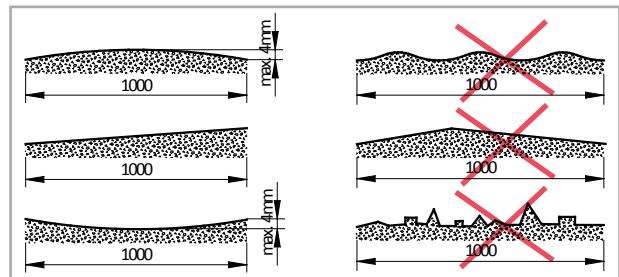


Stainless steel bulb plate

! MOUNTING INFORMATION

The mounting surface has to be absolutely even, clean and dry.

Lay out and position the mat correctly. Mats may not be folded or bent. Safety-Contact-Mats may not be manipulated in any way. Cut outs or shortening is not possible beside shown procedures..



Flatness tolerance for subfloor (according to DIN 18202)

Please note for measurement:

The ramp rail respectively fixation rail is needed to fix the mat to the floor. Subsequently the total space required is calculated by adding up the zone to be guarded (nominal dimension of mat) and the width of the ramp rail or fixation rail.

	Ramp rail	Oversize	Fixation rail	Oversize
SENTIR mat 14	RS 14 Aluminum	62 mm	BS 14 Aluminum	35 mm
SENTIR mat 14 T	Molded	35 mm	- / -	- / -
SENTIR mat 14 ARB	RS 14 Aluminum	62 mm	BS 14 Aluminum	35 mm
SENTIR mat 14 TBV	RS 14 Aluminum	62 mm	BS 14 Aluminum	35 mm

Available space for safeguarding:

1200 x 500 mm

Required Safety contact mat:

SENTIR mat 14 with ramp rail RS 14 and fixation rail BS 14

Example of calculation:

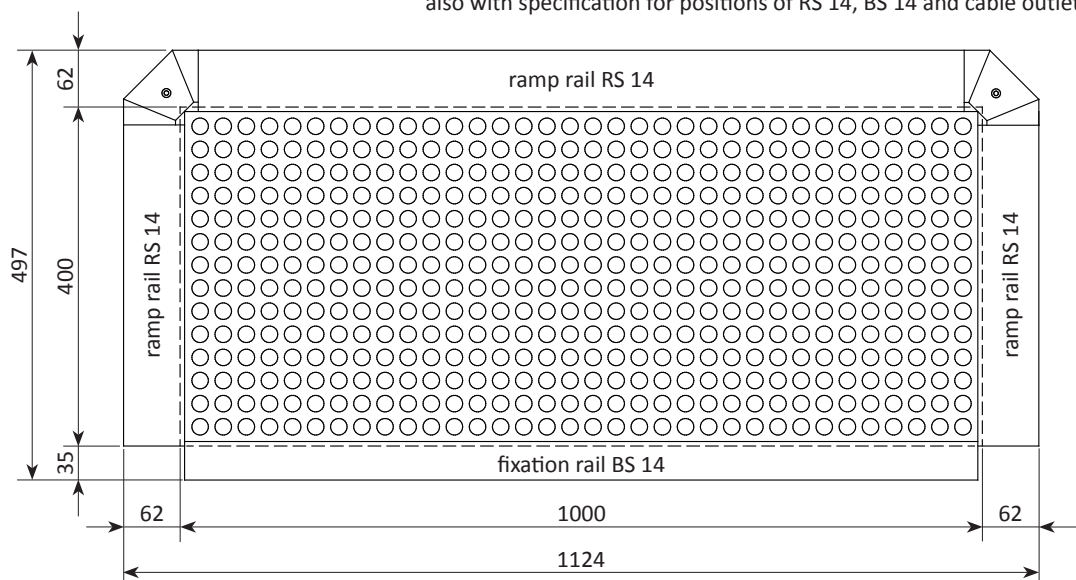
1200 mm - 62 mm - 62 mm = 1076 mm

500 mm - 62 mm - 35 mm = 403 mm

Ordering example:

SENTIR mat 14 1000 x 400 mm with RS 14 and BS 14

also with specification for positions of RS 14, BS 14 and cable outlet



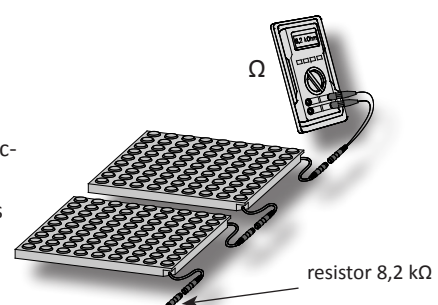
Max. producible size is 2350 mm x 1350 mm. Measures exceeding this size are feasible by combining several SENTIR mat.

If several mats are laid side by side, it has to be done very tightly to the joint.

Afterwards connect the mats electrically and check the resistance.

The resistance is supposed not to vary more than 500 Ohm from 8,2 kOhm in unactuated condition.

Make sure that the cables are not damaged in a way that could possibly influence its function.



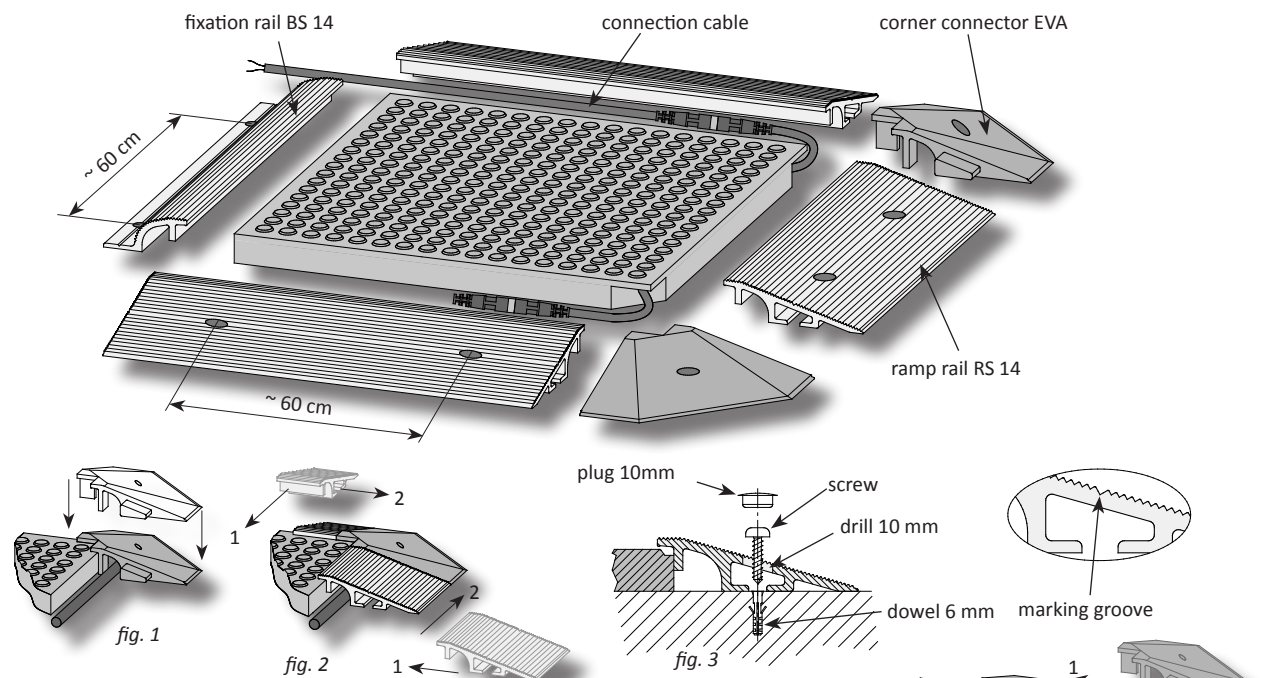
Assembly of SENTIR mat 14

When using corner connectors the ramp rail has to be shortened 20mm for each corner connector.

Insert the cable near corner connector from above to make sure the cable is led through the cable duct (fig. 1). Then attach the ramp rail to the ground with 6mm dowels and appropriate screws.

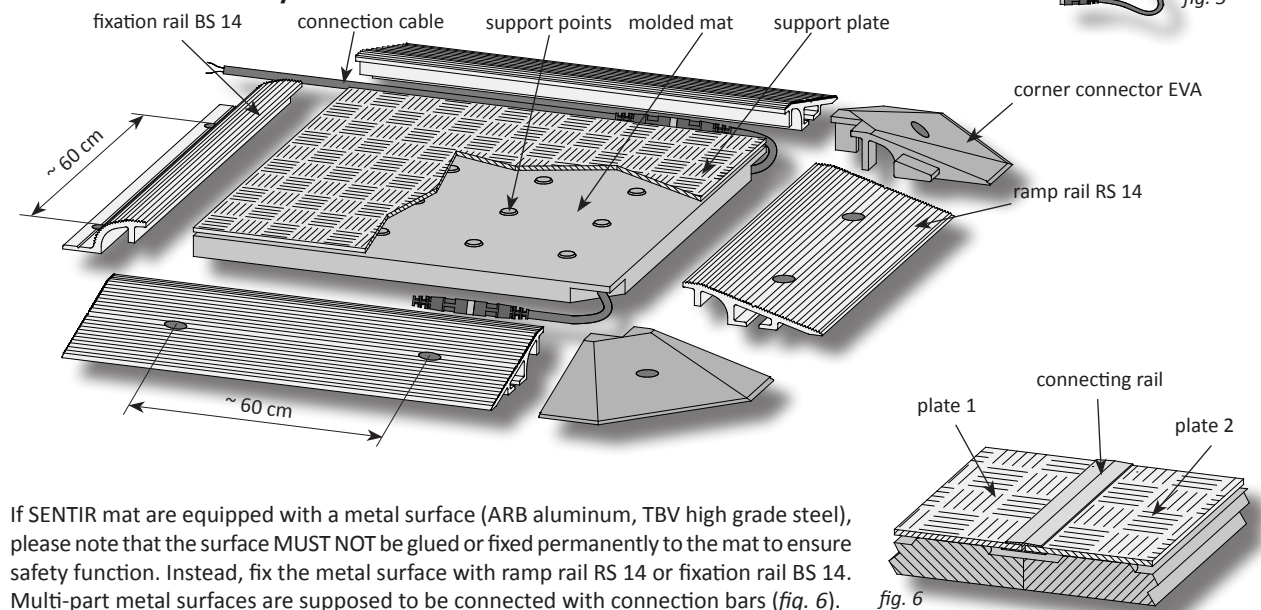
Adjust the ramp rail laterally to the mat and plug it on the guiding pin (fig. 2). Mark the fastening points (One each 60 cm) on the center line of the ramp rail and pre-drill 10 mm for the sealing plugs. Then again attach the ramp rail to the ground with 6 mm dowels and appropriate screws and seal the wholes with the sealing plugs (fig. 3).

For further ramp rails follow the same instructions.



The fixation rail BS 14 is used to fix SENTIR mat on the side facing the machine. Mounting instructions of the ramp rail RS 14 apply to fixation rail BS 14 as well. If possible, cables should be led out laterally and connected to the electronic monitoring devices (fig. 5).

SENTIR mat 14 ARB / SENTIR mat 14 TBV



If SENTIR mat are equipped with a metal surface (ARB aluminum, TBV high grade steel), please note that the surface **MUST NOT** be glued or fixed permanently to the mat to ensure safety function. Instead, fix the metal surface with ramp rail RS 14 or fixation rail BS 14. Multi-part metal surfaces are supposed to be connected with connection bars (fig. 6).

Mounting of SENTIR mat 14 T with molded ramp rail

Please note for oversize:

The total space requirement of a SENTIR mat with molded ramp rail results from the space of the area to be safeguarded (nominal dimension of mat) and the width of the ramp rail. The width of the ramp rail RS 14 is 35 mm (fig. 7).

In order to avoid any clamping or pinching of the cables, cut the cable outlet on required side (fig. 8).

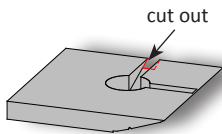


fig. 8

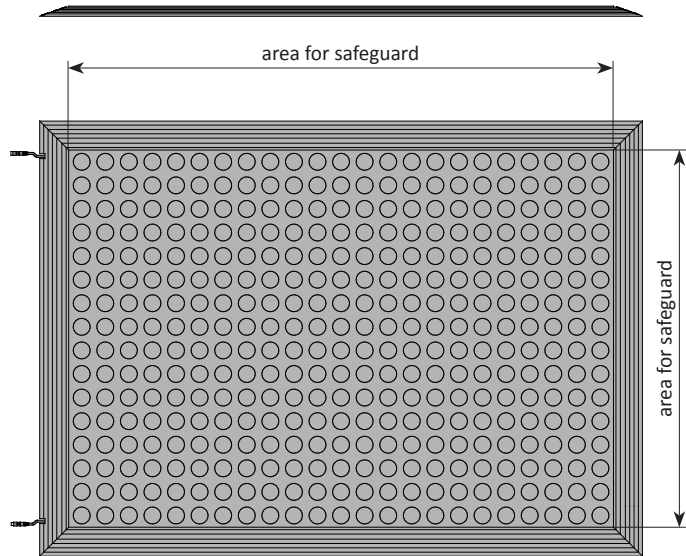


fig. 7

Installation

Adjust the SENTIR mat according to your needs and fix them to the floor with adequate dowels and screws (fig. 9).

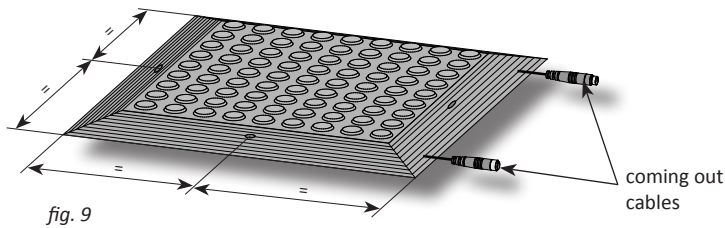
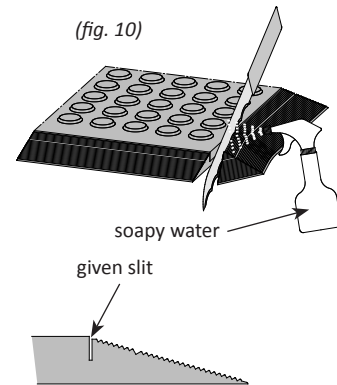


fig. 9



(fig. 10)

If several mats are laid side by side, it has to be done very tightly to the joint. Therefore, ramp rails have to be cut off on the sides which are supposed to be sequenced. Spray soapy water over knife and given cutting slit (fig. 10). Adjust the SENTIR mats and protect them against displacement (fig. 11).

Afterwards connect the mats electrically and check the resistance.

The resistance is supposed not to vary more than 500 Ohm from 8,2 kOhm in unactuated condition.

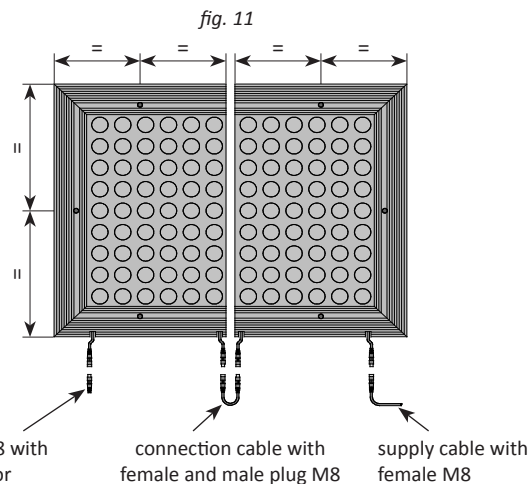


fig. 11

Contact details

ASO Safety Solutions Inc.
Roundhill Drive 300, Unit 6
Rockaway, NJ 07866
973 – 586 960 0

Sales-us@asosafety.com
www.asosafetyus.com

For traffic safety the cable outputs should allways be aligned to the machine side!