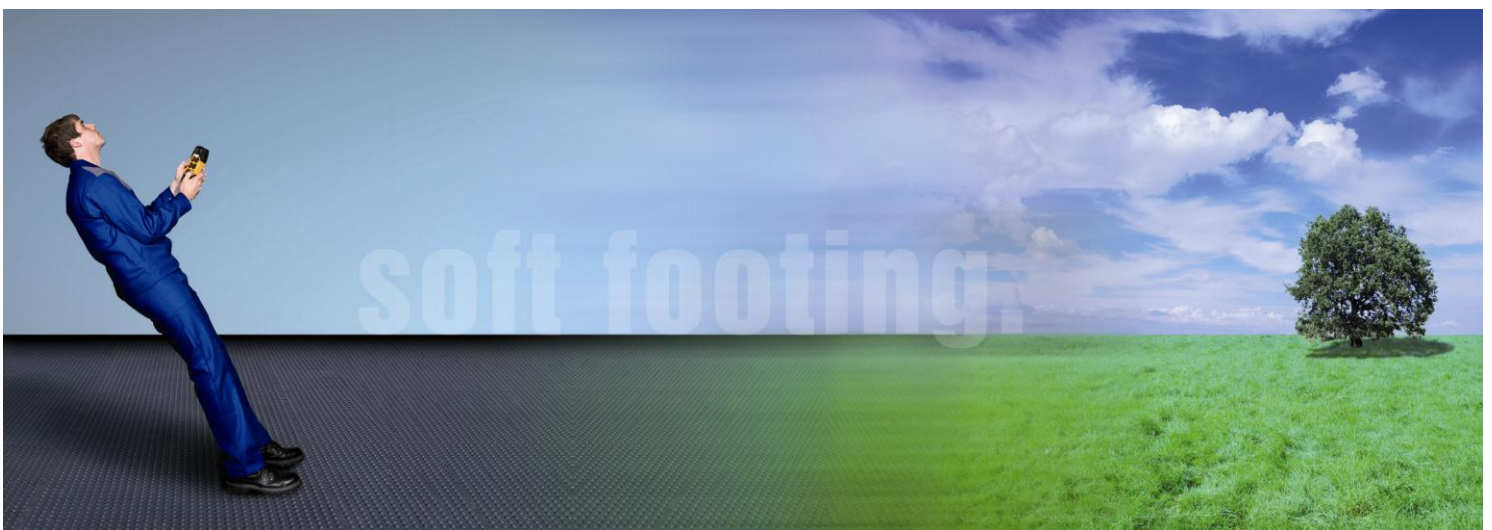


ERGOLASTEC Industrial Mats

Handbook

Directions for Use

Instructions on Usage, Installation,
Cleaning
and Resistance



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1. Useful facts about rubber and elastomers:

In terms of rubber, a distinction is drawn between natural rubber and synthetic rubbers. Natural rubber is obtained from the milky sap of the rubber tree (*Hevea brasiliensis*). Natural rubber is typically used to make tyres, predominantly HGV tyres.

Synthetic rubbers are made from suitable crude oil fractions known as monomers. Examples of such monomers include butadiene, styrene, ethylene, propylene and acrylonitrile. Some of the best known exponents of synthetic rubber are butadiene rubber (BR), styrene-butadiene rubber (SBR), ethylene-propylene-diene monomer rubber (EPDM) and acrylonitrile-butadiene rubber (NBR). These types of rubber are new products used in Ergolastec industrial mats.

The rubber is cross-linked so that the end products will retain their shape. The chains are bonded together chemically and physically in this process, thus forming a mesh which takes on a rubber-like elasticity at working temperature. Changes in size, which are brought about by thermal fluctuations below the decomposition temperature (approx. 200°C), are reversible. The processes of heating or cooling therefore bring about changes in size of <1% deformation for every 10°C. In contrast to elastomers, thermoplastic products will irreversibly lose their shape if subject to a high temperature just once (near melting point). This is not the case with elastomers which retain their shape.

Furthermore, the elastomers used in Ergolastec products also boast excellent skid resistance on wet surfaces. This property is present to a limited extent only in polyurethane rubbers which are also used in ergonomic industrial mats.

In the event of a fire, Ergolastec industrial mats do not give off corrosive fumes like, for example, PVC-based compounds which release fumes containing hydrochloric acid and chlorine in a fire.

The most suitable rubber is selected for each Ergolastec product to achieve the best resistance to various substances, such as oil, fuel, solvents, cleaning agents and other media, with a wide range of applications being covered by the high number of different types of rubber available.

In general, elastomer products can be used continuously in temperatures ranging from approx. -30°C to +100°C. Higher temperatures are also possible depending on the rubber.

Ergolastec industrial mats range from 35-60 Shore A on the hardness scale.

2. Vehicle accessibility guidelines:

Drive-on access is permitted for forklift trucks (max. 200 kg)
(except on ergolastec_display and Ergolastec_sorb).

IMPORTANT: There should be no visible bulging as the weight is put on the mat!

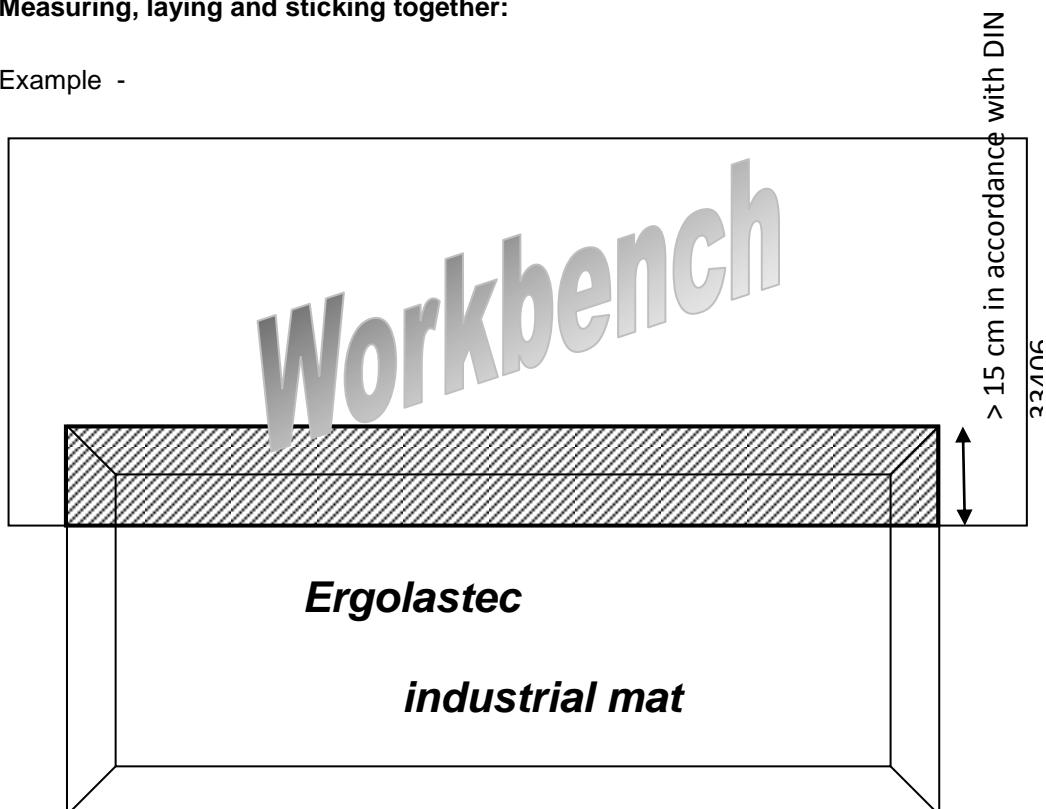
Maximum speed = half walking pace (approx. 2 km/h)

No forceful steering movements - do not steer while stationary! Accelerate and decelerate slowly.

The mat is a suitable surface for office chairs or factory chairs. We recommend the flat texture of the "DRY" mat for this purpose.

3. Measuring, laying and sticking together:

- Example -



Recommendation: If mats are placed in front of a workbench or work surface, at least 15 cm of the mat should be positioned under the edge of the surface in order to ensure stable and upright posture.

Please also refer to the instructions in DIN 33 406 on the dimensions for industrial mats in production areas:

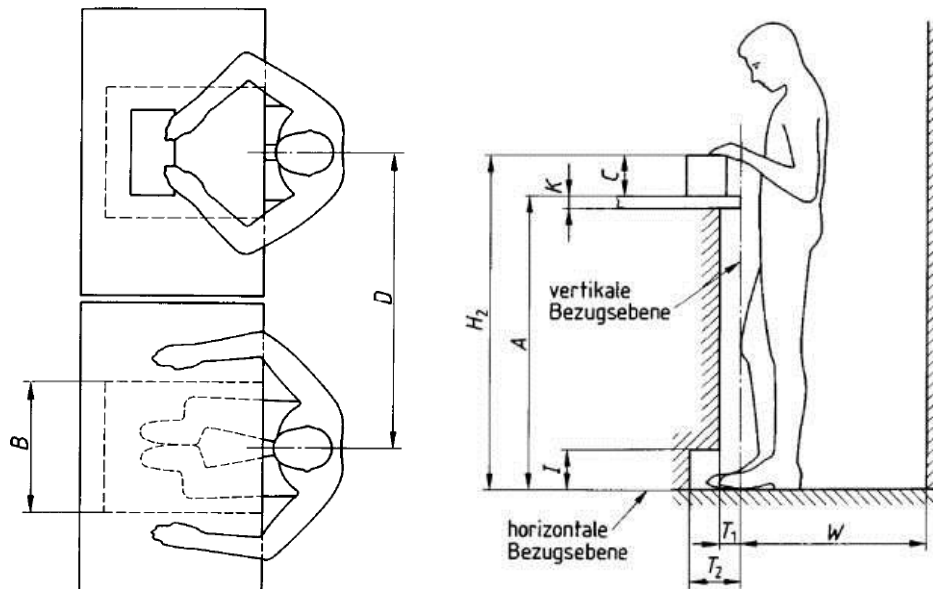


Tabelle 1. **Mindestmaße für Arbeitsplätze im Produktionsbereich** (excerpt from DIN 33 406)

Maße	Sitzarbeitsplatz	Steharbeitsplatz	Sitz-/Steharbeitsplatz
Lateraler Freiraum D		≥ 1000	
Sagittaler Freiraum W		≥ 1000	
Beinraumtiefe T_1	≥ 350	≥ 80	≥ 350
Fußraumtiefe T_2	≥ 550	≥ 150	≥ 550
Höhe des Beinfreiraums G	≤ 350	–	≤ 350
Höhe des Fußfreiraums I	–	≥ 120	–
Beinraumbreite B	≥ 550	–	≥ 550 für $A \leq 850$
			≥ 800 für $A > 850$

Freedom of movement

The lateral clearance D is the length between the centres of adjacent workstations.

The sagittal clearance W is the distance between the vertical reference plane and the workstation zone boundary closest to the body at the back.

Stand-up workstations

Stand-up workstations offer more freedom of movement than sit-down workstations and therefore the advantage of a more spacious working area. When standing up, people can exert greater physical strength than when sitting down because they can apply their body weight to tools and equipment.

Tools required to lay the mats:

Measuring:

- Folding rule, tape measure, laser measuring equipment

Cutting & laying:

- Cutter or universal knife, carpet cutter, metal rod
- Rubber mallet, soapy water

Installation

The surface must be even, clean and smooth, e.g. concrete floor, asphalt, paving or similar surface. If the floor is uneven then the rubber covering will mould to the irregularities to a certain extent. Pools of water or other liquids can also form in dips, leading to a risk of tripping and slipping.

The mats must be stored between +5°C and max. +30°C before they are laid.

The mats are laid on the ground without fixing and (in case of mats with interlocking edges) simply fitted together.

USEFUL TIP: The interlocking edges will "slip" into place more easily if you spray them with soapy water beforehand. A mixture of water and standard washing-up liquid / soap at a ratio of approx. 10 to 1 (10 parts water / 1 part soap) will be suitable.

The mats can simply be cut to size with one of the cutters listed above in order to fit in place and allow for any indents, recesses or workbench legs, etc.

Interlocking connection system

The waterjet-cut Ergolastec interlocking edges form a neat join without the need for any adhesive or screws. The mats are made to the specified size in our factory. The mats can be made-to-measure for your workstation with the aid of standard profiles or with cut-to-size pieces. Interlocked mats can be simply taken apart by hand and put back together at any time.

The mats are laid on the ground without fixing and joined together at the interlocking edges.

Caution: Do not compress or crush the mats!

The ERGOLASTEC interlocking edges automatically form such a tight seal that the resulting floor covering is virtually seamless. ERGOLASTEC® industrial mats are therefore very stable when linked together.



Sticking and sealing ERGOLASTEC industrial mats

The fractional gaps which arise between the waterjet-cut interlocked edges can be sealed if necessary with the special-purpose adhesive Fix-o-Flex (SMP-based adhesive). Various makes of cyanoacrylate-based superglue are the most suitable adhesives to stick the mats to each other.

For further information on the different sealants and adhesive products, please contact our resident expert Mr Lackner (stefan.lackner@kraiburg.co.at)

Markings:

We can provide self-adhesive marker tape (yellow) if high-visibility markings are required for the bevelled edges (under the German marking regulations (KennV)). This marker tape is supplied on a 25 m continuous roll (40 mm width) and can be cut to the required size and stuck on the bevelled edge.

4. Cleaning the mats*:

Rubber mats are easy to clean. They can be swept clean, vacuum-cleaned, washed down with standard cleaning agents, or blasted clean with a pressure washer or steam jet (at a minimum distance of 40 cm). Please note that, when using steam cleaners, peak temperatures of max. 140°C can only be guaranteed for short periods.

We particularly recommend the special-purpose cleaning and care product "PROCUR®" supplied by Kiehl. It boasts intensive cleaning action and leaves special conditioning and protective substances on the mat. For more information on the product and its distribution, please contact our resident expert Ms Asen (tina.asen@kraiburg.co.at).

The mat needs to be cleaned regularly and kept free of dirt and debris from the outset in order to be able to guarantee full skid-resistance.

**Special cleaning instructions for the ERGOLASTEC_Clean and ERGOLASTEC_Display mats can be found in section 5 (additional information on the individual mats)*

5. Additional information on the individual mats:

ERGOLASTEC BASIC



The Ergolastec Basic industrial mat is made of styrene-butadiene rubber and is resistant to temperatures from -35°C to +95°C.

The mat provides very good grip in wet conditions, excellent wear resistance, and a general balance of properties in other respects, making it the all-rounder in our range.

It is suitable for use in various locations, ranging from logistics workstations and assembly posts right through to workstations with low to medium levels of exposure to media.

ERGOLASTEC DISPLAY



The Ergolastec Display ergonomic industrial mat is an alternative version of the Ergolastec Basic. Its chemical and physical properties are the same as those of the Ergolastec Basic but, in this case, a poster of your choice can be inserted below the transparent flexible inlay. The Ergolastec Display is supplied as standard with the transparent inlay and a "Kraiburg poster", both in DIN A0 size. This poster is for illustrative purposes.

Size DIN A0 posters (841mm × 1189mm) should be used in order to maximise the benefit of the Ergolastec DISPLAY and exploit its potential to the fullest possible extent.

We recommend having the poster printed on PVC (waterproof - approx. 310 µm thick) to prevent ingress and entrapment of moisture.

The poster and flexible inlay should be taken out when cleaning the mat. The usual cleaning methods can be used but the mat should be completely dry before reuse in order to avoid ingress and entrapment of moisture.

This mat is designed for use in dry areas.

ERGOLASTEC ESD

The Ergolastec ESD industrial mat is made of styrene-butadiene rubber. The temperature resistance ranges from -35 to +95 °C. Special methods of manufacture enable contact and surface resistance levels of $<10^6$ ohm and therefore render the mats suitable for use at ESD workstations. As a general principle, the workstation should meet the standards required for ESD compatibility before the Ergolastec ESD industrial mat is installed.



How is the electrical discharge generated through the ESD mat on a non-conductive surface?

This takes effect through an ESD metal clip supplied with the mat. This clip is fixed or screwed to the mat and then connected to an earthing object (e.g. machine earth) by means of a cable.

The metallic ESD clip and discharge cable are supplied if required. Drill a hole \varnothing 5 - 6 mm (e.g. with a wood drill) at the place where you want to attach the clip (preferably towards the edge of the mat where it tapers out or in the thicker section but not on the main section of the mat on the raised nodules) and then screw the ESD clip to the mat.

If several Ergolastec ESD mats are linked together on a non-conductive surface and an electric discharge is created by an ESD clip then we recommend earthing and fitting an ESD clip to each individual mat.

Before the "ESD workstation" is put into operation, arrange for the discharge capacity and correct installation of the flooring to be checked and approved by the ESD officer or by other duly authorised persons.

ERGOLASTEC FIRE

The Ergolastec Fire industrial mat is made of styrene-butadiene rubber with special flame-retardant additives. It is suitable for use at temperatures ranging from -35 to $+95^{\circ}\text{C}$. Its wear resistance is also excellent. The flame-retardant additives also prevent the mat from catching fire from external sources, such as flying sparks and weld beads. The additives permeate the entire mat therefore it still retains its flame-retardant properties even after many years of service and surface wear.

Sustained exposure to fire and red-hot objects may damage the mat and impair its effectiveness.



ERGOLASTEC CLEAN

The Ergolastec Clean industrial mat is made of EPDM (ethylene-propylene-diene rubber) and is resistant to temperatures ranging from -35°C to $+120^{\circ}\text{C}$.

The mat therefore boasts excellent resistance to high temperatures, water, steam, dilute alkalis and acids, cooking oils, cooking fats and polar solvents.

It is particularly suitable for use in the catering industry, in canteen kitchens, butcher's shops, slaughterhouses, at workstations in chiller and freezer zones, on fishing boats, at laboratory workstations in the chemical and pharmaceutical industry, in hospitals, medical and massage practices, pharmacies,



washing bays, at packaging and order picking workstations in the food industry, at bars and sales counters, etc.

The mat is only approved for laying on floors where there is no direct contact with food (*EC Regulation 852/2004 with particular reference to industrial premises in Annex II*).

A product, e.g. a foodstuff, which falls on the floor must either be discarded or checked for contamination (adverse/harmful changes) before further use.

Special instructions for the food industry on the cleaning of Ergolastec_Clean:

The mat may be cleaned with standard cleaning agents (pH 2 - 10). We recommend consulting your Kraiburg agent if you wish to use more specialised cleaning agents designed for use in the industry.

As a general principle, you should follow the instructions for use given by the maker of the cleaning agent. The cleaning agent exposure time needs to be adjusted according to the cleaning method. The maximum exposure time should not exceed one hour.

Measures must be taken to ensure that mats which are individually cut to size can be removed at any time for cleaning.

Every time the mat is cleaned, it should be inspected afterwards to make sure it is clean and to check for any visible signs of damage (e.g. tears or cuts). Damaged mats should be replaced or, where applicable, the manufacturer should be consulted regarding the damage. Before the mat is put back down, the floor must also be checked and, if necessary, cleaned.

It is also possible to clean the mat in an industrial machine, although it depends on the detergent used in any given case. Highly caustic cleaning agents combined with high temperatures can have an adverse effect on the quality of the mats in the long term. We recommend that you consult your Kraiburg agent in this regard as well.

Please note that, when using steam cleaners (at a minimum distance of 40 cm), peak temperatures of max. 140°C can only be guaranteed for short periods. The cleaning equipment must also be clean before being used to clean the mats.

Water of drinking quality should be obligatory for the end of the cleaning cycle (final rinse), and a drying cycle should also be a mandatory requirement in order to ensure that there is no residual fluid left after cleaning.

Cleaning the top of the mat:

The surface of the mat should be cleaned after no more than 8 hours. It should be cleaned immediately, however, if there is a major accident or spillage.

Cleaning the bottom of the mat:

The underside of the mat should be cleaned after no more than 24 hours. It should be cleaned immediately, however, if there is a major accident or spillage (except the Ergolastec_Clean_drain which should only ever be held up or hanging when it is cleaned). The top and bottom of this mat should also be cleaned after 8 hours as well as the spaces between the holes).

Cleaning the interlocking mats:

The interlocking mats should be cleaned after no more than 24 hours. They should be cleaned immediately, however, if there is a major accident or spillage. When cleaning the interlocked mats, the individual mats MUST be separated in order to clean each individual mat.

Disinfection:

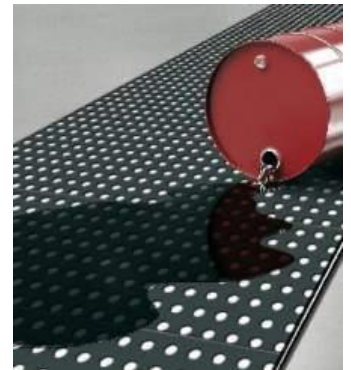
Standard alcohol-based disinfectants may be used to disinfect the mats. We recommend consulting your Kraiburg agent if you wish to use more specialised disinfectants designed for use in the industry.

Waste disposal facilities, such as drainpipes or chutes, must not be covered or obstructed by the mats. The same applies to floor drains or pits which are not secured or which are used for hygiene-related purposes.

In such circumstances you could think about using Ergolastec_clean_drain.

ERGOLASTEC OIL

The Ergolastec Oil industrial mat is made of nitrile-butadiene rubber (NBR). This mat can be used continuously at temperatures of -30 to +110°C. The outstanding feature of the Ergolastec Oil is its excellent resistance to oils, fuels and other non-polar media. This makes it ideal for use at workstations which are subject to spillages of such substances. Examples of such workstations might include workstations in the automotive and mechanical engineering sectors, and laboratory workstations in the chemical and pharmaceutical industries.



ERGOLASTEC SORB


The Ergolastec Sorb industrial mat has the same chemical and physical profile as the Ergolastec Oil mat, demonstrating similar resistant properties. The mat is a popular choice for workstations where relatively large spillages tend to occur. The fluid can seep through the grating into the highly absorbent layer where it is









































absorbed, leaving just small amounts on the grating and reducing the risk of slipping. The correct size of grating is supplied as standard with first orders as well as an absorbent material layer (*3M oil absorbent pad, white / type HP 100*). When this pad needs changing, you are welcome to order replacement absorbent pads through us or you can purchase them directly from your workshop stockist.

6. Resistance of Ergolastec industrial mats to certain media:

 Highly resistant

 Resistant

 Less resistant

Medium	Ergolastec basic	Ergolastec esd	Ergolastec fire***	Ergolastec clean	Ergolastec oil	Ergolastec sorb	Ergolastec display
Water							
Gasoline, mineral oil, fuels							
Brake fluid DOT 4							
Acids							
(dilute inorganic acids) *							
Alkalis							
(dilute inorganic alkalis) *							

* At room temperature

** The manufacturer should be consulted on the use of media not included in the list or with reference to other requirements

*** The flame resistance of the Ergolastec fire industrial mat can be affected by slight surface swelling with combustible media

Any leaks and spillages should be cleared up immediately in the interests of the health and safety of the workers.

7. Service life & warranty:

We guarantee the ergonomic function in terms of the shock-absorbing properties (cf. technical data sheet) of the ERGOLASTEC industrial mats for stand-up workstations and high-footfall areas for 5 years.

The ERGOLASTEC industrial mats must be laid correctly and used in accordance with the recommendations given by KRAIBURG. The rubber mats are subject to natural wear and tear when in use and will undergo a slight change in hardness over time. No guarantee can be given regarding skid resistance.

No liability will be accepted for accidents and consequential damage in connection with the use of ERGOLASTEC industrial mats.

Any instances of damage in transit must be reported to us immediately.

The 5-year warranty takes effect on the day of delivery.

8. REACH, health & safety and environmental sustainability

The Ergolastec industrial mats supplied by KRAIBURG are free of halogens as defined by REACH, the EU regulation on chemicals. The Regulation (EC) No. 1907/2006 (REACH Regulation) entered into force on 1 June 2007. REACH stands for Registration, Evaluation, Authorisation and Restriction of Chemicals. As an EU Regulation, REACH has equal validity and is directly applicable in all member states. KRAIBURG is aware of its obligations under REACH and is kept informed of the REACH requirements through the WDK (Wirtschaftsverband der deutschen Kautschukindustrie e.V. / organisation of German manufacturers of tyres and technical elastomer products).

All the compounds used in each and every Ergolastec industrial mat are new. We do this to make sure that there are no objectionable substances in the mats, such as heavy metals, plasticisers containing phthalates, and other substances not permitted in the EU. This is beneficial both to the health of the users of our industrial mats and to the environment.

9. Why many customers have already opted for ERGOLASTEC mats:

- Increased muscular activity and reduced muscle fatigue
- Shock-absorbing action brings reduction in joint complaints and back problems
- Less swelling of the feet (water retention)
- Heat-insulating action
- Better cushioning properties than shoes with soft soles
- Prevention of slipping and falling (the most common cause of accidents at 27 %) (2004 statistics compiled by accident insurance organisation AUVA)
- Safe landing for falling objects
- Noise-absorbing and sound-deadening effect
- KRAIBURG has over 60 years of experience in the manufacture and processing of elastomers
- The mats stay firmly in place, as required when working in industry
- Resistance to foot eversion thanks to surfaces adapted to working conditions
- Easy to clean using standard means and methods
- Mat size 1350 x 1000 mm is geared to requirements for stand-up workstations (freedom of movement min. 1000 x 1000 mm in compliance with DIN 33406).



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