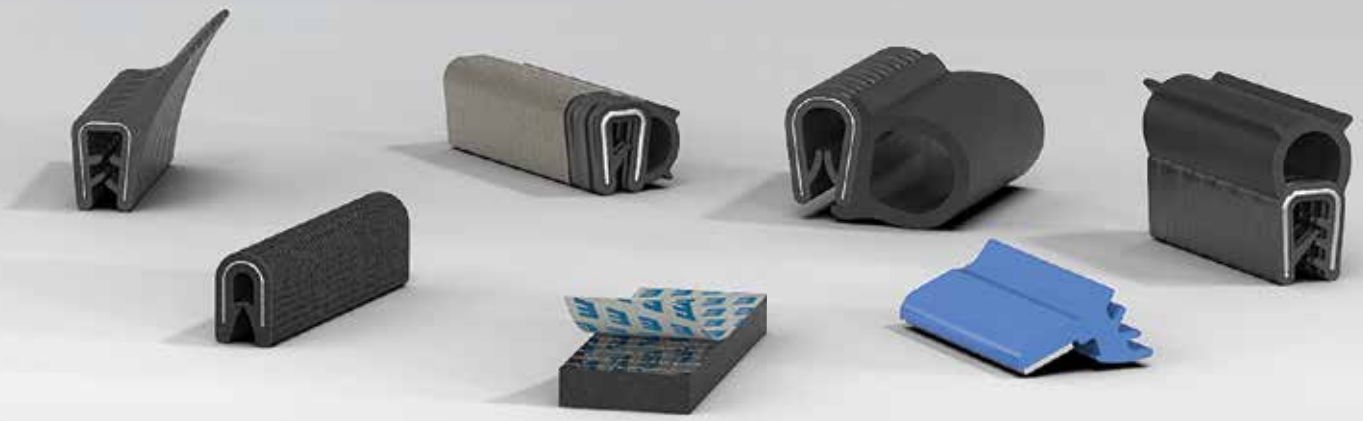
EMKA (UK) LTD

SEALING TECHNOLOGY MADE TO MEASURE

Profiles and Frames from In-House Production



List of contents

The profiles shown on the catalogue pages are (print status) current standard articles.
Further profiles are available on request or individually produced according to customer requirements.

About EMKA

The EMKA Group is world market leader for locks and latches, hinges and seals used in switch and control cabinets. In the areas air conditioning technology and transport, EMKA is one of the leading manufacturers of locking technology.

Currently, the overall range comprises more than 30,000 catalog and special articles, which are developed, manufactured, refined and assembled at ten production sites in Germany, France, Great Britain, Spain, Bosnia-Herzegovina, Serbia, China and India.

With 2,100 employees EMKA serves over 34,000 customers in 52 countries worldwide.

Since a company takeover in 2018, EMKA is also one of the largest mould makers in Europe. With 150 employees in mould making at its production site Goražde in Bosnia-Herzegovina EMKA builds over 900 moulds per year for plastic injection as well as zinc and aluminium die casting according to German quality standards.

Henriville, France

Birmingham, UK

Arnedo, Spain

Goražde (Plant 1), Bosnia and Herzegovina

Goražde (Plant 2), Bosnia and Herzegovina

- Company headquarters
- Production site
- Subsidiary
- Agencies

Company headquarters Velbert, Germany

Bhilai, India

Wuppertal, Germany

Tianjin, China

Mionica, Serbia

EMKA worldwide

2,100 employees

Own production at 10 international locations

Represented in 52 countries worldwide

More than 16,000 catalog products

More than 14,000 special products

More than 34,000 customers worldwide

Locking systems

Locks

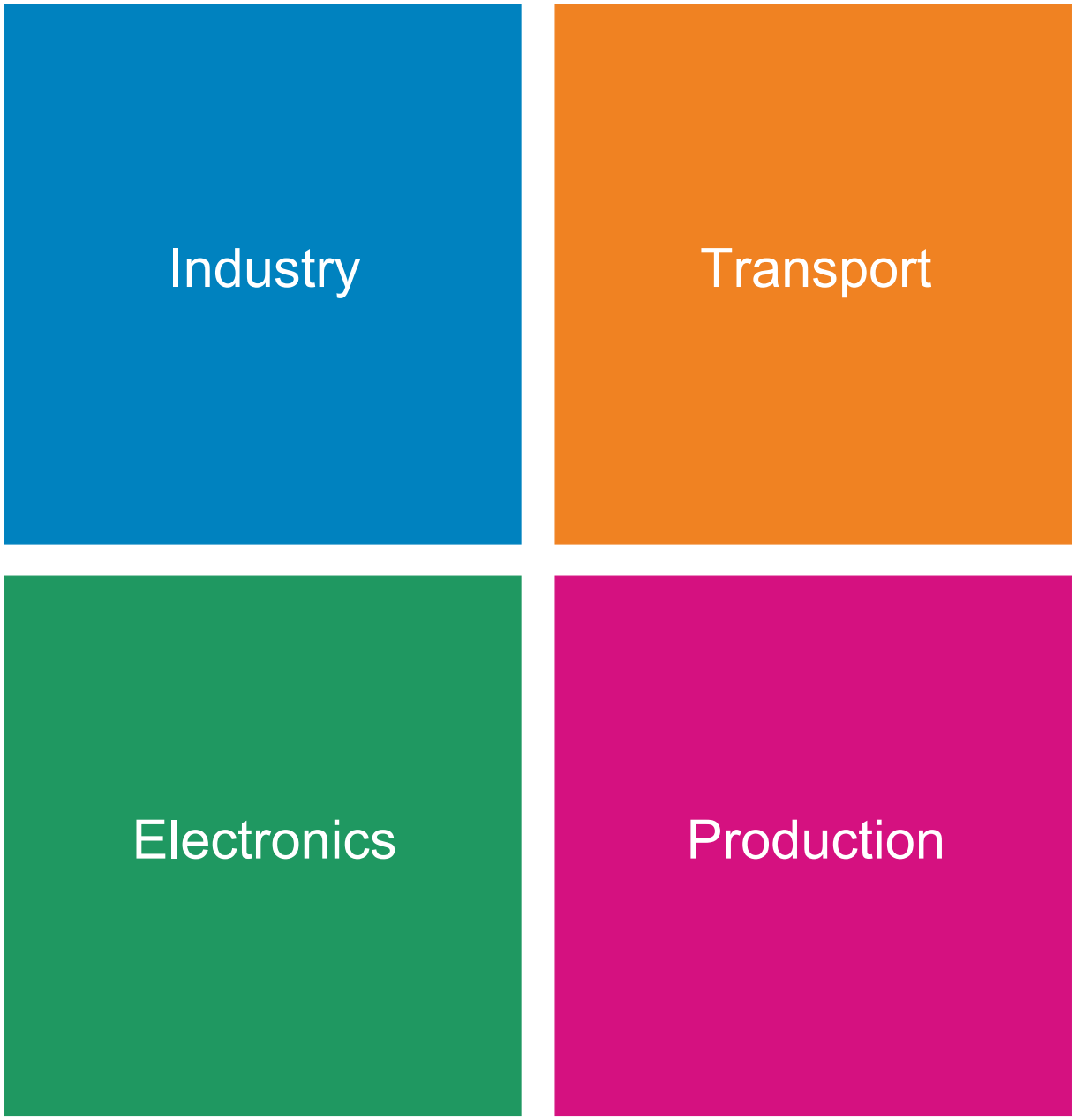
Hinges

Seals

Product areas

EMKA offers a comprehensive product range of ingenious locking technology from a single source. The modular program structure allows a unique variety of components.

The high quality and product standards are guaranteed by an excellent manufacturing know-how and by the certified process control according to ISO 9001.



Business units

The EMKA group is divided into four business units which allow a clear focus on individual sectors and tailor-made solutions for customers.

With its high level of in-house production, EMKA is in control of the entire production flow in every unit – from the concept to the finished product.

Production from A to Z

EMKA is an expert not only in stainless steel casting and in injection moulding of zinc and high performance plastics, but also in extruding rubber and plastic profiles.

Further production technologies include punching, bending, lathe machining, milling, coating and the final assembly of modular product solutions.

Thus, EMKA sets quality standards in locking technology.

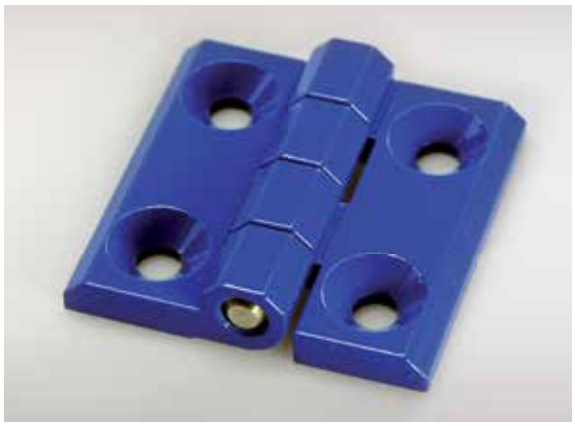
Plastic injection moulding

Punching, bending and metalworking

Zinc die casting

SST Precision Casting

PUR foam technology



Surface finishing

Extrusion of Profiles

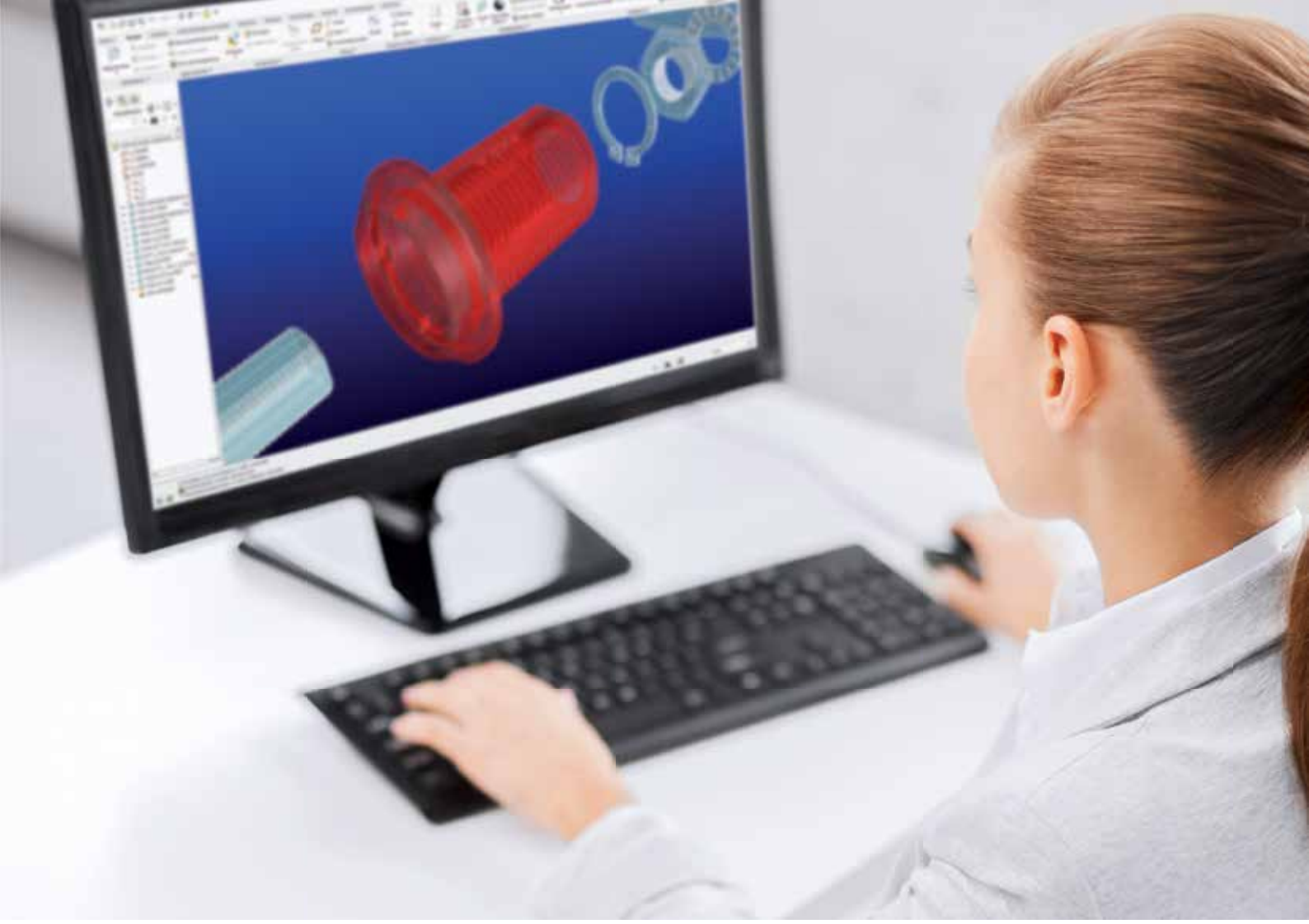
Assembly of profiles

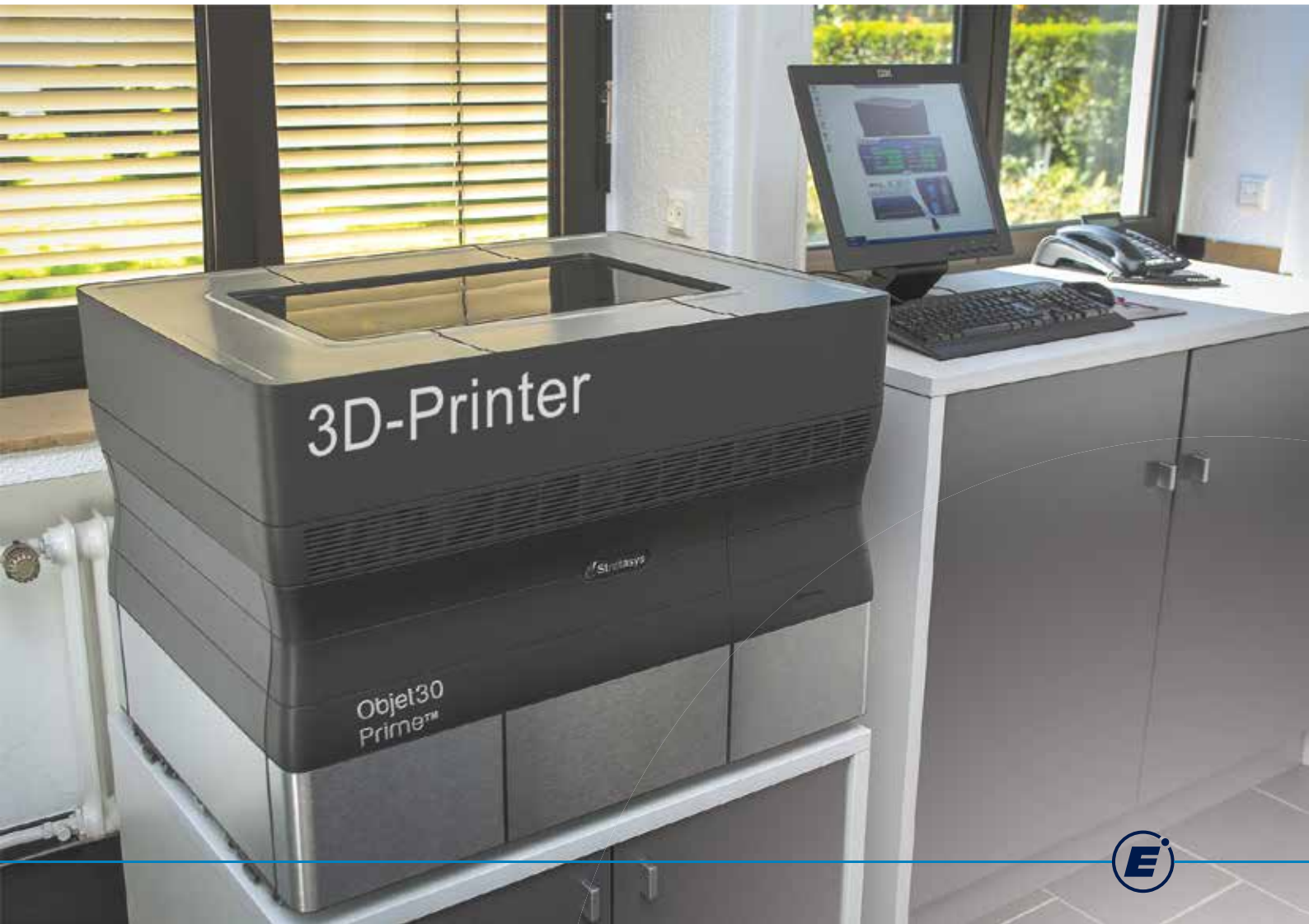
Close communication with the customer from the idea to the product

In the EMKA Technology Centre the innovative products of tomorrow are created. 30 designers and design engineers convert ideas into finished products in close collaboration with the customer. Quite a few of these products are incorporated into the EMKA main catalogue which is thus strongly focused on the current market and customer needs. To this day round 20,000 additional special parts have been created in this way that were tailor-made for special customer requirements by our specialists, intensely tested in our internal test lab and finally produced by EMKA. State-of-the-art CAD systems and development methods such as finite elements method, rapid prototyping and 3D print are only some of the processes that are used in this context. A powerful project management software completes the range of services.

You have got an idea?

Together, let´s make a product out of it!




3D-Printer
Objet30
Prime™

DNV·GL

MANAGEMENT SYSTEM ZERTIFIKAT

Zertifikat-Nr.:
194710-2016-AQ-GER-DAkkS

Datum der Erstzertifizierung:
16. Februar 2013
Ablaufdatum des letzten Zertifizierungszyklus:
15. Februar 2019
Datum der letzten Rezertifizierung:
24. Januar 2019

Gültig:
28. Februar 2019 - 15. Februar 2022

Hiermit wird bescheinigt, dass das Unternehmen

EMKA Beschlagteile GmbH & Co. KG

Langenberger Str. 32, 42551 Velbert, Deutschland
sowie die im Anhang aufgeführten Standorte

ein Qualitäts-Managementsystem in Übereinstimmung mit dem folgenden Standard eingeführt hat und anwendet:

ISO 9001:2015

Dieses Zertifikat ist gültig für die folgenden Produkt- oder Dienstleistungsbereiche:

Entwicklung, Herstellung und Vertrieb von mechanischen / elektronischen Verschluss- Systemen; Scharnieren, Kunststoffspritz-, Automatendrehteilen und Sonderanfertigungen. Management des Herstellungsprozesses von Dichtungen und Druckgussteilen.

Ort und Datum:
Essen, 28. Februar 2019

DAkkS Deutsche Akkreditierungsstelle D-ZM-18453-01-00

Zertifizierungsstelle:
DNV GL - Business Assurance
Schnieringshof 14, 45329 Essen, Germany

Thomas Beck
Leiter Zertifizierungsstelle

Bei Verstoß gegen die im Zertifizierungsvertrag genannten Bedingungen kann das Zertifikat seine Gültigkeit verlieren.
AKKREDITIERTE STELLE: DNV GL Business Assurance Zertifizierung und Umweltgutachter GmbH, Schnieringshof 14, 45329 Essen, Germany.
TEL: +49 201 7296-222, www.dnvgl.de/assurance

DNV·GL

MANAGEMENT SYSTEM ZERTIFIKAT

Zertifikat-Nr.:
283124-2019-AE-GER-DAkkS

Datum der Erstzertifizierung:
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ein Umwelt-Managementsystem in Übereinstimmung mit dem folgenden Standard eingeführt hat und anwendet:

ISO 14001:2015

Dieses Zertifikat ist gültig für die folgenden Produkt- oder Dienstleistungsbereiche:

Entwicklung, Herstellung und Vertrieb von mechanischen / elektronischen Verschluss- Systemen; Scharnieren, Kunststoffspritz-, Automatendrehteilen und Sonderanfertigungen. Management des Herstellungsprozesses von Dichtungen und Druckgussteilen.

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TEL: +49 201 7296-222, www.dnvgl.de/assurance

Zertifikat

Prüfungsnorm	**IATF 16949:2016** **(1. Ausgabe, 2016-10-01)**
Zertifikat-Registrier-Nr.	01 111 125287
IATF-Zertifikat-Nr.	0334831

Unternehmen:
Emka Sealing Systems, S.L.
Pol. Ind. Planaresano - Ctra. de Préjano, 78
26580 ARNEDO (LA RIOJA)
Spanien

Geltungsbereich:
Herstellung von Polymer-Dichtungssystemen

Ohne Produktentwicklung

Durch ein Audit wurde der Nachweis erbracht,
dass die Forderungen der IATF 16949:2016 erfüllt sind.

Gültigkeit:
Dieses Zertifikat ist gültig vom 20.09.2018 bis 19.09.2021.

Ausgabedatum
21.09.2018

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln
Deutschland - NRW

2-IAO-QMC 01003

1/1

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Genau. Richtig.

Certificate

Standard	**IATF 16949:2016** **(1st edition, 2016-10-01)**
Certificate Registr. No.	01 111 125287
IATF Certificate No.	0334831

Certificate Holder:
Emka Sealing Systems, S.L.
Pol. Ind. Planaresano - Ctra. de Préjano, 78
26580 ARNEDO (LA RIOJA)
Spain

Scope:
Manufacture of polymer sealing systems

Excluding Product Design

Proof has been furnished by means of an audit
that the requirements of IATF 16949:2016 are met.

Validity:
The certificate is valid from 2018-09-20 until 2021-09-19.

Release date:
2018-09-21

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln
Germany - NRW

2-IAO-QMC 01003

1/1

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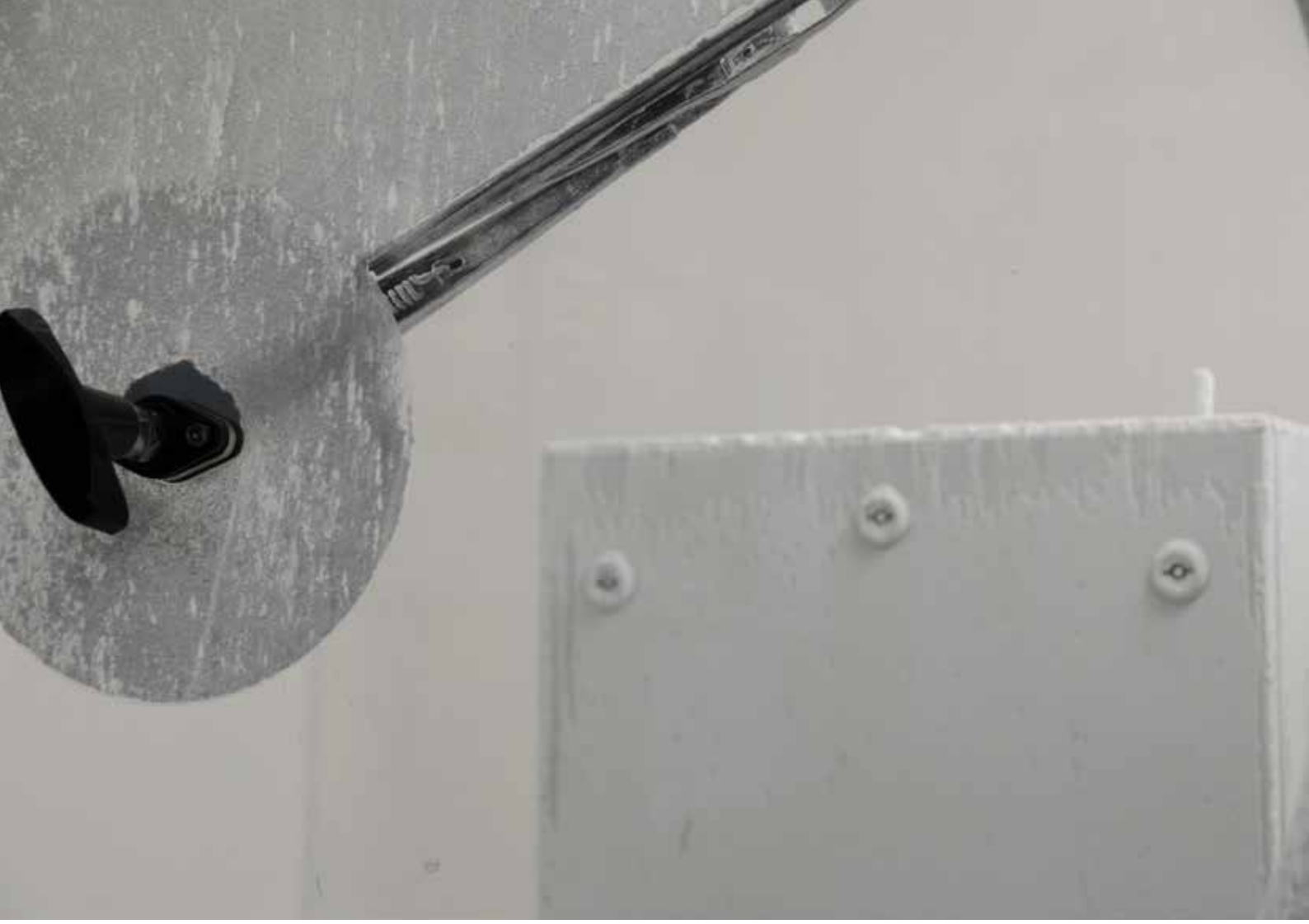
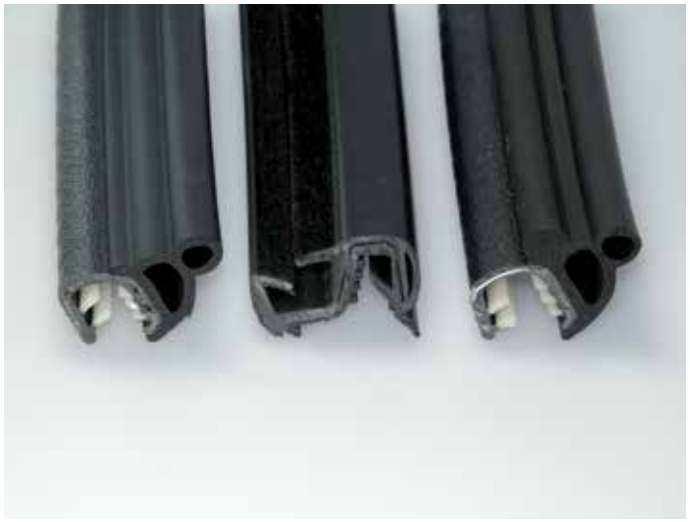
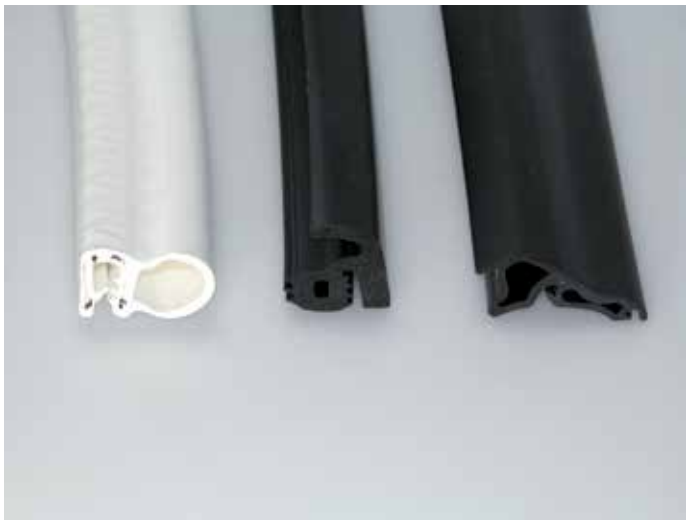


Quality assurance

The high quality and product standards are guaranteed by an excellent manufacturing know-how and by the certified process control according to ISO 9001.

The in-house tool and mould making as well as state-of-the-art development, manufacturing and testing methods ensure a maximum of product quality and reliability.





EMKA know-how guarantees top quality

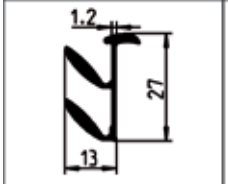
Sealing technology is a core business of EMKA. The company is an expert in extruding rubber and plastic profiles with its own production plants in Spain and England.

EMKA produces more than 1,500 gaskets and rubber profiles made of various materials as catalogue standard as well as countless individual customer solutions after detailed consultation with our sealing experts.

Rubber brought into shape

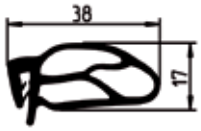
EMKA produces rubber profiles, carrier profiles, hollow chamber gaskets as well as lip seals in different degrees of hardness. Loops and roll editing tape, stamped steel and reinforcements of textile fibres can be additionally incorporated. For subsequent processing we can also manufacture fixed lengths, rings and corner frames.

Glass run seal



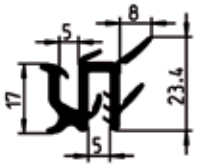
- EPDM 70 ± 5 Shore A
- Inserted metal carrier
- Flock foil

Engine compartment seal



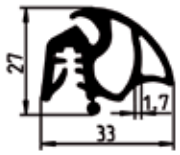
- EPDM 95 ± 5 Shore A
- TPE 60 ± 5 Shore A

Belt guide



- Polypropylene
- TPE 67 ± 5 Shore A
- Flock foil

Door seal

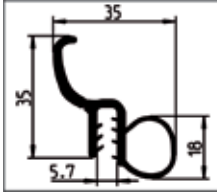


- EPDM 60 ± 5 Shore A
- Foam rubber
- Inserted steel sping core
- Bonded coating
- Fiberglass strand

Door seal

- Foam rubber

Door seal



- EPDM 60 ± 5 Shore A
- Foam rubber
- Inserted steel sping core
- Bonded coating

Extrusion of up to 5 components

- **Soft rubber**
- **Polypropylene**
- **TPE**
- **Foam rubber**
- **Insert steel carrier**
- **Bonded coating**
- **Flock foil**
- **Fiberglass strand**

EMKA Sealing Systems

Arnedo (La Rioja), Spain

- Certified according to ISO 9001, ISO 14001, IATF 16949
- Production area 12,000 m²
- Processing of: EPDM, CR, NBR, thermoplastics
- 1 salt bath extrusion line
- 3 UHF extrusion lines, 2 PVC, 1 TPE
- 5 components extrudable
- Cutting and punching machines for precise lenghts
- Injection presses for mould corners
- Film vulcanization for corners and rings
- SK film laminator

EMKA Profiles

Birmingham, England

- Certified according to ISO 9001
- Production area 4,500 m²
- Processing of: EPDM, CR, NBR
- 3 salt bath extrusion lines
- 2 components extrudable
- Cutting and punching machines for precise lenghts
- Injection presses for mould corners
- Film vulcanization for corners and rings
- SK film laminator

Rubber extrusion lines with salt bath and UHF vulcanization

Wire spiral strip coil with intermediate storage

Bending roller set for profiling the metal insert

Extruder

Line end with automatic take-up device

Extrusion die with emerging rubber profile

Permanent camera-based profile geometry monitoring (PIX-Argus)

UHF vulcanization

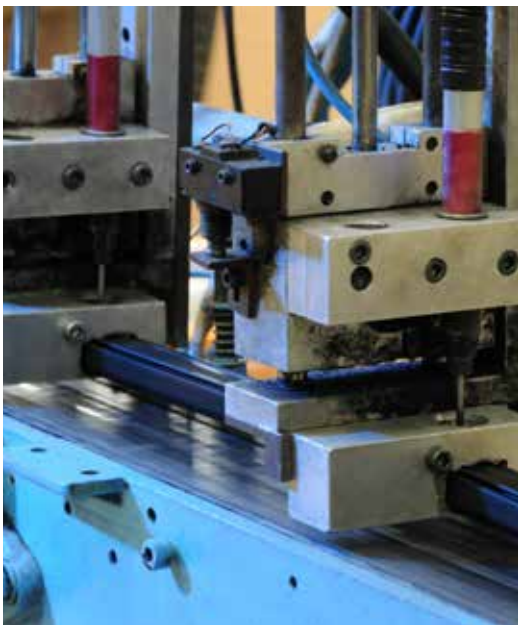
Rubber extrusion line with salt bath vulcanization

220° salt bath to accelerate the vulcanization process

Switch cabinets for line control

Reprofiling

Cleaining and cooling line



Drilling device for vent holes

Laser marking of the rubber profile according to customer require-ments

Robot-controlled insertion of the profile into bulk packaging

PVC extrusion line

Steel clamping band with middle bridge

Extrusion die with emerging PVC profile

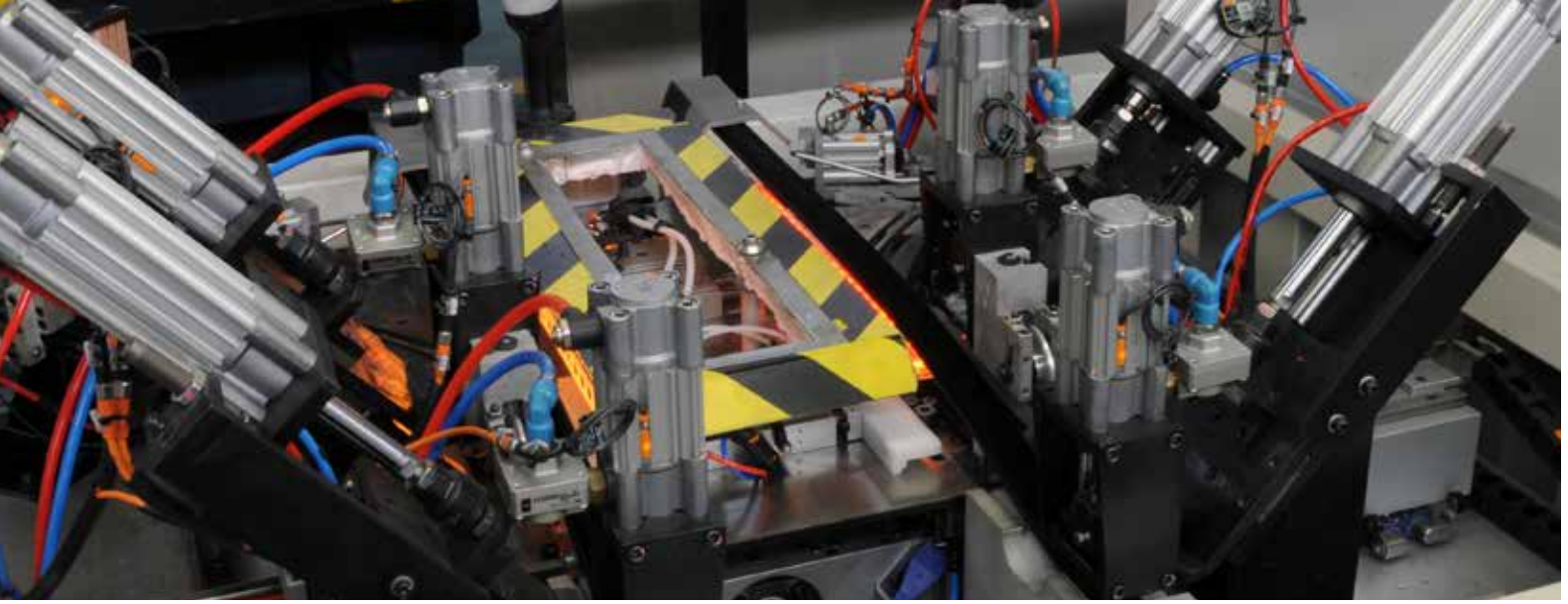
Cooling basin

Line end with automatic take-up device

Bending roller set
for profiling

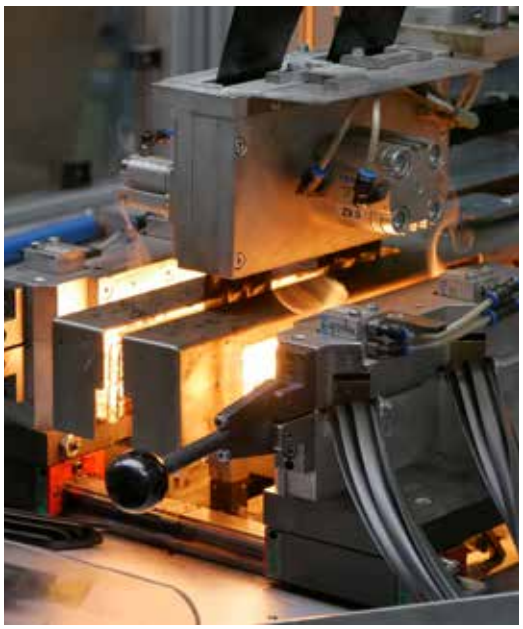
Final shaping

Cut to length and packed
according to customer
requirements



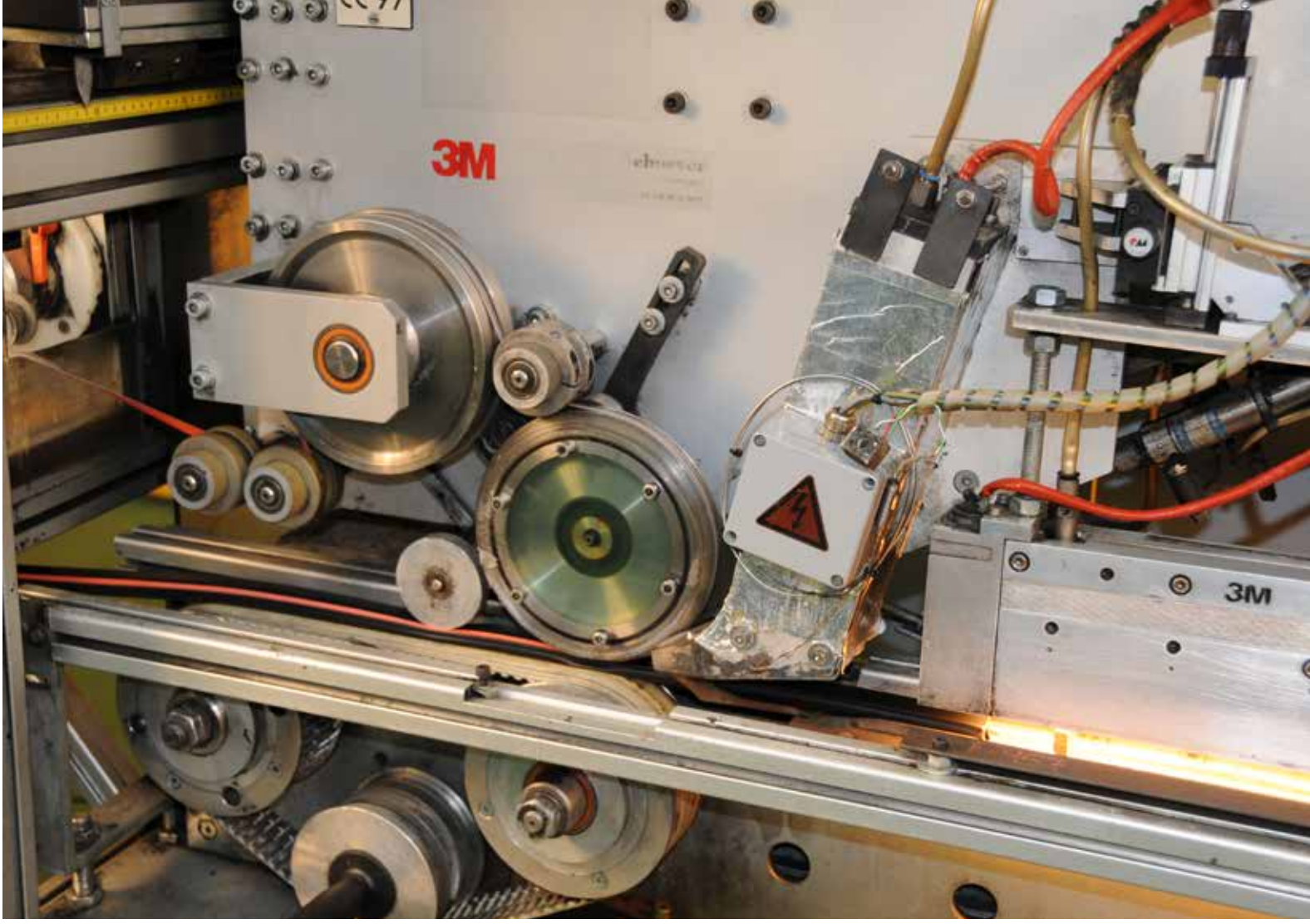
1) Stretch-bending machine
2) Stretch-bent seal

Painting of a moulded-on corner



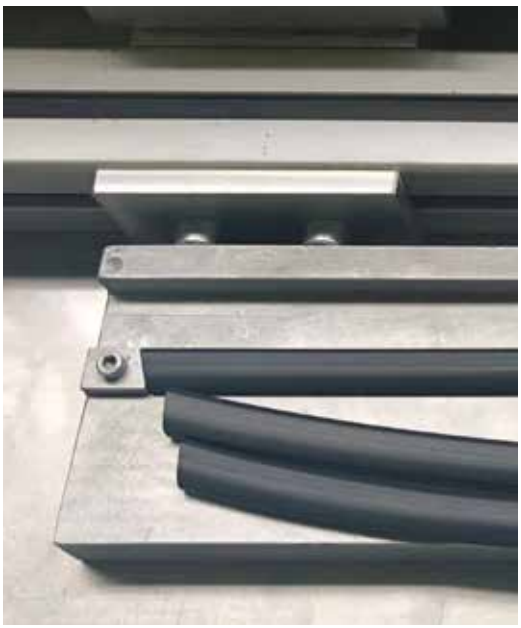
PE film bonding for rings and frames

EPDM film vulcanization for rings and frames



Adhesive tape laminating machine

Injection moulding



Mitre cut

Cut-to-length machine

Success Story

Mountain Top Industries:

Cover system for pick-up loading area

Mountain Top Industries is one of the world's leading manufacturers of pick-up accessories and develops covers, linings and partitions for off-road vehicle cargo compartments and stylish roll bars. Renowned vehicle manufacturers such as VW, Ford, Nissan, Isuzu, Mercedes, Mitsubishi and Toyota already rely on Mountain Top. Cover systems such as the Mountain Top Roll are created from many complexly assembled individual parts.

The nature of the rubber material poses a fundamental difficulty for the closure blades. The soft material is more difficult to process in combination with the hard component. For this challenge Mountain Top has found a reliable partner in EMKA. In just 3 months, the joint team has succeeded in developing a product ready for series production that combines design, geometry, material mix and roller blind functionality.

Success Story

ALSTOM Valenciennes Petite Forêt:

A new solution for passenger seats

The Valenciennes Petite Forêt site is Alstom's centre of excellence for the design, manufacture and testing of metros, trams, RER and double-decker regional trains. All ALSTOM equipment is developed in Valenciennes. The site is also home to the Interior Design Development Centre, which designs parts for the interiors of all Alstom trains worldwide. As a historic player in the Hauts-de-France region (northern France), the site has more than 1,400 employees.

For the Citadis Dualis, a tram train for the Parisian suburbs and the "T12 Express" line, Alstom Valenciennes was looking for a solution to a cleaning problem. Objects and waste that fall behind the seat back can only be removed with considerable effort. In cooperation with EMKA, a simple but effective solution was developed in 5 months: A large-volume U-shaped sealing frame made of soft, flexible foam rubber, which can be attached with adhesive tape, perfectly seals the space between backrest and mounting frame. The new U-frame is not only attached to new vehicles, but is also installed in existing trains during maintenance work.

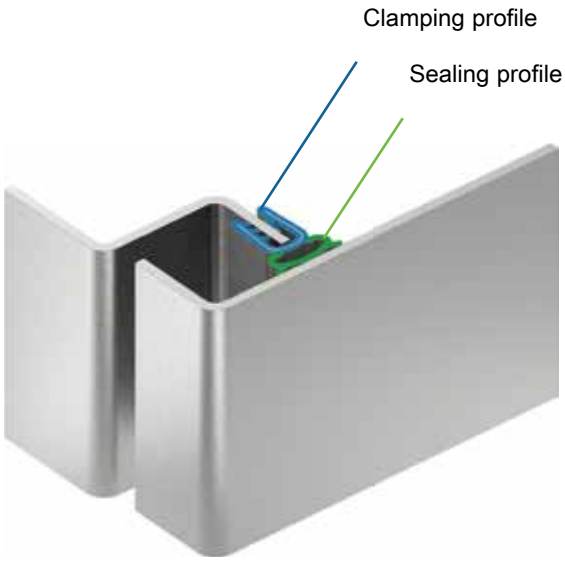
Mounting types

INFORMATION

The right mounting type for every installation situation

The mounting type is a decisive factor in choosing the right profile.

The profiles distributed by EMKA offer mounting types for every application. The four standard mounting types are explained and illustrated below.



Self-clamping

Self-clamping profiles have an internal steel or wire clamping band in the clamping area and thus ensure that the seal is held securely on the sheet edge.

The clamping area and the sealing area usually consist of soft rubber in different Shore hardness as well as foam rubber with different density.

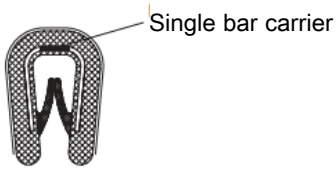
Depending on the installation situation and requirements, a simple edge protection, a clip-on profile with sealing balloon or sealing lip can be attached to the edge.

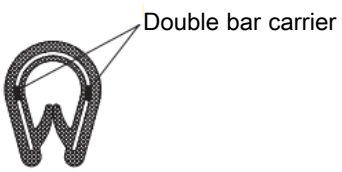
In order to achieve a perfect sealing result, it is necessary to adhere to the bending radii specified in the catalogue. Material buckling or stretching can cause leaks.

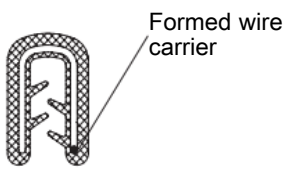
Stamped or wire spiral carrier?

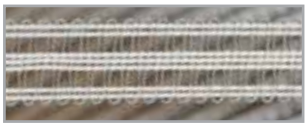
Through the use of steel or wire clamping strips, edge protection profiles can adhere well even without adhesive bonding. Steel strapping generally shows a higher clamping effect than wire strapping. However, with "unbroken" profiles, the restricted bending radii laterally over the legs can be disadvantageous. This can be remedied by breaking the connecting webs; however, this can result in an "unsteady" appearance of the profile strand. In most technical applications the appearance is irrelevant.

The choice between wire or steel clamping band depends on the respective installation situation and the desired appearance.









Plugged

The plugged profile does not have a metal insert and is not glued.

It is plugged into a gap or channel between two edges and safely seals the cavity in this way.

Clamped

Clamping profiles are ideal for screwless insertion of windows into metal or wood cut-outs. The use of a rubber clamping profile guarantees a firm, durable and rattle-free connection in many types of special vehicles, mobile construction site cabins and large machines.

In addition to the filler profile, you can also order the mounting aids from EMKA.

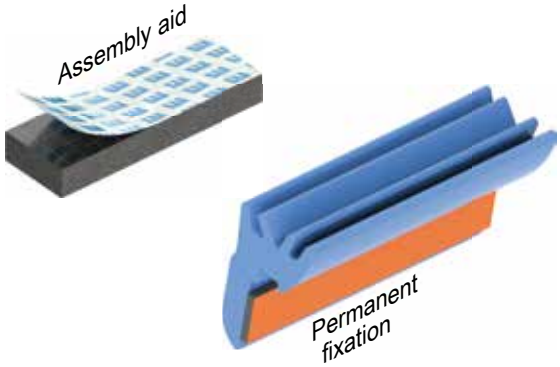
Further information on cross-sections, material compositions, glass thicknesses, single or double glazing and bending radii is available in this catalogue or on request.

Glued

Bonding technology is particularly suitable for economical and quick fastening. The glued profile is glued onto a flat area.

Due to an adhesive strip attached to the profile, the handling is very easy to install.

In the case of the adhesive cellular rubber profiles, integrated cotton threads guarantee a stretch-free installation and thus prevent stretching and subsequent shrinkage of the seal.

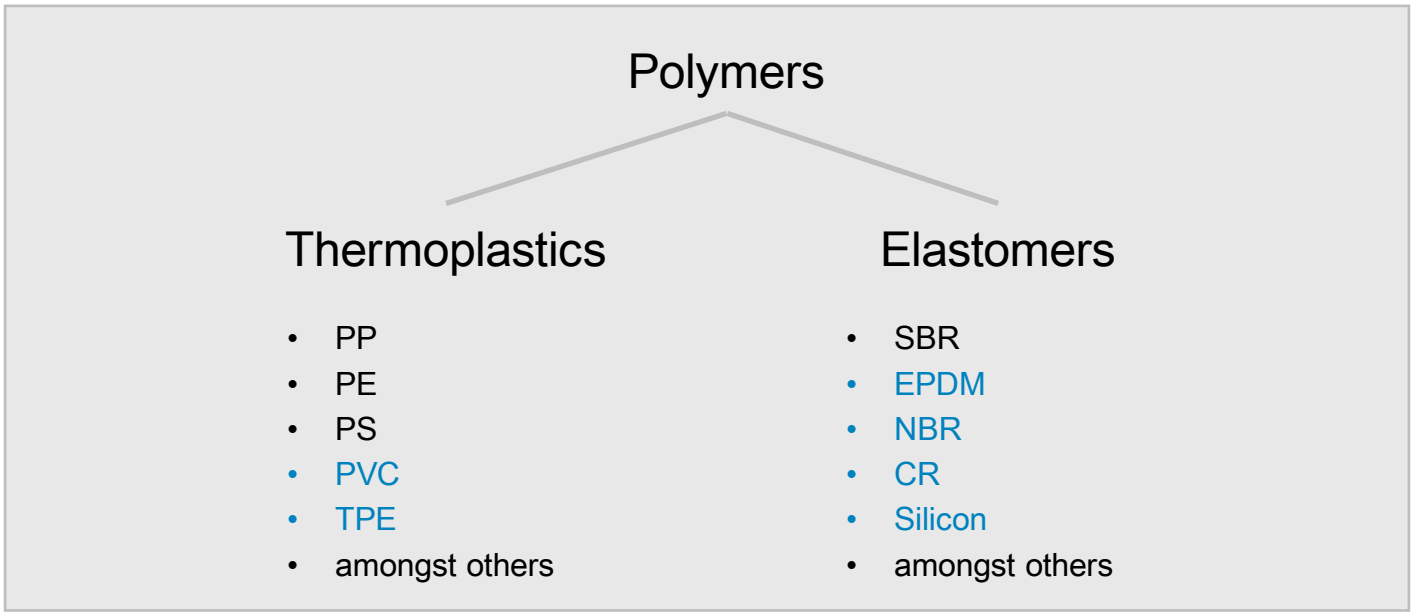


Materials

INFORMATION

What are rubber profiles from EMKA made of?

In addition to the base material, many characteristics influence the function and quality of the seal. These include elasticity, residual compression and resistance to chemicals, heat and environmental influences.



Material characteristics

EPDM (ethylene propylene diene monomer rubber)

EPDM elastomers are the most commonly used materials in the "rubber" sector. The automotive industry is the largest consumer of EPDM products, e.g. for sealing profiles in doors and trunks, windows and headlights, bumpers, hoses and sealing elements. Due to its good resistance to hot water, EPDM is also used in washing machines and dishwashers for seals and hoses etc. EPDM is not resistant to mineral oils and greases but has good chemical compatibility. The operating temperature is between -40° C and +100° C, temporary up to +130° C.

Characteristics of EPDM:

- Very good resistance to aging
- UV resistance
- Very good resistance to weathering
- Very good resistance to ozone
- Very good electrical insulation properties
- Resistant to alcohols and diluted acids (e.g. brake fluids)
- Application range -40° C to +100° C
- Special EPDM compounds also -50° C to +150° C with hot water and air

NBR (butadiene acrylonitrile rubber)

Acrylic butadiene rubber (NBR) is characterised by a very high resistance to lubricating oils, while resistance to fuels can only be achieved by special additives. NBR is also not resistant to polar solvents such as acids and alkalis. NBR is therefore generally used when the material is in constant contact with oil and other mineral oil-based greases. The cold resistance of the elastomer can be influenced by certain additives, but the weathering and ozone resistance of NBR is comparatively low. EPDM profiles are therefore the much better choice for outdoor applications.

Characteristics of NBR:

- Very good oil resistance
- Small compression set
- Good low temperature behaviour
- Typical application range -30° C and +100° C (with special compounds)
- Application in the food industry possible

Silicon

Silicone is difficult to attack chemically, is resistant to high temperatures and at the same time flexible at low temperatures, making it ideal for hygiene applications. In the event of a fire, only little, non-toxic smoke is produced, making it ideal for use in railway technology. Silicone can be coloured in almost any colour.

Characteristics of silicon:

- Good elasticity even at very low and high temperatures
- Application range between -60° C and +200° C
- Conditional resistance to oils
- Resistance to weathering
- Resistance to aging
- Resistance to ozone
- UV resistance
- Very well suited for medical components
- Colour fastness

Material overview thermoplastics

Short name	Typical operating temperatures	Resistances (Resistance list on following pages)					Characteristics
		Mineral oil	Petrol	Sulphuric acid (conc.)	Water	Ozone	
POM	approx. -40°C to +100°C	1	1	3	1	3	Good mechanical characteristics, abrasion resistant, dimensionally stable, good chemical resistance.
PVC	approx. -10°C to +70°C temporary approx. -40°C up to +90°C	2	3	3	1	1	Good chemical resistance and mechanical values, soft PVC hardens in petrol and oil, good weldability and bonding properties.

Material overview elastomers

Short name	Typical operating temperatures	Resistances (Resistance list on following pages)					Characteristics
		Mineral oil	Petrol	Sulphuric acid (conc.)	Water	Ozone	
CR	approx. -25°C to +100°C	3	2	3	2	3	Good mechanical properties, resistant to weathering and ozone. Does not burn in its own flame.
EPDM	approx. -40°C to +100°C temporary up to +130°C	3	3	1	1	1	Versatile material (seals). Good resistance in hot water, very good resistance to ageing, weathering and ozone.
Silicon	approx. -60°C to +200°C	2	3	3	1	1	High thermal resistance, resistant to ageing, ozone and weathering. Good electrical insulation properties.
NBR	approx. -30°C to +100°C temporary up to +120°C	1	2	3	1	3	Versatile material. Seals and moulded parts in contact with mineral oil or fuel. Poor resistance to ozone and weathering.

1 = very good resistance, little or no attack (for thermoplastics: swelling < 3% or weight loss <0.5%)
2 = good resistance, weak to moderate attack (for thermoplastics: swelling 3-8% or weight loss 0.5-5%)
3 = not resistant, strong attack to complete destruction (for thermoplastics: swelling 3-8 % or weight loss >5 %)

Note
The indicated resistances and material properties are only guide values and do not relieve the customer from the responsibility of executing their own tests for evaluating the utilisability. Please note that elastomers have a limited life due to e.g. ageing. This is why we recommend regular inspection and replacement intervals.
All information is correct to our current knowledge. However, we do not guarantee the correctness and completeness of the information.

Tolerances of the sealings and further information

INFORMATION

Tolerances of the profiles:

Profiles are tolerated in accordance with DIN ISO 3302-1.
Soft rubber usually according to 'E2' and sponge rubber according to 'E3'.

Following are some examples:

Nominal dimension		Tolerance class DIN ISO 3302-1 E2	Tolerance class DIN ISO 3302-1 E3
over	to		
0	1,5	±0.25	±0.40
1,5	2,5	±0.35	±0.50
2,5	4,0	±0.40	±0.70
4,0	6,3	±0.50	±0.80
6,3	10	±0.70	±1.00
10	16	±0.80	±1.30
16	25	±1.00	±1.60
25	40	±1.30	±2.00
40	63	±1.60	±2.50

The appropriate storage is important (optimal storage temperature +5°C to +20°C). For the storage of gaskets, attention should be paid to ISO 2230 (guidelines for storage, maintenance and cleaning of rubber products). If possible, wrong storage in respect to long lay days or storing times should be avoided, since the mechanical characteristics may change.

Recommended compression for sealing profiles:

The compression of our sealing profiles should be 50% max. since otherwise the function (tightness) and the resetting forces are affected. In practice, the profiles are compressed between 30-50%.
It does not matter, whether it is a EPDM, NBR or a silicone profile. Here, the mechanical properties are (unlike the chemical resistances) quite comparable. If the gasket is deformed beyond these limitations, there is the risk of the compression set (DVR) becoming too big because the material deforms plastically as well.
Then the gasket would be designed too lean.

Resistances:

Because of the large variety of possible chemicals, solvent (concentrations), operating temperatures and times, no evaluations concerning the possible resistances can be made at this point. In every individual case, a test in the present circumstances, like concentration, temperature and duration of the impact, is recommended.

Fire protection:

We supply materials certified according to the current fire protection standards for rail vehicles.
e.g. according to DIN EN 45545-2, ASTM E1354, ASTM E662, ASTM C1166, BSS 7239, SMP 800C .
Whether the achieved categories fit to the respective requirements or vehicle classes has to be verified for the individual case.

Disclaimer:

Disclosed values are generally guide values determined on test panels and correlate with our respective state of knowledge. They do not, however, relieve the final user from their own thorough tests.

Sealing profile and clamping profile made of 100 % EPDM

EMKA successively changes the material for the self-clamping sealing profiles of the 1011 program to EPDM (ethylene propylene diene elastomer). Until now, the gaskets were made of a mixture of EPDM and polyvinyl chloride (PVC).

With the changeover, the EMKA gaskets once again gain significantly in quality. The EPDM material has a wider thermal application range with high resistance to weathering, UV radiation and acids, which makes them particularly durable. The higher quality gaskets, which EMKA produces in its own factories in Spain and Great Britain, are manufactured without extra charge. The conversion of the profiles will take place successively.

EMKA offers a wide range of seals for housing and control cabinets as well as for railway, HVACR and hygiene applications. The material is very well suited for sealing control cabinets, as it has a high compressive elasticity and good resilience. After stretching or compression, the elastomer returns approximately to its original state. Foam rubber profiles are soft, offer a good contact surface to the case under light pressure and thus provide an ideal seal. Many tolerances on the control cabinet door can thus be bridged. EMKA sealing profiles are particularly high-quality and safe, as numerous certificates according to DIN, VDI, UL or fire protection standards prove.

Advantages of the elastomer EPDM

The material is highly resistant to ozone, aging and weathering and is also highly resistant to hot water and steam.
EPDM is not resistant to mineral oils and fats, but has a high chemical compatibility.

Advantages of the seal made of 100 % EPDM

- Equivalent insertion and holding force
- Large deformation on hose seal
- Lower compression force
- Better temperature range from -40°C to +100°C, temporary up to +130°C
- Better UV and media resistance
- Customized vulcanization of rings and frames
- Possibility to produce the profiles according to standards UL, EN 45545-2 or VDI 6022 (new tools may be necessary)

In the technical data sheets, the smallest possible bending radii of the respective profiles are specified in order to avoid material compression and thus leakage.

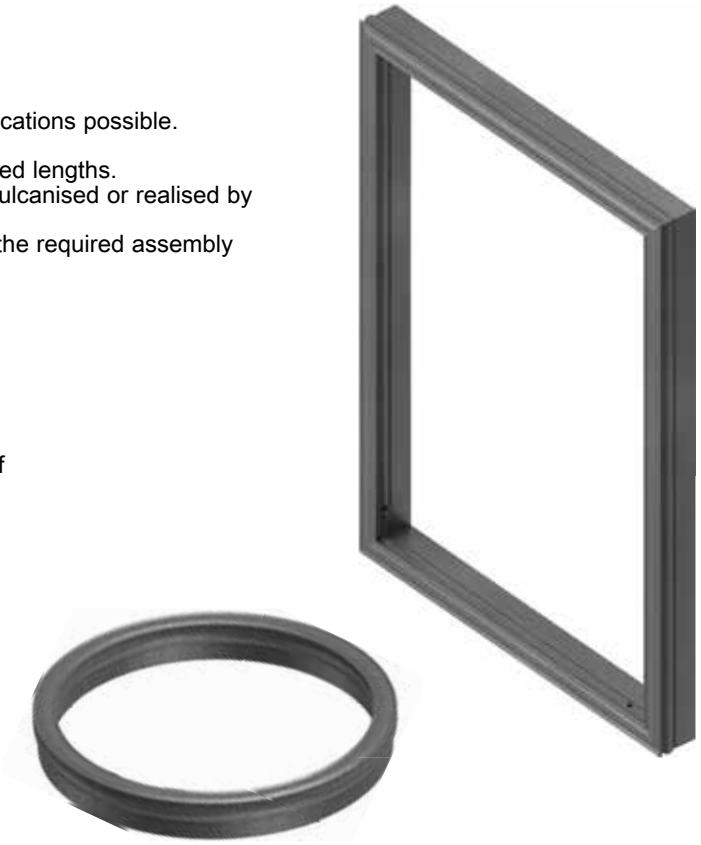
Processing options

INFORMATION

Frames and rings information

Readily customised frames and rings according to customer specifications possible.

We offer numerous processting options for the known profiles in fixed lengths.
For frames and rings the butt and corner joints can be glued, film vulcanised or realised by injection moulding (formed corners / end feeds).
Possibly arising tool costs needs to be clarified beforehand due to the required assembly option.



Product benefits

– The extact and time-intensive mitre-cutting of the gasket or the observance of the given minimum bending radius of the gaskets are not necessary
– The assembled frames and rings facilitate the mounting on doors and cabinets frames
– No leakiness at butt ends and mitre joints

Glueing

The most simple process is to glue two profile ends.
For all rings, vent holes are strongly recommended as the compression force increases in a closed ring.
A better solution to glueing two profiles is film vulcanization.

Film vulcanising

Film vulcanising is a permanent and durable process.
A foil of the same material is inserted between the profile ends that are to be vulcanised. The required time for film vulcanising is longer than for glueing.

Injection moulding

Injection moulding means formed corners and end injection moulding.
Injection molding is e.g. a process to produce special corners for frame. The example next shows ① a rounded frame while the clamping range ② is produced rectangular.
This option is not possible for vulcanising gasket ends with mitre joint ①.

Processing options

INFORMATION

Cutting to length

Upon customer request, profiles can be cut and packed online - i.e. in the running production line - or subsequently to lengths between 5 - 500 cm. Angled cuts, mitre cuts and notches are also possible.

Application of adhesive tape

The toolless mounting by gluing sealing profiles is used for more and more applications. Joining very different materials as well as low-stress bonding by means of large-area glued joints are major advantages here. Double-sided adhesive tapes can be applied subsequently for the respective application.

Coating

The natural, high friction coefficients of an elastomer can be significantly reduced with a bonded coating. This operation can be carried out online - in the running production line - or subsequently, for example after corner vulcanization. The coating is transparent and therefore hardly visible.

Flocking

The flock fibres reduce the coefficients of friction, which are very high in rubber, and can compensate for small irregularities and tolerances. Typical applications are, for example, window seals in automotive engineering.
Profile flocking changes the optical and haptic characteristics.

Sheathing / EMC sealing

A conductive foil is wrapped around the rubber profile and firmly bonded to the surface. The conductive connection of frame and door reduces electromagnetic interference.
The attainable shielding effectiveness depends on numerous influencing factors.

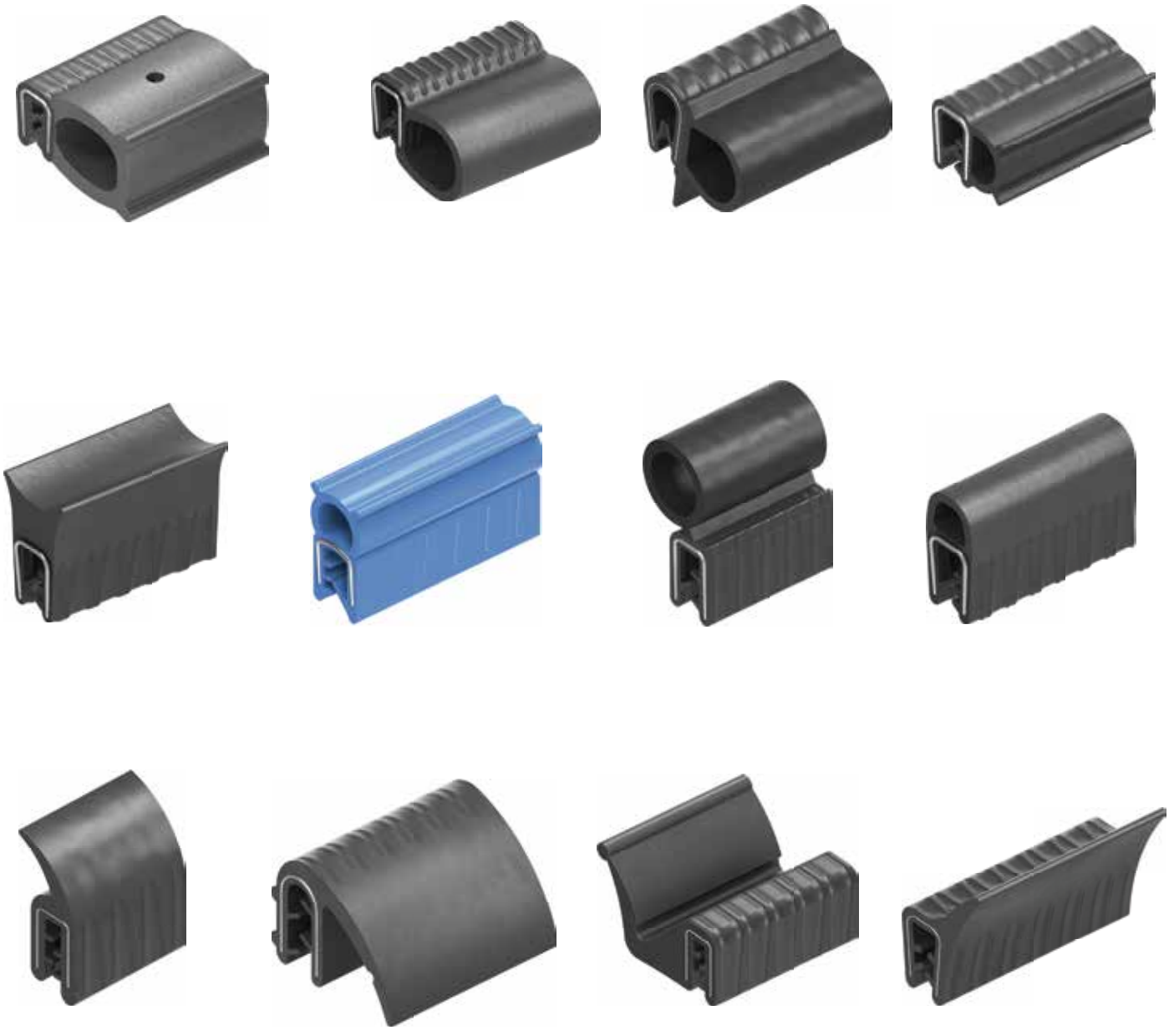
Notes:

Variety of shapes and materials

EXAMPLES

Edge protection

Self-clamping sealing profiles



Self-clamping sealing profiles made of fire protection compound

U-section profiles

Profiles with adhesive tape

Clamping and holding profiles

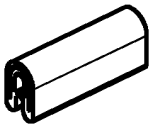
Profiles for industrial applications

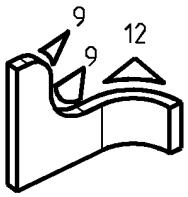
As a system supplier for industrial enclosure construction, EMKA sees itself as a problem solver in order to develop an economically reasonable approach for opening, closing and sealing the enclosure together with the customer.

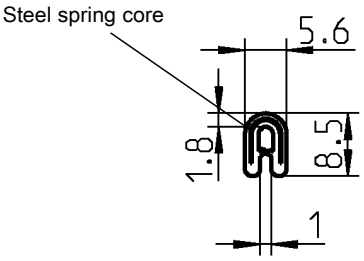
Through the development of individual concepts EMKA offers the appropriate sealing technology for different industrial sectors. Thus EMKA considers not only the seal, but also the closure and hinge technology as well as the material and construction of the respective industrial application. In doing so, EMKA falls back on a broad portfolio of existing sealing materials.

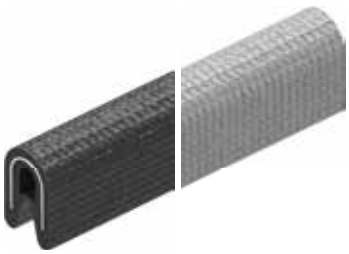
Contact our consultants and benefit from our expert knowledge!
EMKA provides the right solution for every application!

Edge protection
PROGRAM 1010

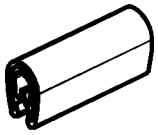


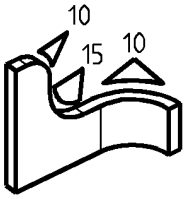


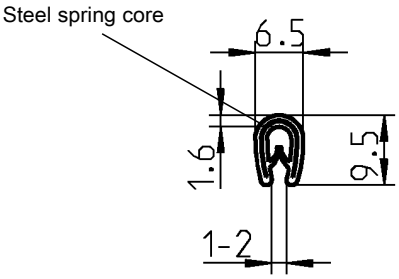




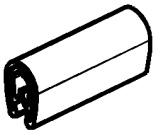
Edge protection PVC 70 ± 5 Shore A, colour of your choice	
black	1010-03
light grey	1010-03-01

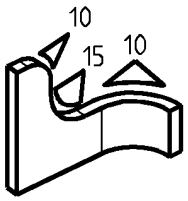


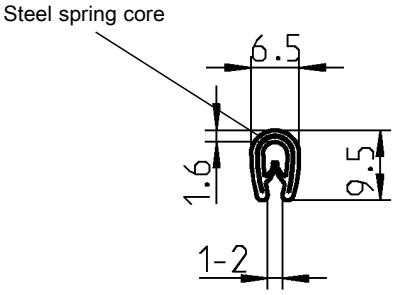


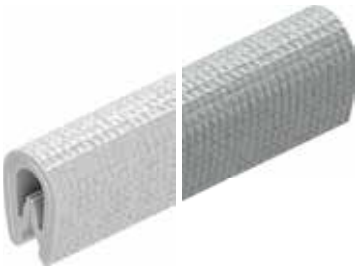


Edge protection PVC 70 ± 5 Shore A, black	
	1010-02









Edge protection PVC 70 ± 5 Shore A, colour of your choice	
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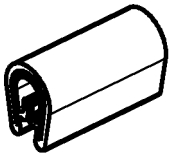
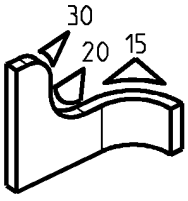
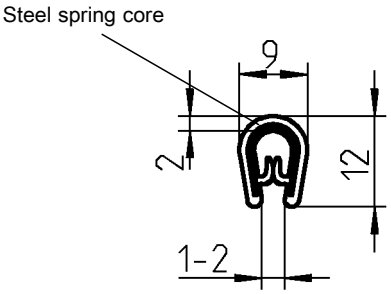
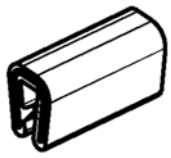
silver	1010-04-02

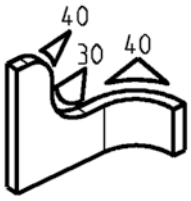


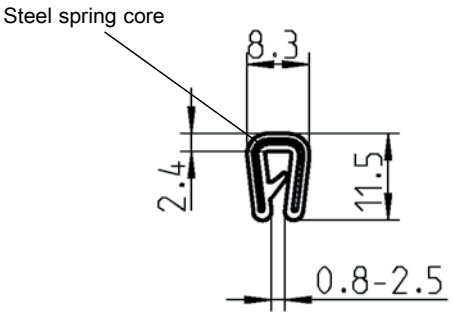




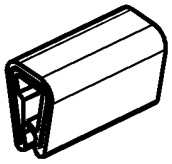
Edge protection PVC 70 ± 5 Shore A, black	
	1010-10

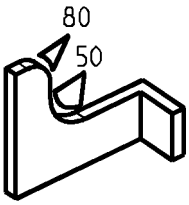


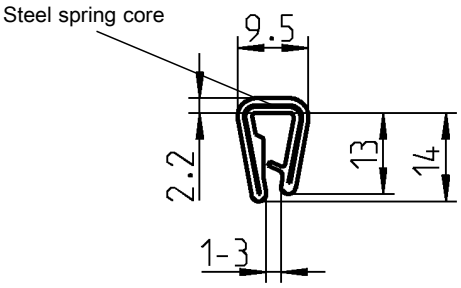




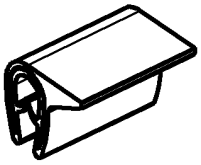
Edge protection EPDM 60 ± 5 Shore A, black	
	1010-12

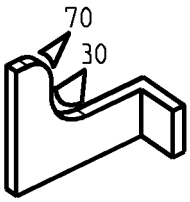


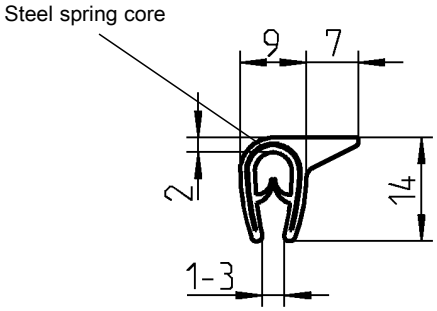




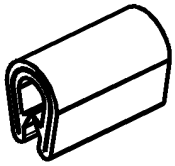
Edge protection PVC 70 ± 5 Shore A, light-grey	
Steel spring core continuous	1010-05

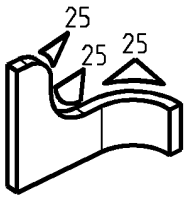


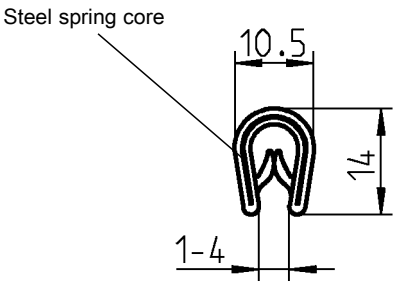




Edge protection PVC 70 ± 5 Shore A, anthracite	
Steel spring core continuous	1010-09

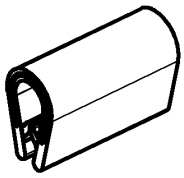


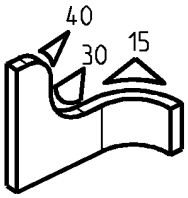


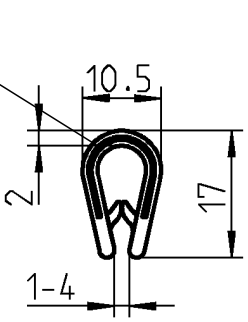


Edge protection PVC 70 ± 5 Shore A, black	
	1010-01

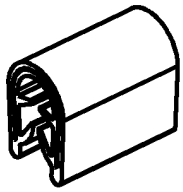
Edge protection
PROGRAM 1010

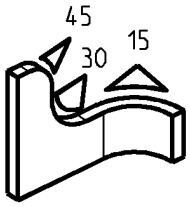


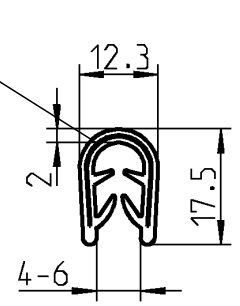




Edge protection PVC 70 ± 5 Shore A, black	
	1010-08







Edge protection PVC 70 ± 5 Shore A, colour of your choice	
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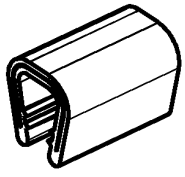
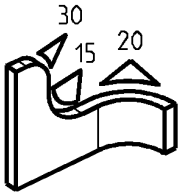
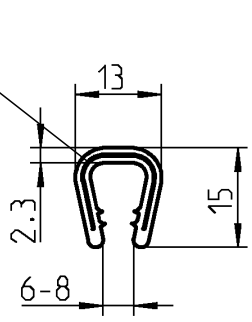
dark grey	1010-11-01



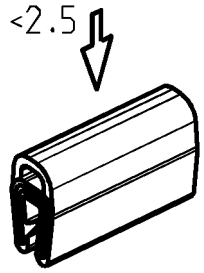




Edge protection PVC 70 ± 5 Shore A, colour of your choice	
black	1010-06
light grey	1010-06-01

Notes:

Self-clamping seals
PROGRAM 1011



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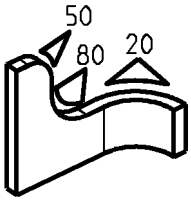
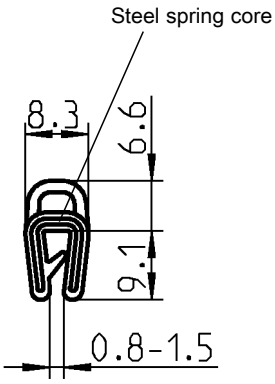
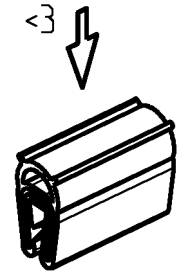




Sealing profile sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black	
	1011-24-01

c UL us *



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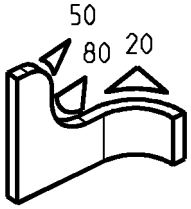
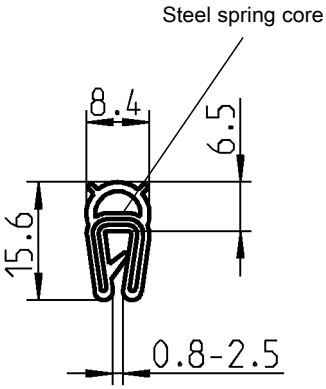
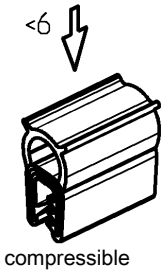




Sealing profile sponge rubber and clamping profile material of your choice	
Sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black	1011-10*
Sponge rubber NBR, clamping profile NBR 60 ± 5 Shore A, black	1011-50

c UL us *



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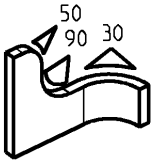
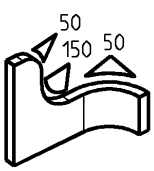
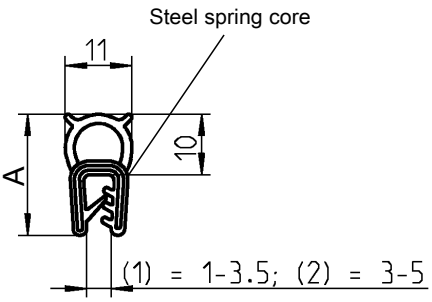


1011-05, -15

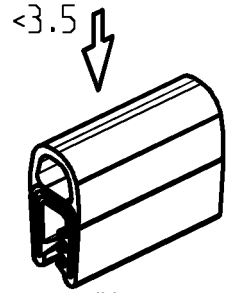


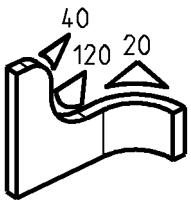
1011-47, -49

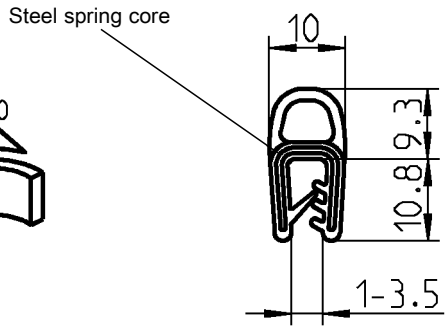


Sealing profile sponge rubber and clamping profile material of your choice	A	
Sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black	20	1011-05* (1)
Sponge rubber NBR, clamping profile NBR 60 ± 5 Shore A, black	21	1011-15 (1)
Sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black	21	1011-49 (2)
Sponge rubber NBR, clamping profile NBR 60 ± 5 Shore A, black	21	1011-47 (2)

* c UL us
UL 50
UL 94-HB

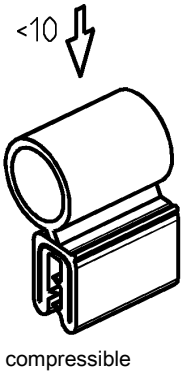


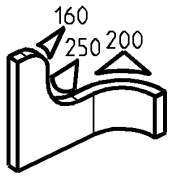


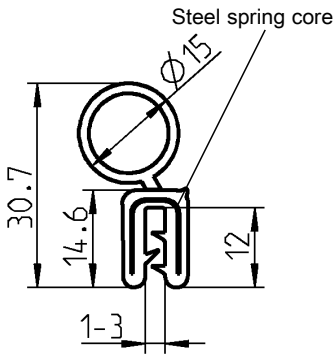


Sealing profile sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black

1011-18-01

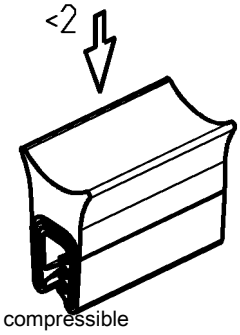


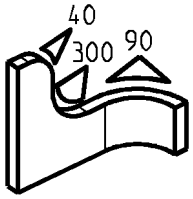


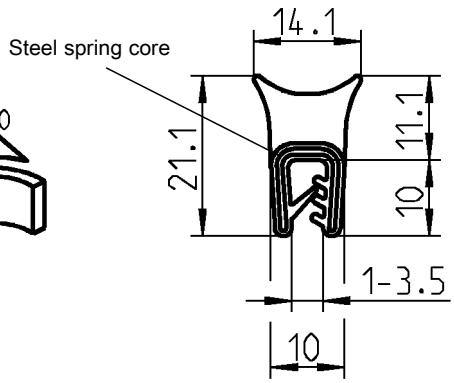


Sealing profile sponge rubber EPDM, clamping profile EPDM 60 ± 5 Shore A, black

1011-34

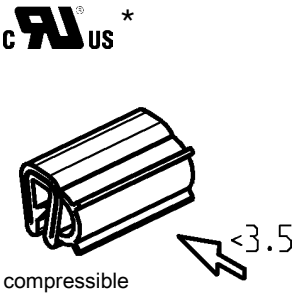


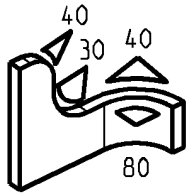


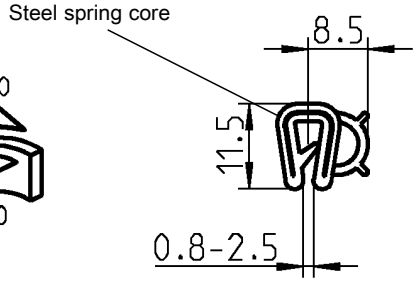


Sealing profile sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black

1011-21-01





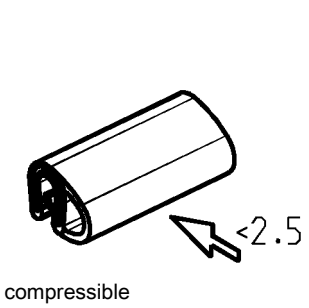


* c US
UL 50
UL 94-HB

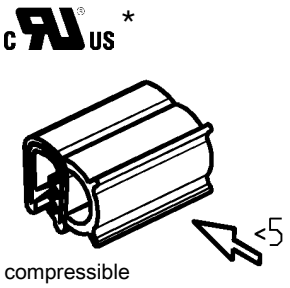
Sealing profile sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black

1011-09*

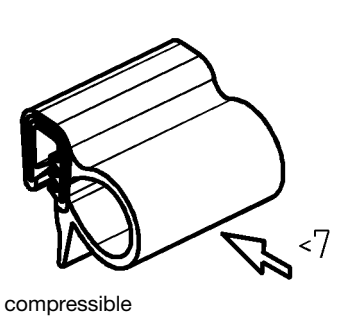
Self-clamping seals
PROGRAM 1011



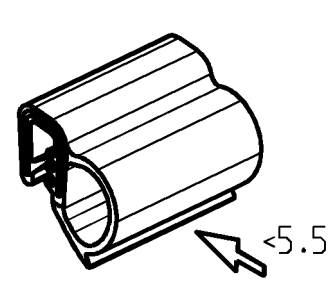
Sealing profile sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black	
	1011-20-01



Sealing profile sponge rubber and clamping profile material of your choice	
Sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black	1011-06*
Sponge rubber NBR, clamping profile NBR 60 ± 5 Shore A, black	1011-16

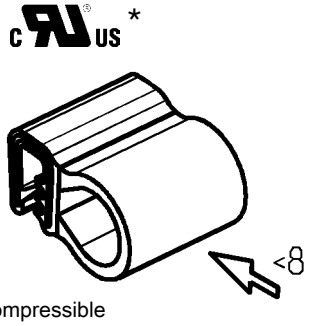


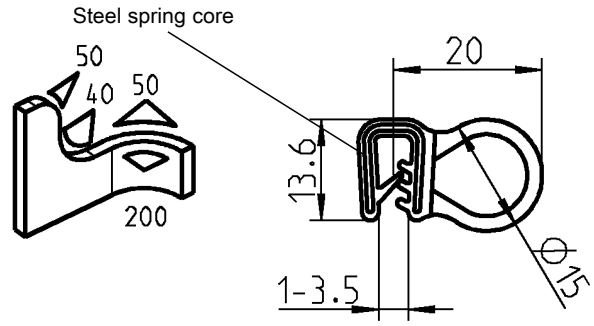
Sealing profile sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black	
	1011-25-01



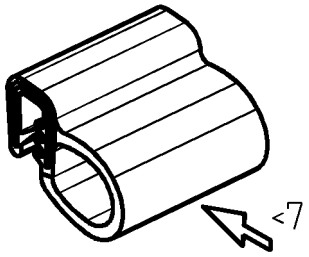
* c UL us
UL 50
UL 94-HB

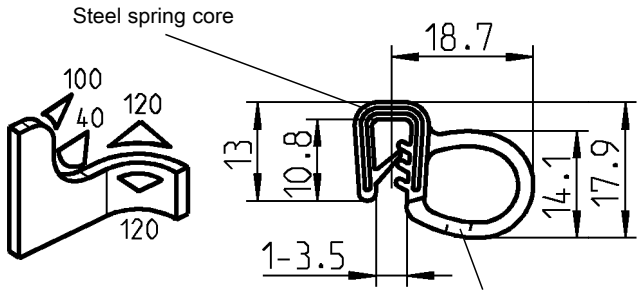
Sealing profile sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black	
	1011-23-01



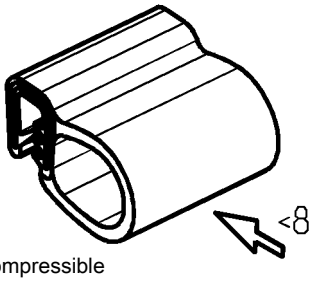


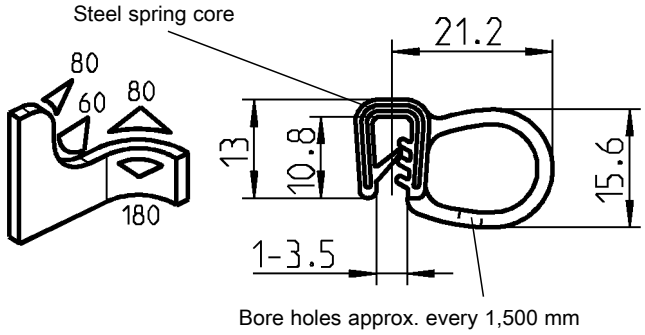
Sealing profile sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black	
	1011-12*



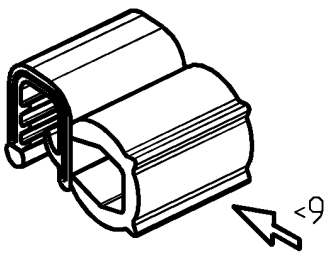


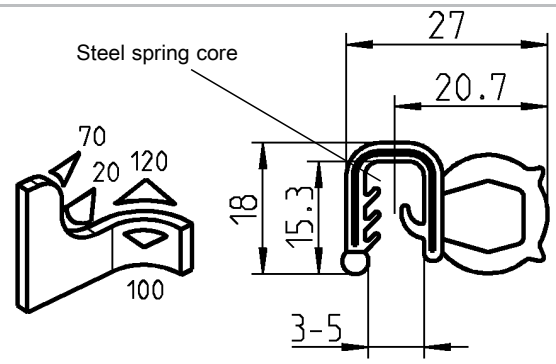
Sealing profile sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black	
	1011-19-01





Sealing profile sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black	
	1011-22-01

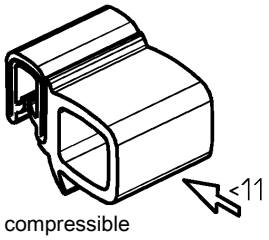


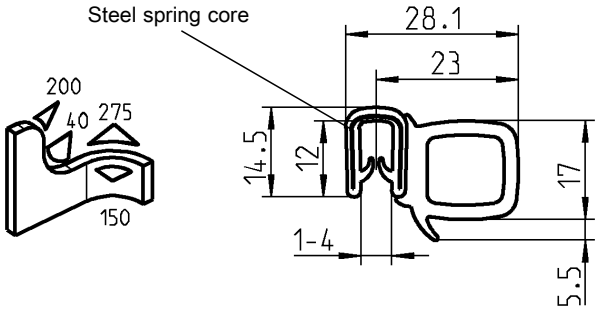


* c US
UL 50
UL 94-HB

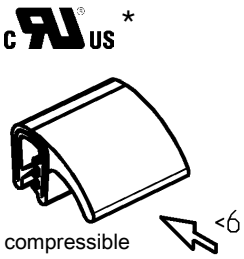
Sealing profile sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black	
Bore holes approx. every 300 mm	1011-45

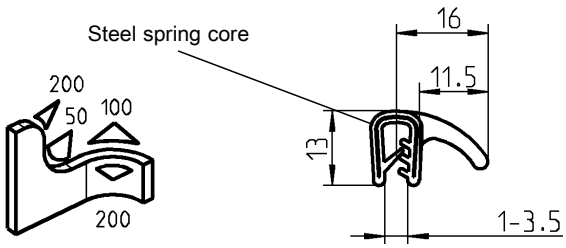
Self-clamping seals
PROGRAM 1011



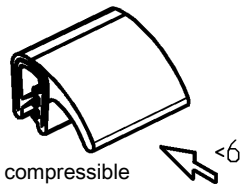


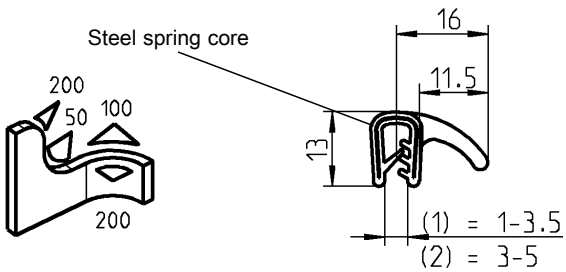
Sealing profile sponge rubber EPDM, clamping profile PVC 70 ± 5 Shore A, black	
	1011-26



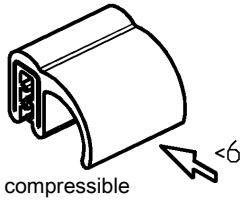


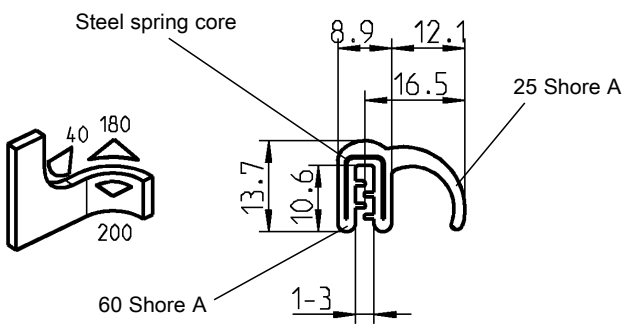
Sealing profile sponge rubber EPDM, clamping profile EPDM 60 ± 5 Shore A, black	
	1011-08*





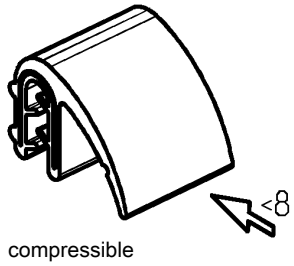
Sealing profile sponge rubber ENBR, clamping profile NBR 60 ± 5 Shore A, black	
(1)	1011-46
(2)	1011-48

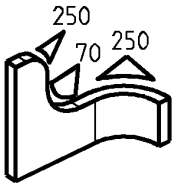


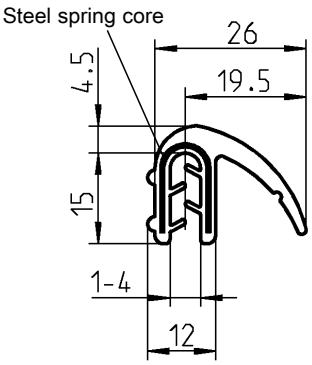


* cULus
UL 50
UL 94-HB

Sealing profile sponge rubber EPDM 25 Shore A, clamping profile EPDM 60 ± 5 Shore A, black	
	1011-41

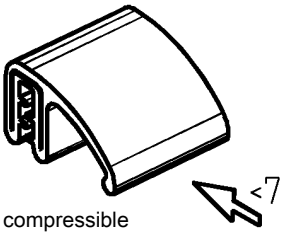


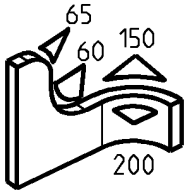


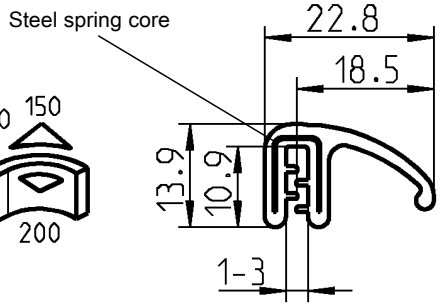


Sealing profile sponge rubber EPDM, clamping profile EPDM 60 ± 5 Shore A, black

	1011-40

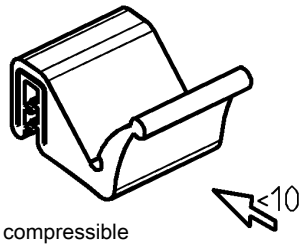


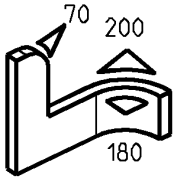


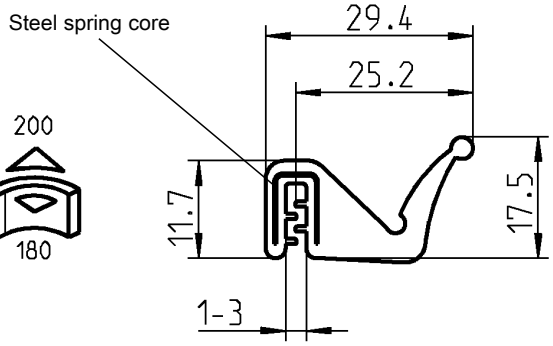


Sealing profile sponge rubber EPDM, clamping profile EPDM 60 ± 5 Shore A, black

	1011-33

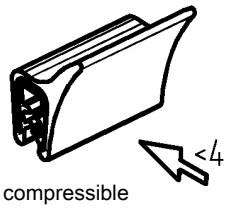


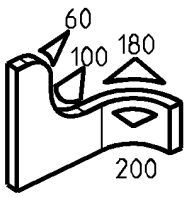


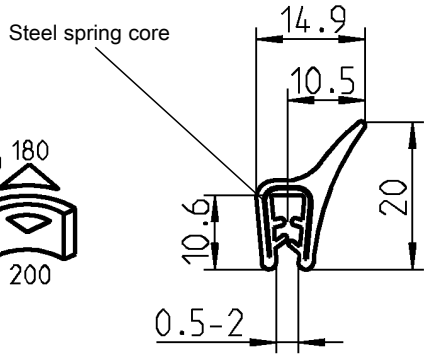


Sealing profile sponge rubber EPDM, clamping profile EPDM 60 ± 5 Shore A, black

	1011-35



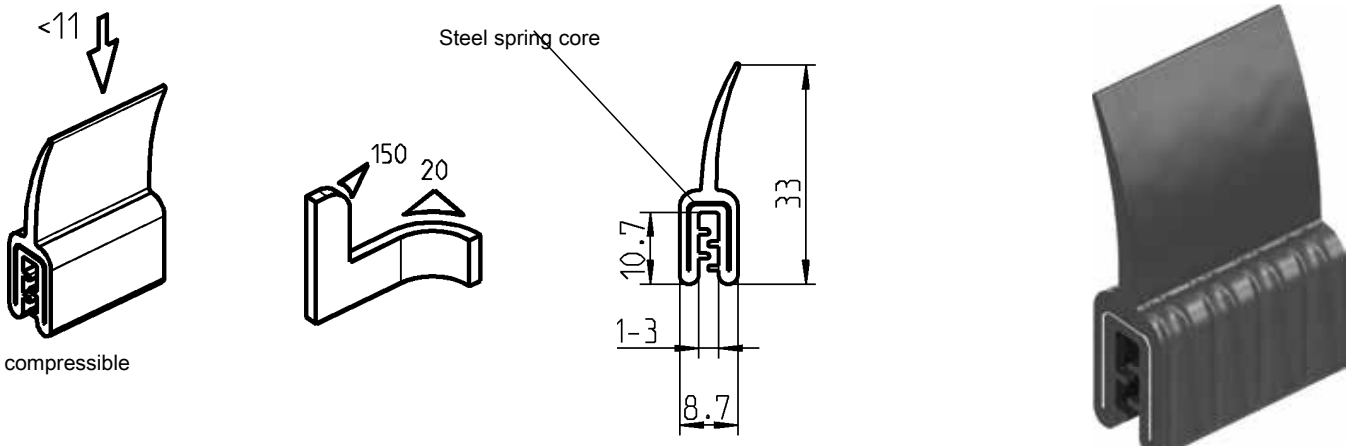




Sealing profile sponge rubber EPDM, clamping profile EPDM 60 ± 5 Shore A, black

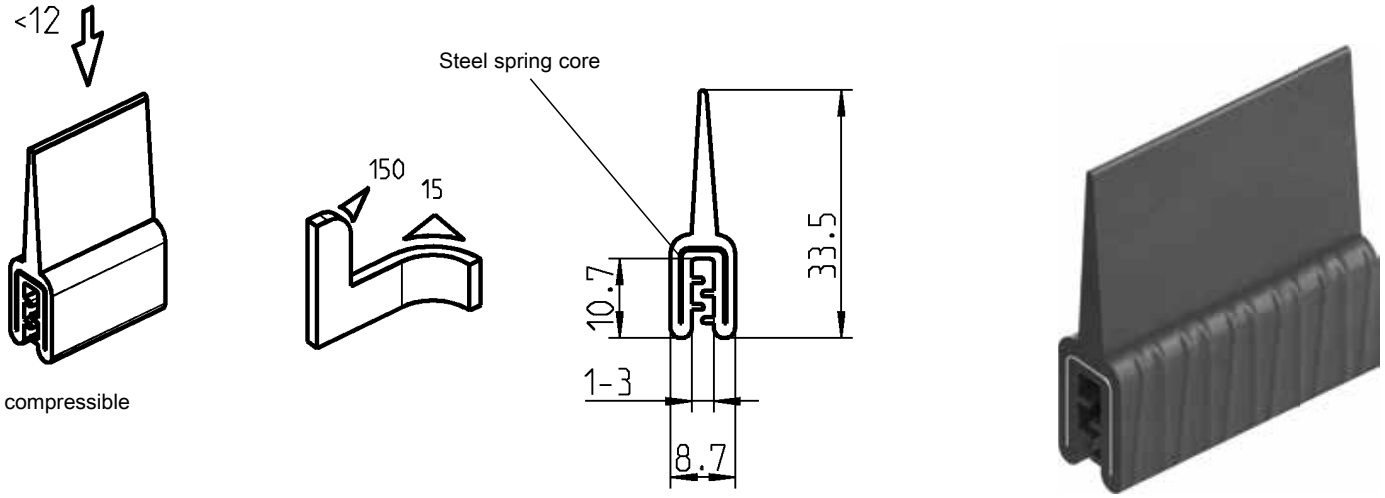
	1011-44

Self-clamping seals
PROGRAM 1011



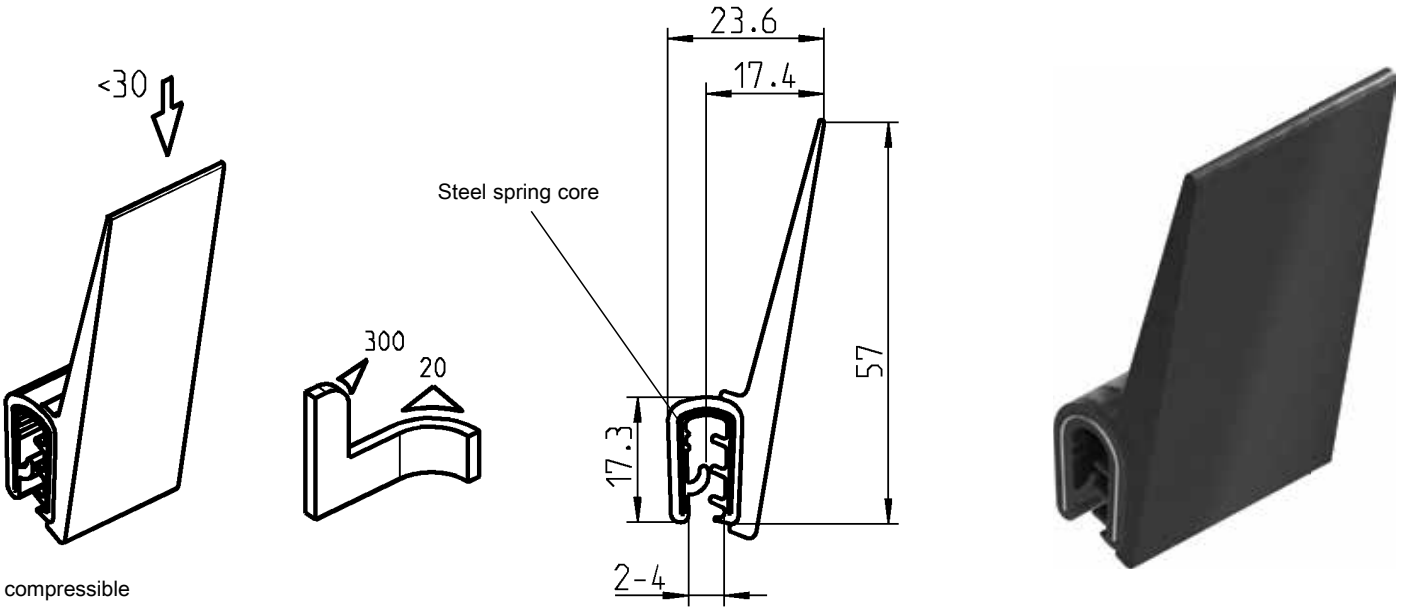
Sealing profile EPDM 60 ± 5 Shore A, black

1011-30



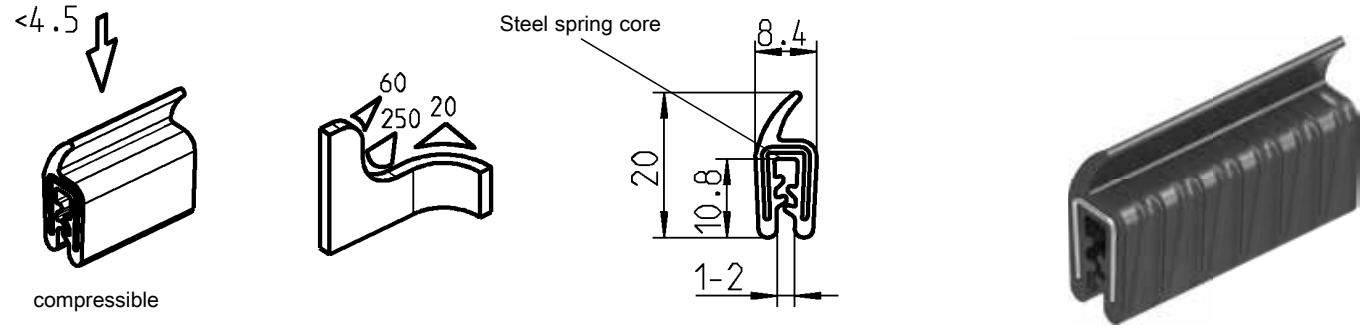
Sealing profile and clamping profile EPDM 60 ± 5 Shore A, black

1011-36



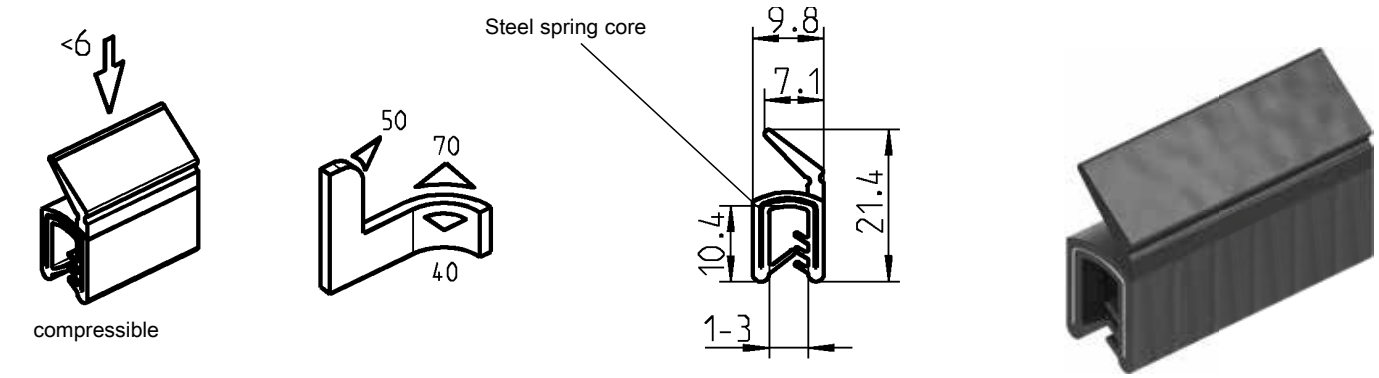
Sealing profile sponge rubber EPDM, clamping profile PVC 70 ± 5 Shore A, black

1011-27



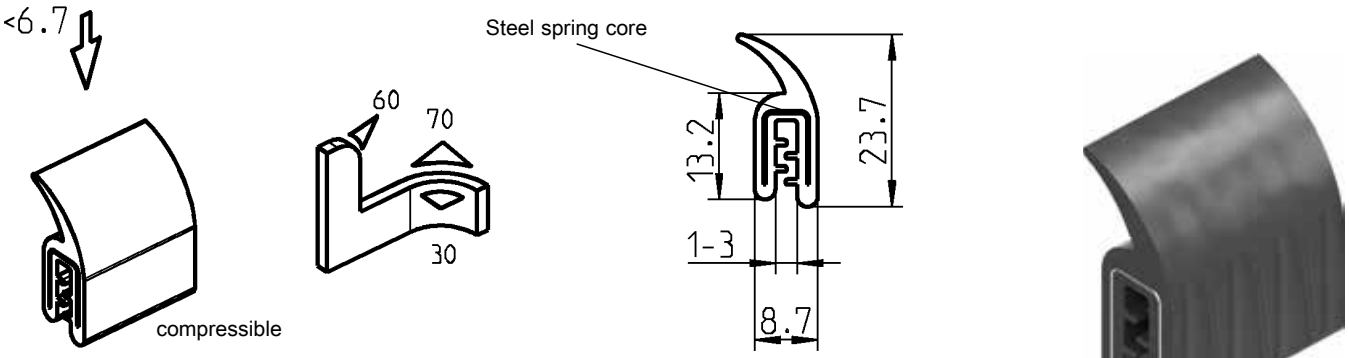
Sealing profile and clamping profile EPDM 60 ± 5 Shore A, black

	1011-31



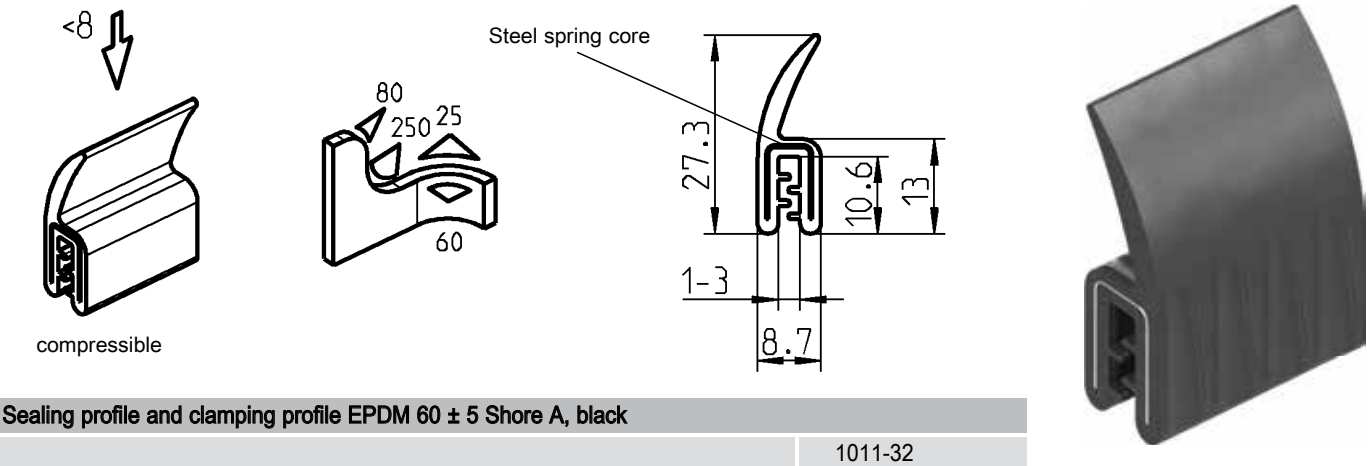
Sealing profile EPDM, clamping profile EPDM 60 ± 5 Shore A, black

	1011-37



Sealing profile and clamping profile EPDM 60 ± 5 Shore A, black

	1011-29

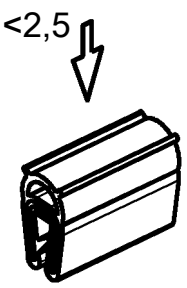


Sealing profile and clamping profile EPDM 60 ± 5 Shore A, black

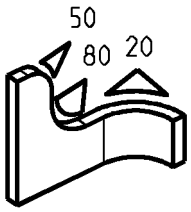
	1011-32

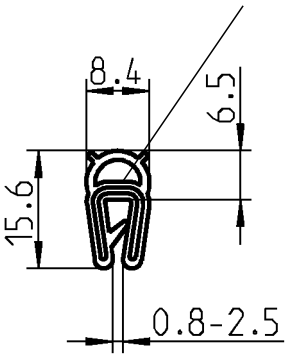
EMC seals
PROGRAM EMC

EMC seals



compressible





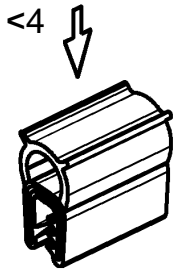
Attention:

Please provide a contact area for all EMC seals.

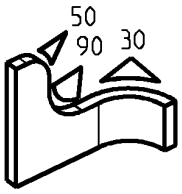
Further profiles on request.

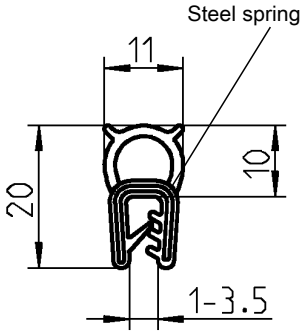
Sealing profile sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black	
	1011-10-E

EMC seals



compressible





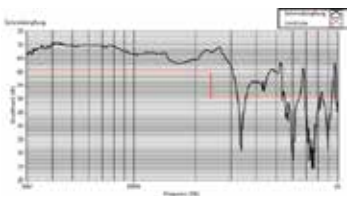
Sealing profile sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black	
	1011-05-E

Shield electromagnetic radiation

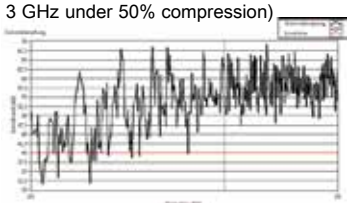
Electrical and electromagnetic fields can become a source of interference for technical equipment. Current carrying cables, electrical appliances and electronic controls generate such electromagnetic fields during operation. It may therefore be necessary to shield switch and control cabinets with EMC protection measures. In principle, it is always a matter of forming a kind of "Faraday cage" that prevents either the propagation or the irradiation of electromagnetic waves. The solution offered by EMKA consists of a completely jacketed EPDM gasket and an EMC conductive tape. This combination closes the slot antenna created by the door opening and diverts induced eddy currents to ground. To ensure full-surface electrical contact with the housing, the contactive tape of metallized fleece is bonded to the housing (frame edge and door contact surface) with electrically conductive adhesive before powder coating. After stove enamelling, the mask is removed. This results in a corrosion-resistant, electrically conductive surface.

EMKA has carried out extensive test series according to DIN EN 61587-3 "Shielding tests for cabinets and subracks" to determine the shielding effectiveness with closed metal enclosures (see graphics below).

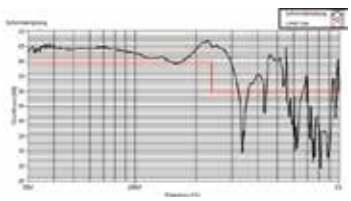
Shielding effectiveness - Vertical
(30 - 1000 MHz under 50% compression)



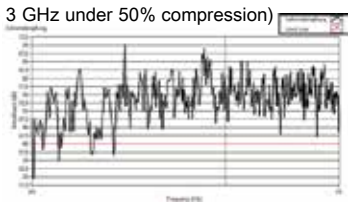
(1 - 3 GHz under 50% compression)

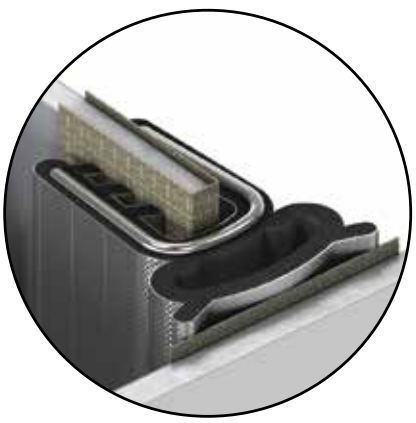


Shielding effectiveness - Horizontal
(30 - 1000 MHz under 50% compression)

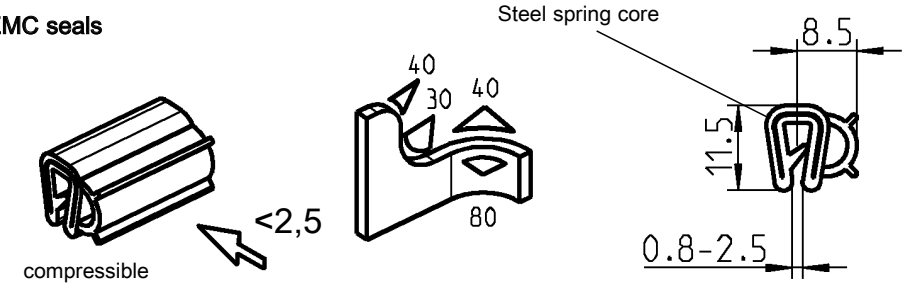


(1 - 3 GHz under 50% compression)





EMC seals



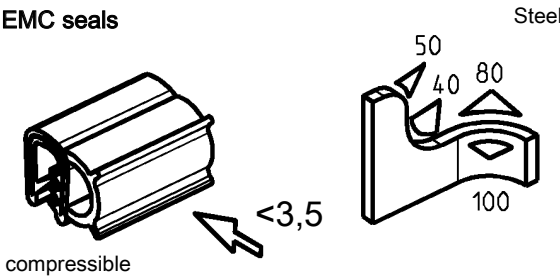
Attention:

Please provide a contact area for all EMC seals.

Further profiles on request.

Sealing profile sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black	
	1011-09-E

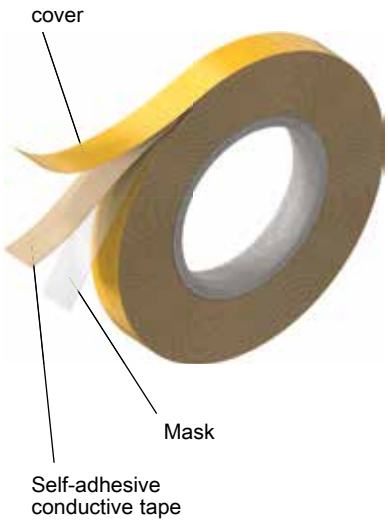
EMC seals



Sealing profile sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, black	
	1011-06-E

EMC conductive tape

– for painting and contact
– highly-conductive adhesive for creating paint-free contact areas
– Length 25 m



Note:

– The area to be adhered to has to be free of grease and dust.

– Remove the cover from the contact strip and stick the conductive tape onto the contact surfaces on the door and frame with some pressure.
For better adhesion the conductive tape is wider than the mask.

– Powder coating can then be applied, whereby the mask prevents the coating adhering to the conductive tape. The baking temperature for powder coating should be as low as possible.

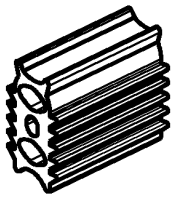
– After powder coating, the mask can be easily removed (preferably while still warm) while the conductive contact tape remains securely in place.

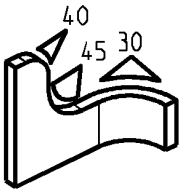
– The continuous operating temperature should not exceed 90° C.

EMC conductive tape		
Width in mm	**suitable for EMC seal**	
12,7	for contact surface on door side	1016-220-127E
22	1011-09-E; 1011-10-E	1016-220-220E
25,4	1011-05-E; 1011-06-E	1016-220-254E
Further dimensions on request		

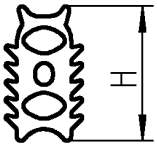
Seals secured in a U-section
PROGRAM 1003

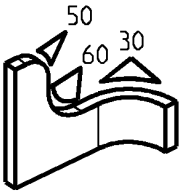
c UL us *



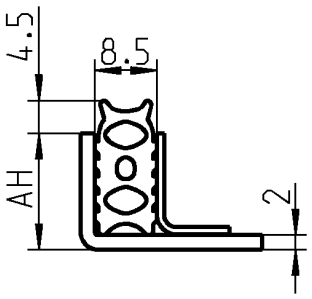


1003-11-N - 1003-13-N

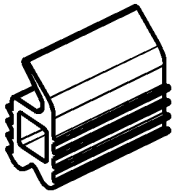


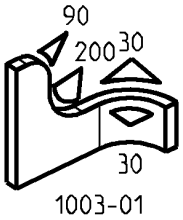


1003-14-N - 1003-24-N

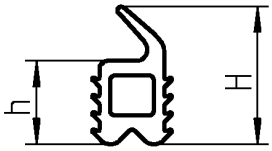


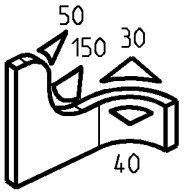
4 lip profile sponge rubber EPDM 25 Shore A, black		
AH	Height H	
16	18,5	1003-11-N*
18	20,5	1003-12-N*
20	22,5	1003-13-N*
22	24,5	1003-15-N*
24	26,5	1003-24-N*
26	28,5	1003-14-N*



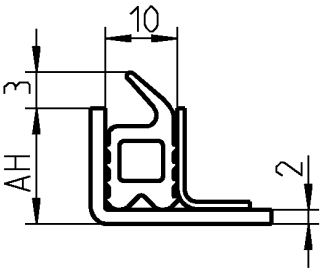


1003-01



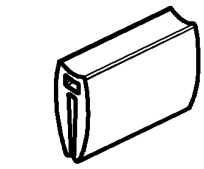


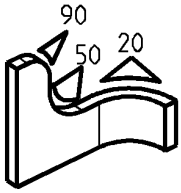
1003-02 - 1003-04

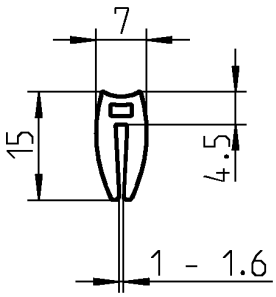


Lip profile EPDM 55 Shore A, black				
AH	H	h	Number of chambers	
16	17	9,5	1	1003-04
18	19	11,5	1	1003-03
20	21	13,5	2	1003-02
26	27	19,5	3	1003-01

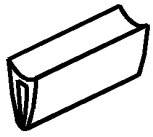
* c UL us
UL 50
UL 94-HB

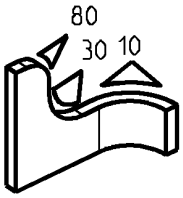


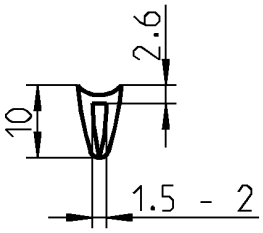




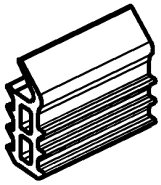
Sealing profile EPDM 55 Shore A, black	
	1038-02*

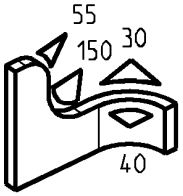


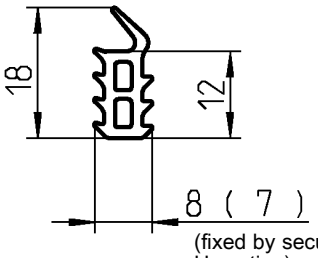




Sealing profile EPDM 55 Shore A, black	
	1038-06*

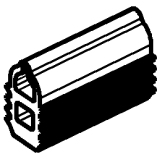


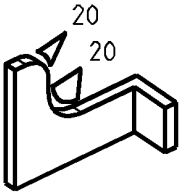


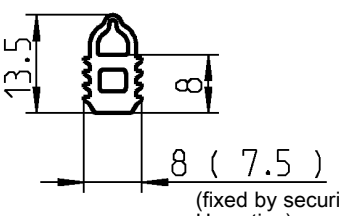


(fixed by securing in a U-section)

Lip profile EPDM 55 Shore A, black	
	1003-07







(fixed by securing in a U-section)

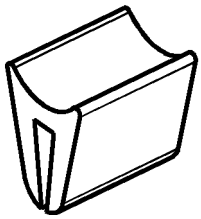
* c UL us

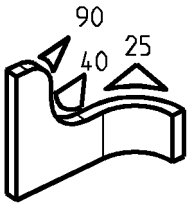
UL 50

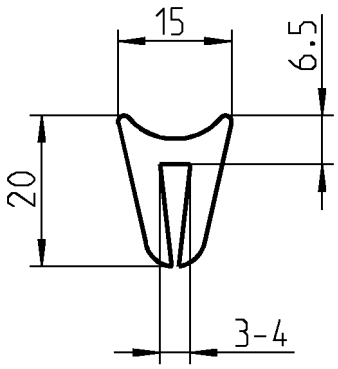
UL 94-HB

Sealing profile EPDM 55 Shore A, black	
	1038-01

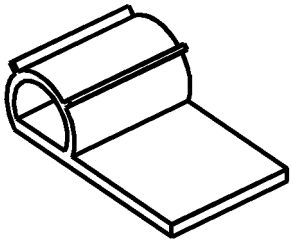
Seals
PROGRAM 1038, 1101

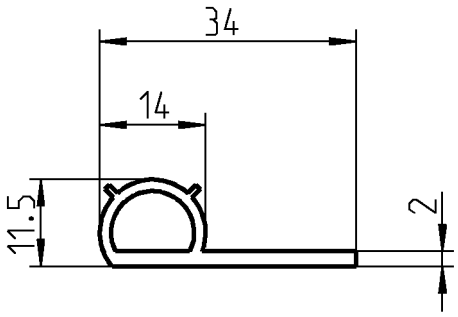




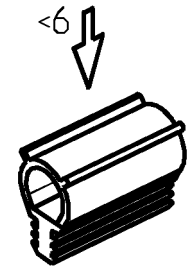


Sealing profile EPDM 55 Shore A, black	
	1038-07

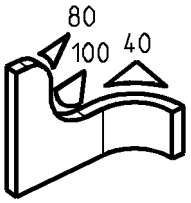


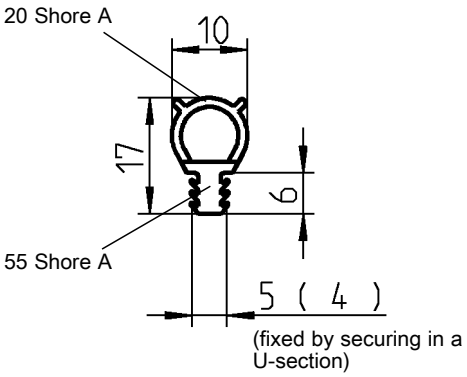


Sealing profile EPDM 55 Shore A, black	
	1038-10



compressible





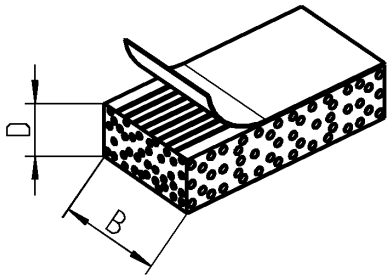
(fixed by securing in a U-section)

Sealing profile sponge rubber EPDM, clamping profile EPDM 55 ± 5 Shore A, black	
	1101-03

Cell sponge rubber
PROGRAM 1016

Coil length:

For depths	3 – 7 = Coil length	a	10 m
For depths	8 – 10 = Coil length	a	5 m
For depths	11 = in strip	a	1 m

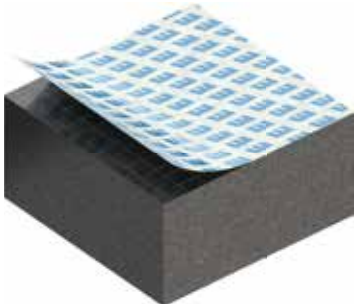


These items can be delivered from stock.
All others will have a lead time of 2 - 3 weeks.

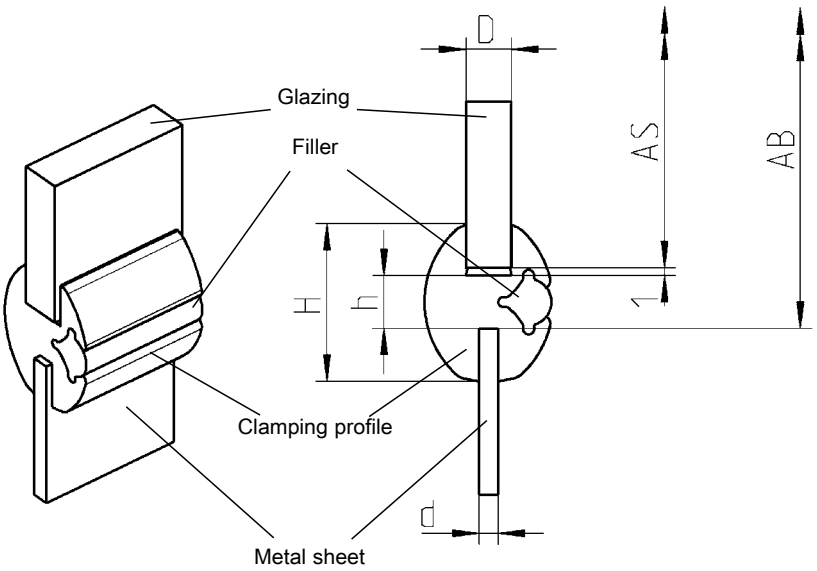
Special lengths available in 6 to 8 weeks. Minimum quantity on request
(Article-No.: 1016- ... L mm) e.g. 1016-118-1400

Cell sponge rubber material of your choice stretch eliminating and self-adhesive, black

Measurement				Measurement			
width	Depth	EPDM	CR	width	Depth	EPDM	CR
10	3	1016-13	1016-61	30	10	1016-123	1016-159
	4	1016-14	1016-62		12	1016-124	1016-160
	5	1016-15	1016-63		15	1016-125	1016-161
10	6	1016-75	1016-99		20	1016-126	1016-162
	8	1016-76	1016-100		25	1016-127	1016-163
	10	1016-77	1016-101	40	5	1016-128	1016-164
15	3	1016-16	1016-64		10	1016-129	1016-165
	4	1016-17	1016-65		15	1016-130	1016-166
	5	1016-18	1016-66		20	1016-131	1016-167
15	6	1016-78	1016-102		25	1016-132	1016-168
	8	1016-79	1016-103		30	1016-133	1016-169
	10	1016-80	1016-104	50	5	1016-134	1016-170
	12	1016-81	1016-105		10	1016-135	1016-171
	15	1016-82	1016-106		15	1016-136	1016-172
20	3	1016-19	1016-67		20	1016-137	1016-173
	4	1016-20	1016-68		25	1016-138	1016-174
	5	1016-21	1016-69		30	1016-139	1016-175
20	6	1016-83	1016-107	60	5	1016-140	1016-176
	8	1016-84	1016-108		10	1016-141	1016-177
	10	1016-85	1016-109		15	1016-142	1016-178
	12	1016-86	1016-110		20	1016-143	1016-179
	15	1016-87	1016-111		25	1016-144	1016-180
	20	1016-88	1016-112		30	1016-145	1016-181
25	3	1016-89	1016-113	70	5	1016-146	1016-182
	4	1016-90	1016-114		10	1016-147	1016-183
	6	1016-91	1016-115		15	1016-148	1016-184
	8	1016-92	1016-116		20	1016-149	1016-185
	10	1016-93	1016-117		25	1016-150	1016-186
	12	1016-94	1016-118		30	1016-151	1016-187
	15	1016-95	1016-119	80	5	1016-152	1016-188
	20	1016-96	1016-120		10	1016-153	1016-189
30	3	1016-22	1016-70		15	1016-154	1016-190
	4	1016-23	1016-71		20	1016-155	1016-191
	5	1016-24	1016-72		25	1016-156	1016-192
	6	1016-97	1016-121		30	1016-157	1016-193
	8	1016-98	1016-122		40	1016-158	1016-194



Clamping profile with filler
PROGRAM 1030

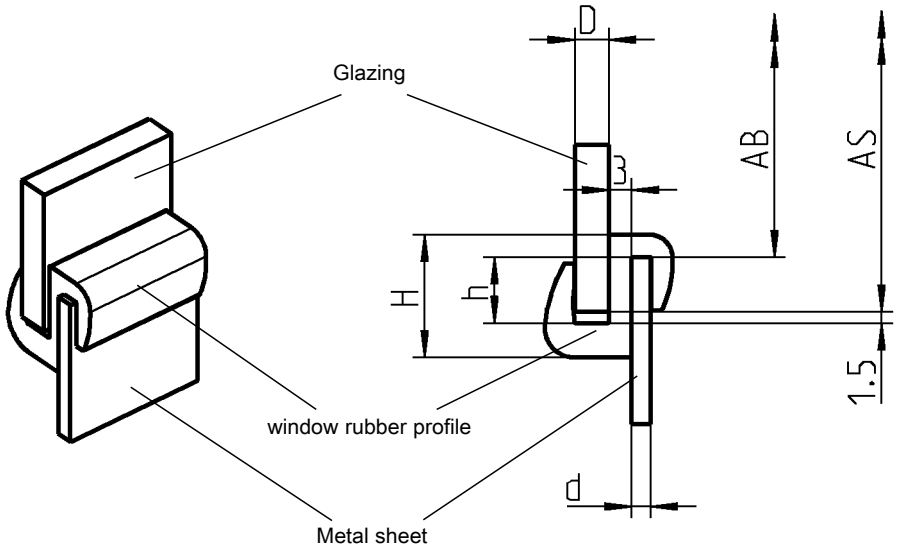


The indication of the bending radius is based on the pane receiver = AS +1 mm

AS = dimension of the glazing
AB = dimension of the cut out

Clamping profile EPDM 75 + 5 Shore, black; with locking strip EPDM 85 ± 5 Shore, black								
D	d	H	h	Bending radius	AB in mm	clamping profile	+	Filler
4	2	15	4	>30	AS+10	1030-01	+	1030-04
4	2,5	21	7	>70	AS+16	1030-02	+	1030-05
6	2,5	21	7	>70	AS+16	1030-03	+	1030-05
5	2	17	5	>50	AS+12	1030-07	+	1030-10
2 tools for installation for glazing and filler								
								1030-U1

Window rubber profile 1074
PROGRAM 1074



AB + 14.5 mm = AS

AS = dimension of the window
AB = dimension of the cut out

Window rubber profile						
	D	d	H	h	Bending radius	Window rubber profile
EPDM 60 Shore A, black	4	2	16,2	8,7	≥ 40	1074-01
NBR 80 Shore A, black	4	2	16,2	8,7	≥ 40	1074-03
EPDM 60 Shore A, black	6	2	16,2	8,7	≥ 40	1074-02
NBR 80 Shore A, black	6	2	16,2	8,7	≥ 40	1074-04

Profiles made of fire protection compound

EMKA processes materials which are certified according to currently valid fire protection standards for rail vehicles.

e.g. according to DIN EN 45545-2, ASTM E1354, ASTM E662, ASTM C1166, BSS 7239, SMP 800C .

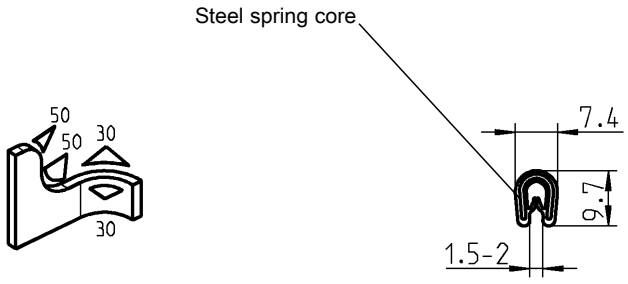
Whether the achieved categories fit to the respective requirements or vehicle classes has to be verified for the individual case.

Product advantages of profiles made of EPDM fire protection compound:

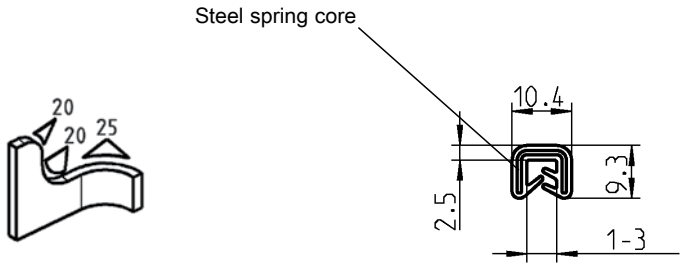
- Flame retardant for more safety
- Significant cost savings compared to silicone seals
- Readily customised frames and rings according to customer specifications possible
- Profile geometry also individually according to customer requirements
- Reliable top quality from in-house production in Europe

Self-clamping edge protection made of fire protection compound

PROGRAM 1010



Edge protection made of fire protection compound EPDM 70 ± 5 Shore A, black	
①	1010-HP479-FR01



Edge protection made of fire protection compound EPDM 60 ± 5 Shore A, black	
① Coil 50 m length	1010-S14-01
① Coil 100 m length	1010-S14-FR01

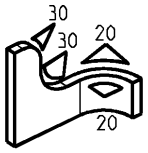
Certificate DIN EN 45545-2 EPDM

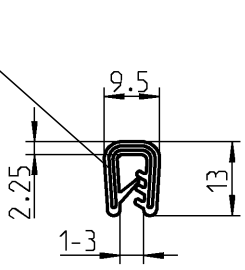
Fire protection standards

①	DIN EN 45545-2
②	
③	ASTM C1166
④	ASTM E662
⑤	SMP 800-C
⑥	BSS 7239
⑦	ASTM E1354

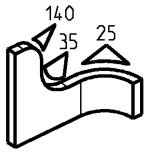
Self-clamping edge protection made of fire protection compound

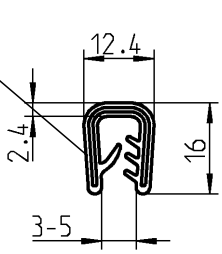
PROGRAM 1010





Edge protection made of fire protection compound EPDM 60 ± 5 Shore A, black	
①	1010-S18-FR01





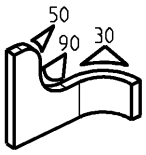
Edge protection made of fire protection compound EPDM 60 ± 5 Shore A, black	
①	1010-S19-FR01

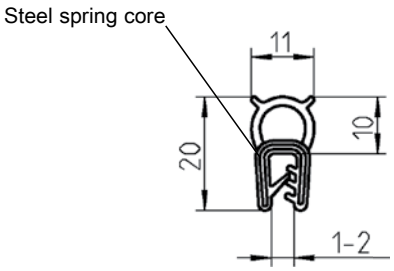
Fire protection standards

①	DIN EN 45545-2
②	
③	ASTM C1166
④	ASTM E662
⑤	SMP 800-C
⑥	BSS 7239
⑦	ASTM E1354

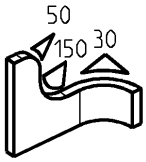
Self-clamping seals made of fire protection compound

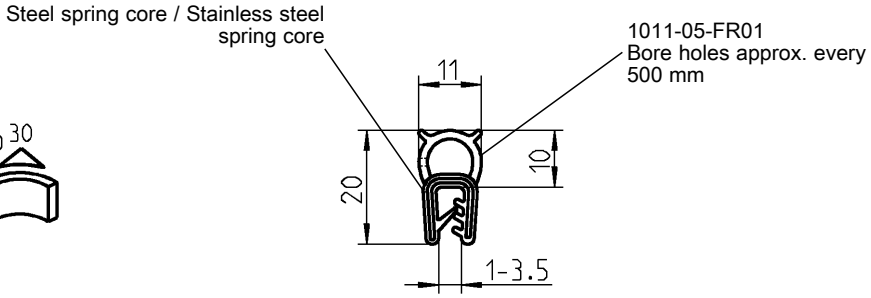
PROGRAM 1011



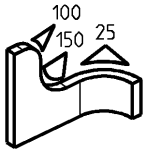


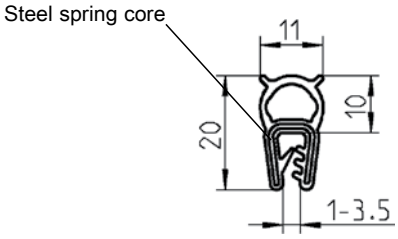
Sealing profle sponge rubber EPDM, clamping profile EPDM, of fire protection compound, black		
③④⑤⑥⑦		1011-S19





Sealing profile sponge rubber EPDM, clamping profile EPDM 60 ± 5 Shore A, of fire protection compound, black		
①	Steel spring core	1011-05-FR01
①	Stainless steel spring core	1011-S140-FR01





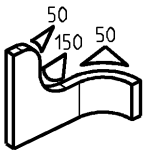
Sealing profile silicone solid material, made of fire protection compound		
①③④⑥⑦	70 ± 5 Shore A blue-black	1011-S47-BF
①	75 ± 5 Shore A white	1011-S47-HA
①	60 ± 5 Shore A black	1011-S80

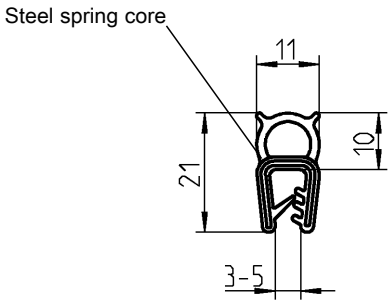
Fire protection standards

①	DIN EN 45545-2
②	
③	ASTM C1166
④	ASTM E662
⑤	SMP 800-C
⑥	BSS 7239
⑦	ASTM E1354

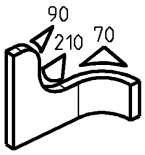
Self-clamping seals
made of fire protection compound

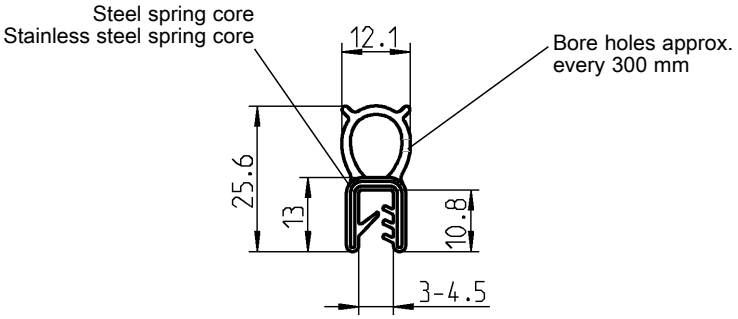
PROGRAM 1011



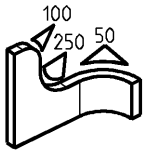


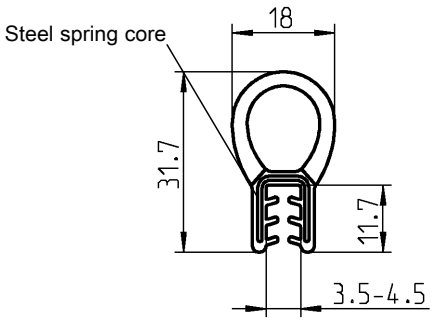
Sealing profile sponge rubber EPDM, clamping profile EPDM 60 ± 5 Shore A, of fire protection compound, black	
①	1011-S127-FR01





Sealing profile sponge rubber EPDM, clamping profile EPDM 60 ± 5 Shore A, of fire protection compound, black	
①	1011-S118-FR01





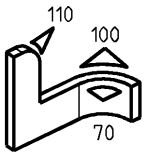
Sealing profile sponge rubber EPDM, clamping profile EPDM 60 ± 5 Shore A, of fire protection compound, black	
①	1011-S119-FR01

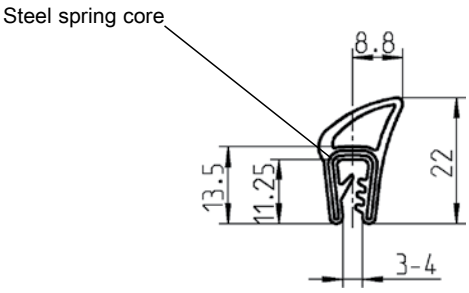
Fire protection standards

①	DIN EN 45545-2
②	
③	ASTM C1166
④	ASTM E662
⑤	SMP 800-C
⑥	BSS 7239
⑦	ASTM E1354

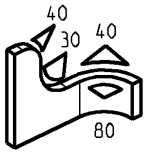
Self-clamping seals made of fire protection compound

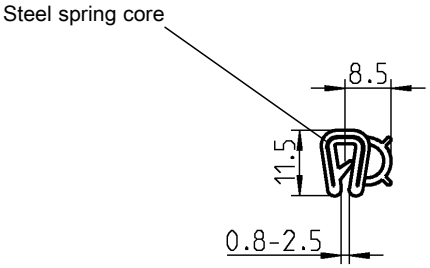
PROGRAM 1011



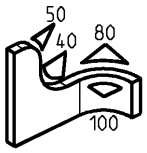


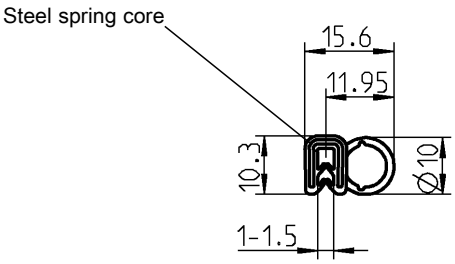
Sealing profile silicone solid material 70 ± 5 Shore A, made of fire protection compound, blue-black	
①③④⑥⑦	1011-S56-BF





Sealing profile sponge rubber EPDM, clamping profile EPDM 60 ± 5 Shore A, of fire protection compound, black	
①	1011-09-FR01





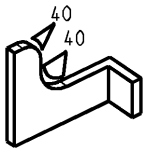
Sealing profile sponge rubber EPDM, clamping profile EPDM 60 ± 5 Shore A, of fire protection compound, black	
①	1011-S34-FR01

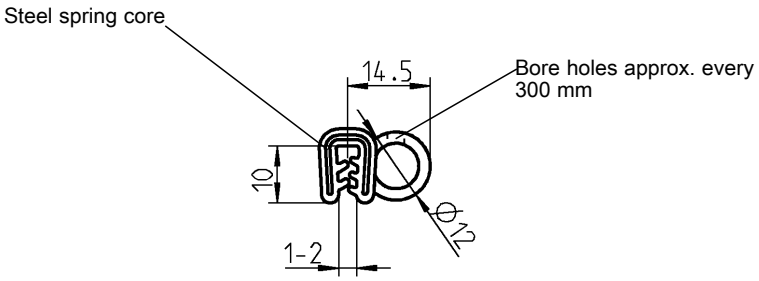
Fire protection standards

①	DIN EN 45545-2
②	
③	ASTM C1166
④	ASTM E662
⑤	SMP 800-C
⑥	BSS 7239
⑦	ASTM E1354

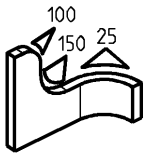
Self-clamping seals made of fire protection compound

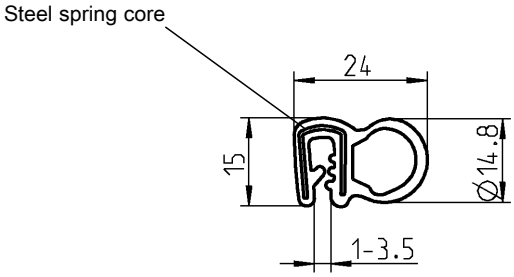
PROGRAM 1011



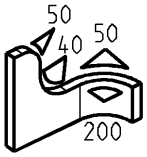


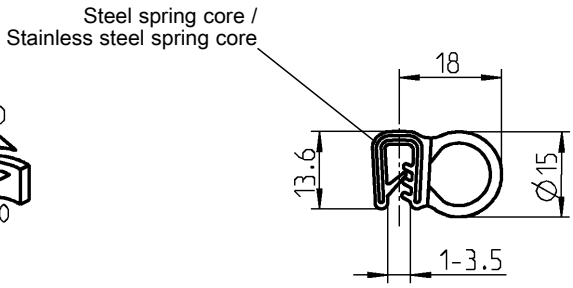
Sealing profle sponge rubber EPDM, clamping profile EPDM, of fire protection compound, black		
③④⑤⑥⑦		1011-S23





Sealing profile silicone solid material, made of fire protection compound		
①③④⑥⑦	70 ± 5 Shore A blue-black	1011-S42-BF
①	75 ± 5 Shore A white	1011-S42-HA





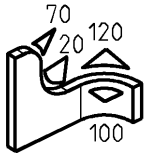
Sealing profile sponge rubber EPDM, clamping profile EPDM 65 ± 5 Shore A, of fire protection compound, black		
①	Steel spring core	1011-51-FR01
①	Stainless steel spring core	1011-S141-FR01

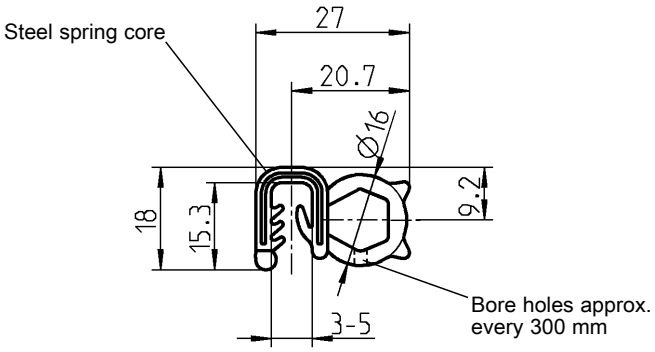
Fire protection standards

①	DIN EN 45545-2
②	
③	ASTM C1166
④	ASTM E662
⑤	SMP 800-C
⑥	BSS 7239
⑦	ASTM E1354

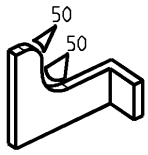
Self-clamping seals made of fire protection compound

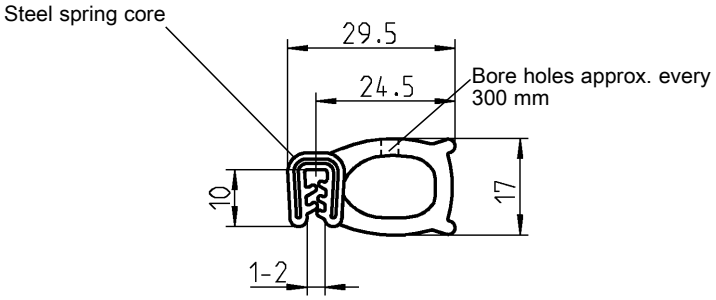
PROGRAM 1011



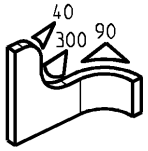


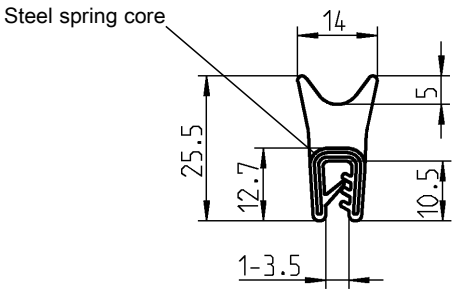
Sealing profile sponge rubber EPDM, clamping profile EPDM 60 ± 5 Shore A, of fire protection compound, black	
①	1011-45-FR01





Sealing profle sponge rubber EPDM, clamping profile EPDM, of fire protection compound, black	
③④⑤⑥⑦	1011-S24





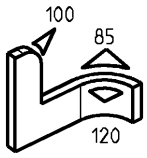
Sealing profile sponge rubber EPDM, clamping profile EPDM 60 ± 5 Shore A, of fire protection compound, black	
①	1011-S124-FR01

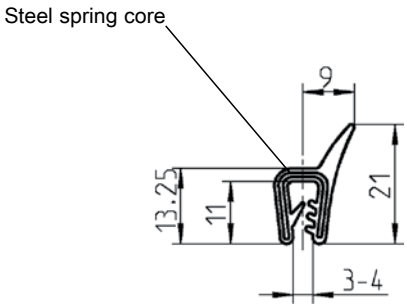
Fire protection standards

①	DIN EN 45545-2
②	
③	ASTM C1166
④	ASTM E662
⑤	SMP 800-C
⑥	BSS 7239
⑦	ASTM E1354

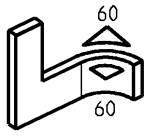
Self-clamping seals made of fire protection compound

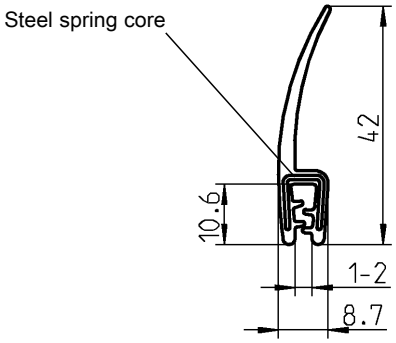
PROGRAM 1011





Sealing profile silicone solid material 70 ± 5 Shore A, made of fire protection compound, blue-black	
①③④⑥⑦	1011-S53-BF





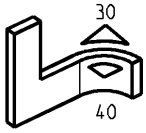
Sealing profile silicone solid material 70 ± 5 Shore A, made of fire protection compound, blue-black	
①③④⑥⑦	1011-S83-BF

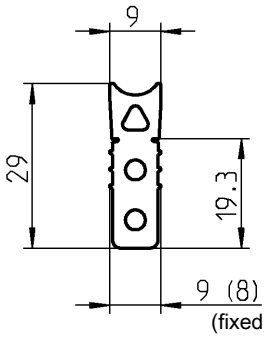
Fire protection standards

①	DIN EN 45545-2
②	
③	ASTM C1166
④	ASTM E662
⑤	SMP 800-C
⑥	BSS 7239
⑦	ASTM E1354

Seals made of fire protection compound fixed by securing in an U-section

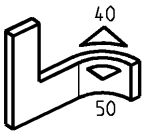
PROGRAM 1003

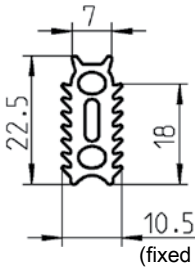




(fixed by securing in a U-section)

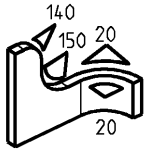
Sealing profle silicone foam, of fire protection compound, blue-black	
①③④⑥⑦	1003-S32-BF

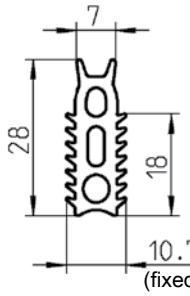




(fixed by securing in a U-section)

Sealing profile silicone solid material 50 ± 5 Shore A, of fire protection compound, blue-black		
①		1003-S30-BF





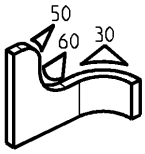
(fixed by securing in a U-section)

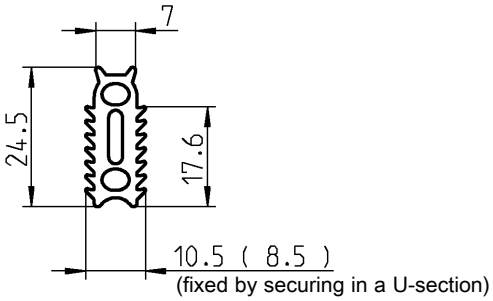
Sealing profile silicone solid material 50 ± 5 Shore A, of fire protection compound, blue-black	
①	1003-S29-BF

①	DIN EN 45545-2
②	
③	ASTM C1166
④	ASTM E662
⑤	SMP 800-C
⑥	BSS 7239
⑦	ASTM E1354

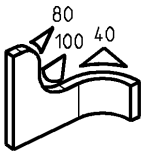
Seals made of fire protection compound fixed by securing in an U-section

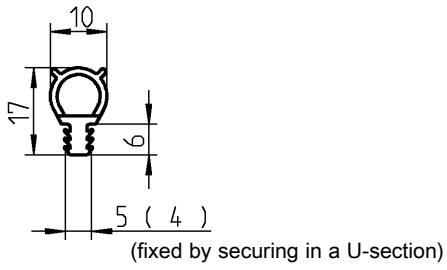
PROGRAM 1003, 1101, 1038



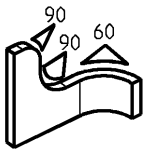


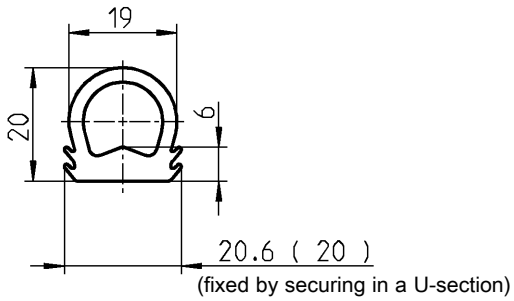
Sealing profile sponge rubber EPDM EPDM 25 ± 5 Shore A, of fire protection compound, black	
①	1003-15-FR01





Sealing profile sponge rubber EPDM, plug-in profile EPDM 60 ± 5 Shore A, of fire protection compound, black	
①	1101-03-FR01





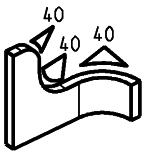
Sealing profile sponge rubber EPDM, of fire protection compound, black	
①	1038-S52-FR01

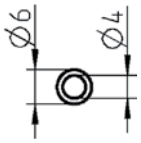
Certificate DIN EN 45545-2 EPDM

①	DIN EN 45545-2
②	
③	ASTM C1166
④	ASTM E662
⑤	SMP 800-C
⑥	BSS 7239
⑦	ASTM E1354

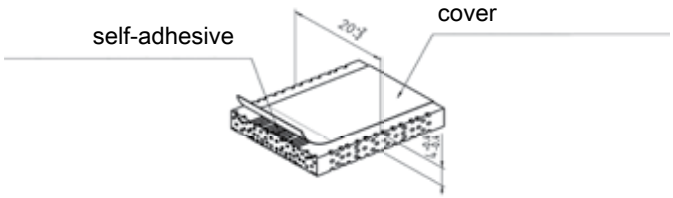
Seals made of fire protection compound

PROGRAM 1016





Sealing profile silicone solid material, made of fire protection compound		
①③④⑥⑦	70 ± 5 Shore A, blue-black	1016-S4-BF
①	75 ± 5 Shore A, white	1016-S4-HA

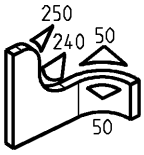


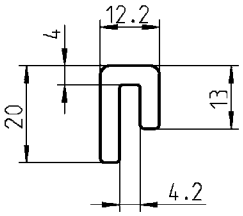
Silicone foam, density 0.4 ±0.05 g/cm³

Sealing profile silicone foam, stretch-free and self-adhesive, of fire protection compound, blue-black		
①③④⑥⑦	Coil length 50m	1016-S128

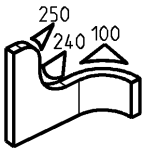
Certificate DIN EN 45545-2 EPDM

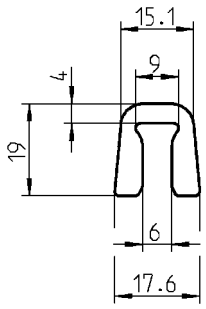
①	DIN EN 45545-2
②	
③	ASTM C1166
④	ASTM E662
⑤	SMP 800-C
⑥	BSS 7239
⑦	ASTM E1354





Clip-on profile EPDM 60 ± 5 Shore A, of fire protection compound, black	
①	1038-S49-FR01





Clip-on profile EPDM 60 ± 5 Shore A, of fire protection compound, black	
①	1038-S50-FR01

①	DIN EN 45545-2
②	
③	ASTM C1166
④	ASTM E662
⑤	SMP 800-C
⑥	BSS 7239
⑦	ASTM E1354


Geprüft
VDI 6022
Certified in

Profiles according to VDI guideline 6022

Information on VDI guideline 6022: Hygiene standard for HVACR systems

In guideline 6022 issued by “Verein Deutscher Ingenieure” (VDI) – Association of German Engineers – you can find a description of the minimum hygienic standards for ventilation and air conditioning systems. The guideline formulates requirements that have to be observed for planning, installation, operation and maintenance of ventilation and airconditioning systems in order to guarantee absolute faultless hygienic condition of the systems as well as the outside air inlets for the air-conditioned premises.

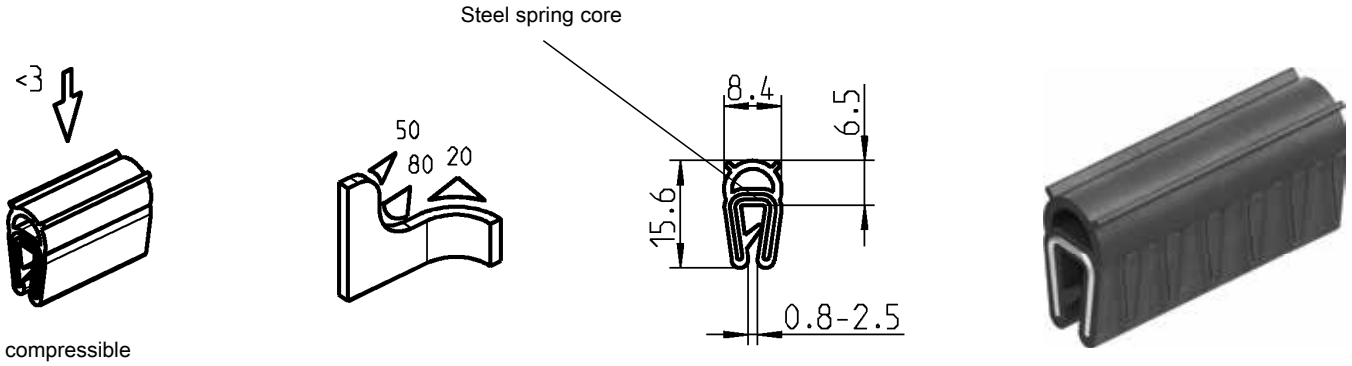
VDI guideline 6022 is valid for the domain of builders, architects, engineers, ventilation planners, manufacturers of air-conditioning systems, machine builders, authorising bodies, operators, service companies, stakeholders of room users (e.g. staff associations or committees as well as company physicians and public health officers).

In line with the latest technical development and scientific knowledge, this guideline is intended to guarantee a precise operation and condition of ventilation and air-conditioning systems by means of preventive technical provisions.

Self-clamping seals

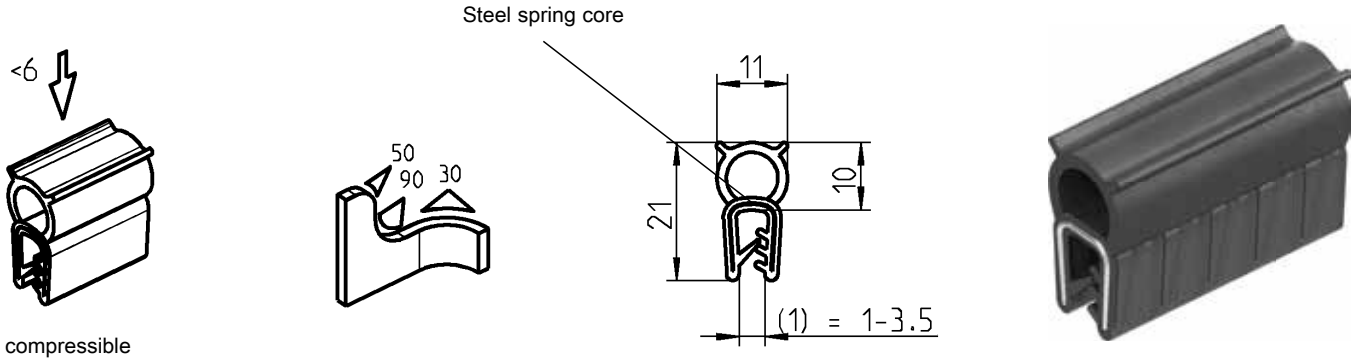
PROGRAM 1011

According to VDI 6022



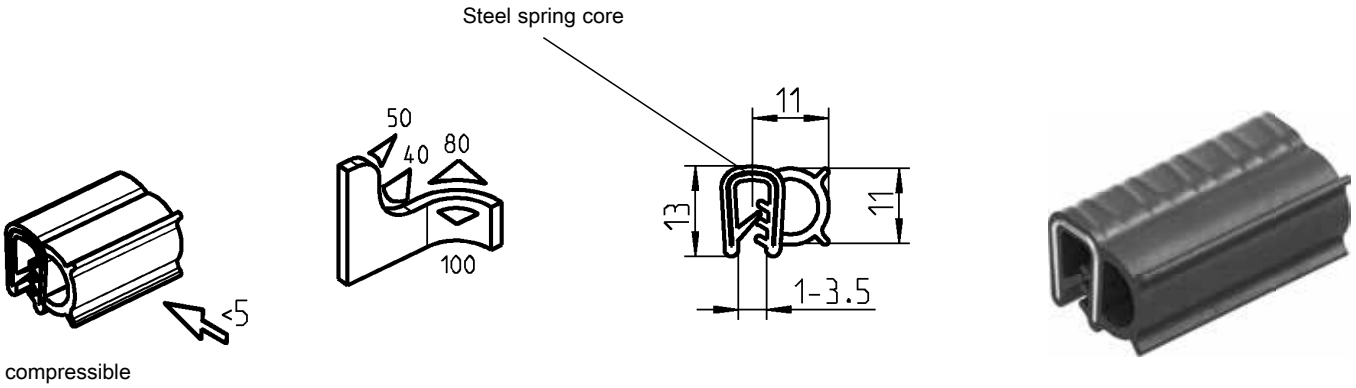
Sealing profile EPDM 45 ± 5 Shore A, clamping profile EPDM 60 ± 5 Shore A, black	
	1011-10-09

According to VDI 6022



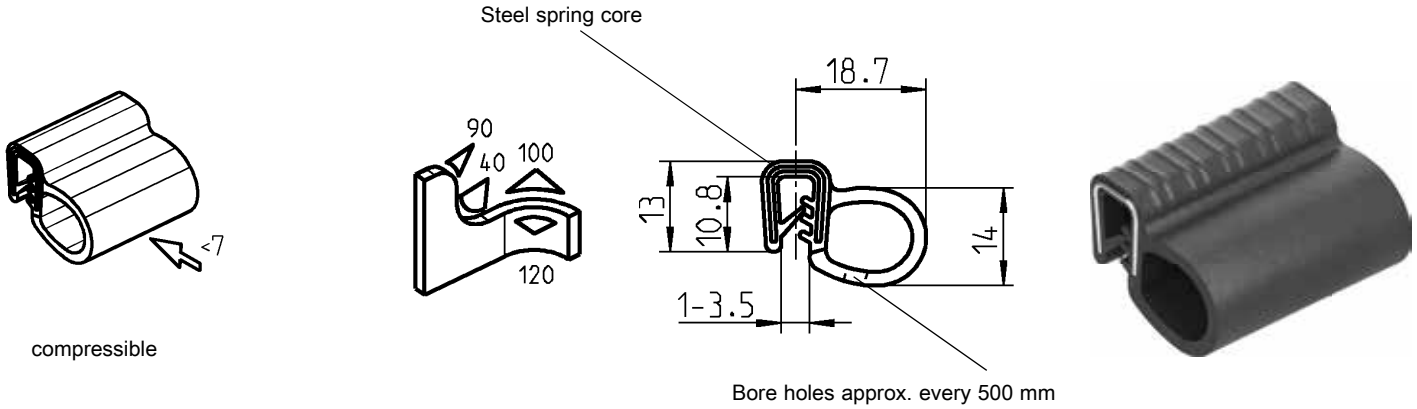
Sealing profile EPDM 45 ± 5 Shore A, clamping profile EPDM 60 ± 5 Shore A, black	
	1011-05-09

According to VDI 6022



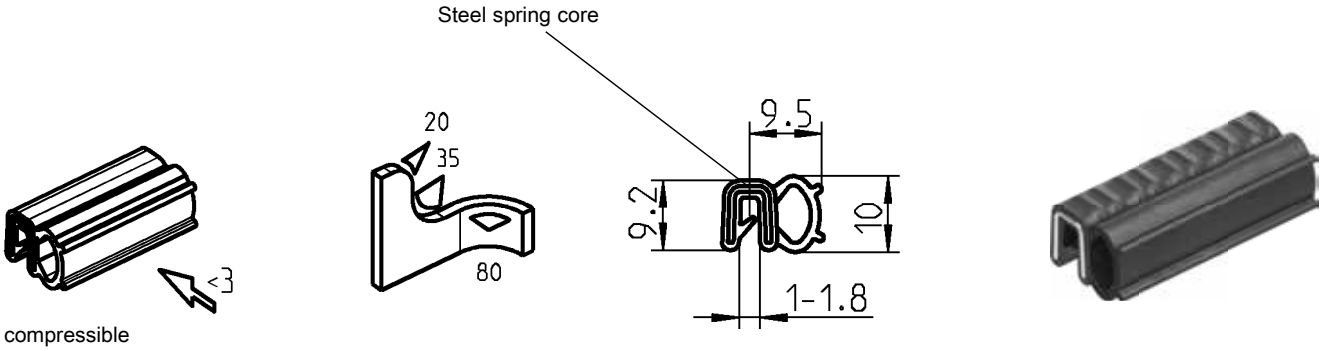
Sealing profile EPDM 45 ± 5 Shore A, clamping profile EPDM 60 ± 5 Shore A, black	
	1011-06-09

According to VDI 6022



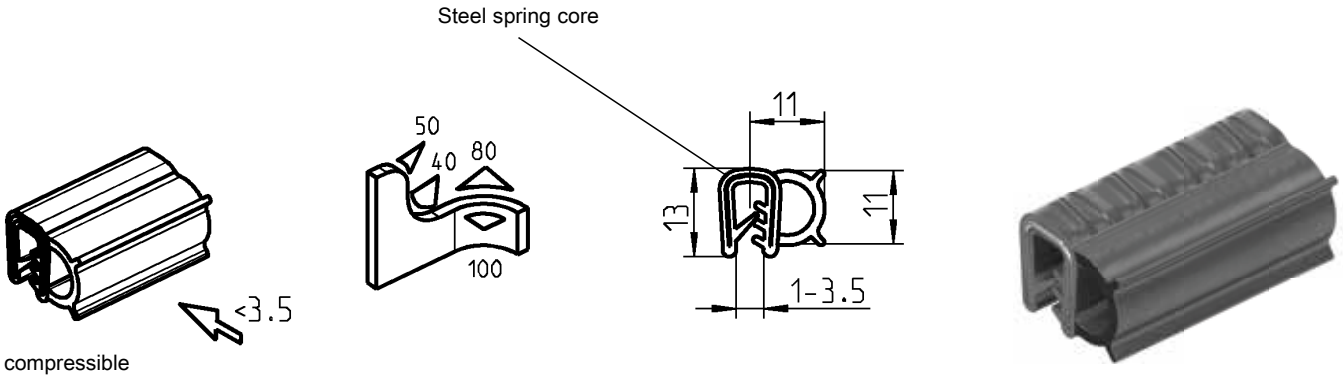
Sealing profile sponge rubber EPDM, clamping profile EPDM 64 ± 5 Shore A, black	
	1011-19-09

According to VDI 6022



Sealing profile sponge rubber EPDM, clamping profile EPDM 64 ± 5 Shore A, black	
	1011-S102

According to VDI 6022

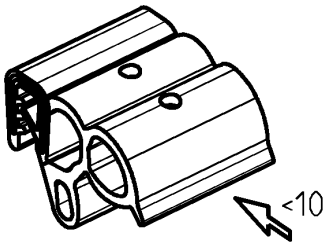


Sealing profile sponge rubber EPDM, clamping profile EPDM 64 ± 5 Shore A, black	
	1011-S122

Self-clamping seals;
Seals secured in a U-section

PROGRAM 1003, 1011

According to VDI 6022



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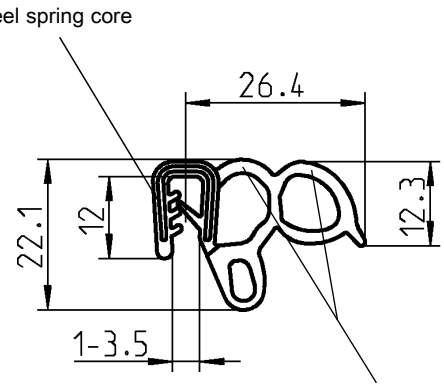
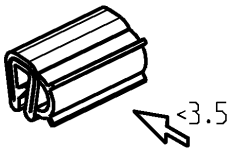


Bore holes approx. every 600 mm

Sealing profile sponge rubber EPDM, clamping profile EPDM 64 ± 5 Shore A, black	
	1011-S154

According to VDI 6022



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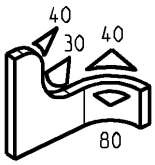
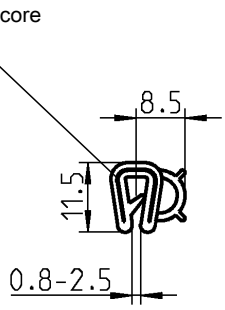
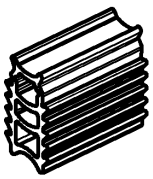
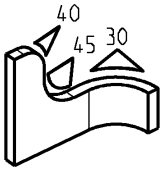


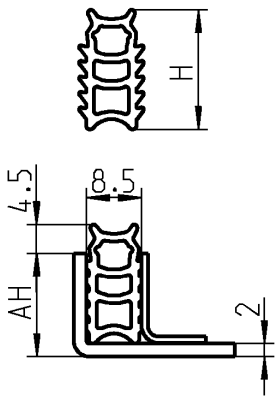


Sealing profile EPDM 45 ± 5 Shore A, clamping profile EPDM 60 ± 5 Shore A, black	
	1011-09-09

According to VDI 6022







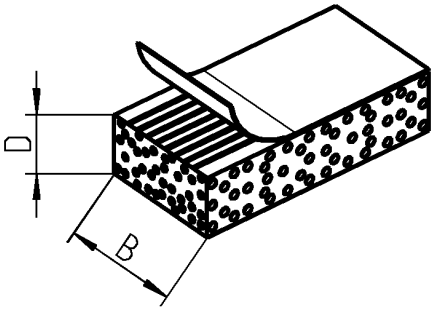
4 lip profile EPDM 45 ± 5 Shore A, black		
AH	Height H	
16	18,5	1003-11-N9
18	20,5	1003-12-N9

Cell sponge rubber according to VDI 6022

PROGRAM 1016

Coil length:

For depths	3 – 7 = Coil length	a	10 m
For depths	8 – 10 = Coil length	a	5 m
For depths	11 = in strip	a	1 m

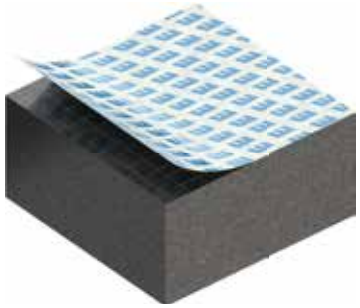


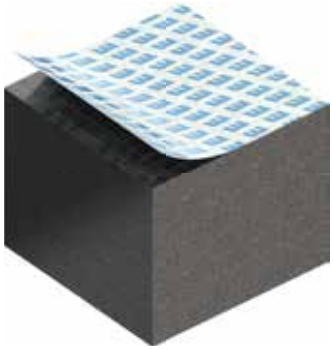
These items can be delivered from stock.
All others will have a lead time of 2 - 3 weeks.

Special lengths available in 6 to 8 weeks. Minimum quantity on request (Article-No.: 1016- ... L mm)

Cell sponge rubber material of choice, black, stretch-free and self-adhesive

Measurement				Measurement			
width	Depth	EPDM	CR	width	Depth	EPDM	CR
10	3	1016-13-09	1016-61-09	30	10	1016-123-09	1016-159-09
	4	1016-14-09	1016-62-09		12	1016-124-09	1016-160-09
	5	1016-15-09	1016-63-09		15	1016-125-09	1016-161-09
10	6	1016-75-09	1016-99-09		20	1016-126-09	1016-162-09
	8	1016-76-09	1016-100-09		25	1016-127-09	1016-163-09
	10	1016-77-09	1016-101-09	40	5	1016-128-09	1016-164-09
15	3	1016-16-09	1016-64-09		10	1016-129-09	1016-165-09
	4	1016-17-09	1016-65-09		15	1016-130-09	1016-166-09
	5	1016-18-09	1016-66-09		20	1016-131-09	1016-167-09
15	6	1016-78-09	1016-102-09		25	1016-132-09	1016-168-09
	8	1016-79-09	1016-103-09		30	1016-133-09	1016-169-09
	10	1016-80-09	1016-104-09	50	5	1016-134-09	1016-170-09
	12	1016-81-09	1016-105-09		10	1016-135-09	1016-171-09
	15	1016-82-09	1016-106-09		15	1016-136-09	1016-172-09
20	3	1016-19-09	1016-67-09		20	1016-137-09	1016-173-09
	4	1016-20-09	1016-68-09		25	1016-138-09	1016-174-09
	5	1016-21-09	1016-69-09		30	1016-139-09	1016-175-09
20	6	1016-83-09	1016-107-09	60	5	1016-140-09	1016-176-09
	8	1016-84-09	1016-108-09		10	1016-141-09	1016-177-09
	10	1016-85-09	1016-109-09		15	1016-142-09	1016-178-09
	12	1016-86-09	1016-110-09		20	1016-143-09	1016-179-09
	15	1016-87-09	1016-111-09		25	1016-144-09	1016-180-09
	20	1016-88-09	1016-112-09		30	1016-145-09	1016-181-09
25	3	1016-89-09	1016-113-09	70	5	1016-146-09	1016-182-09
	4	1016-90-09	1016-114-09		10	1016-147-09	1016-183-09
	6	1016-91-09	1016-115-09		15	1016-148-09	1016-184-09
	8	1016-92-09	1016-116-09		20	1016-149-09	1016-185-09
	10	1016-93-09	1016-117-09		25	1016-150-09	1016-186-09
	12	1016-94-09	1016-118-09		30	1016-151-09	1016-187-09
	15	1016-95-09	1016-119-09	80	5	1016-152-09	1016-188-09
	20	1016-96-09	1016-120-09		10	1016-153-09	1016-189-09
30	3	1016-22-09	1016-70-09		15	1016-154-09	1016-190-09
	4	1016-23-09	1016-71-09		20	1016-155-09	1016-191-09
	5	1016-24-09	1016-72-09		25	1016-156-09	1016-192-09
	6	1016-97-09	1016-121-09		30	1016-157-09	1016-193-09
	8	1016-98-09	1016-122-09		40	1016-158-09	1016-194-09





Profiles for the food industry

Seals for clean and hygienic working areas in the food industry are made of silicone or NBR. The compounds used at EMKA are compliant with the requirements of FDA 21 CFR 177.2600.

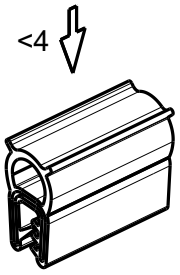
In hygiene-intensive work areas, which are subject to certain standards, the interaction between seal and hinge is particularly important, as only in this way a completely abrasion-free surface can be achieved. A custom-made seal is often required here in order to achieve standard-compliant gap sizes when sealing the joints between door and housing.

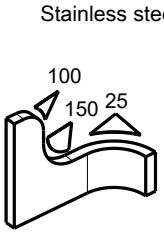
In addition to individual solutions EMKA also offers a variety of standard seals made of different materials and in different shapes.

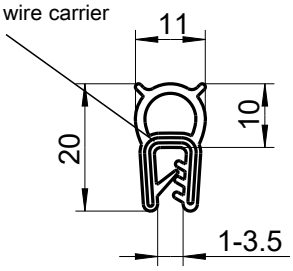
The appropriate sealing technology is developed in dialogue, just contact us!

Seals made of FDA compliant compounds

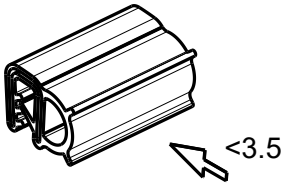
PROGRAM 1011

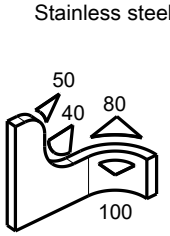


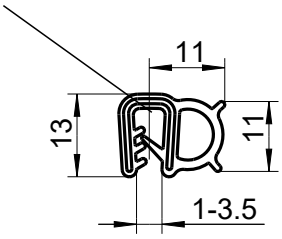




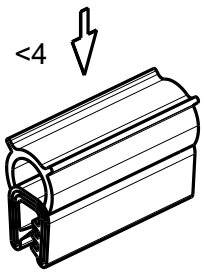
Sealing profile silicon solid material 60 ± 5 Shore A, clamping profile silicon solid material 60 ± 5 Shore A, blue	1011-S142

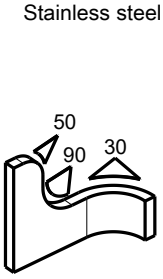


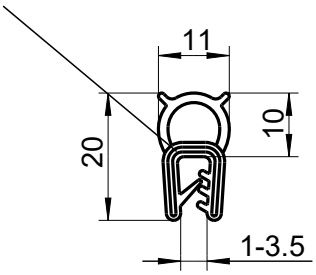




Sealing profile silicon solid material 60 ± 5 Shore A, clamping profile silicon solid material 60 ± 5 Shore A, blue	1011-S143



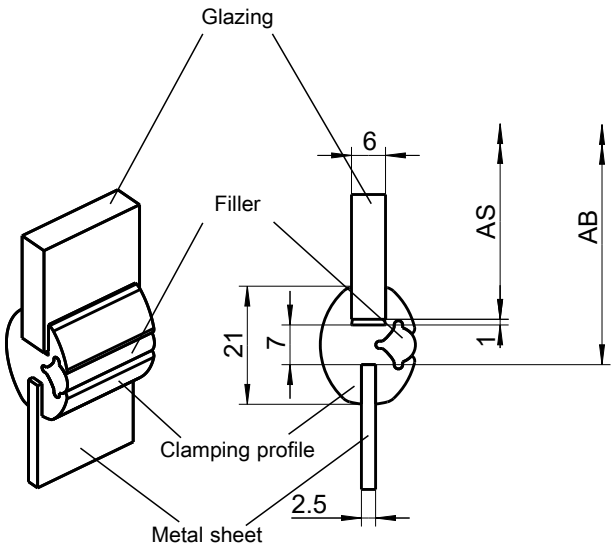




Sealing profile sponge rubber NBR 70 ± 5 Shore A, clamping profile NBR 70 ± 5 Shore A, blue	1011-S180

Clamping profile with filler made of FDA compliant compound

PROGRAM 1030



The indication of the bending radius is based on the pane receiver = AS +1 mm

AS = dimension of the glazing
AB = dimension of the cut out

Clamping profile silicon solid material 60 ± 5 Shore A, with filler silicon solid material 85 ± 5 Shore A, blue	
Clamping profile	1030-S14
Filler	1030-S13
2 tools for installation for glazing and filler	
	1030-U1

Resistance list of elastomers and thermoplastics against chemical media

The individual specifications mean:

1 = Excellent resistance
The medium has little or no effect on the material. Environmental changes such as temperature, concentration etc. can change the resistance.

2 = Good resistance
The material has a satisfactory serviceability. The medium can have a negative influence on the hose material after continuous use. Discoloration may also occur.

3 = Medium resistance to short-term contact with the medium
Long-term contact with the medium will destroy the material.

4 = Not resistant, strong attack to complete destruction
Can not be recommended

- = Resistance not known

Comments:

The values given are test results and are only for guidance. This information enables a preselection to be made, and practical tests must be carried out in the case of safety-relevant or extreme cases.

The values are based (unless otherwise stated) on concentrated or saturated solutions.

The standard test temperature is 20°C unless otherwise specified.

If your particular application does not meet these specifications, a test should be carried out.

If chemicals are mixed with other solvents or water, the compatibility of these solvents should also be checked.

There is no rule about discoloration. If discoloration occurs, please inform us and we will be happy to make a recommendation for use.

The permeability must also be checked. It may be that some media in the gaseous state attack material, although the medium in the liquid state is suitable.

Fire protection:

We supply materials certified according to the current fire protection standards.
E. g. according to DIN EN 45545-2 and NFPA 130

Whether the achieved categories fit to the respective requirements has to be verified for the individual case.
Generally speaking you can achieve higher fire protection classes with silicone profiles than with EPDM.

Note:

The indicated resistances and material properties are only guide values and do not relieve the customer from the responsibility of executing their own tests for evaluating the utilisability.

Please note that elastomers have a limited life due to e. g. ageing. This is why we recommend regular inspection and replacement intervals.

All information is correct to our current knowledge. However, we do not guarantee the correctness and completeness of the information. Furthermore, we reserve the right to change names, values and validity.

Resistance list of elastomers and thermoplastics against chemical media

Medium [1] wenn als Lebensmittel, dann lebensmittelzulässige Qualitäten verlangen	Elastomer / Thermoplast (Kurzbezeichnung)																
	Naturkautschuk (NR, SBR)	Polyurethan-Kautschuke (AU, EU)	Bulykautschuk (IIR)	Aethylen-Propylen-Kautschuke (EPM, EPDM)	Neoprene / Chloroprene (CR)	Nitrilkautschuk (NBR)	Epichlor-hydrin-Kautschuk (CO, ECO)	Silicon-Kautschuke (Q, MQ)	Fluorsilicon-Kautschuke (FQ)	Hypalon ® (CSM)	Viton ® (FPM)	PVC weich (PVC)	Polyäthylene (PE)	Polypropylene (PP)	Polyamide / Nylon usw. (PA)	Polyacetale (POM)	Teflon ® usw. (PTFE)
Acetaldehyd	3	2	1	2	3	4	-	1	4	3	2	4	1	1	2	2	1
Aceton	3	-	1	1	3	4	4	2	4	2	-	3	1	1	1	-	1
Acetylaceton	4	4	1	1	1	4	-	4	-	-	4	4	4	4	-	2	1
Acetylengas	1	1	1	1	1	1	1	1	-	1	1	1	1	1	1	1	1
Acrylnitril	2	4	1	1	1	4	-	2	4	3	2	4	1	1	1	1	1
Acrylsäureathylester: s. Aethylacrylct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adipinsäure	1	-	1	1	1	1	-	-	1	1	1	1	1	1	1	2	1
Adipinstiurediäthylester	3	-	1	1	3	4	-	-	-	1	-	-	-	-	-	1	1
Aethon(gas)	4	1	-	4	2	1	1	3	1	3	1	1	1	1	1	1	1
Aethanol: s. Aethylolkohol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aethanolamin	1	-	1	1	1	2	2	3	4	2	2	-	1	-	-	2	1
Aether (Aethyloether, Diaethylaether)	-	1	-	4	3	4	2	-	-	3	4	3	4	4	1	1	1
Aetherische Öle [1]	-	-	-	-	4	2	-	4	-	3	1	4	4	4	-	1	1
Aethylacetot	3	-	2	2	3	-	-	2	-	-	-	-	2	1	1	3	1
Aethylacrylat	3	-	2	2	3	4	4	2	4	1	4	4	-	-	1	2	1
Aethylaether: s. Aether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aethylalkohol (vergällt = Spiritus) [1]	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1
Aethylbenzol	4	4	4	4	4	3	-	-	1	4	1	-	-	-	-	1	1
Aethylbromid	2	2	1	1	1	1	2	-	1	4	1	4	2	3	1	1	1
Aethylchlorid	-	-	-	-	-	-	-	-	-	4	2	3	-	2	1	-	1
Aethylen(gas) (Aethen)	4	1	4	-	2	1	1	2	1	-	1	1	1	1	-	1	1
Aethylenchlorid	3	-	2	2	3	3	-	-	3	4	1	-	-	1	1	-	1
Aethylendiamin	1	4	1	1	1	2	1	3	4	2	2	4	1	1	1	2	1
Aethylenglykol	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Aethylenoxid	4	-	3	3	4	4	-	-	-	-	4	4	4	1	1	1	1
Aethylenoxid, flüssig	-	-	3	3	4	4	-	-	-	-	-	-	4	-	2	1	1
Aethylglykol	4	2	4	2	2	4	4	-	-	4	-	4	-	1	1	4	1
Aethylglykolacetat	2	-	2	2	-	-	-	-	-	-	-	-	1	1	-	1	1
Aethylmerkaptan	4	4	4	3	3	4	4	3	-	2	4	-	-	-	-	2	1
Aetzkolk: s. Calciumhydroxid/Aetzkali: s. Kaliumhydrosid / Aetznatron: s Natriumhydroxid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Akkusäure: s. Schwefelsäure 30%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alaun: s. Kaliumaluminiumsulfat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aliphate: s. Benzine und Homologe: Allgemein gilt	4	2	4	4	3	1	1	4	2	4	1	3	4	2	1	1	1
Alkohole: s. spezifische Bezeichnungen Allgemein gilt [1]	1	2	1	1	1	1	1	2	1	1	2	2	2	2	2	2	1
Allylchlorid	4	4	4	4	4	4	4	1	-	-	-	4	4	2	1	4	1
Aluminiumacetat, wässrig (EssigsäureTonerde)	1	-	1	1	1	1	1	4	4	1		1	1	1	1	2	1

1 = No to low effect, 0 to 5% volume swell / very good
2 = Low to moderate effect, 5 to 10% volume swell / good
3 = Moderate to strong effect, 10 to 20% volume swell / moderate
4 = Not recommended / poor
- = No values available

All values and descriptions are indicative and not binding for every case of application. Any warranty is excluded.

Resistance list of elastomers and thermoplastics against chemical media

EMKA Beschlagteile

Medium [1] wenn als Lebensmittel, dann lebensmittelzulässige Qualitäten verlangen	Elastomer / Thermoplast (Kurzbezeichnung)																
	Naturkautschuk (NR, SBR)	Polyurethan-Kautschuke (AU, EU)	Bulykautschuk (IIR)	Aethylen-Propylen-Kautschuke (EPM, EPDM)	Neoprene / Chloroprene (CR)	Nitrilkautschuk (NBR)	Epichlor-hydrin-Kautschuk (CO, ECO)	Silicon-Kautschuke (Q, MQ)	Fluorsilicon-Kautschuke (FQ)	Hypalon ® (CSM)	Viton ® (FPM)	PVC weich (PVC)	Polyäthylene (PE)	Polypropylene (PP)	Polyamide / Nylon usw. (PA)	Polyacetale (POM)	Teflon ® usw. (PTFE)
Aluminiumchlorid, wässrig	1	1-2	1	1	1	1	1	4	1	1	1	1	1	1	1	4	1
Aluminiumfluord	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1-2	1
Aluminiumhydroxid	1	2	1	1	1	1	-	1	-	-	1	1	1	1	1	1	1
Aluminiumnitrat, wässrig	1	-	1	1	1	1	1	2	-	1	-	1	1	1	1	2-3	1
Aluminiumphosphat, wässrig (PhosphorsäureTonerde)	1	-	1	1	1	1	1	1	-	1	1	1	1	1	-	2-3	1
Aluminiumsulfat wässrig	1	1	1	1	1	1	-	1	-	2	1	1	1	1	1	3	1
Ameisensäure	1	4	1	1	1	2	2	2	3	1	3	3	2	1	4	2	1
Ammoniak flüssig	2	4	1	1	2	2	-	3	4	2	4	3	1	1	1	1	1
Ammoniakgas 20°C	1	-	1	1	1	1	-	1	1	2	1	1	1	1	1	1	-
Ammoniak in Wasser (Salmiakgeist)	1	4	1	1	I	1	-	1	1	3	1	1	1	1	1	1	1
Ammoniumcarbonat, wässrig	2	4	1	1	1	2	2	2	-	1	1	1	1	1	2	1	1
Ammoniumchlorid, wässrig (Salmiak)	1	1	1	1	1	1	1	1	-	2	1	1	1	1	1	2	1
Ammoniumdiphosphat, wässrig	1	1	1	-	1	1	-	1-2	-	1	1	1	1	1	1	2	1
Ammoniumhydroxid, wässrig: s. Ammoniak in Wasser	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ammoniummetaphosphat	1	1	1	1	1	1	-	1	-	1	1	1	1	1	1	1	1
Ammoniumnitrat, wässrig	1	1	1	1	1	1	1	1	-	2	1	1	1	1	1	1	1
Ammoniumnitrit	1	-	1	1	1	1	1	2	-	1	-	-	-	-	-	-	1
Ammoniumpersulfat, wässrig	1	2	1	1	1	1	-	1	-	1	-	1	1	1	2	2	1
Ammoniumphosphat, wässrig	1	1	1	1	1	1	-	1	-	2	1	1	1	1	1	1	1
Ammoniumsulfat	1	1	1	1	1	1	-	1	-	2	1	1	1	1	1	1	1
Ammoniumthiocyanat	1	2	1	1	1	1	-	1	-	-	-	1	1	1	1	1	1
Amylocetat [1]	4	4	2	2	4	3	4	3	4	4	4	4	2	2	1	2	1
Amylalkohol	1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1
Amylborat	4	-	4	4	1	1	-	-	-	1	1	-	-	-	-	-	1
Amylchlorid	4	4	4	4	4	4	-	3	-	-	-	4	4	3	1	3	1
Anilin (Aminobenzol)	4	4	2	4	3	4	4	2	3	3	1-2	2	1	1	1-2	3	1
Anilinfarbstoffe	3	4	2	2	3	4	-	2	2	3	1	1	3	1	1	1	1
Anol: s. Cyclohexanol/Anon s. Cyclohexanon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antichlor: s. Natriumbiosulfat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimonchlorid 50%	1	2	1	1	1	3	-	4	-	1	1	1	1	1	4	1	1
Apfelsäure, wässrig [1]	1	3	1	1	1	1	-	1	1	1	1	1	1	1	1	1	1
Arttone = Freontypen der ICI: Verlangen Sie unsere detaillierte Anwendungsberatung	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Argongas	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Aromaten: siehe Benzol,Toluol, Xylol und Homologe: allgemein gilt	4	4	4	4	4	3-4	4	4	1	3-4	1-2	4	4	3	1	1-2	1
Arsenige Säure (Arsensäure)	2	3	1	1	I	1	-	1	-	1	1	1	1	1	1	1	1
Asphalt (Erdpech)	4	2	4	4	2	2	1	2	2	2	1	2	1	1	1-2	1	1
Ate-Bremsflüssigkeit	4	2	4	4	3	2	-	4	-	3	1	2	2	2	1	1	1
Boriumchlorid, wässrig	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1

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Bariumhydroxid	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1
Bariumsulfat (Baryt)	1	1	1	I	1	1	1	1	1	1	1	1	1	1	1	1	1
Bariumsulfid	1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1
Baumwollsamenöl [1]	4	1	1	1	1-2	1	1	1-2	1	1-2	1	1	1	1	1	1	1
Benzaldehyd	3	3	1	2	4	4	4	3	4	4	2	3	4	1	1-2	2	1
Benzin, niederaromatisch	4	2	4	4	2-3	1	1	4	1	4	1	3	4	2	1	1	1
Benzin, hocharomatisch	4	2-3	4	4	3	1-2	1-2	4	1	4	1	3	4	2	1	1	1
Benzin, Flugzeugkraftstoff	4	1-2	4	4	2-3	1	1	4	1	1	2	1	3	4	3	1	1
Benzoesöure, wässrig	4	4	4	4	4	4	-	4	2	4	1	1	1	1	1	1	1
Benzol	4	4	4	4	4	3-4	3-4	4	1	3-4	1-2	4	4	3	1	1	1
Benzylalkohol	1-2	4	1	1	3	4	4	1	2	2	1	3	3	3	3	2	1
Benzylbenzoat	4	-	2	2	4	4	-	-	1	-	1	-	-	-	-	2	1
Benzylchlorid	3	4	2	4	3	4	-	2	1	4	1	4	2-3	2-3	-	2-3	1
Bergblau (Kupferhydroxid)	1	1	1	1	1-2	4	-	1	-	-	-	-	1	-	-	1	1
Bestrahlung, radioaktive: allgemein gilt	4	3	4	2	4	4	4	4	4	4	4	4	3	3	4	4	4
Bewitterung	4	1	1	1	1-2	4	1	1	I	1	1	1	2	2	2	2	1
Bier [1]	1	1	1	1	1-2	1	1	1	1	1	1	1	1	1	1	1	1
Biphenyle, polychlorierte: s. Öle, Transformeröle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bismuthcarbanat (Wismutcarbonat)	1	1	1	1	1	1	-	1	-	-	1	1	1	1	1	1-2	1
Bisulfitlauf SO2-haltig	1	-	1	1	-	3	-	-	-	-	1	1	1	1	-	3	1
Bittersalz: s. Magnesiumsulfat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bitumen 20°C (s. auch Heißbitumen)	4	2	4	4	3	2	1	4	1	3	1	4	1	1	1	1	1
Blancfix: s. Bariumsulfat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blausäure 20%	2	2	1	1	3	3	-	2	2	2	2	1	1	1	-	2	1
Blausäure 98% (konz.)	3	2	-	2	3	3	-	2	-	2	2	1	1	1	-	3	1
Bleiacetat, wässrig	1	1	1	1	1	1	2	1	-	-	-	1	1	1	1-2	-	1
Bleiarsenat, wässrig	1	1	-	1	1	1	-	1	-	-	-	1	1	1	1	1	1
Bleichlauge Uovelle-Lauge s. Koliumhypochlorit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bleinitrat	1	-	1	1	1	1	1	2	1	1	-	-	-	-	-	-	1
Bleisulfat	1	1	1	1	1	1	-	1	-	-	-	1	1	1	-	1	1
Borsäure, wässrig	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1-2	1	1
Branntweine aller Art [1]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Braunkohlenteeröl: s. Steinkohleteer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brennsprit: s. Aethylalkohol vergällt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bremsöle: s. Fette und Öle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brom	4	4	3-4	4	4	3-4	-	4	2	4	1	4	4	4	4	4	1
Bromenzol	4	4	4	4	4	4	4	4	1	4	1	4	4	4	4	1	1
Bromwasser	4	4	4	4	4	4	-	4	2	4	1	4	4	4	4	4	1

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Bromwasserstoffsäure	3	3	1	2	2	3	-	2	-	1	1	4	1	1	1	4	1
Butadien	4	1-2	3	3	2	4	4	-	2	2	1	3	1	4	-	1	1
Butan-Gas (Butagas)	2	1	3	2	1	1	1	3	-	1	1	1	4	4	1	1	1
Butan flüssig	4	1	4	4	1	1	1	3	1	1	1	2	1	1	1	1	1
Butanolis Butylolkohol BUi011011 s. Methylaeth Iketon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Butter [1]	3	2	2	1	2	1	1	1	-	2	1	2	1	1	1	1	1
Buttermilch [1]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Buttersäure, wässrig [1]	4	4	3	2	3	4	-	2	-	2-3	3	1	4	1	1-2	1-2	1
Butylacetat	3	4	2	2	4	4	4	3	4	3	4	4	4	2	1	1	1
Butylaether	4	3	4	3	2	1	-	3	-	-	-	1	1	1	1	1	1
Butylalkohol	1	3	1	1	1	1	1	2	1	1	1	1	4	1	1	1	1
Butylamin	4	4	4	4	4	3	-	2	4	4	4	-	-	-	-	4	1
Butylbenzoat	4	-	1	1	4	4	-	-	1	4	1	-	-	2	-	2	1
Butylcarbitol	-	-	1	1	2	1	-	-	-	2	1	-	-	-	-	-	1
Butylen, flüssig	3	-	2	2	3	2	-	-	4	3	1	1	4	4	-	1	1
Butylglykol	1	3	1	1	3	1	-	2	4	-	1	4	1	1	1	1	1
Butyloleat	-	-	2	2	4	-	-	-	2	4	1	-	-	-	-	1	1
Butylstearat	4	1	3	3	4	2	-	1	2	-	1	1	4	1	1	1	1
Butyraldehyd	3	-	2	2	2	3	-	3	4	3	-	-	1	3	-	2	1
Calciumacetat	1	-	1	1	2	2	-	-	4	2	4	-	1	-	-	-	1
Calciumbisulfat, wässrig	1	1	1	1	1	1	-	1	-	1	1	1	1	1	1	1	1
Calciumbisulfit	2	3	1	1	2	3	-	2	1	1	1	1	1	1	1	4	1
Calciumcarbonat	1	1	1	1	1	1	1	1	-	-	1	1	1	1	1	1-2	1
Calciumchlorid, wässrig	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Calciumhydroxid, wässrig (gelöschter Kalk)	1	3	1	1	1	2	1	2	1	1	1	1	1	1	1	1-2	1
Calciumhypochlorit, wässrig	2	4	2	1	4	1	2	3	1	2	1	1	1	1	4	3	1
Calciumnitrot	1	1	1	1	1	1	1	2	1	1	1	1	1	1	-	-	1
Calciumoxid Kalk, gebrannt	1	1	1	1	1	1	1	2	1	1	1	1	1	1	-	1	1
Calciumsulfot (Gips), wässrig	1	1	1	1	1	1	-	1	-	-	1	1	1	1	1	1	1
Calciumsulfid	2	1	1	1	1	2	-	2	-	1	1	-	-	-	-	-	1
Carbitol: s. Dioethylenglykolmonoaethylaether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbolsäure: s. Phenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbolineum, wässrig	4	4	2	2	2	2	-	4	-	1	1	3	1	1	1	1	1
Celluloseocetat	3	1	1	2	3	1	-	1	-	-	-	-	1	1	1	1	1
Cellulube Hydrauliköl: s. Hydrauliköl auf Phosphatesterbasis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlor, trocken	2	4	3	3	4	3	2	4	1	2	1	1	4	4	4	4	1
Chlor, feucht	3	4	3	3	4	4	2	4	2	2	1	4	4	4	4	3	1
Chloraethyl: s. Aethylchlorid/Chlorbenzol: s. Monochlorbenzol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorbrommethan	4	3	2	3	4	4	-	4	2	4	1	4	4	4	1	3	1
Chlorbutadien	4	-	4	4	4	4	-	-	2	-	1	-	-	-	-	-	1

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Chlorcalcium: s. Calciumchlorid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlordioxid	4	4	3	3	4	4	-	3	2	1	1	-	4	4	-	4	1
Chlordiphenyl (Clophen)	4	4	4	4	4	4	-	2	-	4	1	4	1	1	1	1	1
Chloressigsäure: s. Monochloressigsäure / Chlorkalk: s. Colciumhypochlorit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorkohlenwasserstoffe: s. einzelne Bezeichnungen. Allgemein gilt	4	4	4	4	4	2-3	-	4	-	4	2	4	4	4	2	3	1
Chlormethyl: s. Methylchlorid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform (Trichlormethan)	4	4	4	4	4	4	-	4	2	4	1	4	4	4	3	4	1
Chlorothene: s.Trichloraethan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorsäure, wässrig	4	-	2	2	4	4	-	-	2	1	4	1	1	1	4	4	1
Chlorsulfonsäure	4	4	4	4	4	4	-	4	-	4	4	4	4	4	4	4	1
Chlorwasser 3%	3	3	4	3	2	3	-	2	-	3	2	1	2	2	4	4	1
Chlorwasserstoff(säure) s. Salzsäure	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromsäure 10%	4	3	3	2	4	4	-	3	3	2	1	1	1	1	3	2-3	1
Chromsäure 25%	4	4	4	2	4	4	-	4	3	2	1	2	1	1	4	4	1
Chromsäure 50%	4	4	4	2	4	4	-	4	3	2	1	4	3	1	4	4	1
Chromtrioxid: s. Chromsäure	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Citronensäure [1]	1-2	1	1	1	1	1	1	1	1	1	1	1	1	1	1-2	2	1
Clophen: s. Chlordiphenyl	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cresol: s. Kresol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyankali: s. Kaliumcyanid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanwasserstoff (säure): s. Blausäure / Cyon-natrium s. Natriumcyanid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyclohexan (Hexohydrobenzol)	4	2	4	4	4	1	-	4	1	4	1	1	1	1	1	1	1
Cyclohexonol	1-2	4	4	4	1	2	-	2	1	1	1	4	1	1	1	1	1
Cyclohexonon	4	4	3	3	4	4	4	2	4	4	4	4	1	1	1	1	1
Dampf bis °C	4	4	120	130	4	100	100	-	-	-	-	120	100	100	150	1	4
Dekalin (Dekohydronaphthalin)	4	1	4	4	4	1-2	-	4	1	4	-	1	3	1	1	1	1
Dextrose: s. Glucose	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diacetonalkohol	4	2	1	1	3	4	4	1	-	3	4	-	-	-	-	1	1
Dioethonolamin	-	-	2	1	-	3	-	-	-	1	-	-	1	1	-	1	1
Dioethylaether: s. Aether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diaethylamin	2	3	2	2	3	3	-	2	4	3	4	-	3	3	1-2	1-2	1
Diaethylbenzol	4	4	4	4	4	4	-	4	1	4	-	1	-	-	-	-	1
Diaethylenglykol	1	3	1	1	1	1	-	2	-	1	1	1	1	1	1	1	1
Diaethylenalykolmonoaethylaether (Corbitol)	2	4	2	2	2	2	-	2	2	2	2	-	-	-	1	1	1
Diaethylsebazat	-	-	2	2	4	4	-	2	2	4	2	-	-	1	-	1	1
Dibenzylaether	4	4	2	2	4	4	4	2	-	4	1	4	-	-	-	1	1
Dibutylamin	4	-	4	4	4	4	-	3	4	4	4	-	-	3	-	1-2	1

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Dibutylphthalat	3	3	2	2	3	3	2	2	2	3-4	2	3	3	1	1	1	1
Dibutylsebazat	4	4	1	2	4	4	2	1	2	4	2	3	1	1	-	1	1
Dichloraethylen	4	4	4	4	4	4	-	4	-	4	2	4	4	2	1	4	1
Dichlorbenzol	4	4	4	4	4	3	-	4	2	4	1	4	3	3	-	1	1
Dichlorisopropylaether	4	2	3	3	4	4	-	4	3	4	3	-	-	-	-	-	1
Dichlormethan	4	4	4	4	4	3	-	4	2	4	2	4	4	4	2	3	1
Dieselöl	4	2	4	4	2-3	1	1	3	1	3	1	3	2	3	1-2	1	1
Diglykol: s. Diathylenglykol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimethylaether	4	2	3	4	3	3	-	-	-	3	3	4	2	2	-	1	1
Dimethylamin	4	-	4	2	4	4	-	-	-	4	4	4	3	3	1	1-2	1
Dimethylanilin	2-3	4	1	2	4	4	-	2	4	3	1	-	-	-	-	1-2	1
Dimethylformamid	1	3	3	2	3	2	-	2	-	3	4	-	1	1	1	2-3	1
Dimothylphtholat	4	-	2	2	4	4	-	-	2	4	2	-	-	-	-	1	1
Dioclyphthalat	4	2	3	2	4	4	2	3	-	4	1-2	3	3	3	1	1	1
Dioctylsebazot	4	2	2	2	4	4	3	3	2	4	2	-	-	-	-	-	1
Dioxan	4	4	1	2	4	4	-	4	3	4	4	4	1	3	1	1-2	1
Diphenyl	4	4	3	4	4	3	-	4	2	4	1	4	2	2	-	1	1
Diphenyloxid	4	4	4	4	4	4	-	2	2	4	3	-	-	-	-	1	1
Dipropylenglykol	-	-	-	1	1	1	-	-	-	-	1	-	-	-	1	-	1
Dodecylalkohol	-	-	1	1	1	1	-	-	-	-	1	-	-	-	1	-	1
Eau de Javelle: s. Koliumhypochlorit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eisenchlorid (Fern), wässrig	1	3	1	1	1	1	1	1	1	1	1	1	1	1	2-3	2-3	1
Eisensulfat, Eisenvitriol, wässrig	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2-3	1	1
Eisessig: s. Essigsäure konzentriert	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Entwicklerflüssigkeiten (allgemein)	1-2	2	2	2	1	1	-	1	1	1	1	-	-	-	-	-	1
Epichlorhydrin flüssig	4	4	2	2	4	4	-	4	4	4	4	-	1	-	-	-	1
Erdgas: s. Naturgas / Erdöl: s. Öle, mineralische	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Essig, (Speisessig) [1]	1	3	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1
Essigaether / Essigester: s. Aethylacetat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Essigsäure 10%	2	4	1	1	1	2	1	3	2	1	2	3	1	1	4	1	1
Essigsäure 25%	3	4	1	1	2	4	2	3	2	2	2	4	2	1	4	3-4	1
Essigsäure 50%	4	4	2	2	3	4	3	3	3	2	2	4	3	2	4	3-4	1
Essigsäure 100% (konz.)	4	4	2	3	4	4	4	3	3	2	4	4	2	2	4	3-4	1
Essigsäureaethylester: s. Aethylacetat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Essigsäurehydrid 50%	2	4	1	1	3	3	4	1	4	1	4	4	3	1	1	-	1
EssigsäureTonerde: s. Aluminiumacetat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ester: s. einzelne Bezeichnungen Allgemein gilt	4	4	4	2	4	4	3-4	4	-	4	4	4	1-2	1-2	1	1-2	1
Fette: s. Öle und Fette	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fettsäuren allgemein	3	1	3	3	2	2	1	3	-	3	1	1	3	3	2	3	1

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Flüssiggase (LPG). s. entsprechende chemische Bezeichnung des Gases	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluor flüssig	-	-	3	3	-	-	-	-	4	-	2	-	4	4	-	-	1
Fluorbenzol	4	-	4	4	4	4	-	4	2	4	1	-	-	-	-	-	1
Fluorborsäure 65%	2	4	4	2	2	2	-	4	-	2	-	1	1	1	-	4	1
Fuorsiliziumsäure: s. Kieselfluorwasserstoff-säure / Fluorwasserstoff(säure): Flusssäure	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flusssäure 10%	3	2	4	4	4	3	-	1	-	1	1-2	1	2	1	4	4	1
Flusssäure 30%	4	2	4	4	4	4	-	1	-	1-2	1-2	4	2	1	4	4	1
Flusssäure 75%	4	3	4	4	4	4	-	1-2	-	1-2	1-2	4	4	1	4	4	1
Formaldehyd	2	2	2	2	2	2	2	1	-	1-2	1	2	1	1	1-2	1	1
Formalin (30 - 40%ige wässrige Formaldehyd-lösung mit 8- 12 Methylolkoholzusatz)	1	2	2	1	1	2	-	2	1	1	1	2	1	1	1	1	1
Freone und Frigene: detaillierte Anwendungs-beratung verlangen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Frostschutz: s. genaue chemische Bezeichnung	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fruchtsäfte [1]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Furfurylalkohol (Furfurol)	2	4	2	2	2	4	4	2	-	2-3	3	1	4	4	1	2	1
Gallussäure	3	3	2	2	4	4	-	1	1	2	1	1	1	1	-	4	1
Gasoliv: s. Benzine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gelatine, wässrig [1]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gerbsäure (Tannin)	2	1	3	2	2	2	-	2	-	1-2	1-2	1	1-2	1	1	3	1
Gips: s. Calciumsulfat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Glaubersalz: s. Natriumsulfat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Glucose[1]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Glycerin	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1
Glycerol: s. Aethylenglykol rein	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Glykole: genaue Bezeichnung ermitteln: allgemein gilt	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Harn: s. Urin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heißbitumen bis °C	4	4	4	4	4	12	100	4	-	4	180	4	4	4	90	90	200
Heißluft: s. Luft	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heißteer bis °C	4	4	4	4	4	100	100	4	-	4	180	4	4	4	90	90	200
Heizöle	4	2	4	4	2	1	1	3	1	3	1	3	3	3	1	1	1
Helium	1	1	1	1	1	1	-	1	-	1	1	1	1	1	1	1	1
Heptan	4	2	4	4	2	1	-	4	-	2	1	1	1	2	1	1	1
Hexaldehyd	3	3	1	2	2	4	-	3	-	-	-	-	1	1	-	2	1
Hexohydrobenzol: s. Cyclohexan / Hexolin: s. Cyclohexonol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexan	4	2	4	4	1	1	1	4	1	1	1	1	1	3	1	1	1
Hexanol - Hexylolkohol	1	4	2	1	2	1	1	3	1	1	1	3	1	1	1	1	1

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Holzöl	4	2	4	4	3	2	-	3	-	3	1	3	2	2	1	1	1
Hydraulik-Öle und Flüssigkeiten - Mineralölbasis	4	1	4	4	2	1	1	3	1	2	1	3	3	2	1	1	1
Hydraulik-Öle und Flüssigkeiten - Glykolbasis	4	1-2	1	1	2	1	1	2	-	-	-	-	-	1	1	1	1
Hydraulik-Öle und Flüssigkeiten - Phosphatesterbasis	4	4	2	2	4	4	4	2-3	-	4	1	4	4	3	1	-	1
Hydrazin	2	4	1	1	2	2	-	4	-	2	4	1	1	1	-	1-2	1
Hydrozinhydrat, wässrig	4	4	1	1	3	3	-	3	-	1	1	1	1	1	-	1	1
Isobutanol = Isobutylalkohol	1-2	4	1	1	1	2	-	1	2	1	1	1	1	1	1	1	1
Isooctan	4	2	4	4	2	1	1	1	1	2	1	1	4	1	1	-	1
Isooctanol = Isoctylalkohol	1	3	1	2	1	2	-	2	-	2	1	1	1	1	-	1	1
Isophoron	4	4	1	1	4	4	4	4	4	4	4	-	-	-	-	2	1
Isopropanol = Isopropylalkohol	1	3	1	1	1	2	1	1	2	1	1	3	1	1	1	1	1
Isopropylocetat	3	3	1	2	4	4	-	2	-	4	4	2	-	3	1	1	1
Isopropylaether	4	2	3	3	3	3	-	-	-	3	3	3	3	3	1	1	1
Isopropylbenzol	4	3-4	4	4	4	4	-	4	-	4	1	-	-	-	-	-	1
Isopropylchlorid	4	-	4	4	-	4	-	-	2	-	1	-	-	-	-	-	1
Jauche	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Jovellelauge: s. Koliumhypochlorit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jodtinktur (5-10%ige alkohol. Jodlsg.)	2	4	2	2	4	2	-	4	-	2	1	4	3	2	4	4	1
Kalilauge: s. Kaliumhydroxid / Kalisolpeter: s. Koliumnitrot	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kaliumacetat, wässrig	4	4	1	1	2	2	-	4	4	4	4	1	1	1	-	1	1
Kaliumaluminiumsulfat (Alaun)	1	1	1	1	1	2	-	2	-	1	1	1	1	1	1	1	1
Koliumbicarbonat	1	2	1	1	1	1	-	1	-	1	1	1	1	1	1	1	1
Koliumbichromat: s. Kaliumdichromat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kaliumborat, wässrig	1	1	1	1	1	1	-	1	-	1	1	1	1	1	1	1	1
Koliumbromid, wässrig	1	1	1	1	1	1	-	1	-	1	1	1	1	1	1	1	1
Kaliumcarbonat (Pottasche)	1	3	1	1	1	1	-	1	1	1	1	1	1	1	1	1	1
Kaliumchlorat, wässrig	1	2	1	1	1	1	-	2	-	1	1	1	1	1	1	4	1
Kaliumchlorid	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Kaliumcyanid (Cyankali)	1	3	1	1	1	1	1	1	1	1	2	4	1	1	1	1	1
Kaliumdichromat	3	2	1	1	3	2	1	1	3	1-2	1	1	1	1	2-3	1	1
Kaliumhydroxid (Aetzkali, Kalilauge)	1	1	1	1	1	1	-	3	-	1-2	1	1	1	1	1	1-2	1
Kaliumhypochlorit (Javelle)	2	4	2	2	4	2	-	2	-	4	1	1	3	3	4	-	1
Kaliumjodid, wässrig	3	-	1	1	1	1	-	-	-	1	1	3	1	1	4	1	1
Kaliumnitrat, wässrig	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Kaliumpermanganat 10 °C, wässrig	3	1	1	1	3	2	-	1	-	1	1	1	1	1	4	1	1
Kaliumphosphat (mono und dibasisch)	1	1	1	1	2	1	-	4	-	1	1		1	1	1	1	1
Kaliumsulfat	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Kaliumsulfit	1	1	1	1	1	1	-	1	-	1	1	1	1	1	1	4	1

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Kalkstein: s. Calciumcarbonat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kalzium: s. Calcium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kalzinierte Soda: s. Natriumcarbonat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Karbolineum: s. Carbolineum / Karbolsäure: s. Phenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kerosen (Kerosin)	4	2	4	4	3	2	-	3	-	2-3	1	1	4	4	1	1	1
Ketone: s. einzelne Bezeichnungen: allgemein gilt	3-4	4	2	2	4	4	3	2	4	4	4	4	4	4	1-2	1-2	1
Kieselfluorwasserstoffsäure, wässrig	1	4	2	2	3	2	-	4	-	2	4	1	1	1	3	4	1
Kieselsäure: s. Siliziumdioxid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kochsalz: s. Natriumchlorid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kohlendioxyd, gasförmig, sowie nass und trocken	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Kohlendioxyd fest (Trockeneis -80°C) beständig, jedoch werden die Elasto- und Plastomere steif bis brüchig	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kohlendisulfid: s. Schwefelkohlenstoff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kohlenmonoxid	2	1	3	3	2	2	1	1	2	2	1	1	1	1	1	1	1
Kohlensäure: s. Kohlendioxid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kohlenstofftetrachlorid (Tetrachlorkohlenst.)	4	3	4	4	4	3	2	4	1	4	1	4	4	4	1-2	1	1
Kokosnuss-Fett und Cl	4	1	1	1	2	1	1	1	1	2	1	1	4	4	1	1	1
Königswasser	4	4	4	3	4	2	-	3	3	2	2	2	4	4	4	4	1
Kornöl	4	1	3	2	2	1	1	1	1	2	1	2	4	1	1	3	1
Kreosot	4	2	2	2	4	4	4	2	1	2-3	1	2-3	4	4	1	1	1
Kreosole (Kresylsäure)	4	4	4	4	3	3	-	2	2	3	1	4	4	4	4	3	1
Kupferacetat	-	-	1	1	2	2	-	-	-	2	-	-	1	1	-	-	1
Kupferchlorid, wässrig	1	1	1	1	1	1	4	1	1	1	1	1	1	1	2-3	1	1
Kupfercyanid	1	2	1	1	1	1	-	1	-	1	1	-	1	1	1	1	1
Kupferhydroxid: s. Bergblau	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kupfernitrat, wässrig	1	3	1	1	1	1	-	1	-	1	1	3	1	3	1	1	1
Kupfersulfat, wässrig (Kupfervitriol)	1	1	1	1	1	1	-	1	1	1	1	2-3	1	1	2-3	1	1
Lochgas: s. Stickoxydul	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lackbenzin: siehe Benzine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lacke: unbedingt Zusammensetzung ermitteln	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lanolin	4	1	3	3	2	1	-	3	-	3	1	2	2	3	1	1	1
Laugen: s. genaue Bezeichnungen Allgemein gilt	1-2	2	1	1	1-2	2-3	2	2	1-2	1	2	1	1-2	1-2	2-3	3	1
Laürylolkohol: s. Dodecylalkohol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lebertran (Öl) [1]	4	1	1	1	2	1	1	2	1	2	1	4	1	1	1	1	1
Leichtbenzin: s. Benzine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leim, tierisch	2	2	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1

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Leinöl [1]	4	2	2	2	2	1	-	1	1	1-2	1	3	4	1	1	1	1
Leuchtgas: s. Stadtgas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lösungsmittel: s. spezifische Bezeichnungen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LPG: s. entsprechende chem. Bezeichnung des Gases	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luft, atmosphärische, ölfrei, bis +°C	70	80	90	120	90	90	150	175	175	120	200	70	90	100	120	120	200
Luft, ölhaltig, bis +°C	4	80	4	4	90	100	150	175	175	120	200	70	90	100	120	120	200
Magnesiumchlorid, wässrig	1	1	1	1	1	1	1	1	1	1-2	1	1	1	1	1	1	1
Magnesiumhydroxid	2	1	1	1	1	2	1	-	-	1	1	-	-	-	-	-	1
Magnesiumsilikat (Talk)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Magnesiumsulfat	2	1	1	1	1	2	-	1	-	1	1	1	1	1	1	1	1
Magnesiumsulfit, wässrig	1	1	1	1	1	1	-	1	-	1	1	1	1	1	-	4	1
Maische [1]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Maleinsäure, wässrig	3	4	3	3	4	4	-	-	-	4	1	1	1	1	-	3	1
Margarine-Fette und -Öle [1]	3	1	1-2	3	2	1	1	3	1	1-2	1	2	2-3	2-3	1-2	1	1
Maschinenöle: s. Öle, mineralische	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Meerwasser: s. Wasser	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MEK: s. Methylaethylketon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melasse [1]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mesityloxid	4	-	2	2	4	4		4	4	4	4	-	-	-	-	-	1
Methan(gas)	4	3	4	3	3	1	1	3	2	3	1	1	1	1	1	1	1
Methanol: s. Methylalkohol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylacetat	4	4	4	2	4	4	4	4	4	4	4	4	1	1	1	2	1
Methylaethylketon (MEK)	4	4	1	1	4	4	4	4	4	4	4	3	1	1	1	3	1
Methylalkohol	1	3	1	1	1	1	1	1	1	1	1-2	1	1	1	1-2	1	1
Methylamin, wässrig	1	-	1	1	1	4	-	-	-	1	1	3	1	1	1	1	1
Methylchlorid	3	4	2	2	4	4		4	2	4	3	3	4	2	1	4	1
Methylenchlorid: s. Dichlormethan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylgykol (Methylcellosolve)	4	-	2	2	2	-	-	-	-	2	4	4	1	1	1	2	1
Methylclykolacetat	4	4	2	2	-	4	-	4	-	-	4	-	-	1	1	2	1
Methylisobutylketan	4	4	3	3	4	4	4	3	4	4	4	-	1	-	1	2	1
Methylphthalat: s. Dimethylphthalat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Milch [1]	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1
Milchsäure, wässrig [1]	2	2	2	2	3	3	1	1	1	2	1	3	2	1	1-2	1	1
Mineralöl: s. Öle, mineralische	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Milchsäure I (Schwefelsäure / Salpetersäure / Wasser)	4	4	2	4	4	4	-	4	2	4	4	4	4	4	4	4	1
Milchsäure II (Schwefelsäure / Phosphorsäure / Wasser)	4	-	2	2	3	4	-	-	2	1	1	1	3	4	4	4	1
Monochlorbenzol	4	3	4	4	4	4	4	3	2	4	2	4	4	1	1	1	1
Monochloressigsäure	4	4	2	2	4	4	-	4	-	2	4	4	4	1	4	4	1

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Monochlormethan: s. Methylchlorid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Monostyrol: s. Styrol, monomer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Most, unvergoren [1]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Most, vergoren: s. Obstwein	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Motorenöl: s. Öl und Fette, mineralische Zusätze abklären	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Myristylolkohol - Myristinalkohol	-	-	-	1	1	1	-	-	-	1	1	1	-	-	-	1	1
Naphtha (Erdöl)	4	2	4	4	4	1	1	2	1	3	1	3	4	1	1	1	1
Naphthalin: s. Steinöl	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Natriumacetat, wässrig	1	3	1	1	1	1	-	1	4	-	1	1	1	1	1	1	1
Natriumbicarbonat, wässrig	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Natriumbisulfat	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Natriumbisulfit, wässrig	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1
Natriumborat (Borax)	2	1	1	1	1	2	1	2	1	2	1	1	1	1	1	1	1
Natriumcarbonat	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Natriumchlorat, wässrig	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1
Natriumchlorid (Kochsalz) [1]	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Natriumcyanid	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Natriumdichromat	2-3	3	2	1	2	3	-	2	-	1	1	-	1	1	-	1	1
Natriumfluoraluminat 10%	1	2-3	1	1	1	1	-	2	-	-	1	1	1	1	-	1	1
Natriumfluorid	1	2	1	1	1	1	-	2	-	-	1	1	1	1	1	1	1
Natriumhydroxid, (Natronlauge, Aetznatron) 25%, 20°C	1	2	1	1	1	2	2	2	2	1	3	1	1	1	1-2	1	1
Natriumhydroxid (Natronlauge, Aetznatron) 25%, 100°C	4	4	2	2	3	4	3	4	3	3	4	4	4	2	2-3	4	1
Natriumhypochlorit 10%	2	2	1	1	3	1	1	1	2	1	1	1	1	1	4	2-3	1
Natriumhypochlorit 30%	3	3	2	1	4	2	1	3	2	1	2-3	1	2	1	4	2-3	1
Natriummethaphosphat	1	-	1	1	1	1	-	1	1	1	1	1	1	1	1	1	1
Natriumnitrat	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Natnummtrit	1	1	1	1	1	1	-	1	-	1	1	1	1	1	1	3	1
Natriumperborat	1	-	1	1	1	1	-	1	1	1	1	2	1	1	1	1	1
Natriumperoxid	2	3	2	2	3	2	-	4	1	2	2	-	-	1	1	1	1
Natriumphosphat (siehe auch zusätzlich Trinatriumphosphat)	1	2	1	1	1	1	-	1	-	1	1	1	1	1	1	1	1
Natriumsilikat, wässrig	1	3	1	1	1	1	-	1	-	1	1	1	1	1	1	1	1
Natriumsulfat, wässrig	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1
Natriumsulfid, wässrig	3	-	1	1	4	1	-	-	-	1	4	1	1	1	1	1	1
Natriumsulfit, wässrig	1	1	1	1	1	1	-	1	-	1	1	1	1	1	1	2-3	1
Natriumthiosulfat (Antichlor)	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1

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Natron, auch doppeltkohlensaures N: s. Natriumbicarbonat Natronlauge: s. Natrium-hydroxid / Natronsalpeter: s. Natriumnitrat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naturgas, nass	3	1-2	4	3	1	1	1	4	1	1	1	1	2	1	1	1	1
Naturgas, trocken	1	1	1	1	1	1	1	4	1	1	1	1	1	1	1	1	1
Nickelsulfat, wässrig	1	2	1	1	1	1	1	1	-	1	1	1	1	1	1-2	1	1
Nitriersäure (Gemische aus Salpetersäure und konz. Schwefelsäure, siehe diese)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrobenzol	3	4	4	4	4	4	-	4	4	4	2	4	4	1	1-2	2-3	1
Nitropropan	4	4	2	2	4	4	-	4	-	4	4	-	-	-	1	2-3	1
Nitrotoluol	4	-	3	3	4	3	-	-	2	4	3	4	1	-	-	2-3	1
Nonylalkohol (Nonanol)	4	4	4	1	1	4	-	2	-	2	1	-	1	-	1	1	1
Obstpulpe [1]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Obstweine vergoren [1]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Octan	4	1	4	4	3	1	-	4	2	4	1	-	1	-	1	1	1
Octanol = Octylalkohol	2	4	1	1	1	2	-	2	-	1	1	4	1	1	1	1	1
Olsäure	4	1	4	4	3	2	-	4	1	4	2	1	2	3	1	1-2	1
Öle und Fette - mineralische, ohne Zusätze bei 20°C	4	1	4	4	2-3	1	1	2-3	1	2-3	1	2	2	2	1	1	1
Öle und Fette - mineralische, ohne Zusätze bis °C	4	60	4	4	4	120	140	4	180	150	200	4	30	40	100	100	200
Öle und Fette - ASTM-Öl Nr. 1 20 °C	4	1	4	4	1	1	1	2	1	1	1	2	2	2	1	1	1
Öle und Fette - ASTM-Öl Nr. 2 20 °C	4	2	4	4	2	1	1	3	1	2	2	2	3	3	1	1	1
Öle und Fette - ASTM-Öl Nr. 3 20 °C	4	2	4	4	2	1	1	3	1	2	2	2	3	3	1	1	1
Öle und Fette - tierische (animalische) [1]	4	1	2	2	2	1	1	3	1	1-2	1	2	2-3	2-3	1-2	1	1
Öle und Fette - pflanzliche (vegetabile) [1]	3	1	1-2	3	2	1	1	3	1	1-2	1	2	2-3	2-3	1-2	1	1
Transformator-Öle (Pyranole)	4	2	4	4	4	1	4	2	1	4	1	3	3	4	1	1	1
Transformator-Öle (Pyranole) - auf Siliconbasis	1	1	1	1	1	1	1	4	1	1	1	1	1	1	1	1	1
Transformator-Öle (Pyranole) - Dieselöl	4	2	4	4	2-3	1	1	3	1	3	1	3	2	3	1-2	1	1
Transformator-Öle (Pyranole) - Heizöl	4	2	4	4	2	1	1	3	1	3	1	3	2	3	1-2	1	1
Hydrauliköle auf - Mineralölbasis	4	2	4	4	2	1	1	3	1	1-2	1	3	3	2	1	1	1
Hydrauliköle auf - Glykolbasis (Polyalkylglykole)	4	1-2	1	1	2	1	2	2	-	2	3	-	1	1	1	1	4
Hydrauliköle auf - Phosphatesterbasis	4	4	2	2	4	4	4	2-3	2	4	1	4	4	3	1	-	1
Olein(säure): s. Ölsäure	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oleum (rauchende Schwefelsäure)	4	4	4	4	4	4	4	4	4	4	1	4	4	4	4	4	1
Oleumdämpfe	4	4	3	3	4	4	-	4	-	3	3	3	4	4	4	4	1
Olivenöl [1]	4	1	2	3	1	1	1	2	1	1-2	1	1	1	1	1	1	1
Oxalsäure, wässrig	2	4	2	2	2	2	3	1	1	2	1	2	1	1	1-2	2	1
Ozon	4	1	2	1	3	4	1	1	1	1	1	1	4	4	3	4	1
Palmitinsäure	3	1	3	3	2	3	2	1	1	2-3	2	4	1	1	1	2	1
Palmöl 1)	4	2	1	1	2	1	1	1	1	3	1	3	4	4	1	1	1

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Paraffin, Poroffinöle	4	2	3	3	2	1	1	2	1	3	1	1	3	1	1	1	1
Paraformaldehyd	3	1	2	2	2	2	-	1	-	-	2	-	1	1	1-2	1	1
Pentachlorphenol	4	4	1	2	4	4	-	3	-	-	-	-	-	1	-	4	1
Pentan	4	4	4	4	1	1	1	4	-	-	-	1	4	-	1	1	1
Perborat: s. Notriumborat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perchloraethylen	4	4	4	4	4	2-3	2	2	2	4	1	4	4	4	1-2	1	1
Perchlorsäure, wässrig	2	4	2	2	3	3	3	4	1	1	1	1	1	1	4	4	1
Perhydrol: s. Wasserstoffsuperoxid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Permanganat: s. Kaliumpermanganat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petrol(eum)	4	1	4	4	2	1	1	2	1	3	1	4	2-3	2-3	2-3	1	1
Petrolaether: s. Benzin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pflanzenöle allgemein gilt	3	1	1-2	3	2	1	1	3	1	1-2	1	2	2-3	2-3	1-2	1	1
Phenol (Corbolsäure), wässrig	3	4	1	1	3	4	4	2	2	3	1	4	4	1	4	3	1
Phosphoroxidchlorid	4	-	1	1	4	4	-	-	-	1	1	4	3	3	-	4	1
Phosphorsäure 50%	1	2	1	1	1	2	-	2	2	1	1	1	1	1	4	4	1
Phosphorsäure 85%	1	4	1	1	1	3	-	3	2	1-2	1	1	1	1	4	4	1
Phosphorsoure Tonerde: s. Aluminiumphosphat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phtalsäureanhydrid, wässrig (Phthalsäure)	1	-	1	1	1	4	-	-	-	1	4	1	1	1	3	2	1
Pikrinsäure	3	4	3	1	3	3	-	1	2	2	1-2	1	1	1	1	4	1
Pinienöl [1]	4	1	4	4	4	2	1	2	1	4	1	2	2-3	2-3	1-2	1	1
Polychlorierte Biphenyle (Pyranole): s. Öle, Transformeröle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pottosche: s. Koliumcarbonat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pressluft: s. Luft, ölhaltig	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Propan, flüssig	4	1	4	4	2	1	1	3	2	3	1	1	4	1	1-2	1	1
Propangas	1	1	1	1	1	1	1	4	2	2-3	1	1	2	2	1	1	1
Propanol: s. Propylolkohol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Propionsäure	4	-	1	1	3	4	4	-	-	3	1	1	1	1	-	4	1
Propylacetat	4	-	2	1	1	4	4	-	4	4	4	-	2	2	-	1	1
Propylalkohol	1	3	1	1	1	2	1	2	1	2	1	3	1	1	1	1	1
Propylamin	4	4	4	4	4	4	-	4	-	4	4	-	-	1	-	1-2	1
Propylen (Propen)	4	4	4	4	4	4	-	4	2	4	1	-	-	1	-	1	1
Propylendichlorid	4	-	4	4	4	4	-	4	-	-	-	-	4	4	1-2	4	1
Propylenglykol	1	-	1	1	1	3	-	1	-	1	1	3	1	1	4	1	1
Propylenoxid	4	4	2	2	4	4	-	4	-	4	4	-	-	1	4	2	1
Pydraul: s. Hydraulikflüssigkeiten auf Phosphatesterbasis / Pyronole: s. Öle, Transformeröle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyridin	4	4	2	1	4	4	3	4	-	3	3	4	1	3	1	1	1
Quecksilber	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1

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Quecksilberchlorid (Sublimat)	1	1	1	1	2	3	1	1	-	1-2	1	3	1	1	4	1	1
Quecksilbernitrat	1	1	1	1	1	1	-	1	-	-	-	1	1	1	1	1	1
Rauchende Schwefelsäuren s. Oleum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Raps(samen)öl	4	2	1	1	2	2	1	4	1	2	1	-	-	-	-	-	1
Rizinusöl [1]	1	1	2	2	1	1	1	1	1	1	1	-	2-3	1	1	1	1
Rohöl, stark womausch	4	2	4	4	3	1-2	1	4	1	2	1	3	3	3	1	2	1
Rohzuckersaft [1]	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Solicylsäure, wässrig	1	-	1	1	1	1-2	-	-	1	1	1	-	1	1	1	3	1
Salmiak: s. Ammoniumchlorid / Salmiakgeist s. Ammoniak in Wasser	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Salpetersäure 10%	3	4	1	1	3	3	4	3	-	1-2	1-2	1	1	1	4	4	1
Salpetersäure 25%	4	4	2	1	4	4	4	4	-	1-2	1-2	1	1	1	4	4	1
Salpetersäure 40%	4	4	2	2	4	4	4	4	-	1-2	1-2	2	4	4	4	4	1
Salpetersäure 60%	4	4	4	3	4	4	4	4	-	1-2	1-2	3	4	4	4	4	1
Salz: wenn Kochsalz siehe Natriumchlorid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Salzsäure 15%	1	2	1	1	3	2	2	1	-	1-2	1	1	1	1	4	4	1
Salzsäure 38% (konz.)	2	4	1	1	3	3	4	3	2	1-2	1	2	1	1	4	4	1
Salzsäuregas	1	2	1	1	3	2	-	1	-	1-2	1	1	1	1	4	4	1
Salzwasser: s. Sole oder s. Wasser, Meerwasser	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sangojol i. Terpentinölersatz: s. Benzine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Säuren: s. spez. Bezeichnung. Allgemein gilt	2-3	3	2	1-2	2-3	3	2-3	2	1-2	1-2	1	2-3	1-2	1-2	3	2-3	1
Sauerstoff rein bis +°C	4	80	90	120	90	4	100	175	175	120	200	70	70	70	90	100	200
Scheidewasser: s. Salpetersäure	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schmieröle und -fette: s. Öle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schwefel, geschmolzen, 90 °C	1	2	4	4	4	4	3	1	1	1	1	4	4	4	1	1	1
Schwefeläther: s. Ather / Schwefeldioxid s. schweflige Säure	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schwefelkohlenstoff	4	2	4	4	4	4	1	4	1	4	1	2	4	4	1	1	1
Schwefelsäure 10%	1	2	1	1	1	1	1	2	3	1	1	1	1	1	4	1-2	1
Schwefelsäure 30%	2	2	1	1	2	2	2	4	4	1	1	1	1	1	4	4	1
Schwefelsäure 50%	3	2	1	1	3	3	3	4	4	1	1	1	1	1	4	4	1
Schwefelsäure 75%	4	4	3	2	4	4	4	4	4	1-2	1	3	3	1	4	4	1
Schwefelsäure 90%	4	4	4	3	4	4	4	4	4	2	1	4	4	1	4	4	1
Schwefelsäure konz. (Oleum, rauchende S.)	4	4	4	4	4	4	4	4	4	4	1	4	4	4	4	4	1
Schwefeltrioxid	2	2	3	2	4	3	-	3	2	2-3	1	1	1	1	4	4	1
Schwefelwasserstoff, feucht	4	3-4	2	2	3	3	2	1	3	1	1	4	1	1	1	4	1
Schwefelwasserstoff, trocken	3	3	2	2	3	2	2	1	2	1-2	1	4	1	1	1	4	1
Schweflige Säure 10%, feucht	3	2	1	1	3	3	-	1	2	1-2	2	2	2	1	1	4	1
Schweflige Säure 75%, feucht	4	4	2	2	4	4	-	3	2	2-3	2	4	3	3	4	4	1
Schweinefett: s. Öle und Fette, tierische	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schwerbenzin (Lack. oder Testbenzin): s. Benzine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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	Naturkautschuk (NR, SBR)	Polyurethan-Kautschuke (AU, EU)	Bulykautschuk (IIR)	Aethylen-Propylen-Kautschuke (EPM, EPDM)	Neoprene / Chloroprene (CR)	Nitrilkautschuk (NBR)	Epichlor-hydrin-Kautschuk (CO, ECO)	Silicon-Kautschuke (Q, MQ)	Fluorsilicon-Kautschuke (FQ)	Hypalon ® (CSM)	Viton ® (FPM)	PVC weich (PVC)	Polyäthylene (PE)	Polypropylene (PP)	Polyamide / Nylon usw. (PA)	Polyacetale (POM)	Teflon ® usw. (PTFE)
Seifenlösung	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
reine Siliconöle und -Fette	1	1	1	1	1	1	1	2	1	1	1	4	1	1	1	1	1
Siliziumdioxid (Kieselsäure)	1	1	1	1	1	1	-	1	-	1	1	1	1	1	1	1	1
Skydrol: s. Hydraulikflüssigkeiten, auf Phosphatesterbasis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Soda, kristallisiert: s. Natriumcarbanat / Soda, kalziniert: s. Natriumcarbonat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sojabohnenöl [1]	4	2	3	3	2	1	1	1	1	2	1	1	4	1	1	1	1
Sole (Kochsalzlösung)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Speck [1]	4	1	4	4	3	1	1	2	1	3	1	-	1	1	1	1	1
Spindelöl. s. Öle, mineralische	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spiritus: s. Athylalkohol, vergällt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stadtgas, Leuchtgas (Erdgas: s. Naturgas)	3	3	3	3	3	2	1	3	3	3	1	1	1	1	1	1	1
Stärke, wässrig [1]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Stärkesirup [1]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Stearin(säure)	2	1	2	2	2	2	2	1	-	2-3	2	1	4	4	1	1	1
Steinöl (Naphthalin)	4	2	4	4	4	1	-	3	1	2-3	1	1	4	4	1	1	1
Steinkohlenteer (s. auch Heißteer)	4	4	4	4	3	2	2	1	1	4	1	2	2	2	1	1	1
Stickoxydul (Lachgas)	1	1	1	1	1	1	-	1	-	1	-	1	1	1	1	1	1
Stickstoff	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Styrol, monomer	4	3	4	4	4	4	4	4	3	4	2	4	4	4	1	1	1
Sublimat: s. Quecksilberchlorid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Talg	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Talk(um): s. Magnesiumsilikot	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tannin: s. Gerbsäure	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Teer (s. auch Heißteer)	4	4	4	4	3	2	2	2	1	4	1	2	2	2	1	1	1
Terpentin(öl)	4	4	4	4	4	1	1	4	2	4	1	3	3	4	1	2	1
Terpentinersatz: s. Benzin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Testbenzin = White Spirit: s. Benzine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloräthylen (Perchloräthylen)	4	2	4	4	4	2	1-2	4	2	4	1	4	4	4	1-2	1	1
Tetrachlorkohlenstoff (Kohlenstofftetrachlorid)	4	3	4	4	4	3	2	4	1	4	1	4	4	4	1-2	1	1
Tetrahydrofuran	4	-	2	4	4	3	-	-	-	4	4	4	3	4	1	1-2	1
Tetralin = Tetrahydronaphthalin	4	-	4	4	4	3	-	4	1	4	1	1	3	4	1	1	1
Tierfett: s. Öle und Fette, tierische	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluol	4	4	4	4	4	3	4	4	2	4	1	4	4	4	1	1	1
Tran: s. Lebertran	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transformatorenöle: s. Öle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Traubensatz, unvergoren [1]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Traubenzucker. s. Glucose	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Triäthanolamin	3	4	3	3	1	2	-	1	4	3	1	4	1	1	1	1	1
Triäthylamin	-	-	2	4	-	3	-	-	-	-	-	-	1	-	-	1-2	1
Tributylphosphat	4	4	2	1	4	4	-	-	4	4	4	4	1	-	-	2	1

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Trichloräthan (Chlorothene)	4	4	4	4	4	4	-	4	2	4	1	-	4	2	1	4	1
Trichloräthylen	4	4	4	4	4	3	4	4	2	4	1-2	4	4	2	1-2	2-3	1
Trichlormethan: s. Chloroform	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tricresylphosphat	1	4	1	1	3	4	4	1	2	4	2	4	3	3	1	2	1
Trinatriumphosphat	1	3	1	1	1	1	-	1	-	1	-	1	1	1	1	1	1
Trioctylphosphot	4	-	1	4	4	2	-	3	2	4	4	4	1	1	-	2	1
Urin	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Vaseline: s. Öle und Fette, mineralische	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Verdünner für Farben und Lacke: Zusammensetzung ermitteln	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinylocetat	1	-	1	1	1	1	-	-	-	1	1	4	-	-	1	2	1
Vinylchlorid, monomer	2	4	1	2	4	4	-	4	-	-	1	4	4	-	1	4	1
Vitriol: s. Kupfersulfat / Vitriolöl: s. Oleum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waschmittel, synth. 20°C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Wasser - Trink- oder Mineralwasser, ohne Zusätze [1] bis °C	70	60	100	120	70	110	110	120	100	100	150	70	80	90	100	100	200
Wasser - destilliert, demineralisiert, entsalzt, Kondenswasser: beeinflusst nicht Polymer, Polymer beeinflusst Wasser	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wasser - Mineralwasser CO. gesättigt	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Wasser - Königswasser: siehe dieses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wasser - Meerwasser	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Wasserdampf bis °C	4	4	120	130	4	100	100	120	100	100	150	4	4	4	120	120	200
Wasserglas: s. Natriumsilikat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wasserstoff(gas)	2	1	1	1	1	1	1	3	3	1	1	1	1	1	1	1	1
Wasserstoffperoxid 10%	3	2	4	2	4	3	-	1	-	1	1-2	1	2	1	4	1	1
Wasserstoffperoxid 30%	4	2	4	2	4	4	-	1	2	1-2	1	4	1	1	4	1	1
Weine rot und weiß [1]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Weinsäure, wässrig [1]	1	1	2	2	1	1	2	1	I	1	1	1	1	1	3	3	1
White Spirit: s. Benzine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wismutcarbonat (Bismuthcarbonat)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Wollfett: s. Lanolin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenol	4	4	4	4	4	3-4	4	4	1	4	1-2	4	4	3	1	1	1
Xylol	4	4	4	4	4	3-4	4	4	1	4	1-2	4	4	3	1	1	1
Zinkacetat, wässrig [1]	4	4	1	1	2	2	-	4	4	4	4	-	1	1	-	1	1
Zinkchlorid, wässrig [1]	1	3	1	1	1	1	-	1	1	1	1-2	1	1	1	2-3	2	1
Zinksulfat, wässrig	1	3	1	1	1	1	-	1	1	1	1	1	1	1	2-3	1	1
Zinn II-Chlorid, wässrig	1	1	2	2	1	1	-	2	1	1	1	1	1	1	3	4	1
Zitronensäure, wässrig [1]	1-2	1	1	1	1	1	1	1	1	1	1	1	1	1	1-2	2	1
Zucker, wässrig [1] (Rohzuckersaft, s. diesen)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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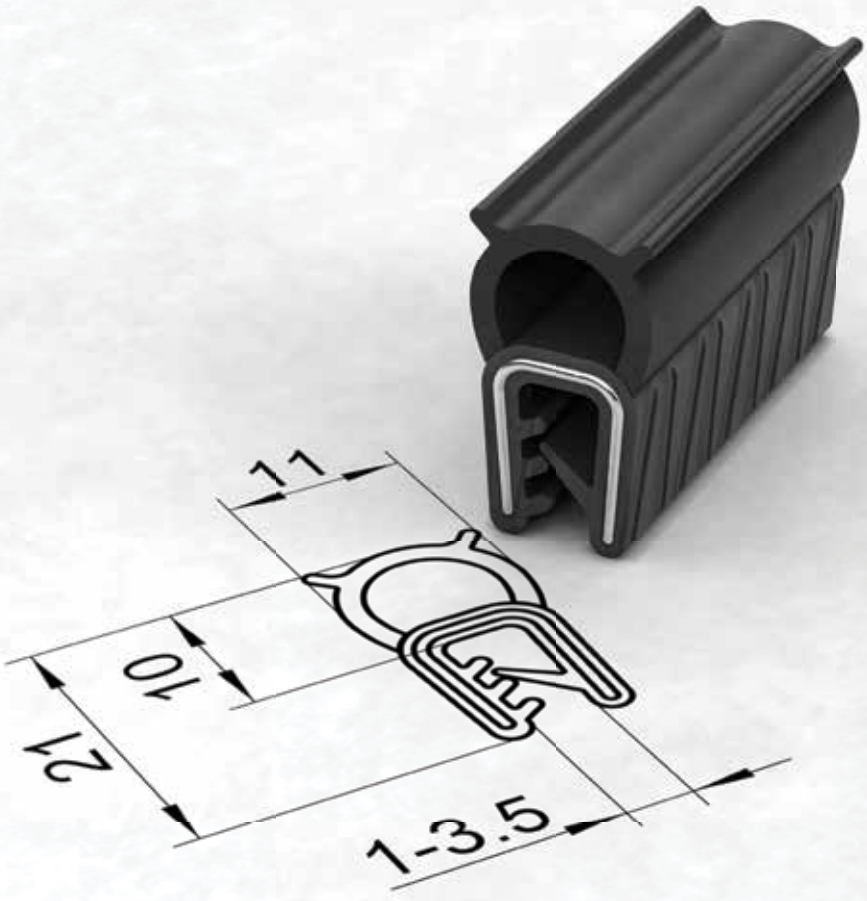

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