THINK Filter Technology
GKN Sinter Metals Filters, the leading manufacturer of porous sinter metal products, offers a variety of solutions to fulfil customer requirements. We are familiar with various applications in almost every industrial branch. Our products are applied in gas- and liquid filtration, dampening, sparging, sensor protection, bulk handling and many more. We offer solutions for high temperature and corrosive environments.

Sintered filter elements made of stainless steels, bronze, nickel based alloys, titanium and several special alloys can be manufactured seamless up to 1,600 mm length and 320 mm OD. Larger elements will be assembled in our certified in-house welding shop. Our most innovative product for the chemical industry is the patented metallic membrane SIKA-R...AS.

The filter cartridges equipped with this state-of-the-art technology offer a flow rate up to 4 times higher compared to conventional sinter metal filter cartridges. Furthermore an excellent back flush performance is guaranteed. The filter active membrane layer with filter grades down to 0.1 µm absolute has a thickness of only 200 µm and is made of the same alloy as the coarse support material. The membrane is sinter bonded to the support and therefore cannot peel off.

Another innovation introduced by GKN is the sinter bonded joint of porous parts with solid fittings in order to avoid welding seams – the weak spot of all sintered cartridges of our competitors.

All sintered materials of GKN offer a self-supporting structure with high mechanical strength.

We manufacture various filter grades with specified pore sizes and flow rates in order to have the appropriate solution for your requirements.
SIKA-B

SIKA-B, is a brand name for GKN Sinter Metals’ high porosity sintered elements from spherical Bronze powder.

SIKA-B... materials are used as self-supporting structural elements. The pores are mechanically fixed with respect to both size and position after the sintering process.

Properties

The characteristics of SIKA-B products result in the following important properties:

- Shape/-stability i.e. selfsupporting structural elements suitable for high differential pressures
- Particularly good properties when under compression, vibration and changing conditions or with high sudden pressures peaks
- High heat resistance and thermal stability
- Defined permeability and filtration properties because the pore size and distribution are exact and uniform
- Backflushing and easy cleaning with superheated steam, chemical solvents, thermal processes or ultrasonically
- The variety of materials used can be welded and machined
Application Examples

- Autogenous welding (as flame arrestors) / Explosion protection
- Polymer filtration
- Gas- and Liquid filtration
- Silencing
- Sparging
- Fluidization (handling of bulk material)
- Sensor and valve protection
- Flow restriction

as well as various further applications in industries like:
- chemical
- semiconductor
- scientific instrumentation
- pharmaceutical

Filtration and separation

Protecting

Oil filter in an oil burner nozzle
Aeration pads for Bulk Handling:

Ideal aftermarket solution due to easy installation!
Manufacturing of SIKA-B... Products

Moulding

Shape, size and distribution of the powder particles are important parameters which affect the properties of a high porosity sintered Bronze product.
By varying the parameters of the powder-production process, it is possible to produce spherical powder particles in a wide range of particle sizes.
SIKA-B filters are produced by gravity sintering technique.
The powder is filled into moulds and then sintered inside of these moulds.

Sintering

Sintering, the fundamental processing step for all P/M products, means bonding of powder particles through fusion at temperatures well below the melting point.
The structure, after sintering, shows that the grain boundaries run over the original particle boundaries.
Sintering gives the high porosity material its shape-stability and properties of a strong metal component.
SIKA-B materials are used as self-supporting structural elements.
The pores are mechanically fixed regarding size and position after sintering.
Filter Elements SIKA-B

Our various high porosity sintered metal filter elements can be manufactured in the following standard geometries:

- SIKA-Discs
- SIKA-Cylinders
- SIKA-Cones
- SIKA-Plates
- SIKA-Silencers

Seamless construction up to 300 mm diameter.

We also manufacture to customer-specified dimensions. Bigger elements can be welded at our certified in-house welding shop.

All specifications are subject to change.
Standard Geometries

SIKA-B-Discs and -Plugs of sintered Bronze

- Ø d 1 mm to Ø d 300 mm seamless
- Ø d from 300 mm welded from sections
- up to h 100 mm

SIKA-B-Rings and Hollow cylinder of sintered Bronze

- Ø d 4 mm to Ø d 300 mm, seamless
- Ø d from 300 mm, welded from sections
- up to h 900 mm

and according to diameter, either seamless or welded from sections

SIKA-B-Plates of sintered Bronze

- l up to 1200 mm
- b up to 300 mm up to h 100 mm
- h up to 70 mm
- larger dimensions welded from sections
SIKA-B conical moulds with or without flange of sintered Bronze

- Ø d 4 mm to Ø d 100 mm
- h 8 mm to h 200 mm

SIKA-B conical moulds of sintered Bronze

- Ø d 4 mm to Ø d 100 mm
- h 5 mm to h 200 mm up to h 900 mm

SIKA-B-Moulds of sintered Bronze

- Ø d 4 mm to Ø d 100 mm, seamless
- Ø d from 500 mm welded from sections up to h 900 mm

and according to diameter, either seamless or welded from sections

SIKA-B-Cones with flange of sintered Bronze

- Ø d 2 mm to Ø d 100 mm
- h 2 mm to h 100 mm
## Silencer made of sintered bronze with a hexagon

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## Silencer made of sintered bronze sintered together with a solid fitting hexagon

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Silencer made of sintered bronze

![Silencer made of sintered bronze](image)

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Vent plug made of sintered bronze

![Vent plug made of sintered bronze](image)

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Silencer made of sintered bronze with a slot

![Silencer made of sintered bronze with a slot](image)

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Silencer made of sintered bronze with a square

![Silencer made of sintered bronze with a square](image)

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G 3/4” 16 17 14 13 29 540032
G 1” 22 19 16 15 36 540036

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G 1/2” 13 24 20.5 43 10 7 17 544004
G 3/4” 20 30 25 55 14 17 544005
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Additional Applications of GKN Filters...

- Catalyst recovery
- Refinery
- Water treatment
Pneumatic valves

Ex-protection

Food shaping
Further Brochures Available
**Basic Information for Designing a Filter**

### 1. Customer’s information

- **Enquiry date:**
- **Company name:**
- **Contact name:**
- **Street address:**
- **ZIP:**
- **Town, US State:**
- **Country:**
- **Email:**
- **Phone:**
- **Mobile:**

### 2. The planned application of the SIKA element?

- **Filtration**
- **Equalizing**
- **Fluidising**
- **Others**

- **Separation**
- **Silencing**
- **Sparging**
- **Degassing**

- **Throttling**
- **Protecting**

### 3. What kind of gas or liquid will flow through the SIKA element?

- **Medium specification**
  - Operation density
  - Dynamic viscosity
  - Operation temperature
  - Operation flow rate
  - Absolute pressure before the SIKA element
  - Wanted or permissible pressure drop of clean filter
  - Max permissible pressure drop of used filter

### 4. Which particles must be retained by a SIKA element?

- **Kind**
- **Size of the particle**
- **Shape of the particle**
- **Filter grade**

### 5. How will the SIKA element be applied?

- **Shape of the element**
  - Tube
  - Cartridge
  - Sheet

- **Connecting element**
  - Disc
  - Other
  - Thread
  - Other

- **Housing diameter**
- **Quantity**

### 6. Short description of the process:

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**Dahlienstraße 43**
**42477 Radevormwald**
**GERMANY**

**Phone:** +49 (0) 2195 609 0
**Email:** filters@gknpm.com
**Website:** www.gknpm.com/filters
Our locations:

- Head Quarter and Manufacturing
- Local Sales Partners

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42477 Radevormwald
GERMANY

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E-Mail: filters@gknpm.com
www.gknpm.com/filters