GKN SINTER METALS

THINK > Filter Technology




SIKA-B

ENGINEERING > THAT MOVES THE WORLD

Since 1759

250 years of exceptional engineering

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.

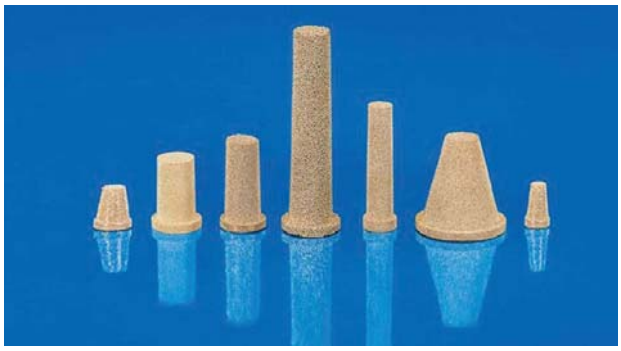
All sintered materials of GKN offer a self-supporting structure with high mechanical strength.

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:

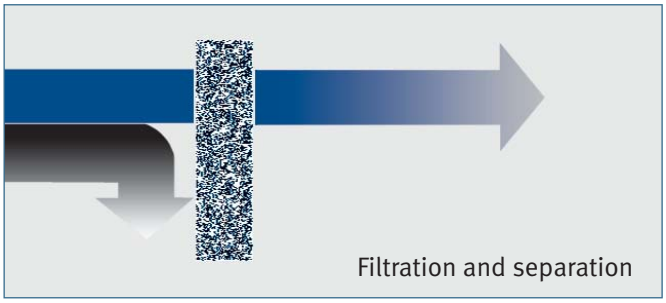
- Shape/-stability i.e. selfsupporting structural elements suitable for high differential pressures
- Particularly good properties when under compression, vibration and changing conditions or with high sudden pressures peaks
- High heat resistance and thermal stability
- Defined permeability and filtration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

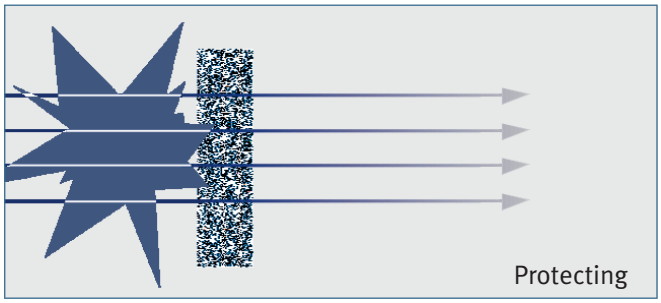
Application Examples

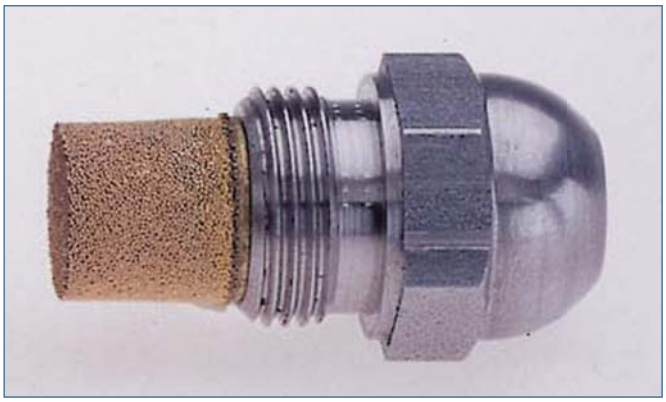
- Autogenous welding (as flame arrestors) / Explosion protection
- Polymer filtration
- Gas- and Liquid filtration
- Silencing
- Sparging
- Fluidization (handling of bulk material)
- Sensor and valve protection
- Flow restriction

as well as various further applications in industries like:

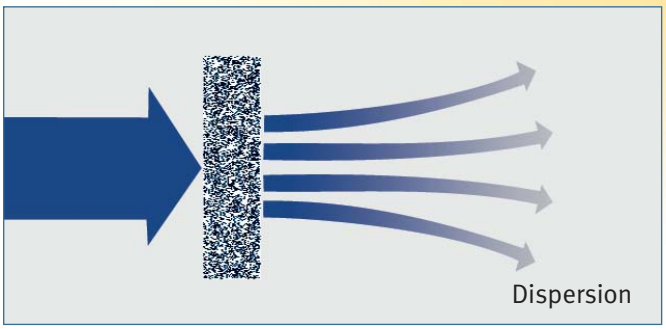
- chemical
- semiconductor
- scientific instrumentation
- pharmaceutical

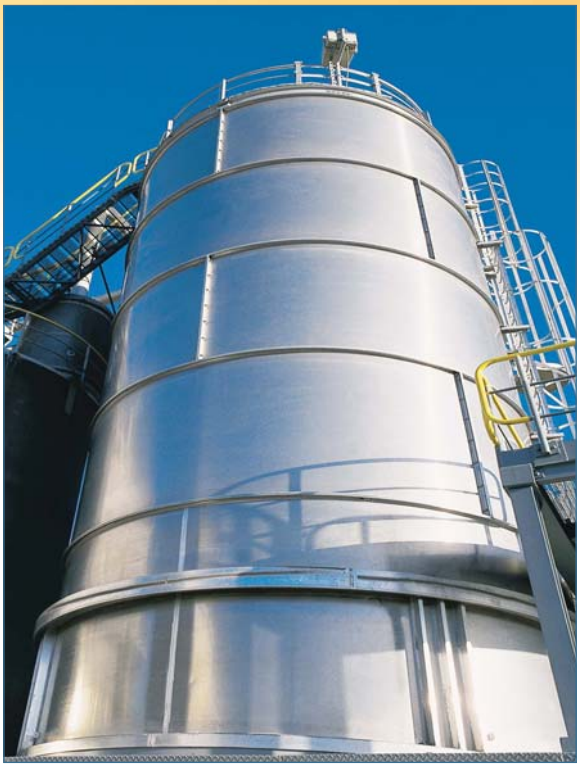






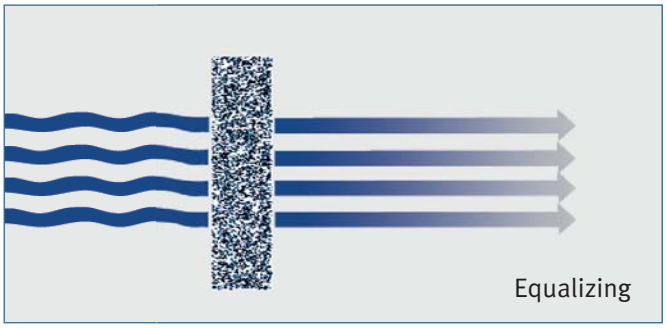
Oil filter in an oil burner nozzle





Aeration pads for Bulk Handling:

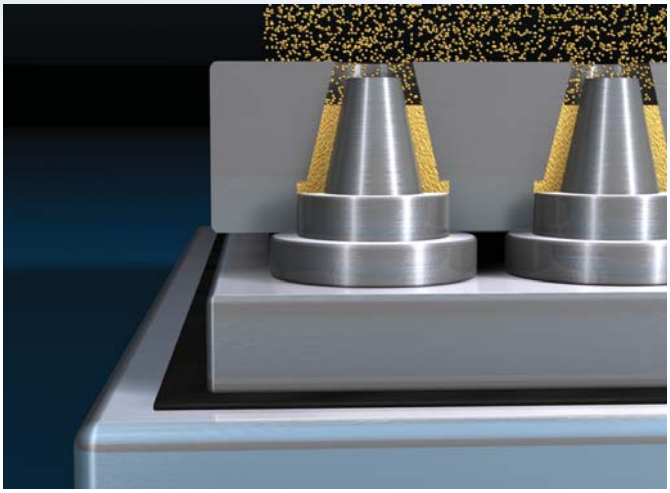
Ideal aftermarket solution due to easy installation!



Manufacturing of SIKA-B... Products

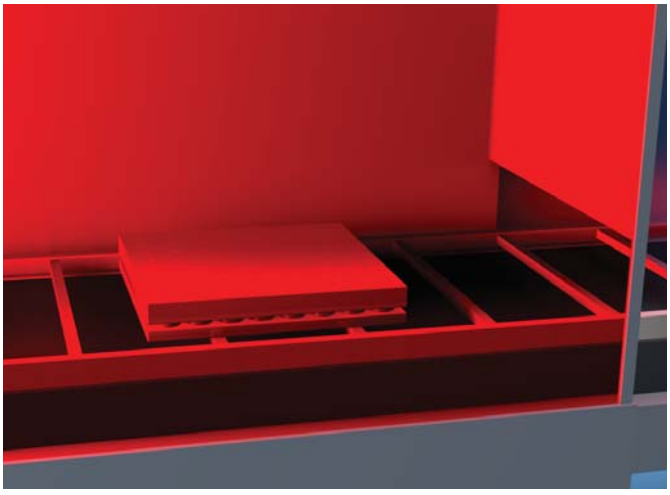
Moulding

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.



Standard Materials

Material	Name	Mat.-No.	SIKA-					Fe	Cr	Ni	C	Mo	Miscellany	Max. Temperature °C		Keyword
			R...			FIL	B	in weight- %						Reducing	Oxidizing	
			IS	*AX*	*AS*											
High alloyed material	AISI 304 L	1.4306	x	x	x			Bal.	18.0-20.0	8.0-12.0	<=0.03	0.5	N<=0.1	600	500	Standard for food application
	AISI 316 L	1.4404	x	x	x			Bal.	16.0-18.0	10.0-14.0	<=0.03	2.0-3.0	N<=0.1	540	400	
						x								380	320	
	AISI 904 L	1.4539	x	x	x			Bal.	19.0-21.0	24.0-26.0	<=0.02	4.0-5.0	N<=0.15 Cu 1.2-2.0	600	500	Resistant against sulphuric acid, phosphoric and hydrochloric acid
	AISI 310	1.4841				x		Bal.	24.0-26.0	19.0-22.0	<=0.25	-	-	800	600	Heat resistant
	FeCrAl	1.4767 Mod.				x		Bal.	19.0-22.0	-	<0.10	-	Al 5.0-6.5 with rare earth elements	unfit	1000	
Nickel based alloys*	Hastelloy C 22	2.4602	x					2.0-6.0	20.0-22.5	Bal.	<0.02	12.0-14.5	W 2.0-3.5 Co 2.5	650	650	Corrosion resistant with various agressive media. Duration application at > 400 °C possible.
	Hastelloy C 276	2.4819	x	x				4.0-7.0	14.0-16.0	Bal.	<0.02	15.0-17.0	W 3.0-4.5	650	650	
	Hastelloy X	2.4665	x	x				17.0-20.0	20.5-23.0	Bal.	<0.15	8.0-10.0	Co 0.5-2.5 W 0.2-1.0	930	800	
	Inconel 600	2.4816	x	x	x			6.0-10.0	14.0-17.0	>=72.0	<0.15	-	-	700	600	
	Inconel 625	2.4856	x		x			<=5.00	20.0-23.0	>=58.0	<0.10	8.0-10.0	Nb 3.15-4.15	650	650	
	Monel 400	2.4360	x	x	x			<2.0	-	>=63.0	<0.30	-	Cu 28.0-34.0	500	500	Resistant against Cl-containing media
Bronze**	CuSn 11	2.1052					x	-	-	-	-	-	-	300	250	Typically used for hydraulic & pneumatic
Titanium	Ti	-	x	x				-	-	-	-	-	Ti > 99 %	500	500	Medicine. acid. electrolysis
Other	Other materials on request															

Not all raw materials are in stock. Typical Iron or Nickel elements e.g. Si, Mn, P, S according to the literature.
* Nickel based *AX*-products only after consultation. Not all dimensions feasible.
** Nickel plating possible

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.

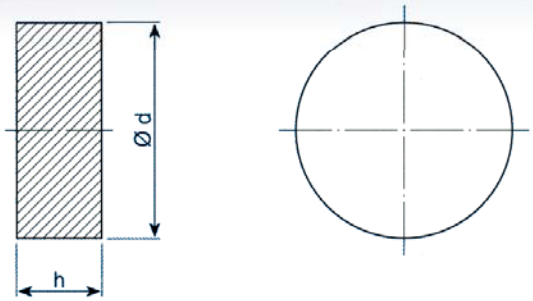
All specifications are subject to change.

GKN Filter Grades

SIKA-B	8
SIKA-B	12
SIKA-B	20
SIKA-B	30
SIKA-B	45
SIKA-B	60
SIKA-B	80
SIKA-B	100
SIKA-B	120
SIKA-B	150
SIKA-B	200

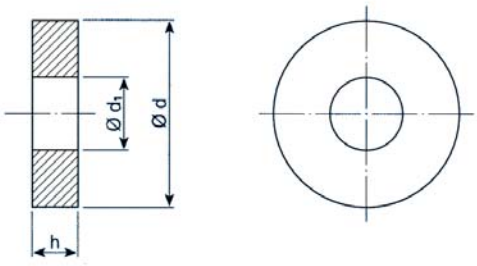
Standard Geometries

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

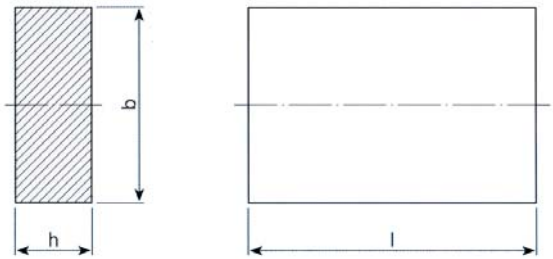
SIKA-B-Rings and Hollow cylinder of sintered Bronze



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

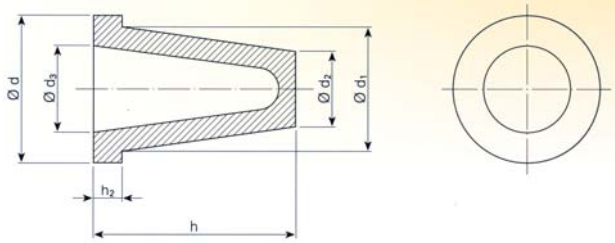
and according to diameter, either seamless or welded from sections

SIKA-B-Plates of sintered Bronze



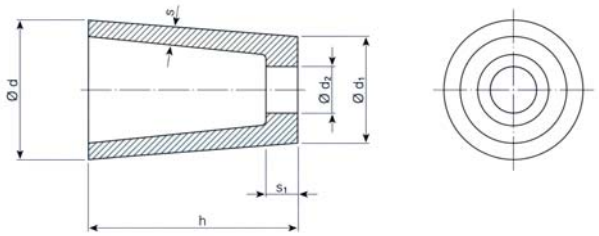
- l up to 1200 mm
- b up to 300 mmup to h 100 mm
- h up to 70 mm
- larger dimensions welded from sections

SIKA-B conical moulds with or without flange of sintered Bronze



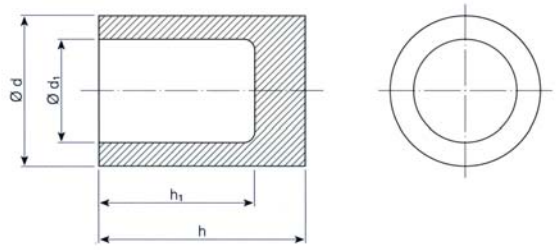
- Ø d 4 mm to Ø d 100 mm
- h 8 mm to h 200 mm

SIKA-B conical moulds of sintered Bronze



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

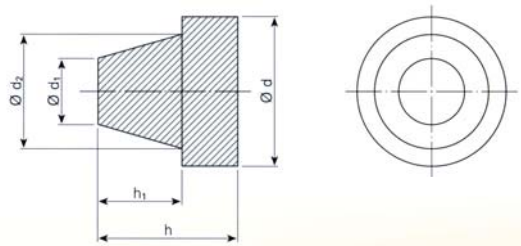
SIKA-B-Moulds of sintered Bronze



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

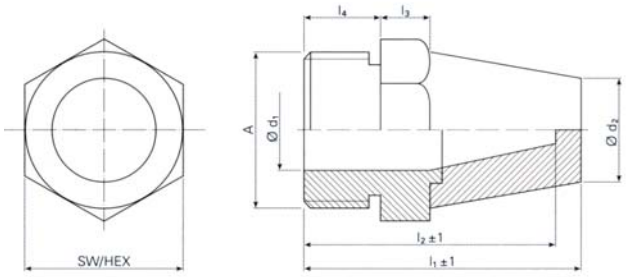
and according to diameter, either seamless or welded from sections

SIKA-B-Cones with flange of sintered Bronze



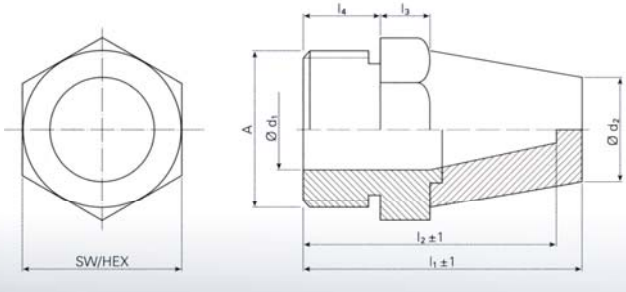
- Ø d 2 mm to Ø d 100 mm
- h 2 mm to h 100 mm

Silencer made of sintered bronze with a hexagon



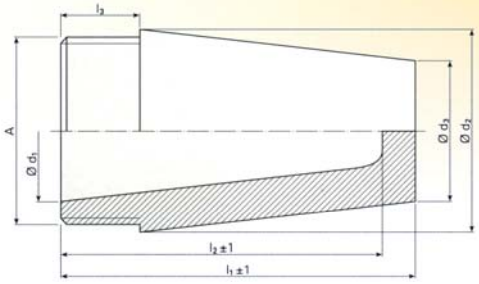
A	Ø d_1 mm	Ø d_2 mm	l_1 mm	l_2 mm	l_3 mm	l_4 mm	SW HEX	Tool No.
G 1/8"	4	8	28	24	4	6	13	540001
G 1/4"	6	12	34	30	4	8	17	540002
G 3/8"	9	15	36	32	5	10	22	540003
G 1/2"	12	19	44	40	7	12	27	540004
G 1/2"	12	17	65	60	7	12	22	540021
G 3/4"	16	22	54	48	10	14	32	540005
G 1"	22	28	66	60	10	16	41	540006
G 1 1/2"	36	-	70	63	10	16	55	540011
G 2"	48	50	75	68	10	16	70	540010
M 30 x 1,5	22	28	66	60	10	16	41	540019

Silencer made of sintered bronze sintered together with a solid brass hexagon



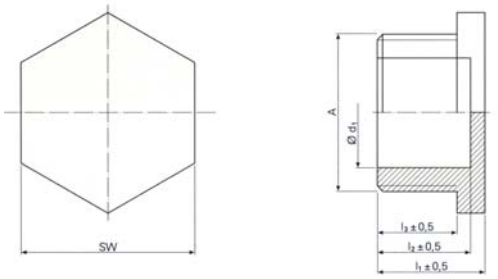
A	Ø d_1 mm	Ø d_2 mm	l_1 mm	l_2 mm	l_3 mm	l_4 mm	SW HEX	Tool No.
G 1/8"	4	8	28	24	4	6	13	546001
G 1/4"	6	12	34	30	4	8	17	546002
G 3/8"	9	15	36	32	5	10	22	546003
G 1/2"	12	19	44	40	7	12	27	546021
G 3/4"	16	22	54	48	10	14	32	546005
G 1"	22	28	66	60	10	16	41	546006

Silencer made of sintered bronze



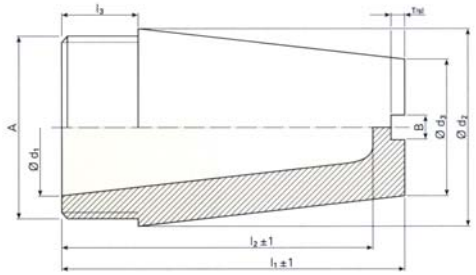
A	Ø d_1 mm	Ø d_2 mm	Ø d_3 mm	l_1 mm	l_2 mm	l_3 mm	Tool No.
G 1/8"	4	11	8	21	17	5,5	541001
G 1/4"	6	14	10	27	20	8,5	541002
G 3/8"	10	18	15	36	30	11	541003
G 1/2"	11	24	19	44	37	11	541004
G 3/4"	18	30	20	63	55	13	541005
G 1"	22	36	25	75	67	15	541006
G 1 1/2"	39	54	20	75	67	15	541007

Vent plug made of sintered bronze



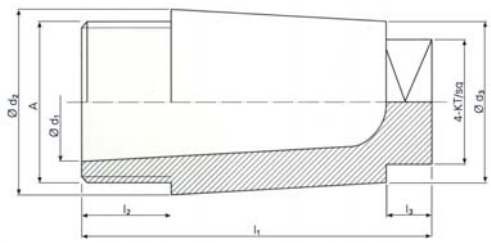
A	Ø d_1 mm	l_1 mm	l_2 mm	l_3 mm	SW HEX	Tool No.
G 1/8"	5.2	8.4	4.7	5.3	11	540035
G 1/4"	7	12	9	8,5	15	540030
G 3/8"	9	15	12.5	11	19	540031
G 1/2"	13	15	12.5	11	22	540008
G 3/4"	16	17	14	13	29	540032
G 1"	22	19	16	15	36	540036

Silencer made of sintered bronze with a slot



A	Ø d_1 mm	Ø d_2 mm	Ø d_3 mm	l_1 mm	l_2 mm	l_3 mm	B mm	T sl	Tool No.
G 1/8"	4	11	8	21	17	5.5	1.5	2	543001
G 1/4"	6	14	10	27	20	8.5	1.5	2	543002
G 3/8"	10	18	15	36	30	11	2	2	543003
G 1/2"	11	24	19	44	37	11	2	3	543004
G 3/4"	17	29	20	65	53	12	2	3.5	543005
G 1"	22	35	26	75	66	15	3.5	4	543006

Silencer made of sintered bronze with a square



A	Ø d_1 mm	Ø d_2 mm	Ø d_3 mm	l_1 mm	l_2 mm	l_3 mm	4-KT sq	Tool No.
G 1/8"	5	12	8.5	22	5.5	4.5	7	544001
G 1/4"	6.2	14	11.5	27	7	4.5	9	544002
G 3/8"	9	18	15.5	35	9	6	13	544003
G 1/2"	13	24	20.5	43	10	7	17	544004
G 3/4"	20	30	25	55	14	7	19	544005
G 1"	25	38	30	69	15	8	24	544006

A	Ø d_1 mm	Ø d_2 mm	Ø d_3 mm	l_1 mm	l_2 mm	l_3 mm	4-KT sq	Tool No.
M 10 x 1	5	12	8.5	22	5.5	4.5	7	545001
M 12 x 1.5	6.2	14	11.5	27	7	4.5	9	545002
M 14 x 1.5	6.2	16	11.5	27	7	4.5	9	545003
M 16 x 1.5	9	18	15.5	35	9	6	13	545004
M 22 x 1.5	13	24	20.5	43	10	7	17	545005
M 27 x 2	20	30	25	55	14	7	19	545006
M 33 x 2	25	38	30	69	15	8	24	545007

Additional Applications of GKN Filters...

Catalyst recovery

Refinery

Water treatment

Pneumatic valves

Ex-protection

Food shaping

Basic Information for Designing a Filter

Customer's Information

Enquiry date: _____

Company Name _____
Contact Name _____
Street Address _____
ZIP _____
Town, US State _____
Country _____

1. The planned application of the SIKA element?

◯ Filtration ◯ Equalizing ◯ Fluidizing
◯ Separation ◯ Silencing ◯ Sparging
◯ Throttling ◯ Protecting ◯ Degassing

Others _____

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

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

3. Which particles must be retained by a SIKA element?

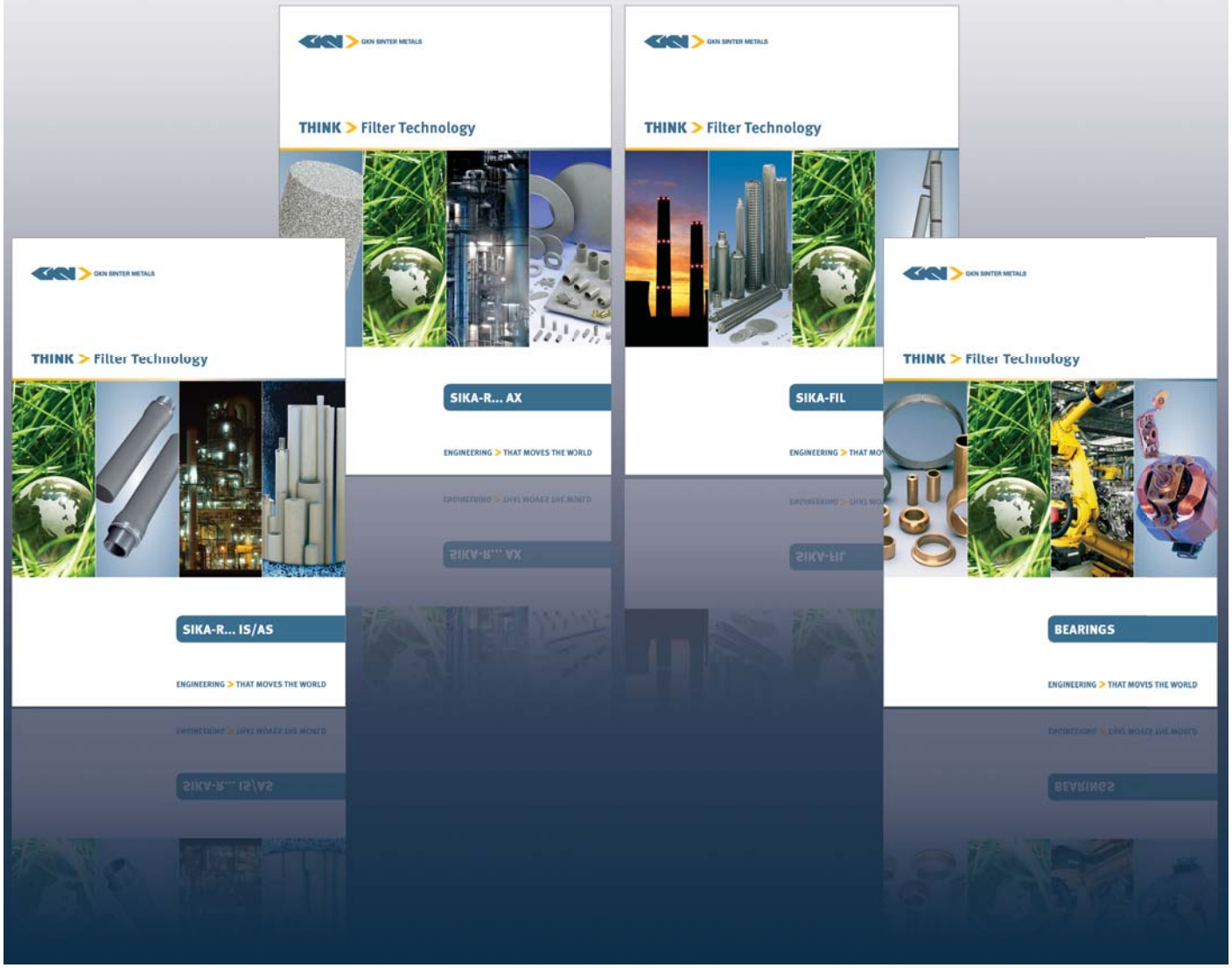
Description _____
_____
_____
Filter grade _____

4. How will the SIKA element be applied?

Shape of the element ◯ Tube ◯ Cartridge ◯ Sheet
◯ Disc ◯ Other
Connecting element ◯ Flange ◯ Thread ◯ Other
Housing diameter _____
Quantity _____

5. Short description of the process:

Further Brochures Available



GKN SINTER METALS

GKN Sinter Metals Filters GmbH
Dahlienstraße 43
D-42477 Radevormwald
P.O. Box 1520
D-42464 Radevormwald
Phone: +49 (0) 2195-609-0
Fax: +49 (0) 2195-609-348
Email: info@gkn-filters.com
www.gkn.com/filters

EXPECT>MORE