Düker

FITTINGS AND VALVES

Ductile Cast Iron Gate Valves

for water and gas supply

Reliable, Dependable and Economical

Ductile cast iron valves

In Germany alone, thousands of kilometers of pipes ensure a reliable supply of water, anytime and anywhere.

The piping used needs to meet the highest requirements:

- Resist intense soil movement
- Reliability even after many service years
- Ensure perfect hygiene
- Safe transport of our drinking water without loss

Cast iron is a natural material and forms the foundation of the Düker valves. Due to its outstanding material properties, it complies 100% with the following requirements:

- Long service life
- High density
- Excellent corrosion resistance
- Economic efficiency
- And, finally, it is 100% recyclable

A safe connection living up to its promise

Another important element for a safe and above all leak-proof pipeline is its connections.

In addition to the tried and tested flange connections, Düker also offers, depending on the application area, socket systems with the corresponding coupling adapters for an axial-restraint connection securing tensile strength:

- Düker SMU and
- Düker SPEZIAL for threaded couplings
- Tyon SIT® and
- TYTON SIT PLUS® for TYTON®-sockets
- Novo SIT® and
- Novo GRIP® III for Novo sockets

Ductile cast iron

Ductile cast iron is a special form of cast iron which is also known as spherulitic graphite iron. This material withstands both internal and external pressure as well as virtually all impact caused by soil or traffic. It is therefore reliable and ideally suited to meet the requirements of our service pipes.

The right coating is what matters

In the end, however, it is the coating that reliably guarantees permanent hygiene in our drinking water supply system. This is why the surface protection is as equally important as the base material.

All Düker valves receive a seamless and pore-free Epoxy Powder coating or are completely enamelled. This procedure offers permanent corrosion and encrustation protection, and additionally makes the pipes extremely adhesion and shock resistant.

The Epoxy Powder is applied onto the clean blasted cast part at 200° C with a layer thickness of at least 250 µm. As a member of the "Gütegemeinschaft Schwerer Korrosionsschutz" (GSK) society, Düker is entitled to carry the RAL quality seal.

RAL GÜTEZEICHEN
SCHWERER KORROSIONSSCHUTZ VON ARMATUREN UND FORMSTÜCKEN

Enamel, on the other hand, is a sign for integral corrosion protection. The perfectly smooth surface prevents potential bacteria build-up. Biofilm adhesion is actively prevented thus ensuring a hygienically and physiologically safe drinking water supply.

Etec enamel – the special surface protection for valves

etec

Etec enamel is a composite material which enters a permanent chemical connection with the cast iron pipe section. Its main strengths are:

- Inside and outside corrosion protection including class III soil
- High degree of resistance to mechanical stress (friction, impact, pressure, push)
- Ageing resistance
- Prevention of blistering between the carrier material and coating caused by diffusion of water through the coating
- No sub-surface migration even in the case of local damage
- Climate and media resistance (UV-radiation, humidity, temperature, organic solvents)

Gate Valves 2004 and 4004

Entirely shock-resistant enamelling for best possible corrosion protection and 100% hygiene

Area of application: Drinking water
- EPDM vulcanized wedge and gasket

Area of application: Gas/waste water
- NBR vulcanized wedge and gasket

Corrosion protection
Seamlessly and fully enamelled shock-resistant housing inside and outside according to the DEV guideline (class III soils, DIN 3475) or with full EKB coverage for gas applications.

Medium temperature range for gas and drinking water from -10 °C to +60 °C.

Alternative for gas
DN 40–300, PN 10–16

Long service life of the valve
- Coating optimized head piece and housing
- Highly corrosion resistant to class III soils following the requirements of the DVGW publication GW 9

Operator friendly
- Low torques due to sophisticated design
- Low coupling moment and high drive reserves
- New wedge guidance with vulcanized plastic sliding shoes

Maintenance-free operation
- New spindle bearing design

No restrictions in ground installation
- Concealed lock nut in the head piece with a protective plastic cap against solid objects and humidity
- No additional measures required for the installation in highly aggressive soils
- Easy handling in all installation situations

Universal application options
- Interface installation set – without adapter according to GW 336

Optimal protection
- Media-free spindle bearing
- Full corrosion protection with etec enamel

Full protection during transport and storage
- Edge protection between head piece and housing, passage flanges with plastic cap protection

Extensive accessory program
- GW 336 compliant installation set
- Adjustable/rigid telescope with Clip Pins
- Uni-Clip installation set
- Height adjustable and rigid street caps
- Operating keys
- Hand wheels

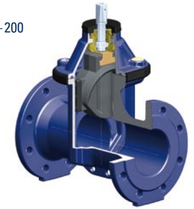
Versions
- With flange connection
- With socket connection

Details and materials

Item	Description	Material DN 80–200	Item	Description	Material DN 40–65 & DN 250–300
1	Housing	EN-JS 1050	1	Housing	EN-JS 1050
1	Sealing wedge	EPDM W270/NBR*	1	Sealing wedge	EPDM W270/NBR*
1	Spindle nut	CuZn36Pb2As/bronze*	1	Head piece	EN-JS 1050
1	Spindle	1.4021 (X20Cr13)/1.4571*	1	Spindle	1.4021 (X20Cr13)/1.4571*
1	Gasket	EPDM W270/NBR*	1	Lock nut	CuZn35-NiMn2AlPb
4	Cylinder head screw	A2-70	1	Spindle nut	CuZn35-NiMn2AlPb/bronze*
1	Clamping piece	CuZn35-NiMn2AlPb	1	Screen	TPE
1	Head piece	EN-JS 1050	2	Slide ring	red brass
1	Lock nut	CuZn35-NiMn2AlPb	6	Cylinder head screw	A2-70
1	Adapter cap	EPDM	2	O-ring	EPDM W270/NBR*
3	O-ring	EPDM W270/NBR*	1	O-ring	EPDM W270/NBR*
1	Retainng ring	1.4541 (X6CrNiTi1810)	1	Head seal	EPDM W270/NBR*
2	O-ring	EPDM W270/NBR*	1	Grooved cylindrical pin	A2-70
1	Edge protection	PVC			

* waste water version

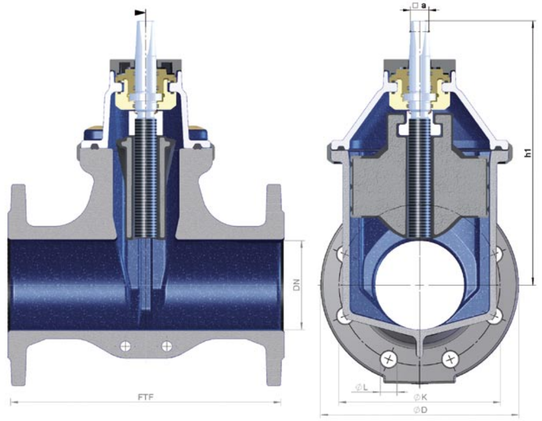
DN 80–200



DN 40–65 &
DN 250–300

PN	10	16
Test pressure in bar according to DIN EN 12266-1		
Housing	17,0	25,0
Closure	11,0	17,6
Highest admissible positive operating pressure in bar	10,0	16,0
Area of application and inspection for use in		
Gas pipes according to DIN 2470, part 1 > pressure tests according to DIN 3230, part 5, PG 2	•	•
Gas plants according to DIN 30 6902, part 1 > pressure tests according to DIN 3230, part 5, PG 3	•	•

Gate valve construction length according to DIN EN 558 basic series R14 and R15



Dimensions and weights

DN mm	PN bar	FTF mm R14	FTF mm R15	h_1 mm	D mm	K mm	no. of holes	L mm	□a mm	U	T Nm	Weight kg R14	Weight kg R15
40	10 / 16	140	240	207	150	110	4	19	14	11	30	11,2	12,5
50	10 / 16	150	250	233	165	125	4	19	14	13	40	13,3	14,7
65	10 / 16	170	265	270	185	145	4	19	17	14	60	17,0	18,8
80	10 / 16	180	280	270	200	160	8	19	17	16	35	17,8	17,5
100	10 / 16	190	300	295	220	180	8	19	19	25	45	22,5	24,6
125	10 / 16	200	325	330	250	210	8	19	19	25	45	27,8	31,0
150	10 / 16	210	350	373	285	240	8	23	19	30	45	36,0	40,6
200	10	230	400	462	340	295	8	23	24	34	60	54,8	61,5
200	16	230	400	462	340	295	12	23	24	34	60	54,4	61,0
250	10	250	450	648	400	350	12	23	27	43	150	104,4	113,6
250	16	250	450	648	400	355	12	28	27	43	150	104,0	113,0
300	10	270	500	723	445	400	12	23	27	51	150	146,7	161,0
300	16	270	500	723	445	410	12	28	27	51	150	146,0	160,0

Gate Valve 4004 with PE 100 Pipe Ends for Welding

The innovative valve series for the application with plastic pipes

Area of application water

- For drinking water DIN EN 1074-part 1 and part 2
- For temperatures up to +60 °C

EPDM vulcanized wedge and gaskets are KTW and W 270 tested. Pipes according to DIN 8074, inspection report Engler-Bunte-Institute regarding connection technology on the basis of DVGW-VP600, melting index group MFI 005 and 010, according to the guidelines of the DVGW publication G 477 and bulletin DVS 2207.

As an option, the gate valve 4004 with PE 100 pipe ends for welding may be equipped with a hand wheel, an installation set for ground installation, electric or pneumatic drive and clear shaft end.

As molded parts, the PE pipe ends for welding are extruded and mechanically processed. These PE pipe ends for welding are mounted tension-free and friction-locked as plug-in connection in the TYTON® socket. Locking and pull-out protection is ensured through a thrust resisting joint ring on the outside.

During the welding process, the advantage of this design is that it enables the valve to be flexible without impairing pull-out protection and tightness.

Long service life of the valve

- Coating optimized head piece and housing
- Highly corrosion resistant to class III soils following the requirements of the DVGW publication GW 9

Operator-friendly

- Low torques due to sophisticated design
- Low coupling moment and high actuator reserves
- New wedge guidance with vulcanized plastic sliding shoes

Optimal protection

- Media-free spindle bearing
- Full corrosion protection

Area of application gas

- For all gases according to DVGW publication G 260/I

Inspection report Engler-Bunte-Institute regarding connection technology on the basis of DVGW-VP 600, melting index group MFI 005 and MFI 010, according to the guidelines of the DVGW publication G 477 and bulletin DVS 2207. Gas PN 10 pipe connection pieces.

As an option, the gate valve 4004 may be equipped with a hand wheel, an installation set for ground installation, electric or pneumatic drive and clear shaft end.

Corrosion protection

The standard version of the gate valve is equipped with a high quality epoxy powder coating according to the RAL-GZ 662 quality assurance of the "Gütegemeinschaft schwerer Korrosionsschutz (GSK)", the German quality association for Corrosion Protection of Powder Coated Valves and Fittings.

Maintenance-free operation

- New spindle bearing design

No restrictions in ground installation

- Concealed lock nut in the head piece with a protective plastic cap against solid objects and humidity
- No additional measures required for the installation in highly aggressive soils
- Easy handling in all installation situations

Universal application options

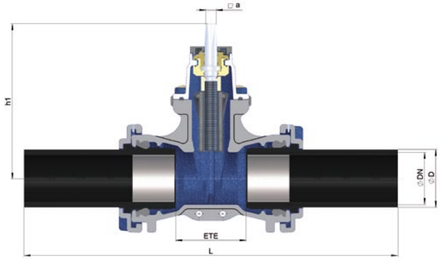
- Interface installation set – without adapter according to GW 336

Full protection during transport and storage

- Edge protection against impacts between head piece and housing, PE ends

Versions

- Type 4004 – 430 PE 100 on one side, TYTON® or novo socket on the other side
- Type 2004 – 420 PE 100 end on one side, flange on the other side
- Also refer to service connection valve type 1004 DN 25 – 50 with PE 100 welding pipe ends



PE 100 pipe welding pipe ends as injection molded part (black for water and gas) with stainless steel support sleeve.

For welding in PE pipelines applying the heating element butt welding method. Pipe length laid out for two welding processes. Inspection according to DIN 3230-5 PG-2 or PG-3; including 3.1 B certificate according to EN 10204.

Dimensions

DN mm	PN bar	L mm	h_1 mm	ETE mm	□a mm	Ø D mm
80	10	650	268	114	17	90
100	10	710	294	127	19	110
100	10	760	294	127	19	125
125	10	790	330	140	19	140
150	10	840	372	140	19	160
150	10	890	372	140	19	180
200	10	970	460	152	24	200
200	10	960	460	152	24	225

Minimum wall thickness according to DIN 8074

DN mm	d mm	SDR 11 mm	SDR 17 mm
80	90	8	5
100	110	10	7
100	125	11	7
125	140	13	8
150	160	15	10
150	180	16	11
200	200	18	12
200	225	21	13

Exchange and Repair Gate Valve 2004 and 4004

The perfect valve for the application in pipe trenches

Area of application water

- For drinking and untreated water up to PN 10/16
- Ambient temperature up to +60 °C
- For all plant and pipeline network operators

Corrosion protection

Shock resistant enamelling inside and outside. Loose flanges guaranteeing tensile strength in black with EKB coating.

The basis of this valve is the tried and tested Düker repair valve concept. This series has undergone continuous innovations and improvements and is now available with the nominal diameters DN 80–200.

The proven concept allows operators cost efficient utilization of their resources – either for new building projects or as a replacement valve in the course of facilities and public power supply redevelopment measures. Depending on the material choice of the adjusting and disassembling devices, the savings potential for new investments is between 5 and 20%.

Long service life of the valve

- Coating optimized head piece and housing
- Highly corrosion resistant to class III soils following the requirements of the DVGW publication GW 9
- Loose flanges guaranteeing tensile strength on both sides

Operator-friendly

- Low torques due to sophisticated design
- Low coupling moment and high drive reserves
- New wedge guidance with vulcanized plastic sliding shoes

Maintenance-free operation

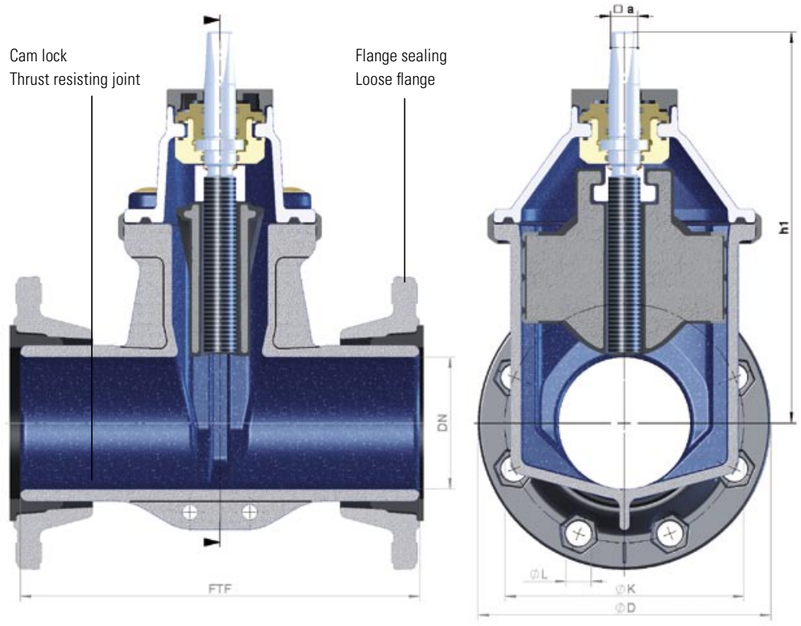
- Newly designed spindle bearing / or new spindle bearing design

No restrictions in ground installation

- Concealed lock nut in the head piece with a protective plastic cap against solid objects and humidity
- No additional measures required for the installation in highly aggressive soils
- Easy handling in all installation situations

Quick replacement as and when required

- Valve exchange only even in adjusting and disassembling devices are connected with permanent spindles
- Ability to even out misalignments on the existing pipeline
- Installation of the gasket ring does not require spreading between pipeline and valve



Dimensions and weights type 4004

DN mm	PN bar	FTF mm	FTF variable	D mm	K mm	h_1 mm	□a mm	L mm	Weight kg
80	10 / 16	280	± 6 mm	200	160	270	17	19	20
100	10 / 16	300	± 6 mm	220	180	295	19	19	25
125	10 / 16	325	± 6 mm	250	210	330	19	19	33
150	10 / 16	350	± 6 mm	285	240	373	19	23	44
200	10	400	± 6 mm	340	295	462	24	23	65
200	16	400	± 6 mm	340	295	462	24	23	65

Universal application options

- No changes necessary. Ready for use in facilities and ground installation
- Universal interface to the installation set – without adapter according to GW 336
- Use of complete flanges with DIN EN 1092-2 complying connections

Optimal protection

- Media-free spindle bearing
- Full corrosion protection with etec enamel

The loose flanges have a limited sliding tolerance (+/- 6mm). In addition, they are tightly connected to the valve housing guaranteeing tensile strength. The design of a loose flange valve is defined as follows:

The construction length is prepared direction minus tolerance. Additional allowance for clearance is caused through the elimination of the flange gaskets on the loose flange sides. The gasket is integrated in the loose flange.

Saving time and materials

- No need for adjusting and disassembling devices
- Minimizing labor time as a result of integrated loose flanges with sealing elements guaranteeing tensile strength

Full protection during transport and storage

- Edge protection between head piece and housing

Gate Valve 4004 with Exhaust Unit

The perfect valve for modern gas distribution systems – with simple and fast gas ventilation

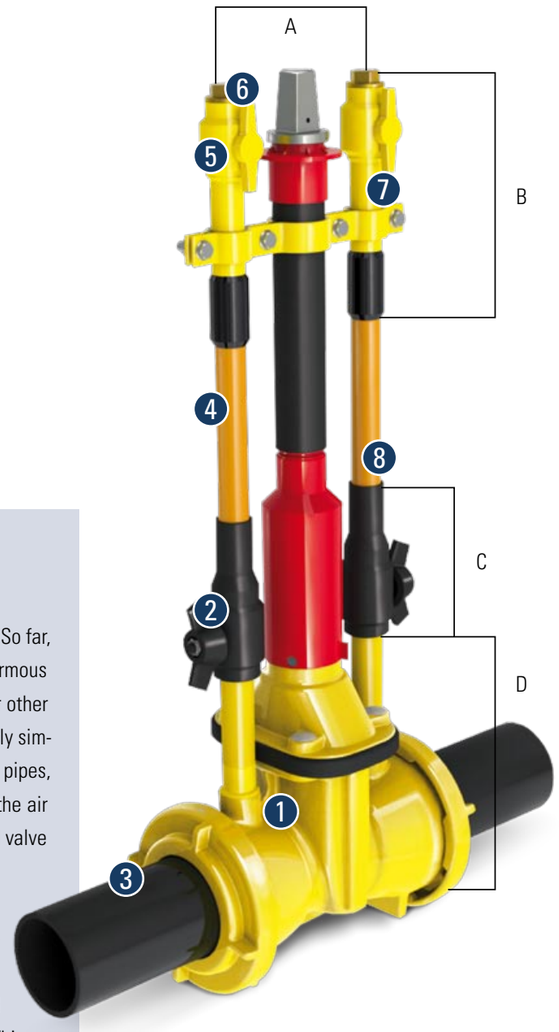
Area of application gas

- For all gases according to DVGW publication G 260/I

  Inspection report: Engler-Bunte-Institute regarding connection technology on the basis of DVGW-VP 600, melting index group MFI 005 and 010, according to the guidelines of the DVGW publication G 477 and bulletin DVS 2207. Gas PN 5

- It is used for retrofits or new construction of PE gas pipes in the pressure range ≤ PN 4

The gate valve with exhaust unit is equipped with PE 100 pipe ends for welding.



Functions of the ventilation pipes

The filling up of gas pipes also leads to the formation of air pockets. So far, the removal of these air pockets has been associated with an enormous effort, often accompanied by the installation of additional valves or other ventilating devices. Using the Düker gate valve 4004 will significantly simplify the ventilation process. After the filling procedure of the gas pipes, only the ball valves mounted on the exhaust pipes are opened for the air pocket to escape. Once the air has been entirely removed, the ball valve shuts. The system is then ready to operate.

During gas pipe repair work too, where parts of the gas distribution system needs to be shut down, the gate valve 4004 renders work much easier. First, the gas is discharged through the attached ventilating pipes. Then, the system is flushed with nitrogen. This ensures the removal of all remaining gas and enables risk-free gas pipe work. After repairing or retrofitting the part of the system in question, the pipe is immediately ready for operation again, because the gate valve 4004 also facilitates ventilating during the refill process.

Dimensions in mm	
A	190
B	min. 400
C	min. 110
D	approx. 350 at DN 80
	approx. 370 at DN 100
	approx. 450 at DN 150 / 200

The most important elements

1 = Welded transition
2 = Ball valve
3 = PE welding pipe end
4 = Exhaust pipe in DN 32 PE
5 = Ball valve with temperature resistant pipe end
6 = Plug with relief drilling
7 = For all sizes with the same blow-off ball valve
8 = Two weldings possible

Type

- Identical with the 4004 series

- As molded parts, the PE pipe ends for welding are extruded and mechanically processed. They are mounted tension-free and friction-locked as plug-in connection in the TYTON® socket. Locking and pull-out protection is ensured through a thrust resisting joint locking ring on the outside

- The length of the PE pipes section enables double socket welding. The PE pipes are available pursuant to DIN 8074 in SDR 11 and, alternatively in SDR 17

- The exhaust pipes are welded on the casing with steel pipes until the first ball valve is reached (DN 80–200 = 1")

- The height depends on the pipe coverage or the customer's request. One ball valve each is welded to the upper end of the blow out valves down to the shut-off position. Both blow-out pipes are locked with the Düker gate valve by means of a tripe clamp via the installation set

Dimensions

DN mm	PN bar	L mm	h_1 mm	ETE mm	□a mm	Ø D mm
80	16	650	268	114	17	90
100	16	710	294	127	19	110
100	16	760	294	127	19	125
125	16	790	330	140	19	140
150	16	840	372	140	19	160
150	16	890	372	140	19	180
200	16	970	460	152	24	200
200	16	960	460	152	24	225

Gate Valve 3004 with Steel Pipe Ends for Welding

Entirely shock-resistant enamel on the inside and “PUR” polyurethane coating on the outside – the perfect solution for gas supply

Area of application gas

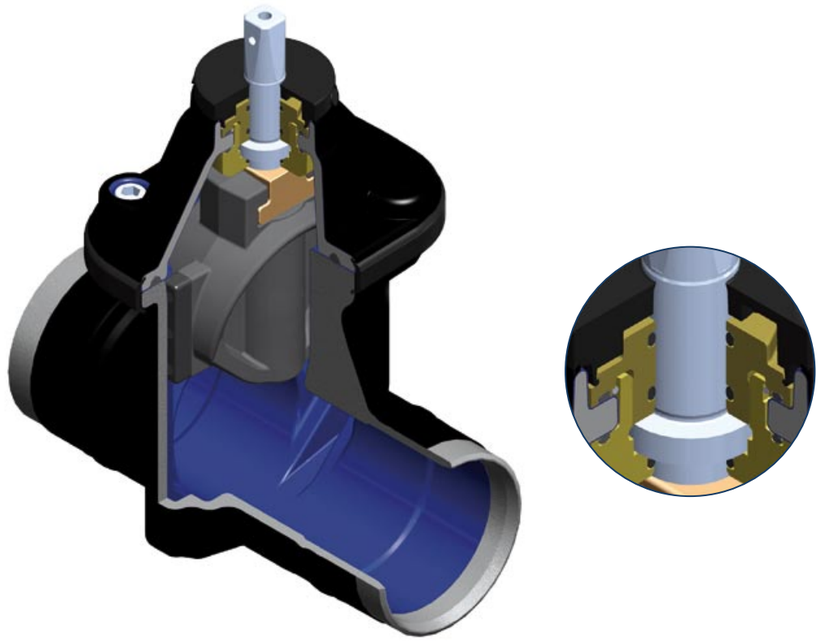
- For all gases according to DVGW publication G 260/I with inspection PG 3

Corrosion protection

Enamel on the inside pursuant to the DEV guideline (except for the welding area). Outside coating “PUR” polyurethane. The inspection is carried out in line with DIN 30677, part 2 and according to 15 kV.

Gate valve type 3004

Resilient seated with a smooth passage according to DIN EN 13774. Housing and head piece in GJS-400-18 with shoed ends from St. 35.8 edge form 22. Wedge with new guidance, vulcanized plastic sliding shoes. Stainless austenitic Cr steel 1,4021 spindle and wound up thread. Media-free spindle bearing. Spindle sealing with two O-rings and back seal.



The 3004 gate valve is also available as “blow-out unit” in two versions, either steel ends or PE ends.

More than 500 Years of Experience in Iron Casting

Our know-how for your benefit

The Düker name has been synonymous for premium quality iron casting for more than 500 years. We are today among the leading manufacturers of valves and pressure pipe fittings for drinking water and gas supply as well as for pipes and fittings for drainage technology.

To be “very good” is setting a high standard. Every day, we try to achieve just a little bit more. This is why many developments made by Düker are recognized as quality standard among experts today. And we keep on learning and growing.

Our long-standing tradition is what you can benefit from. All of our qualified teams in engineering, sales, production and service are happy to assist you with all questions regarding “drinking water and gas supply”. From planning to logistics and finally to installation. On top of that, we are able to consult you on more complex pipe line projects also for as long as our valves and pipes are in use.

Düker fittings are used all over the world and are subject to very high requirements, especially when it comes to drinking water. This is why all valves are developed and manufactured applying the greatest possible care and attention to detail. Needless to say, before any product leaves Düker, it is thoroughly put to the test.

It also goes without saying that our valves are in line with the most current:

- KTW recommendations
- Guidelines of the Federal Environment Agency for the hygienic evaluation of organic materials that come in contact with drinking water
- Requirements of the DVGW publication W 270 “Microbial enhancement on materials to come into contact with drinking water - Testing and assessment”

Quality on the highest possible level

We are the first to set the highest requirements for the quality of our products. And, as a result, we have introduced a modern quality management system according to DIN EN ISO 9001 already in 1993 which has also been TÜV CERT certified.

In addition, Düker products have undergone other tests and approval procedures in line with product or market specific standards and regulations.

It is not unusual that quality criteria are met within the context of quality assurance associations that are way beyond the standard requirements.

ZERTIFIKAT ◆ CERTIFICATE ◆ 認証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

CERTIFICATE

The Certification Body
of TÜV SÜD Management Service GmbH
certifies that

Düker GmbH & Co. KGaA
Würzburger Straße 10
D-97753 Karlstadt
Hauptstraße 39-41
D-63846 Laufach

has established and applies
a Quality Management System for

Development, manufacture, supply and service of valves used in water- and gas industries, high pressure ductile iron fittings, drain pipes and fittings, highly acid resistant glass lined components, castings made to specification, centrifugal casting plants for production of castings as well as cokeless cupola furnaces

An audit was performed, Report No. **70008454**
Proof has been furnished that the requirements
according to

ISO 9001: 2008

are fulfilled. The certificate is valid until **2012-03-23**
Certificate Registration No. **12 100 21864 TMS**

Munich, 2009-04-08

QMS-TGA-ZM-07-92

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Düker

FITTINGS AND VALVES

DRAINAGE TECHNOLOGY

ENGINEERING

GLASS LINING TECHNOLOGIES

JOBBING FOUNDRY

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770524 05/11 Specifications subject to change without notice.