



Ductile Cast Iron Hydrants

Düker Hydrants – Important Elements of a Modern Public Water Supply

Ductile cast iron hydrants

Hydrants are an important part of the public water supply system, with a wide area of application, such as:

- drawing water for fire fighting and emergency conditions
- setting up of temporary network connections in case of an emergency
- aeration and venting of pipe sections
- temporary water supply during events or on construction sites

The right material is what counts

Material quality is at the core of continued and reliable operations. This is why Düker hydrants are made of ductile cast iron.

Another name for ductile cast iron is spherulitic graphite iron. The material has outstanding properties such as a long service life, density, good corrosion resistance, cost effectiveness and on top of it, is fully recyclable. It is therefore reliable and ideally suited to meet the requirements of our hydrants.

Permanent all-round protection

In order to ensure even better and permanent protection against corrosion and encrustation, our hydrants are fully enamelled, according to the requirements of the DEV guidelines and DIN 51178.

No chance is given to bacteria on the flawlessly smooth enamel surface. Biofilm adhesion is actively prevented, thus ensuring hygienically and physiologically safe drinking water supply – even during temperature fluctuations.

Düker underground and pillar hydrants

- underground hydrant type 304/305
DN 80, PN 16, pipe covering 0.80 m to 1.50 m
- underground hydrant type 393S
DN 80, PN 16, pipe covering 0.75 m to 1.50 m
- pillar hydrant type 494
AUD shape with two top outlets
DN 80 and 100, PN 16, pipe covering 1.25 m and 1.50 m
- pillar hydrant type 495
AFUD shape with protective cover DN 100,
PN 16, pipe covering 1.25 m and 1.50 m
- pillar hydrant type 504
AUD shape, DN 100, PN 16, pipe covering
1.10 m to 1.60 m



etec-Enamel – the special all-round surface protection for Düker hydrants

Etec enamel is a composite which melds a permanent chemical bond 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 base material and the coating, by the 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)

Maximum protection

All Düker hydrants are equipped with a secured obturator linkage that prevents the obturator linkage to be catapulted out as a result of the existing operating pressure in case of mechanical damage of the upper part or during maintenance work.

DIN outlet coupling, head piece and linkage may be easily replaced by the user.

Underground Hydrant 304 and 305 – with Flange Connection

DN 80/PN 16 – pipe covering 0.80 m to 1.50 m, inside and outside enamelled

Range of application

- for drinking and raw water
- up to 16 bar
- up to 60 °C

Underground hydrants of the 304 and 305 series correspond to the requirements and tests of DIN 3221, DIN 3321 and EN 14339, as well as the DVGW testing standard VP 325 and possess a DVGW type approval test.

All materials used correspond to the KTW recommendations of the Federal Environmental Agency and the DVGW worksheet W270.

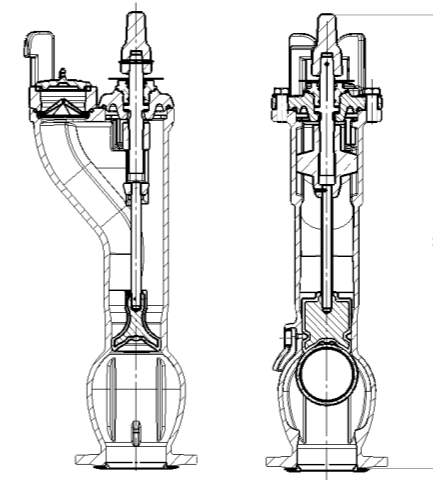
Furthermore, the requirements of the standard are even exceeded in many areas, such as the amount of residual water of 10 cm³ for example (standard requirements: ≤ 80 cm³) or the flow rate at 132 m³/h (standard requirement: ≥ 110 m³/h).

Upon request, the hydrants may be serially equipped with a self-locking, epoxy coated stainless steel outlet cover.



The most important elements

- 1 = inside and outside enamelled one-piece body
- 2 = cast-on and fully enamelled drainage outlet.
- 3 = factory-mounted EPDM flange gasket with a steel core
- 4 = dual shut-off with an EPDM coated steel ball (305)
- 5 = obturator with full polyurethane elastomer coating
- 6 = solid stainless steel obturator linkage
- 7 = brass guide piece
- 8 = well-established and proven stem bearing
- 9 = self-acting EPDM stone protector
- 10 = DIN outlet coupling with brass ring and cast protective cover with stainless steel chain



Dimensions and weights

| Type | DN | PN | Pipe covering mm | Height of construction mm | Weight kg |
|------|----|----|------------------|---------------------------|-----------|
| 304 | 80 | 16 | 800 | 575 | 24 |
| | 80 | 16 | 1000 | 750 | 24 |
| | 80 | 16 | 1250 | 1000 | 31 |
| 305 | 80 | 16 | 1500 | 1250 | 35 |
| | 80 | 16 | 800 | 575 | 25 |
| | 80 | 16 | 1000 | 750 | 25 |
| | 80 | 16 | 1250 | 1000 | 32 |
| | 80 | 16 | 1500 | 1250 | 36 |

Materials and technical properties

The one-piece body of the underground hydrant type 304 or 305 is made of ductile cast iron and is fully enamelled.

The sturdy obturator is also made of cast iron. Its shape allows ideal flow-through conditions and it is further fully coated with premium hydrolysis resistant polyurethane.

The design of this underground hydrant supports water pressure protection according to DIN 3321. Once the hydrant is opened, the pressurized water will not enter the pillar from the main pipe before the drainage outlet of the pillar is locked.

Following that same pattern, the drainage outlet will not open during the shut-off procedure until the main valve is securely locked. This prevents the leaking of pressurized water and allows the remaining residual water to discharge.

Type 304 comes with a single shut-off and type 305 comes with a dual shut-off device. An additional sealing ball ensures sealing when the linkage is replaced under pressure. There is no need for the pipe to be without pressure due to the dual shut-off device and no additional gate valve is required.

Maintenance-free stem bearing as a result of using two O-rings. The rolled stem thread ensures high wear resistance.

If repair is needed, the marking on the top of hydrant indicates information about the pipe covering in order to find the appropriate linkage length. The standard linkage safeguarding arrangement ensures additional safety during linkage exchange.

Installation and operation to be carried out in accordance with the guidelines of the DVGW worksheet W 331.



Underground Hydrant 393 S – for TYTON®/ Novo Coupling

DN 80/PN 16 – pipe covering 0.75 m to 1.50 m, inside and outside enamelled

Range of application

- for drinking and raw water
- up to 16 bar
- up to 60 °C

The underground hydrant 393 S is equipped with a spigot that fits into every TYTON®/Novo socket DN 80. It is available for pipe coverings from 0.75 m to 1.50 m.

The type 393 S underground hydrant corresponds to all details and tests of the standards DIN 3221, DIN 3230 as well as the DVGW worksheet W331 and has stood the test of time in drinking water supply, fire fighting and emergency water supply.

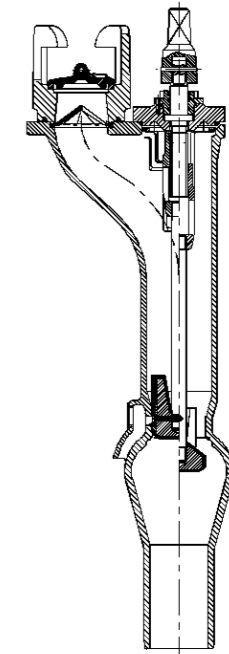
Düker
e^{tec}

The most important elements

- 1 = inside and outside enamelled one-piece body
- 2 = EPDM obturator
- 3 = cast-on and fully enamelled drainage outlet
- 4 = stainless steel rod
- 5 = brass guide piece
- 6 = stem nut (with rings)
- 7 = stone protector
- 8 = DIN outlet coupling with brass ring and cast protective cover with stainless steel chain
- 9 = cast iron protector

Dimensions and weights

| DN | PN | Pipe covering mm | Height of construction (H) mm | Weight kg |
|----|----|------------------|-------------------------------|-----------|
| 80 | 16 | 750 | 670 | 29 |
| 80 | 16 | 1000 | 890 | 33 |
| 80 | 16 | 1250 | 1140 | 38 |
| 80 | 16 | 1500 | 1390 | 43 |



Technical properties

The one-piece body of 393 S is made of fully enamelled ductile cast iron.

The sturdy obturator allows ideal flow-through conditions and is also made of ductile cast iron with an all-around premium EPDM coating, permanently connected by vulcanization.

Pressurized water protection is ensured according to DIN 3321. Once the hydrant is opened, the pressurized water will not enter the pillar from the main pipe before the drainage outlet of the pillar is locked.

Following that same pattern, the drainage outlet will not open during the shut-off procedure until the main valve is securely locked. This prevents the leaking of pressurized water from the discharge outlet and allows the remaining residual water to discharge.

Type 393 S underground hydrant comes with a single shut-off device. This model requires the pipe to be pressure-free during installation.

Maintenance free stem bearing (6) through the use of two O-rings. The rolled stem thread ensures high wear resistance.

A marking on the hydrant top (one to four cams) provides information about the pipe covering so that the pipe covering can also be determined any time after underground installation.

The built-in linkage safeguarding arrangement ensures secure installation and removal. Installation and operation to be carried out in accordance with the guidelines of the DVGW worksheet W 331.

Pillar Hydrant 494 – with Dual Shut-off

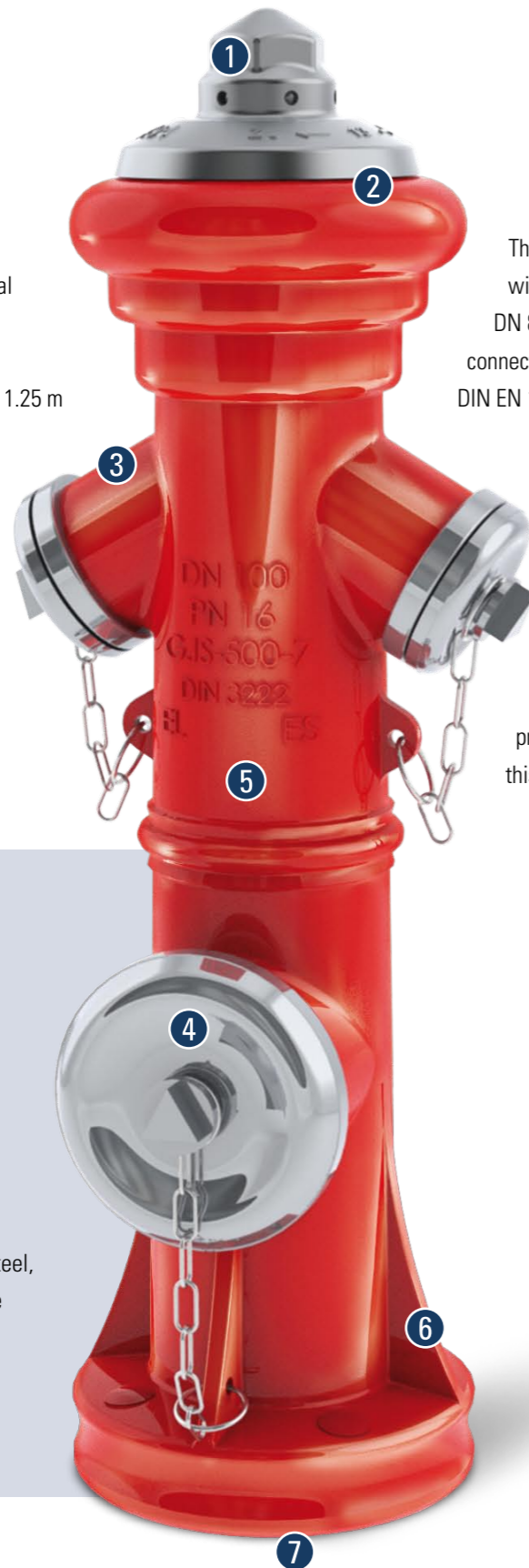
DN 80/100/PN 16 – pipe covering 1.25 m and 1.50 m

Range of application

- for drinking and raw water
- up to 16 bar
- up to 60 °C

Colour and design make the 494 pillar hydrant a highly visible water withdrawal point from underground pipelines.

It is available with the pipe coverings of 1.25 m and 1.50 m. As an option, the hydrant is also available in a height-adjustable version. Here, the pipe covering is adjustable in 5 cm increments from 1.10 m to 1.60 m (see page 12).



The pillar hydrant 494 is available with the nominal diameters of DN 80 and DN 100. The flange connection fulfils the requirements of DIN EN 1092-2 PN 16.

The hydrant corresponds to the standards of pillar hydrants according to DIN 3222, DIN 3321 and EN 14384, as well as the DVGW testing principle VP 325. A DVGW type approval test is also available for this hydrant.

The most important elements

- 1 = operating cap, connected with the solid stem extension through a stainless steel pin
- 2 = aeration and vent valve underneath the cap
- 3 = aluminium B couplings according to DIN 14318, attached to the hydrant by a stainless steel chain
- 4 = A outlet available upon request
- 5 = linkage made entirely of stainless steel, separated by a brass coupling at the progression to the upper part
- 6 = brass linkage safeguarding arrangement
- 7 = lower part with dual shut-off

Technical properties

All body parts are made of EN-JS 1050 ductile cast iron and are enamelled on the inside.

The hydrant has two upper B outlets (3). An additional A outlet is available upon request for the nominal diameter DN 100 (solid coupling according to DIN 14319) (4).

Linkage, stem and all screws are made of stainless steel. Stem nut, guide piece, support bearing and predetermined breaking coupling are made of brass.

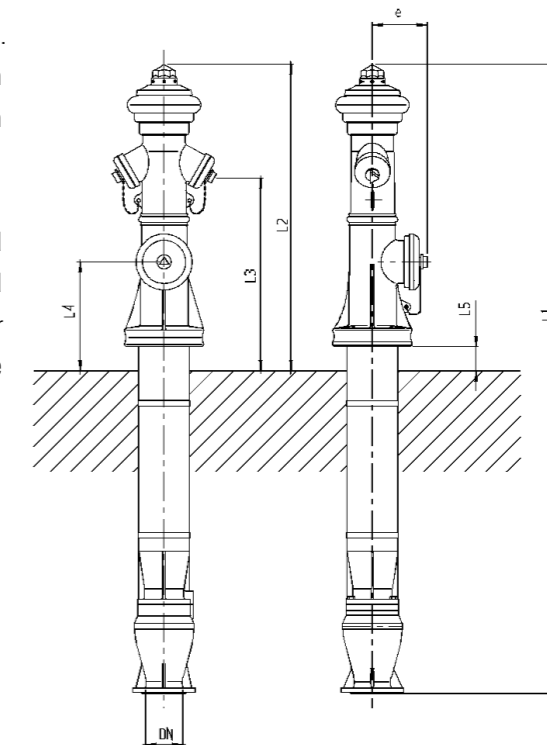
The upper part of the pillar is RAL 3001 powder coated. The lower part of the pillar and the bottom come with a base coat enamel and an additional epoxy resin cover varnish in RAL 3001.

In order to prevent the hydrant from being destroyed by impact such as from a car, the linkage is divided with a brass coupling on the progression to the upper part. This way, only the damaged elements with the predetermined breaking point need to be replaced.

The type 494 pillar hydrant comes with a dual shut-off. An additional obturator ensures sealing when the linkage is replaced under pressure.

Because of the dual shut-off, the pipe does not need to be pressure-free. The safety clasp, however, which protects the maintenance workers, needs to remain in place until the tightness of the dual shut-off can be guaranteed.

The packaging concept, too, is worth mentioning. The polystyrene transportation safety device may be also used as drainage stones.



Dimensions and weights

| DN | PN | Pipe covering mm | Height of construction (L ₁) mm | Height (L ₂) mm | Height (L ₃) mm | Height (L ₄) mm | Weight kg |
|-----|----|------------------|---|-----------------------------|-----------------------------|-----------------------------|-----------|
| 80 | 16 | 1250 | 2195 | 1000 | 600 | 300 | 136 |
| 80 | 16 | 1500 | 2445 | 1000 | 600 | 300 | 147 |
| 100 | 16 | 1250 | 2195 | 1000 | 600 | 300 | 140 |
| 100 | 16 | 1500 | 2445 | 1000 | 600 | 300 | 151 |

Pillar Hydrant 495 – with Protective Cover

DN 100/PN 16 - pipe covering 1.25 m to 1.50 m

Range of application

- for drinking and raw water
- up to 16 bar (test pressure: 24 bar)
- up to 60 °C

The pillar hydrant type 495 offers both appealing design with its bright red upper part and the stainless steel protective cover, as well as sophisticated functionality.

It is available in the nominal diameter of DN 100 with pipe coverings of 1.25 m and 1.50 m. The flange connection fulfils the requirements of DIN EN 1092-2.

The hydrant corresponds to the standards of pillar hydrants according to DIN 3222, DIN 3321 and EN 14384 as well as the DVGW testing principle VP 325. A DVGW type approval test is also available for this hydrant.



The most important components

- 1 = EN-JS 1050 hand wheel
- 2 = stainless steel protective cover
- 3 = B couplings according to DIN 14318, underneath the protective cover
(single control with two valves / safety relief valve)
- 4 = A outlet on the lower part
- 5 = linkage made entirely of stainless steel, separated by
a brass coupling at the progression to the upper part
- 6 = brass linkage safeguarding arrangement
- 7 = lower part with dual shut-off

Dimensions and weights

| DN | PN | Pipe covering mm | Height of construction L ₁ mm | Height L ₂ mm | Height L ₃ mm | Height L ₄ mm | Weight kg |
|-----|----|---------------------|---|-----------------------------|-----------------------------|-----------------------------|--------------|
| 100 | 16 | 1250 | 2390 | 1195 | 895 | 300 | 185 |
| 100 | 16 | 1500 | 2640 | 1195 | 895 | 300 | 196 |



Technical properties

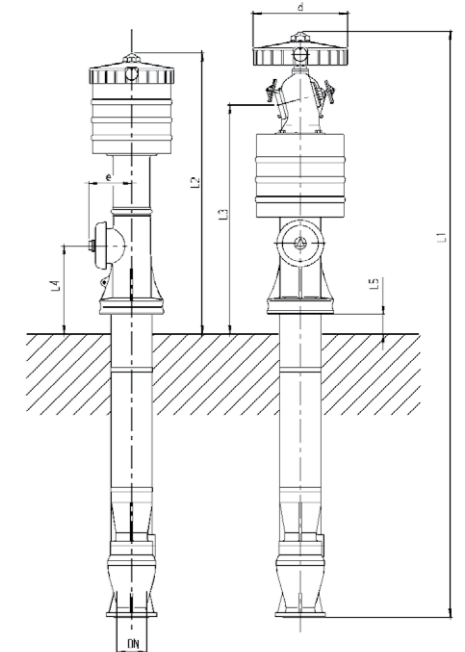
Bottom, upper and lower part of the pillar, valve head and hand wheel are made of cast iron with spheroidal graphite according to EN 1563.

The cast iron body is enamelled on the inside. The upper outside part of the hydrant is protected by a red powder coating in RAL 3001. The lower part and the bottom have a base enamel coating with an epoxy resin varnish in RAL 3001.

The cast iron EN-JS 1050 hand wheel is connected to the solid stainless steel stem extension with a feather key. Underneath the stainless steel protective cover, the two well-protected aluminium B couplings are located in accordance with DN14318. They can be individually controlled with two valves. A safety relief valve prevents the protective cover closing when under pressure.

The type 495 pillar hydrant is equipped with a predetermined breaking point and a dual shut-off. The lower part of the hydrant also features an outlet with an A solid coupling according to DIN 14319 with an outlet cover.

The polystyrene packaging material ensures secure transportation and may additionally be used as drainage stones.



Pillar Hydrant 504 – Height Adjustable, with Dual Shut-off

DN 100/PN 16 - pipe covering 1.10 m to 1.60 m



Range of application

- for drinking and raw water
- up to 16 bar
- up to 60 °C

The type 504 pillar hydrant ideally combines an appealing design with proven functionality. It is available for pipe coverings from 1.10 m to 1.60 m.

The hydrant may be perfectly adjusted to the local conditions thanks to its freely rotating upper part and the standard height adjustment in 5 cm increments.

The flange connection meets the requirements of DIN EN 1092-2.

The hydrant corresponds to the standards for pillar hydrants DIN 3222, DIN 3321 and EN 14384 as well as the DVGW testing principle VP 325.

The most important elements

- 1 = operating cap, connected to the solid stem extension with a stainless steel pin
- 2 = aeration and vent valve underneath the cap
- 3 = aluminium B couplings according to DIN 14318, attached to the hydrant by a stainless steel chain
- 4 = linkage entirely made of stainless steel
- 5 = brass linkage safeguarding arrangement
- 6 = dual shut-off



Technical properties

The upper part of the pillar hydrant housing is entirely made of EN-JS 1050 ductile cast iron and enamelled on the inside. The outside of the upper part has a base enamel coating and an additional red paint finish in RAL 3001. Standpipe and standpipe cover are enamelled inside and outside.

The hydrant has two upper B outlets (3).

Linkage, stem and all screws are made of stainless steel. Stem nut, guide piece, support bearing and predetermined breaking coupling are made of brass.

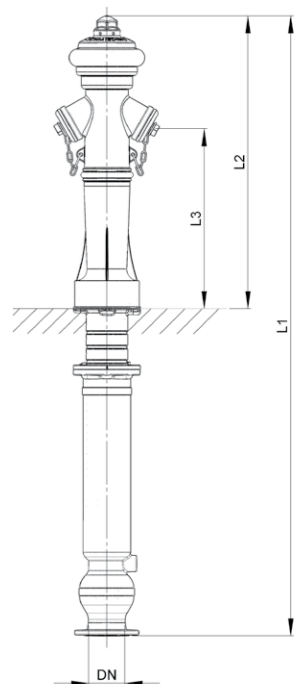
In order to prevent the hydrant from being destroyed by impact such as from a car, the linkage is divided with a brass coupling on the progression to the upper part. This way, only the damaged elements with the predetermined breaking elements need to be replaced.

The type 504 pillar hydrant comes with a dual shut-off. An additional obturator ensures sealing when the linkage is replaced under pressure.

Because of the dual shut-off, the pipe does not need to be pressure-free. The safety clasp, however, which protects the maintenance workers, needs to remain in place until the tightness of the dual shut-off can be guaranteed.

Dimensions and weights

| DN | PN | Pipe covering mm | Height of construction L ₁ mm | Height L ₂ mm | Height L ₃ mm | Weight kg |
|-----|----|------------------|--|--------------------------|--------------------------|-----------|
| 100 | 16 | 1100 – 1600 | 1970 – 2470 | 980 | 700 | 140 |



More than 500 Years of Experience in Iron Casting

Our know-how is your advantage

The Düker name has been synonymous for premium quality iron casting for more than 500 years. Today, we are 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 the standard high. Every day, we are faced with stretching the goal yet a little further. This is why many developments made by Düker are recognized as quality standard among experts today. And we keep on learning and growing.

You benefit from our many years of experience. All of our qualified teams in engineering, sales, production and service are happy to assist you with all questions concerning "drinking water and gas supply". It starts with the planning, continues with logistics and finally results in installation. On top of that, we also consult with you regarding more complex pipe line projects, given the long service life of our products.

Quality at the highest possible level

We are the first ones to set the highest requirements into the quality of our products. It is for that reason that we 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 or rule sets.

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



Düker valves are in use 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 by applying the greatest possible care and attention to detail. Needless to say, before any product will leave Düker, it will be thoroughly put to the test.

It also goes without saying that our valves are CE tested in accordance with DIN 14339 and 14384 and correspond to the 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"



FITTINGS AND VALVES

DRAINAGE TECHNOLOGY

ENGINEERING

GLASS LINING TECHNOLOGIES

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