GRUNDFOS
COMMERCIAL BUILDING SERVICES

Wastewater products for commercial buildings

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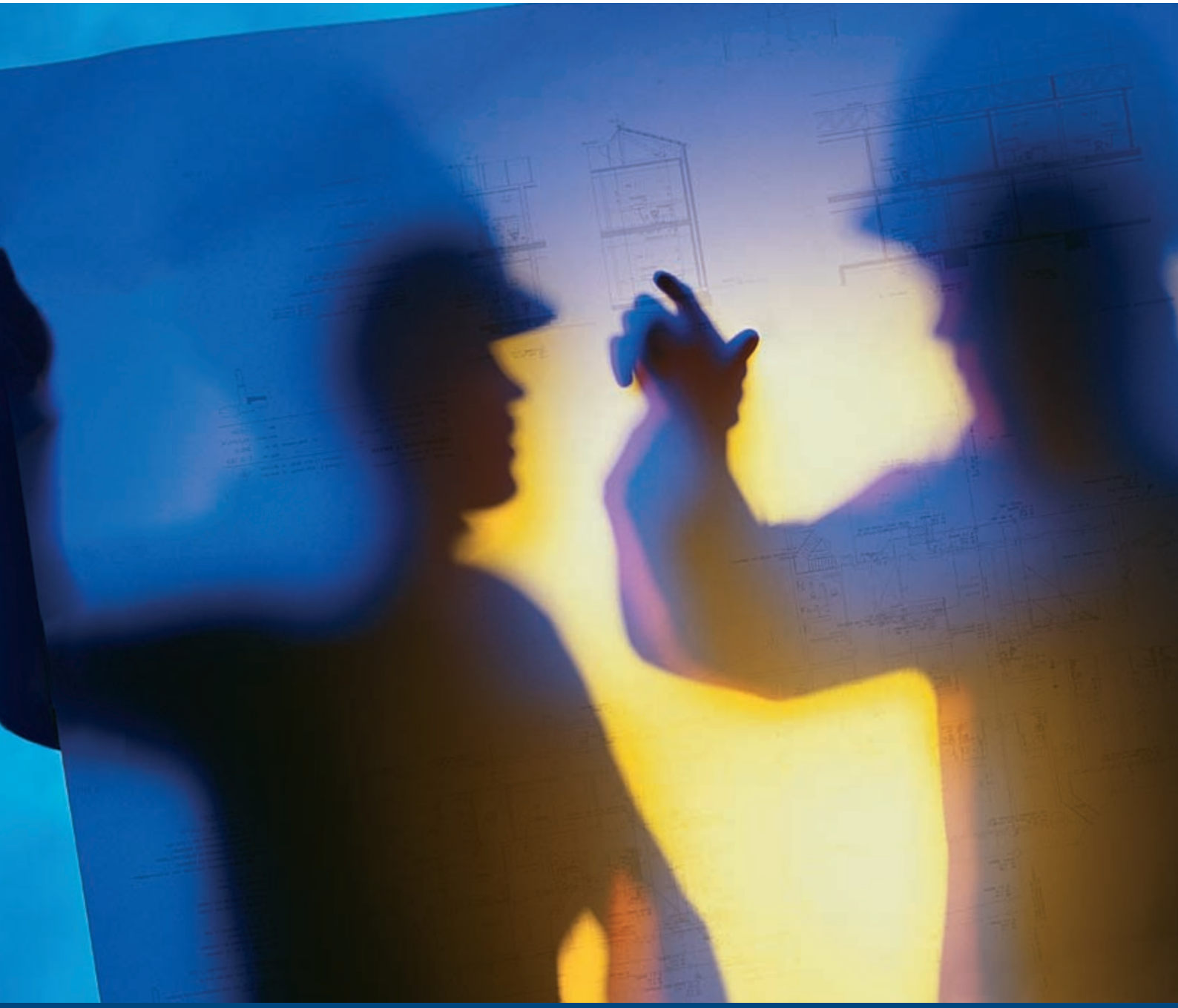
GRUNDFOS



Wastewater **definitions**

In Grundfos terminology, “wastewater” comprises three categories:
Drainage, effluent and sewage.

Yes, we do **wastewater too**

For any kind of wastewater in any kind of building

You probably already know us as a leading supplier of high-quality pumps for water supply, heating, air conditioning, and fire fighting systems. After all, major building projects all over the world have enjoyed the benefits of Grundfos technology for more than fifty years. But you may not be familiar with our large range of products for wastewater management on any scale. If so, you are in for a very pleasant surprise.

Wastewater technology: a focus area for Grundfos

In recent years, we at Grundfos have devoted a lot of energy to building a complete range of pump technology for wastewater handling. One of our strategies has been to acquire a number of carefully selected companies, ensuring that you benefit from decades of experience with large-scale wastewater pump technology. Naturally, we have then brought the special Grundfos touch to bear on all solutions that leave our premises.

Bringing you a complete range of solutions

Even more importantly, we have spent years on developing a complete range of wastewater pumps to solve all building-related tasks. And this is technology you can trust. Every product shown in this brochure is designed to handle specific tasks as efficiently as possible for as long as possible.

We're always ready to assist you

Of course we can only provide you with the most general information here, so once you have an overview of what's on offer, why not contact us? That way, you can learn even more about how Grundfos can help you create the best possible wastewater systems for your projects.

Drainage means:

Groundwater and rain/surface water with solids no larger than 12 mm. To avoid clogging, we recommend pumps that allow free passage of solids up to 10-12 mm.

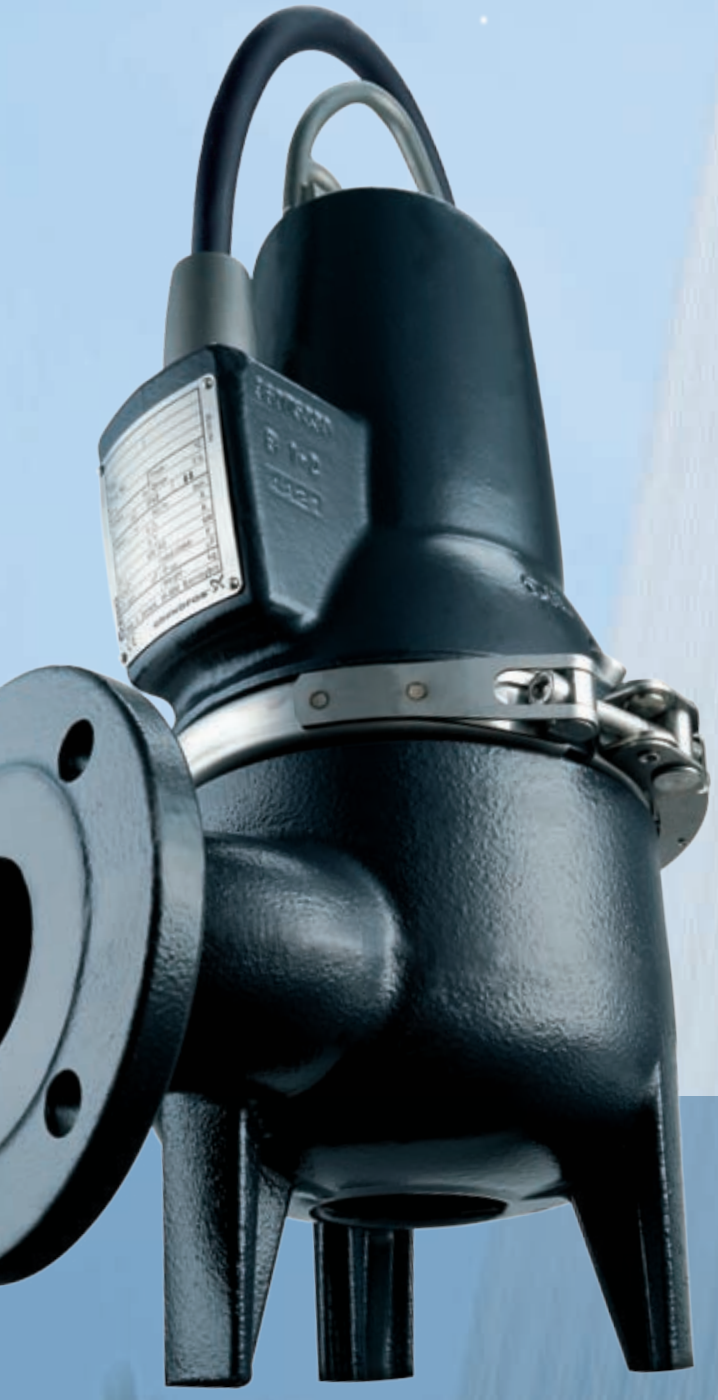
Effluent means:

Dirty water with fibres and solids no larger than 35 mm. Please note that this does not include discharges from toilets. To avoid clogging, we recommend pumps that allow free passage of solids up to 35 mm.

Sewage means:

Untreated wastewater and raw sewage that contains fibres, textiles, and other large solids up to 100 mm including discharge from toilets. For sewage applications in public buildings we recommend pumps with a free passage of at least 65 mm (SuperVortex impeller) or 80 mm (single-channel impeller).

No clogging. Ever.



The small cast-iron SEV pumps are ideal for submerged installation in small-scale applications. They come with motor sizes of 0.9, 1.1, and 1.5 kW.

New pump range to cover 90% of all your needs

It gives us great pleasure to introduce our all-new SEV and SE1 pumps (please see p. 6 for the SE1). The innovative, award-winning SEV/SE1 wastewater pumps are not just good-looking – they are also extremely useful in building projects on any scale. So useful, in fact, that they cover up to 90% of all your wastewater pumping needs. No, we're not kidding.

The versatility of the SEV and SE1 pumps is partly due to the extent of the product range: with motor sizes from 0.6 to 11 kW, these pumps can handle any small and medium-sized wastewater task. And within this spectrum, you can choose either a SuperVortex impeller (SEV) or a single-channel impeller (SE1), allowing you to weigh factors such as the risk of clogging and pump efficiency against each other to arrive at the solution that is right for you. Even this is not all: we also analysed the most common problem areas known from conventional pumps. Then we solved them. Please see page 7 for more information about how the new **cable entry design**, the **shaft seal solution**, and the special **heat transfer solution** used in the stainless steel versions can bring new benefits to your building.

The SEV pump in brief

Media type:	Drainage, effluent, sewage
Max. flow:	36 l/s (130 m^3/h)
Max. head:	44 m
Motor sizes:	0.9 to 11 kW
Power supply:	1 x 230V / 3 x 220–240 / 3 x 380–415V
Free passage:	60–80–100 mm
Max. liquid temp.:	+40°C
No. of poles:	2 or 4
Discharge dim.:	DN 65 – DN 150
Weight:	38–210 kg
Materials:	Cast iron/stainless steel

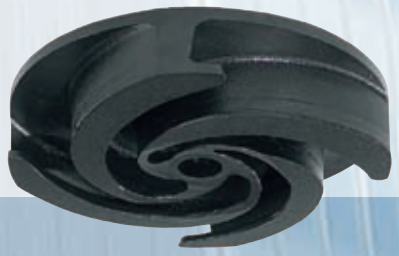
For media with lots of solids or fibres

SuperVortex impeller for super solids handling

The Grundfos SEV pumps are fitted with a SuperVortex impeller which ensures that the flow inside the pump does not pass the impeller itself. This makes them ideal for applications involving large quantities of solids, abrasive liquids, gassy sludge, or fibres. Depending on which model you choose, SEV pumps allow for free passage of solids of 65 mm, 80 mm, or 100 mm. As long as they are not required to pump solids larger than these limits, SuperVortex pumps will never become jammed. Ever.

Installation

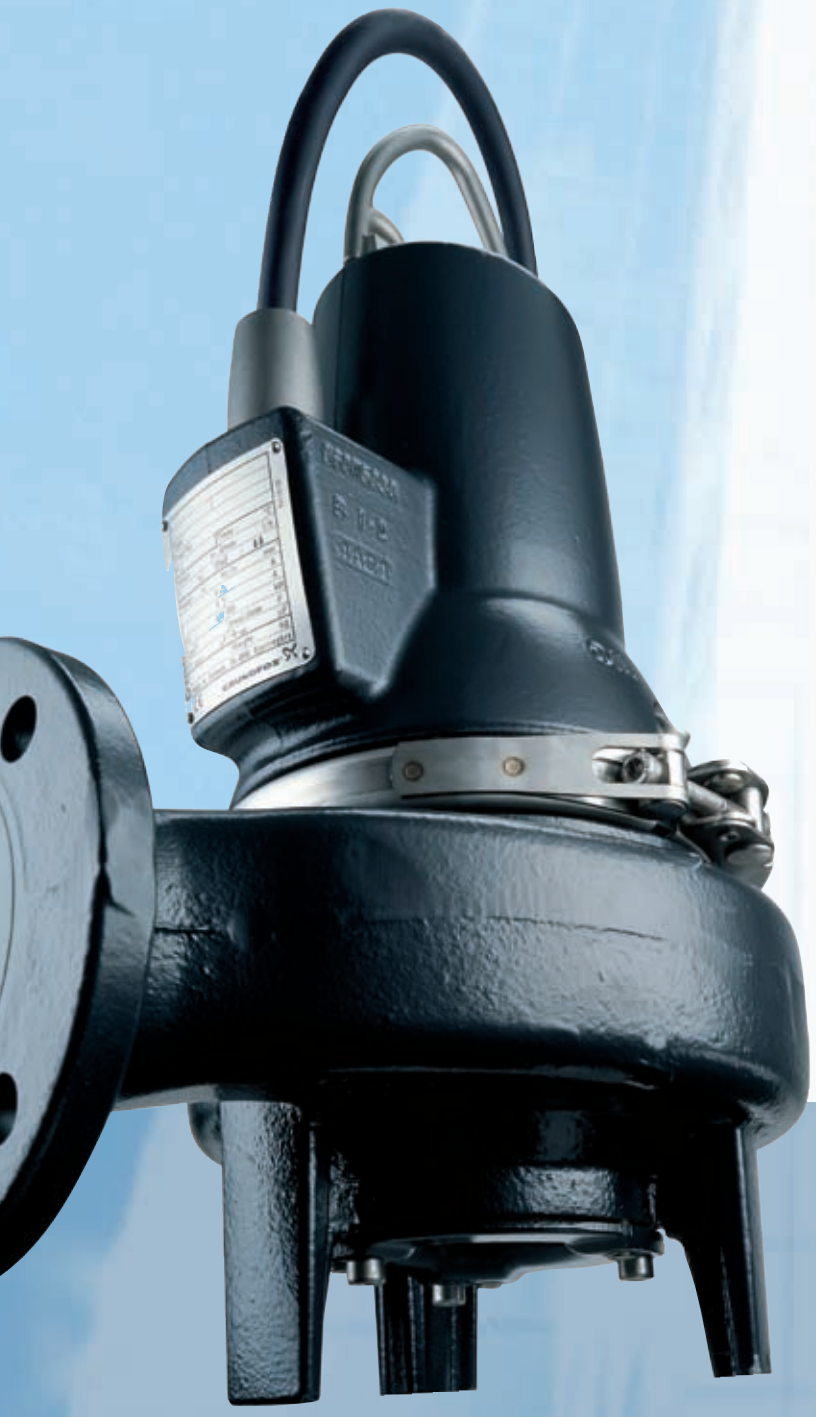
The special heat transfer solution used in the larger SEV pumps (easily recognisable by the stainless steel motor jacket) means that Grundfos SEV pumps can be installed exactly as you want: **submerged** on auto-coupling or free-standing, or **dry-installed** in vertical or horizontal positions to suit your requirements. No motor modification is necessary! The small, cast-iron SEV models without the motor jacket are excellent for all types of submerged installation.



SuperVortex impellers prevent downtime due to clogging or jamming.

SEV pumps fitted with the distinctive stainless-steel motor jacket hide a unique heat transfer solution behind their sleek, strong exterior. They are available with motors from 1.1 to 11 kW.

Maximise efficiency



Cast-iron SE1 pumps for submerged installation are available with 0.9, 1.1, and 1.5 kW motors.

Single-channel impeller for maximum efficiency

The single-channel impellers used in the Grundfos SE1 range maximise pump efficiency while also offering excellent protection against clogging. You can choose SE1 pumps allowing for free passage of solids of 50 mm, 80 mm, or 100 mm respectively. The 80 and 100 mm variants in particular are ideal for large flows of raw sewage, and single-channel versions are very cost-efficient in applications where the pumps are required to run for long periods of time.

Installation

Please see the notes on installation of SEV pumps on page 4.

Remove risk factors with SEV/SE1 pumps

The SEV/SE1 pumps are the result of years of development work carried out to make life easier for you. Basically, we set out to eliminate the problems you know from conventional wastewater pumps.

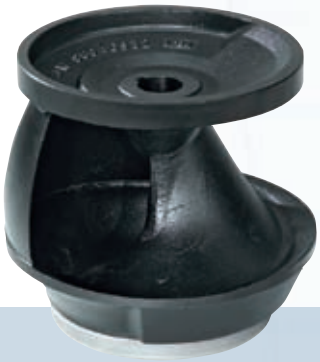
The SE1 pump in brief

Media type:	Drainage, effluent, sewage
Max. flow:	83 l/s – 300 m^3/h
Max. head:	32 m
Motor sizes:	0.9 to 7.5 kW
Power supply:	1 x 230V / 3 x 220–240 / 3 x 380–415V
Free passage:	50–80–100 mm
Max. liquid temp.:	+40°C
No. of poles:	2 or 4
Discharge dim.:	DN 65 – DN 150
Weight:	38–210 kg
Materials:	Cast iron/stainless steel

High-efficiency pumping of lots of wastewater

We are happy to report that we succeeded. We focused on creating a **watertight cable entry point** to remove the risk of water entering the motor – a common cause of pump failure. To eliminate another frequent source of problems, we designed a **shorter rotor shaft**, thereby reducing vibrations to create a sturdier, more reliable pump. We did this by effectively combining two shafts seals into one, bringing you a shaft seal that lasts longer than standard seals, increases performance, and can be replaced in seconds, thereby preventing costly replacement manoeuvres. We think you'll like it.

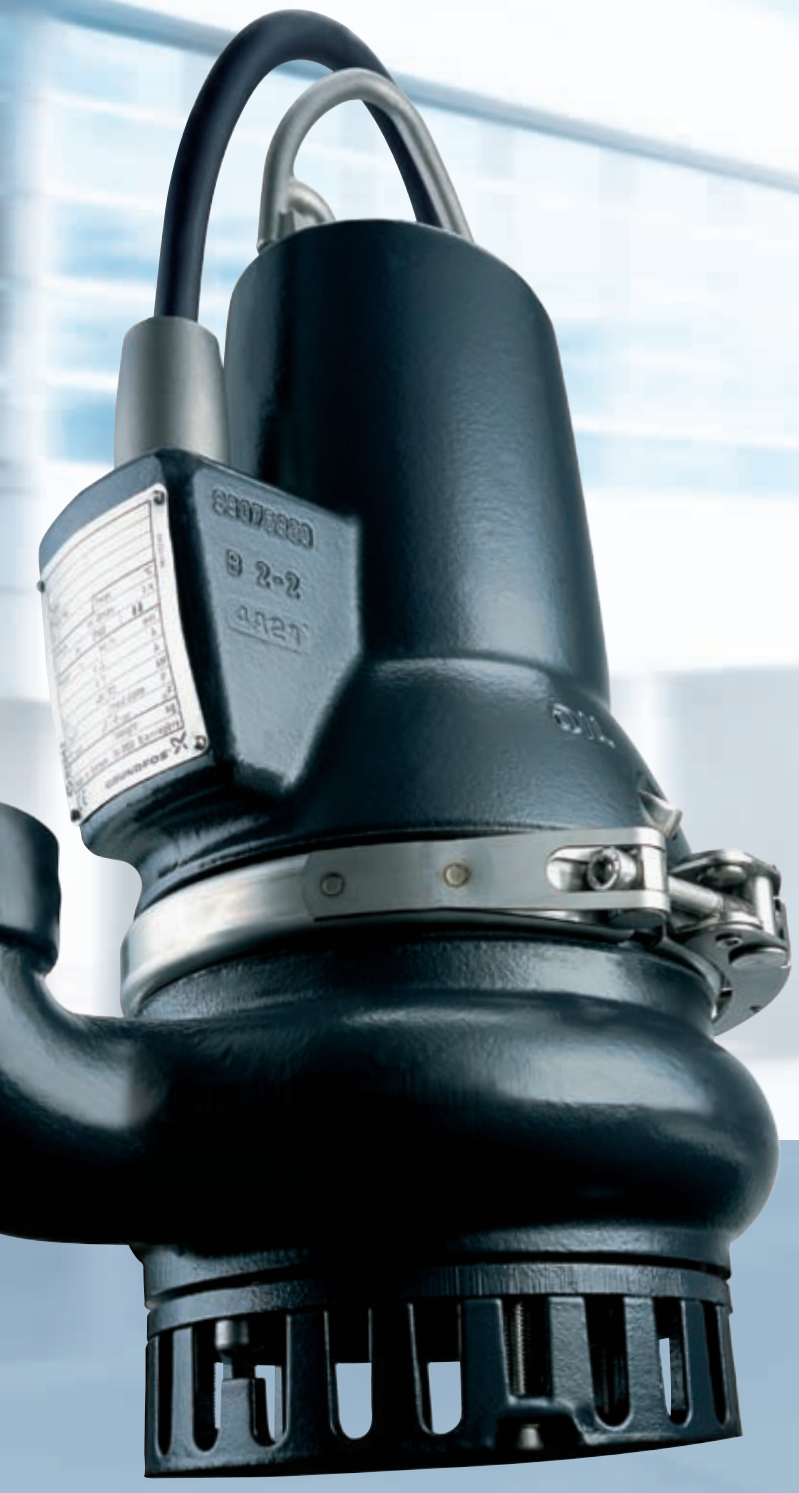
We also think that you should be able to install your pumps just as it suits you. That is why the larger versions of SEV/SE1 pumps have a solid aluminium stator housing behind their steel jacket. This stator housing leads heat away from the motor, acting as a **unique heat transfer solution** that eliminates the need for cooling liquid. This prevents overheating and allows for continuous operation even in partly submerged or dry installations.



Single-channel impellers maximise pump efficiency.

SE1 pumps with stainless-steel motor jackets come with motors from 1.5 to 7.5 kW.

Keeping buildings dry



For all kinds of water – no fibres allowed!

The fully portable Grundfos DP pumps are efficient drainage pumps specially designed to handle drainage water, surface water, groundwater, and process water with no solids or fibres. They can be installed permanently wherever you want reliable pump equipment for liquids with a pH value of 4 to 10, or be kept on stand-by for immediate flood relief.

Strainer protects against impurities

The DP range is fitted with a semi-open multi-vane impeller and come with a suction strainer that lets solids with a diameter of up to 10 mm pass through. The strainer is easy to dismantle for cleaning and allows effortless inspection of the pump hydraulics.

Installation

The Grundfos DP pumps with motors up to 1.5 kW are designed for free-standing or portable use, while the 2.6 kW motor versions can be installed free-standing or mounted on an auto-coupling system.

The DP pump in brief

Media type:	Drainage
Max. flow:	12.5 l/s – 45 m³/h
Max. head:	25 m
Motor sizes:	0.9–1.5–2.6 kW
Power supply:	1 x 230V / 3 x 400–415V
Free passage:	10 mm
Max. liquid temp.:	+40°C
No. of poles:	2
Discharge dim.:	2 Rp or DN 65
Weight:	39–61 kg
Materials:	Cast iron/stainless steel

Grundfos EF range

Fantastic for **fibres**

For wastewater with small impurities or fibre

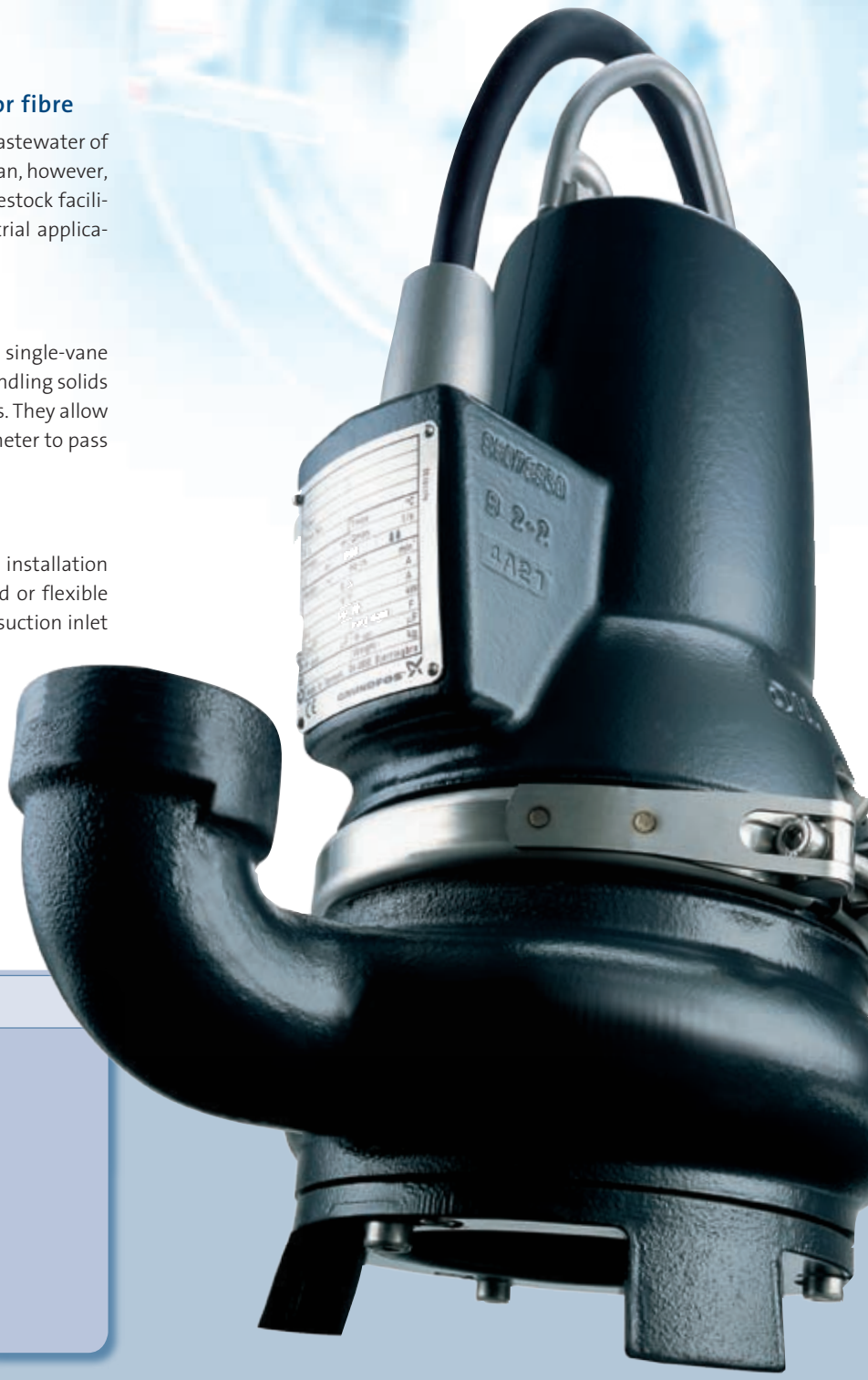
The Grundfos EF pumps are designed to pump wastewater of many different kinds – but no toilet waste. They can, however, pump liquid manure if your building includes livestock facilities, and are also suitable for a variety of industrial applications.

Excellent solids handling

The Grundfos EF pumps are fitted with an open single-vane impeller that makes them remarkably good at handling solids – even those difficult fibres from laundry facilities. They allow particles with a diameter of up to 30 mm in diameter to pass through with no problems.

Installation

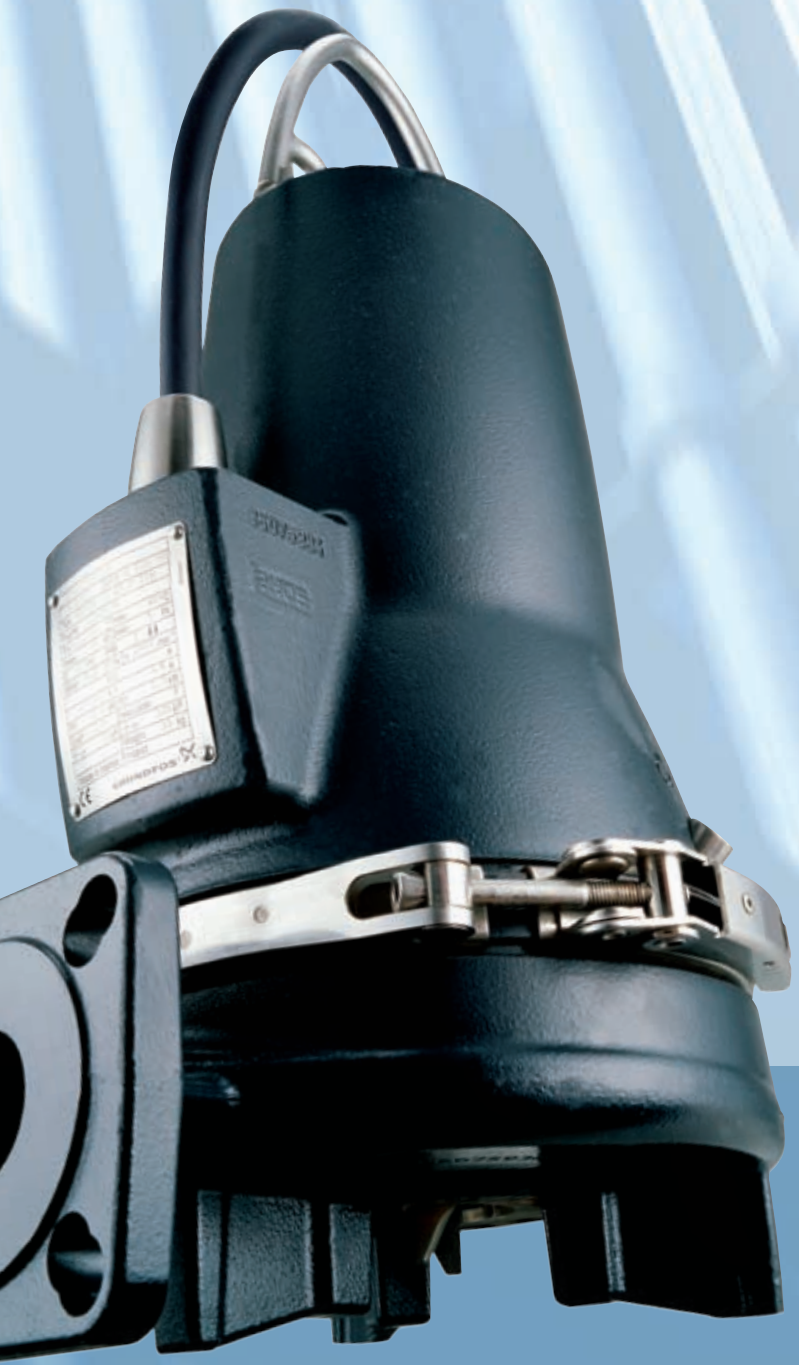
The EF models are designed for free-standing installation or portable use, and work equally well with rigid or flexible discharge pipes. The integrated stand keeps the suction inlet well clear of the pit bottom.



The EF pump in brief

Media type:	Drainage, effluent (w. fibres)
Max. flow:	12.5 l/s – 45 m^3/h
Max. head:	22 m
Motor sizes:	0.6–0.9–1.1–1.5 kW
Power supply:	1 x 230V / 3 x 400–415V
Free passage:	30 mm
Max. liquid temp.:	+40°C
No. of poles:	2
Discharge dim.:	2 Rp
Weight:	38 kg
Materials:	Cast iron/stainless steel

Cutting-edge grinders



For wastewater with solids you want smaller

The grinder system used in the SEG pumps cuts up sewage solids so efficiently that you can use pipes with a diameter of down to 40 mm. This, combined with their high-head pumping capabilities, makes them ideal for pressurised systems, minimising the cost of the total solution. They are often used in small pumping stations designed to pump sewage into the public sewage systems.

For high-head pumps, precise impeller action is necessary in order to maintain peak performance. That is why the SEG system has its own SmartTrim system to allow easy adjustment of the impeller clearance. You won't have to dismantle the pump, and you don't need special tools.

Installation

The SEG models are designed for submerged installation. They can be installed on an auto-coupling system with guide rails or on a hookup auto-coupling system, and are also available as free-standing pumps.

The SEG pump in brief

Media type:	Effluent, sewage
Max. flow:	5 l/s – 18 m^3/h
Max. head:	45 m
Motor sizes:	0.9–1.2–1.5–2.6–3.1–4.0 kW
Power supply:	1 x 230V / 3 x 400V
Cutter system:	Hardened stainless steel
Max. liquid temp.:	+40°C
No. of poles:	2
Discharge dim.:	DN 40
Weight:	35–70 kg
Materials:	Cast iron

Need a pumping station? Get the complete set at Grundfos!
For perfect product compatibility, we recommend that you get your pumping stations from Grundfos, too. The sets consist of a moulded PEHD pump pit, all accessories and controls, and one or two quality pumps (SEG, DP, EF, cast-iron SEV and SE1 models, KP, or AP). The range is regularly updated with new models and sizes – check **www.grundfos.com/pumpingstations** for the latest news

Great **lift!**

Lifting stations to collect and transfer sewage

Compact all-in-one units for sewage transfer

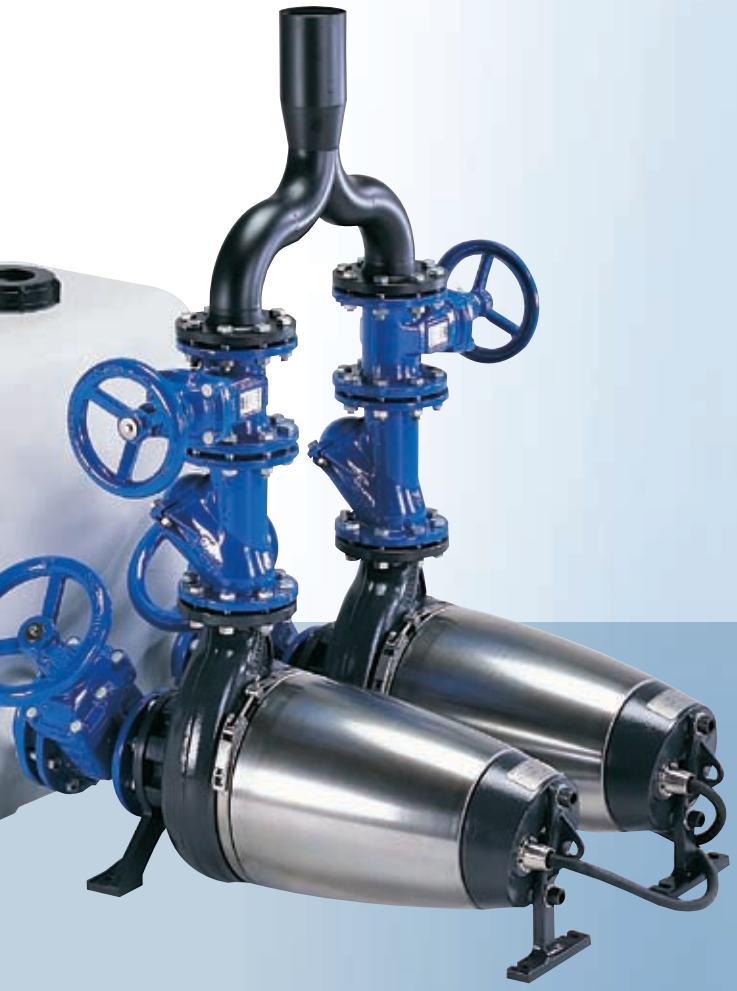
Grundfos lifting stations are compact all-in-one units specially designed to collect and transfer sewage from below sewer level. As the name suggests, they lift the wastewater and carry it to the sewer line – very efficiently and with minimum noise. Equipped with either one or two pumps and tanks and capable of holding up to 800 litres, Grundfos lifting stations are gas and odour proof, easy to install, and require minimum maintenance. Different sizes are available to suit your needs, ranging from the smallest, single-pump Multilift M model to large, double-tank Multilift MDV and MD1 solutions featuring either SuperVortex or channel-impeller SE pumps.

The Multilift MDV and MD1 in brief

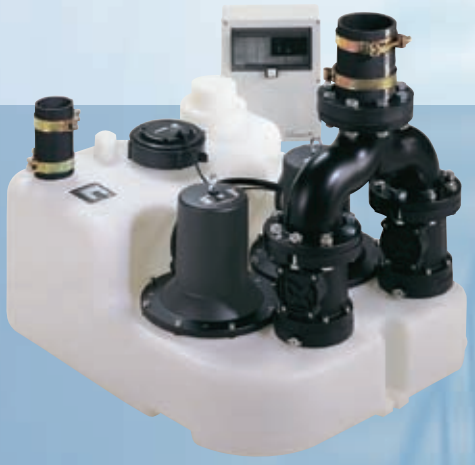
Media type:	Sewage
Max. flow:	61 l/s – 220 m³/h
Max. head:	28 m
Motor sizes:	1.5 to 7.5 kW
Power supply:	3 x 230 / 400V
Free passage:	65–80 mm
Max. liquid temp.:	+40°C
Inlet dimension:	DN 100 to DN 150
Discharge dim.:	DN 80 to DN 100
Weight:	Approx. 250 kg to 530 kg
Materials:	Polyethylene tank, cast iron/stainless steel pumps
Tank capacity:	Up to 800 l (two-tank system)

The Multilift M/MD in brief

Media type:	Sewage
Max. flow:	16 l/s – 57.6 m³/h
Max. head:	19 m
Motor sizes:	1.2 to 3.2 kW
Power supply:	1 x 230V / 3 x 230V / 3 x 400V
Max. liquid temp.:	+40°C
Inlet dimension:	3 x DN 100 + 1 x DN 150
Discharge dim.:	DN 80/100
Weight:	36.5 kg to 80 kg
Materials:	Polyethylene tank, cast iron
Tank capacity:	100/120 l



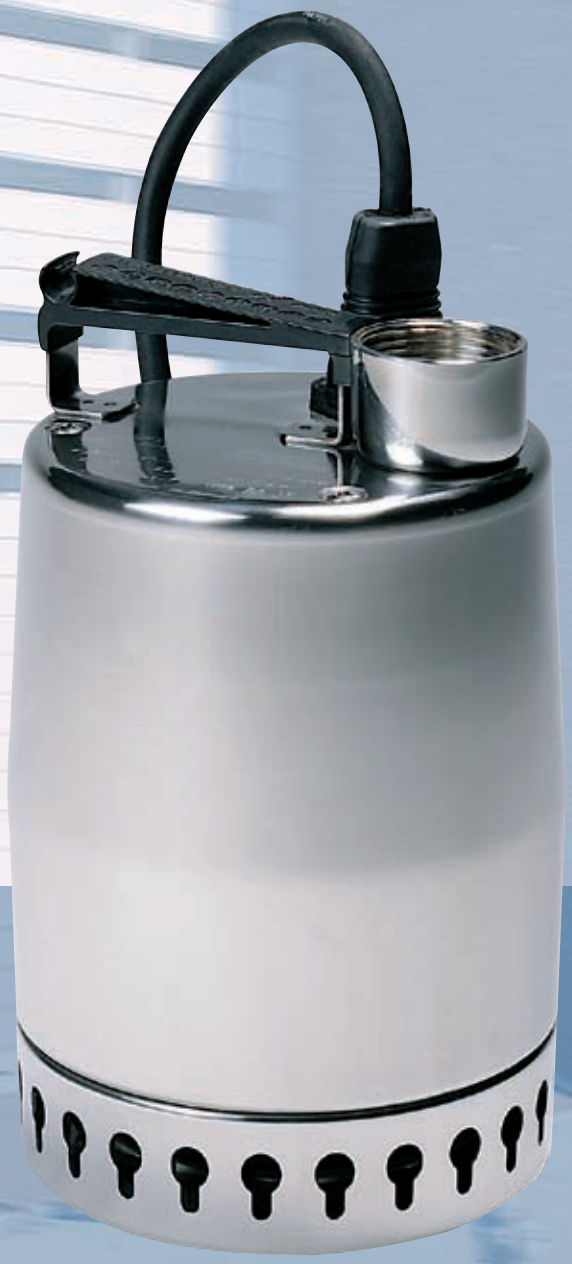
Multilift MDV



Multilift MD

Lightweight **beauties**

for heavy work



Portable pumps for drainage and effluent

The Grundfos KP pumps are lightweight, portable pumps specially designed for drainage jobs. They are also suitable for effluent with solids up to 10mm in diameter, but no fibres!

Elegant design with very real advantages

The award-winning design of the KP and AP pumps goes far beyond the elegant exterior. The stainless steel makes them extremely robust, durable, and corrosion-free and reduces maintenance to an absolute minimum. They are also easy to dismantle for cleaning. For complete flexibility, KP pumps can be fitted with a float switch for automatic operation.

Installation

While fully portable, KP pumps are also excellently suited for permanent installation. You can place them vertically, horizontally – even at an angle. Their flexibility means that you can use them for drainage in basements or outside your building, pump water from washing machines, bath, showers, and more.

The KP pump in brief

Media type:	Drainage, effluent
Max. flow:	4 l/s – 14.4 m^3/h
Max. head:	9 m
Motor sizes:	0.15 to 0.35 kW
Power supply:	1 x 220–240V / 3 x 380–415V
Free passage:	10 mm
Max. liquid temp.:	+50°C/70°C
Discharge dim.:	Rp 1 1/4
Weight:	5.5–7.5 kg
Materials:	Stainless steel

Steely perfection

for the really rough stuff

Portable pumps for a range of wastewater needs

The Grundfos AP pumps are larger cousins of the KP range. They share many of the same features, but are designed for more demanding wastewater tasks – from groundwater lowering to wastewater with toilet waste. The AP range comprises the AP12, the AP35/50, and the AP35B/50B models.

Three main variants:

AP12

Similar to the KP pump in many respects, the AP12 line comprising four models with motors of 0.4, 0.6, 0.8, and 1.1 kW respectively. The AP12 pumps can handle somewhat dirtier water than the KP line and will pump clean, non-aggressive water and drainage water with solids up to 12mm in size – hence the name!

AP35/50

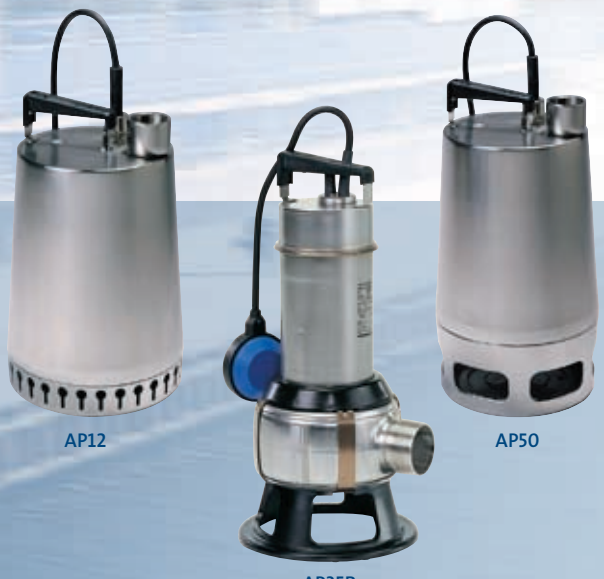
The AP35/50 pump takes over where the KP and AP12 lines cannot go. As the name suggests, the AP35 pumps can handle solids up to 35mm, while the AP50 allows for solids with diameters up to 50mm. Fitted with vortex-type impellers, they are designed to pump clean water, effluent with solids up to 35 or 50 in size, sludge, and domestic wastewater. The AP50 can also handle sewage, i.e. discharges from WCs, on a scale corresponding to the sewage generated by a two-family home. Motor sizes ranges from 0.6 to 1.1 kW.

AP35B/50B

The design is different, but the performance remains the same. The AP35B/50B series are tough pumps designed for the same media and solid sizes as the AP35/50 series, but they offer higher head, have a horizontal discharge port, and can be installed in an auto-coupling system. The motor sizes range from 0.6 to 1.5 kW. Four stainless steel spring clamps makes dismantling and reassembly quick and easy, minimising the time spent on service and cleaning.

Installation

All AP pumps are fully portable while also excellent for permanent installation. Like the KP pumps, you can place them vertically, horizontally – even at an angle. They can be fitted with float switches for automatic operation.

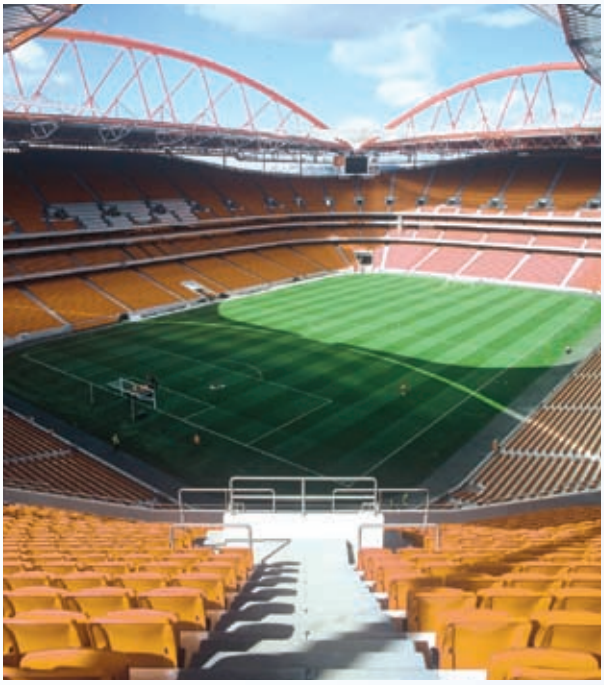


AP12 AP35B AP50

The AP pump in brief

Media type:	Drainage, effluent. AP50 models can also handle sewage.
Max. flow:	9.4 l/s – 34 m^3/h
Max. head:	18 m
Motor sizes:	Up to 1.5 kW
Power supply:	1 x 230V / 3 x 230/400V
Free passage:	Up to 50 mm
Max. liquid temp.:	+55°C / +70°C
No. of poles:	2
Discharge dim.:	Up to 2 Rp
Weight:	Up to 17.9 kg
Materials:	Stainless steel

Your building **deserves the best**



Premium solutions for premium projects

Now that you have seen our wastewater programme, consider what you get by selecting a Grundfos solution. Not only do you get products specially designed to handle specific tasks, you also get the peace of mind that comes from choosing premium quality. We are sure you are proud of your project – as proud as we are of our pump solutions, which have made us the preferred supplier to major clients all over the world. So why not join projects like the Portuguese Euro 2004 stadiums, the Athens 2004 Olympic venues, and many more? Treat your buildings to the best.

And there's even more in store for you ...

Even our extensive wastewater range represents only a small selection of what we can do for you. With a full range of pump solutions for buildings of all kinds, you need look no further than Grundfos. We can supply all the pumps you will ever need. Contact us for more information or to set up a meeting – we look forward to working with you.

www. grundfos.com

BE > THINK > INNOVATE >

Being responsible is our foundation
Thinking ahead makes it possible
Innovation is the essence

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