

Pioneering for You

**wilo**

*Industry General*

# **Reliable and Energy Efficient Pumps**

## For Mining Industry





# Pioneering for You.

## Our promise to you.

WILO SE is one of the world's leading premium suppliers of pumps and pump systems for building services, water management, and the industrial sector. With over 7800 employees in more than 60 subsidiaries around the world, we develop smart solutions that connect people, products and services to effectively support you in your daily work. "Pioneering for You" is our lasting commitment to clear customer focus, unrelenting pursuit of quality and our special passion for technology.

As the digital pioneer of the pumps industry, we understand the challenges that will shape the future. As an innovation and technology leader, we provide holistic solutions to address them. We know that these issues play a major role in your daily work and, in turn, ours too.

## Sustainably better.

One of the most pressing tasks in times of limited natural resources is the responsible consumption of water, a resource that is becoming increasingly scarce. Efficiency, connectivity and safety will become increasingly important in the future. We aspire to offer you sustainable, user-friendly and high-performance solutions for building services and water management that are ahead of their time. We work closely with our customers to create innovative products and systems that perfectly match their requirements and are rounded off with convenient services. The result is integrated solutions you can rely on at all times.





# GREEN SOLUTIONS FOR A BETTER CLIMATE.

Smart. Efficient. Sustainable. Our solutions offer measurable added value..  
Energy-efficiency and resource-efficiency are vital elements to the efforts to protect the climate.  
One of our primary sustainability goals is to supply people with clean water while reducing our ecological footprint.

With our high-efficiency technologies we contribute worldwide to more gentle handling with valuable resources like water and energy. In doing so, we rely on smart products that integrate seamlessly into digitally controlled infrastructures. In this context, we use digitalisation which offers us new opportunities in terms of energy savings.

Wilo offers an extensive range of products for Building Services, Water Management and Industry, and is continuously working on the further development of its product portfolio.

[www.wilo.de](http://www.wilo.de)



## More is more: in-depth digital content

**Our extra for you:** wherever you see this logo you can call up additional in-for-mation we prepared for you. Simply scan the area with your smartphone and find out more about selected topics.



Download the Wilo-Assistant App for free in the Google Play Store for Android or in the App Store for iOS.



Tap the AR logo to start the Wilo-Assistant App and scan the content with your smartphone.

**wilo**

Pioneering for You

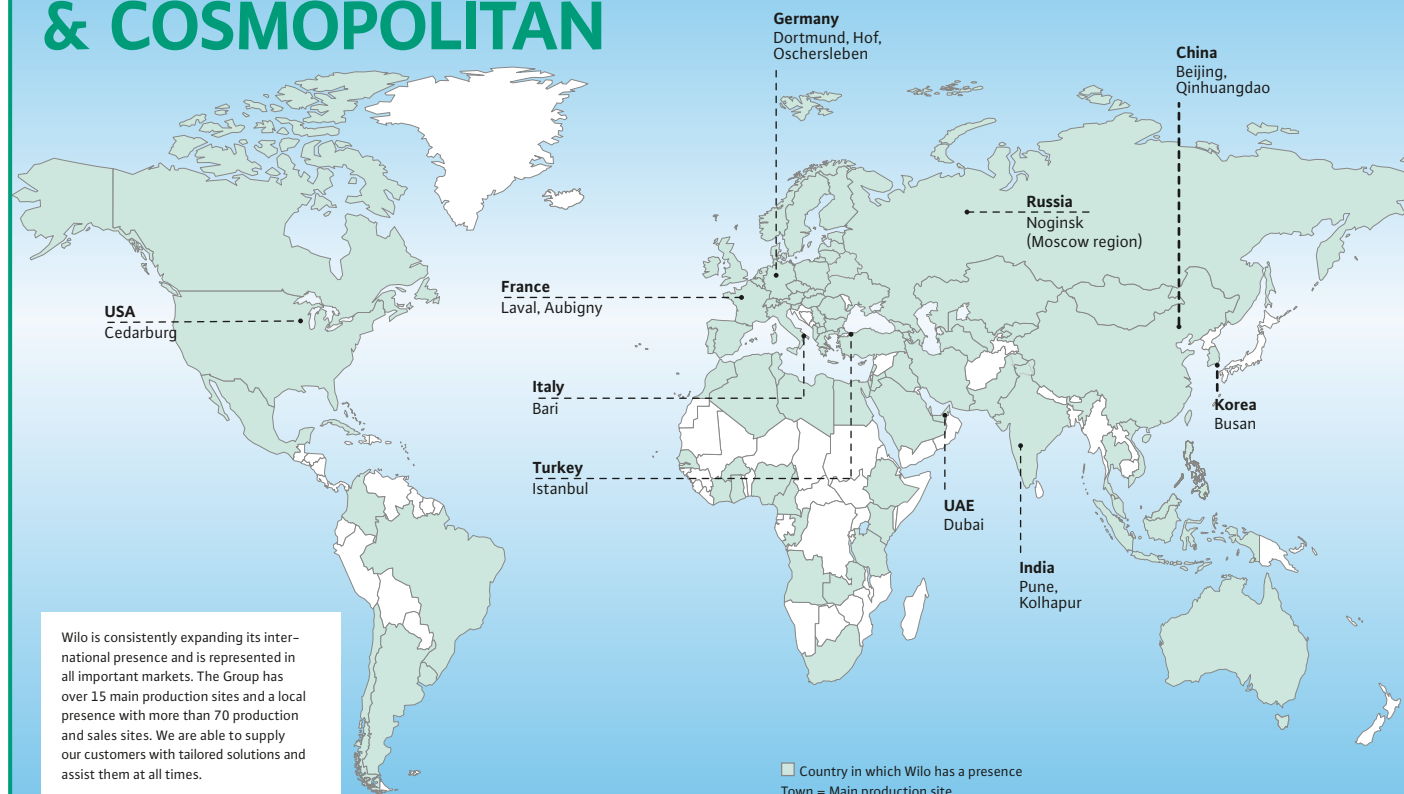


## The company at a glance

WILO SE, based in Dortmund, Germany is one of the world's leading manufacturers of pumps and pumping systems for heating, cooling and air conditioning, water supply, sewage disposal and industrial applications. With more than 15 production sites over 60 subsidiaries, and more than 7,800 employees around the world, Wilo is a true global player. Founded in 1872 as the Louis Opländer Copper and Brass Goods Factory, the company has developed to become the leading innovator in the high-tech pump sector.



## INTERNATIONAL & COSMOPOLITAN



Wilo is consistently expanding its international presence and is represented in all important markets. The Group has over 15 main production sites and a local presence with more than 70 production and sales sites. We are able to supply our customers with tailored solutions and assist them at all times.



Chinchwad, Pune Plant

## WILO Mather and Platt Pumps Pvt. Ltd.

Mather and Platt started its Indian operations in 1913 from Kolkata, and has been fulfilling the need of water supply for more than 100 years in India for segments like building services, water management and industries.

We started our operation at Chinchwad works in Pune, Maharashtra in year 1959.

Mather and Platt Pump Ltd became part of WILO SE in the year 2005

And in year 2014, WILO Mather and Platt Pumps Ltd. Became WILO Mather and Platt Pumps Pvt. Ltd.

In the year 2009 a new state of art manufacturing facility covering over approx. 6000 sq. meters has been built at Kolhapur around 260 km from Pune to manufacture the latest high efficiency products of Wilo India.

The Pune & Kolhapur plants have acquired ISO 9001, ISO 14001 and OSHAS 18001 and all products are CE certified.



Kolhapur Plant



# Water is life.



## Quality. This is what matters.

Deviations of 70 micrometres – a hair's breadth – are just visible to the naked eye. This is still too much tolerance for real quality and this is why our quality assurance system combines the latest measuring methods with extensive testing procedures. These include, for example, an endurance test in which our pumps run non-stop under full load. This test and the most demanding eagle-eyed technicians mean that even the smallest of flaws do not go undetected. Only products that pass our tests with flying colours are put to use in your company. Quality means that we question every aspect of our products and actions, so that you are left in peace.



## Service. Wherever you need us.

Flexibility is one of the most important qualities in the business world of today. Not only for the product range or service, but also spatially. Our specialists for development, quality assurance and production work in close cooperation with you when integrating our pumps in your production process. That begins with individual consulting during the planning stage, and goes far beyond installation and connection. A well-trained and worldwide active service department is another essential feature of our partnership philosophy. We're only happy when your business runs as well as our pumps.

### Wilo service worldwide:

- ⑩ More than 1500 Wilo technicians
- ⑩ Available in more than 60 countries
- ⑩ Customer driven solutions
- ⑩ Excellent supply performance
- Fast and in best quality

### Wilo service in India:

- ⑩ More than 200 Wilo technicians
- ⑩ More than 100 Wilo service partners
- ⑩ Available across the country
- ⑩ Customer driven solutions
- ⑩ Excellent supply performance
- ⑩ Quick and reliable
- ⑩ Each our regional office is having team of service persons
- ⑩ At Pune, we have centralized service team
- ⑩ We have appointed service dealers who are having trained service team from M+P
- ⑩ We are doing energy audit of Industrial plant
- ⑩ We carry out retro fitting jobs also.

## Engineering Capabilities

### IDEC

Our Design & Engineering Centre [IDEC] facility in Pune, India focus on continuous research, development of products & services with state of art technologies.. Key activities carried out are as follows

- ⑩ Geometric modelling
- ⑩ In-house hydraulic design
- ⑩ Computational fluid Dynamics [CFD]
- ⑩ Finite Element Analysis [FEA]
- ⑩ Sump model & Intake sump model analysis
- ⑩ Stress, Torsional & Seismic analysis

Team of experts working towards development of world-class fluid pumping technology to cater growing demands from Indian & Overseas customers offering cutting edge solution with Best In Class solutions in terms of hydraulic efficiency, energy efficiency, weight to hydraulic mass ratio & structural durability





**Introduction:**

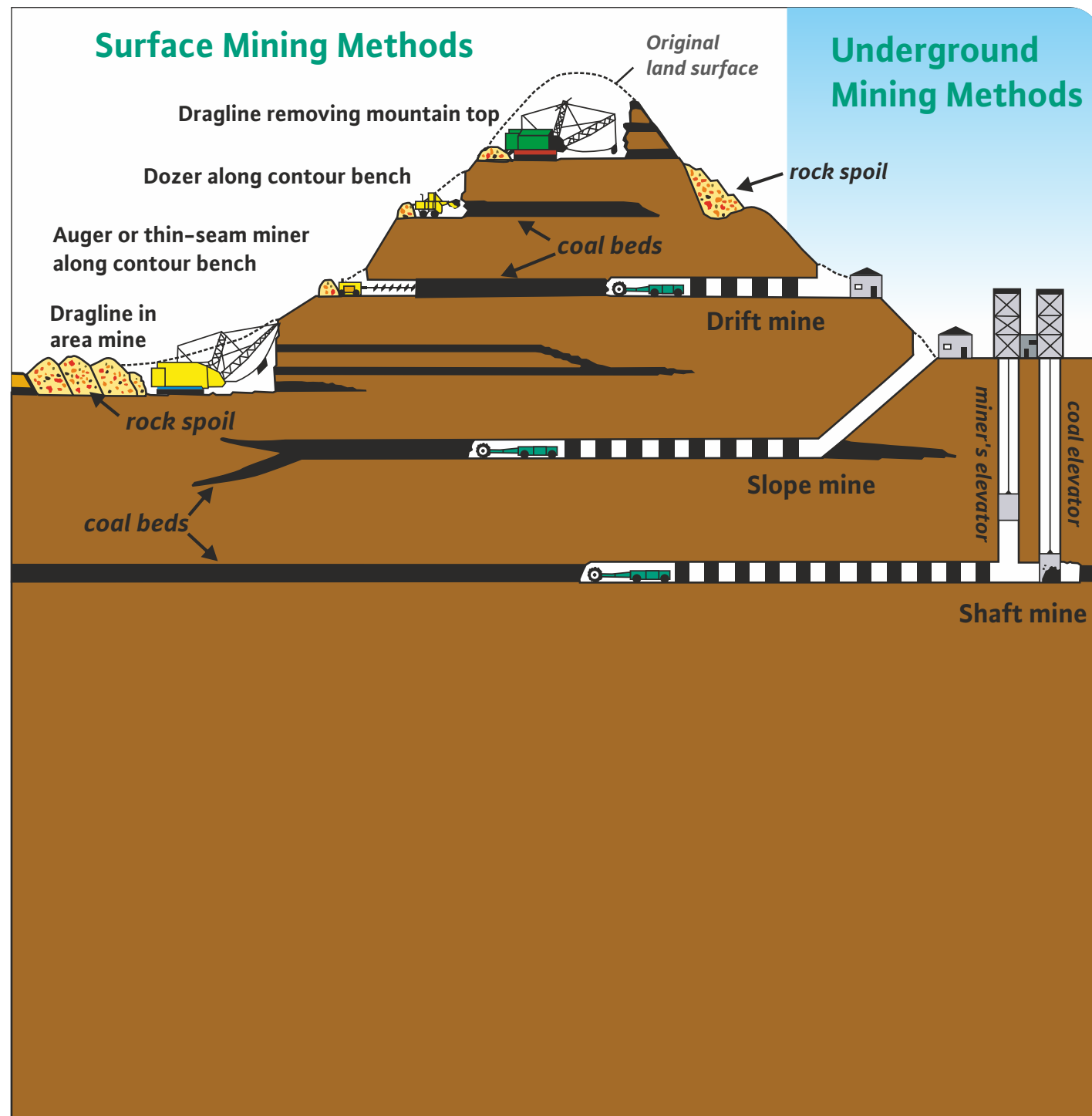
- Mining is the process of extraction or digging things out of the ground. Mining things from the ground is called extraction. Mining can include extraction of metals and minerals, like coal, diamond, gold, silver, platinum, copper, tin and iron ect
- The two most common types of mining are Surface mining and Underground mining.

**1. Surface mining**

- ⑩ Open cast or Open Pit mining
- ⑩ Mountain top mining

**2. Underground mining**

- ⑩ Drift mining with horizontal access tunnels
- ⑩ Slope mining using diagonally sloping access shafts
- ⑩ and Shaft mining with vertical access shafts



Horizontal Split casing—Dewatering Pump on Pontoon



Vertical Turbine pump on Pontoon

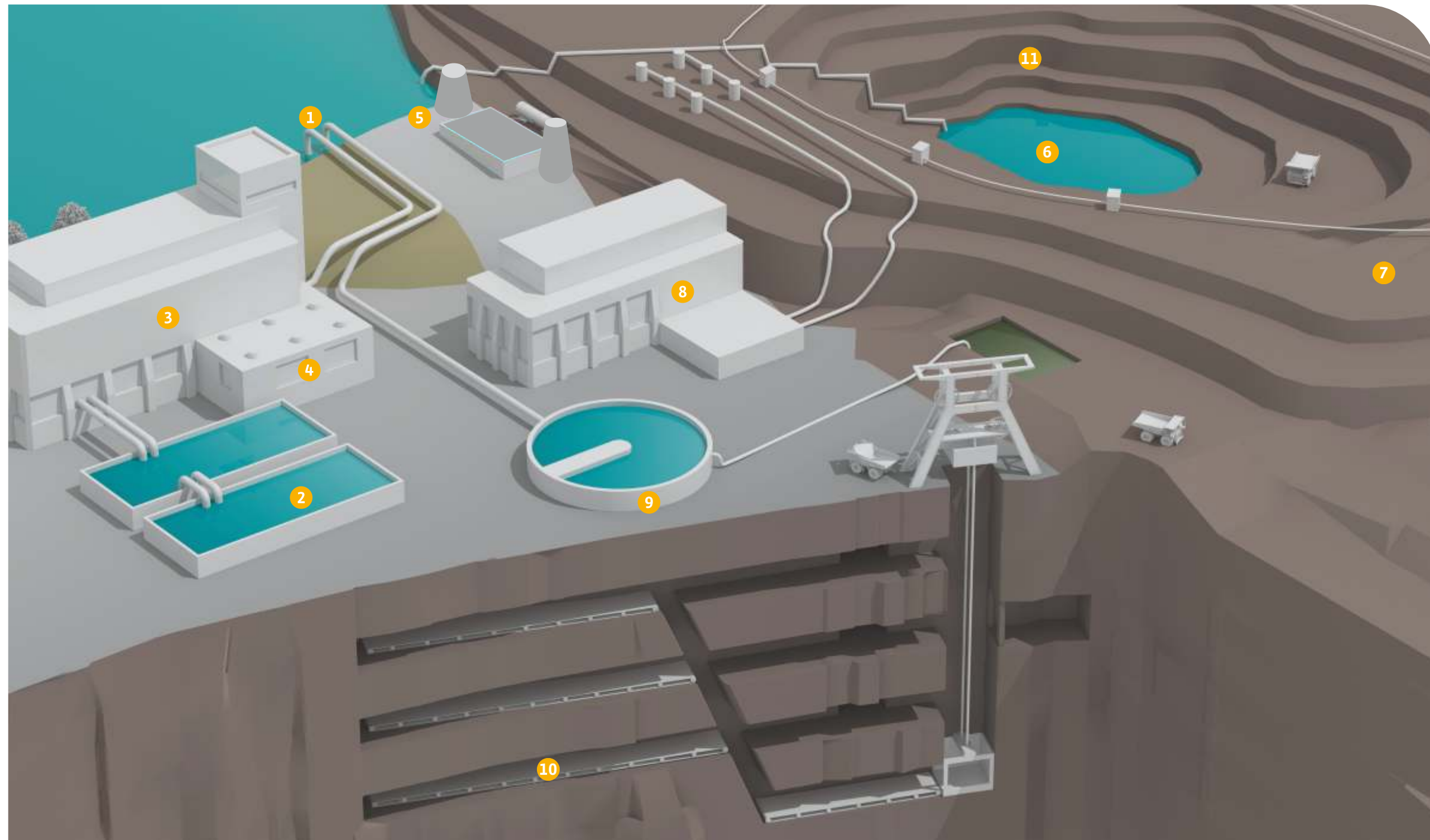
Pontoon is a floating element which is made up of a hollow metal cylinders used to support a temporary bridge or a floating structure. Pumps are mounted on these pontoons or floating Structure. Pontoon mounted pumps are **mainly used for Surface dewatering** in mining industry. Pontoon mounted dewatering systems are fast making traditional land-based dewatering pump houses outdated due to its various advantages.

**The main advantages of using Pontoon mounted pumps is that it:**

- ⑩ Minimizes or eliminates suction lift problems and hence eliminates NPSH or cavitation issues
- ⑩ Avoids the need for concrete foundation because of which it is a cost effective option..
- ⑩ It Can move around the dewatering site and/or be relocated where needed
- ⑩ Rises and falls with water level thus maintaining prime
- ⑩ Can be designed to handle multiple pumps
- ⑩ Can be designed to be skidded around site so no cranes required

WILO offers Split-casing pumps as well as VT pumps for this kind of applications

### WILO pumps for mining applications:



1 Raw water Intake

2 Water Treatment

3 Utilities/Drinking Water

4 Fire Fighting

5 Captive Power Plant

6 Face Dewatering

7 Dust Suppression

8 Washery (Recirculation)

9 Waste Water Treatment

10 Intermediate Dewatering

11 Intermediate Dewatering

**Raw Water Intake:**  
Water being the main resource of any industry, pumping raw water from its source is of utmost importance and WILO provides a range of products for this application. We offer pumps for the supply and transfer of water from sources such as groundwater or surface water from rivers and lakes, treated water or even seawater.

**Water Treatment:**  
Water treatment is required to improve the quality of raw water to make it acceptable for various usage. The end use may be for drinking purpose, utilities or industrial water supply. WILO provides pumps in various Material combinations for this application.

**Utilities/Drinking Water:**  
WILO provides Pumping Solutions for Transfer of Potable water for various usage.

**Fire Fighting:** With the increase in demand for safety in industries the demand for fire fighting system in on the rise. Furthermore fire regulations such as NFPA & FM/UL are becoming mandatory. Safety being one of the most important aspects of Mining Industry WILO provide highly reliable range of pumps for this application meeting the regulatory requirements of NFPA & FM/UL.

**Captive Power Plant:**  
Off late due to the demand for localised source of power it is now inevitable for mines to have their own Captive power plant. WILO offers pumps for various applications for intake and Cooling.

**Dewatering:**  
Dewatering is one of the most important process in mining and to controlling and managing surface and groundwater play a major role to allow uninterrupted operation in relatively dry conditions and improve the efficiency of extraction methods. WILO provides a range of highly reliable & Efficient pumps for this purpose.

**Dust Suppression:**  
Dust is a an inevitable result of mining operations and must be controlled to prevent clogging of pipes and mechanical parts. WILO offers pumping solutions for sprinkler and water spray systems which help control dust emissions.

**Washery:**  
Pumps for circulation of water at various stages of the washing process.

**Waste water Treatment:**  
In the process of treating contaminated water which is discharged from drainage, effluent and sewage derived from various mining operations and mineral processing Our pumps are not only used in transfer of Effluent/Sewage water but also used to drive recycled water for re-use and thereby reducing the need for fresh raw water.





Application Matrix:

Pump Description	Pump Model Type	Raw Water Intake	Water Treatment	Utilities	Fire Fighting	Captive power Plant	Dewatering		Dust Suppression	Washery (Recirculation)	Waste Water Treatment
							Face Dewatering	Intermediate Dewatering			
Horizontal End Suction	MISO/PISO/ Atmos-GIGA	✓	✓	✓		✓	✓		✓	✓	✓
Non Clogg	SK/MF	✓					✓				✓
Non Clogg-Self Priming	MNC	✓									✓
Horizontal Split casing	SCP-Single Stage or GST/GME-2 Stage			✓	✓	✓			✓	✓	✓
Multistage Ring Section	RN/IPB/PJ Pluro	✓			✓				✓		
Vertical Inline- Multistage	MVI/Helix		✓	✓	✓				✓		
Submersible	FA						✓				
Submersible -Borewell	Zetos/ TWI										
Vertical Turbine	VT	✓				✓					



# Meet Wilo-Actun ZETOS

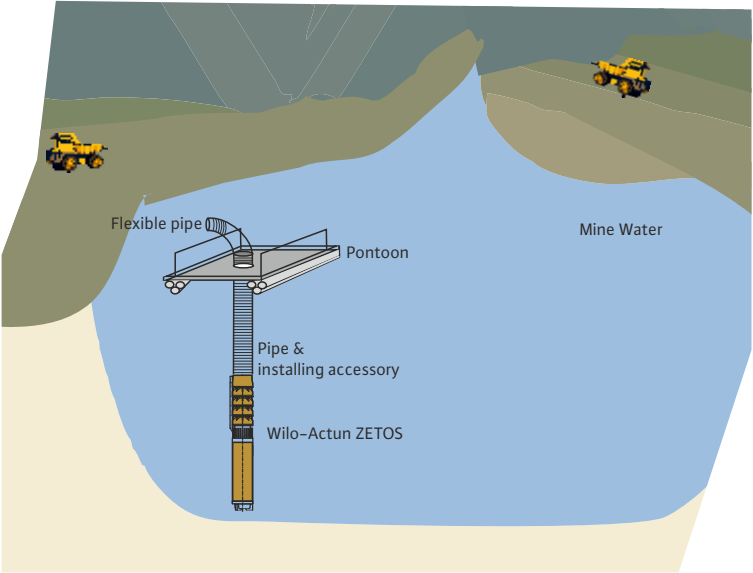
Excellent energy efficiency you can rely on

**What makes the Wilo-Actun ZETOS stand out?**

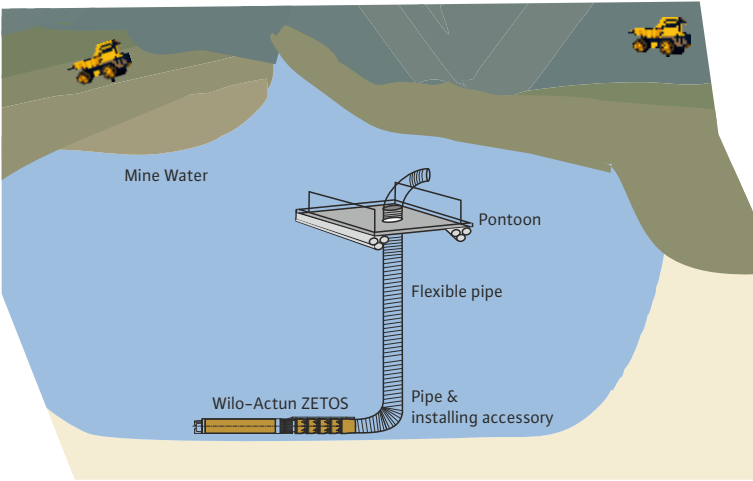
The Wilo-Actun ZETOS hydraulics are made entirely of stainless steel investment casting. It has a high wear resistance and is suitable for pumping water with sand content of up to 150 g/m3. The highly corrosion-resistant 1.4408 material even enables operation in salt water. This makes it particularly robust and suited to demanding applications. Excellent energy efficiency is achieved with permanent magnet motors specially selected for the pump's hydraulics.

- The benefits at a glance:**
- Energy-efficient water supply with a pump efficiency of up to 85.5 percent.
  - Cost-efficient operation thanks to the highest overall efficiency in its class with a permanent magnetic motor.
  - High reliability as a result of the particularly corrosion-resistant hydraulics made completely of 1.4408 (AISI 316)SS investment casting.
  - High wear resistance: max sand content of 150 g/m<sup>3</sup>
  - ACS approval for use with drinking water.
  - Straight forward Maintenance, easy installation and dismantling.

**Installation options:**



Vertical installation on pontoon



Horizontal installation on pontoon



Wilo-Actun ZETOS-K8



Wilo-Actun ZETOS-K10



Scan this QR code with your smartphone to find out more about Wilo-Actun ZETOS products.

# Product solutions for mining applications

thanks to excellent technology from Wilo.



Product range	Horizontal Split Case Pump	Multistage Ring Section pump	Vertical Inline pump
Volume flow	upto 18000 m <sup>3</sup> /hr	upto 1000 m <sup>3</sup> /hr	upto 155 m <sup>3</sup> /hr
Delivery head	upto 270 m	upto 1800 m	upto 235 m
Temperature	upto 120°C	upto 160°C	upto 100°C
Stages		3 to 15	2 to 24
Features	<ul style="list-style-type: none"><li>Ⓡ Mechanical seal/gland packing</li><li>Ⓡ Centerline line mounting for high temp service</li><li>Ⓡ Vertical execution direct drive/shaft extension unit</li><li>Ⓡ Prime mover – Motor/Engine</li></ul>	<ul style="list-style-type: none"><li>Ⓡ Radial flow impeller with vane diffusers mechanical seal/gland packing</li><li>Ⓡ Grease lubricated antifriction bearings</li><li>Ⓡ Balance valve design for axial thrust bush bearing/roller bearing</li><li>Ⓡ Vertical /centreline optional mounting arrangement</li></ul>	<ul style="list-style-type: none"><li>Ⓡ Vertical inline mounting</li><li>Ⓡ Antifriction bearing, mechanical seal with EPDM/viton elastomers</li><li>Ⓡ Supplied with high efficiency VFD compatible motor</li><li>Ⓡ Option of Flame proof motor</li></ul>



Product range	Helix FIRST V	Zetos-K8-K10/Wilo-EMU 14"/24"	Submersible Sewage Pump
Volume flow	upto 280 m <sup>3</sup> /hr	upto 350 m <sup>3</sup> /hr	upto 8000 m <sup>3</sup> /hr
Delivery head	upto 70 m	upto 60 m	upto 100 m
Temperature	upto -20°C to +120°C		upto 60°C
Features	<ul style="list-style-type: none"><li>Ⓡ Laser-welded 2D / 3D hydraulics with efficiency optimization</li><li>Ⓡ Wheels, diffusers and corrosion resistant stepped bodies</li><li>Ⓡ Hydraulic with optimized passage and degassing</li><li>Ⓡ Pump body with enhanced flow optimization and NPSH</li><li>Ⓡ Compact and easy to maintain thanks to its compact construction</li><li>Ⓡ Particularly robust coupling protector</li></ul>	<ul style="list-style-type: none"><li>Ⓡ Energy-efficient</li><li>Ⓡ Cost-efficient operation</li><li>Ⓡ High reliability</li><li>Ⓡ High wear resistance: max. sand content of 150 g/m<sup>3</sup></li><li>Ⓡ Straightforward maintenance, easy installation and dismantling</li></ul>	<ul style="list-style-type: none"><li>Ⓡ Non clog free flow, single/multi channel impeller</li><li>Ⓡ Free passage size upto 200 mm</li><li>Ⓡ Oil barrier chamber with float switch winding. bearing temperature indicator, moisture sensor</li><li>Ⓡ Stationary/portable installation, with/without macerator</li></ul>





Product range	End Suction Pump	End Suction Pump	Self-priming Non-Clog pump
Volume flow	upto 750 m <sup>3</sup> /hr	upto 1000 m <sup>3</sup> /hr	upto 4446 LPM
Delivery head	upto 170 m	upto 150 m	upto 34 m
Temperature	upto 120°C	upto -20°C to +140°C	
Features	<ul style="list-style-type: none"><li>End Suction top discharge</li><li>Back pullout design</li><li>Conforms to ISO 2858</li><li>Mechanical seal/gland packing</li><li>Grease/Oil Lubricated Bearing</li><li>Prime mover- Motor/Engine</li></ul>	<ul style="list-style-type: none"><li>Energy-saving thanks to increased overall efficiency through improved hydraulics and the use of IE 3 motors</li><li>Cataphoretic coating of all cast components for high corrosion resistance and long service life</li><li>Universally usable thanks to standardised dimensions, a range of motor options and impellers made of different materials</li></ul>	<ul style="list-style-type: none"><li>De-watering from trenches, pits, basements, go downs, multistory</li><li>Shopping malls, hospitals, hotels</li><li>Sewage pumping, rain water, flooding and mud transfer</li></ul>



Product range	Non Clog Sewage/Wastewater	Vertical Turbine Pump	Diesel Engine Driven Pumps:
Volume flow	upto 8000 m <sup>3</sup> /hr	upto 50000 m <sup>3</sup> /hr	
Delivery head	upto 70 m	upto 450 m	
Temperature	upto 80°C	upto 80°C	
Features	<ul style="list-style-type: none"><li>End Suction top discharge</li><li>Casing with hand hole</li><li>Free passage size upto 200 mm</li><li>Grease lubricated antifriction bearing</li></ul>	<ul style="list-style-type: none"><li>Above floor/below floor</li><li>Suspension length upto 25 meters, also available in hollow shaft design</li><li>Single/multistage, caisson/cannistor construction</li><li>Tilted pad thrust bearings with bearings cooling arrangement, semi-open impellers</li><li>Pumped medium/oil/external water lubricated line shaft bearings</li><li>Prime mover- Motor/Engine</li></ul>	<ul style="list-style-type: none"><li>A lot of mines nowadays are also Installing Engine Driven pumps as a Back up in case of Emergency or power failure. Engine Driven pumps are used in critical services like Fire fighting, Intake and Dewatering. WILO offers pumps in End suction, Split casing and even Vertical turbine pump which can be driven by Diesel Engine</li></ul>





## Sewage disposal equipment from Wilo.

### Safe transport of heavily contaminated water.

**Wilo submersible sewage pump.**  
**Highest reliability.**

The numerous combinations of fluids and solids in our sewage pose widely differing demands on a pump solution.

The Wilo FA series offers an extensive portfolio for a wide range of applications here. Self-cooling, dry well-installed and/or explosion-proof motors are standard today. But with regard to flexibility,

Wilo is setting future-oriented standards with the new motor technology of the FKT 27.1. It is suitable for vertical and horizontal installation and is designed for permanent operation for wet well and dry well installation.

Further advantages:  
The cooling is independent of the type of fluid and, in the case of dry well installation, no room ventilation is necessary – thus, the pit volume can be reduced and building costs saved. Through the perfect combination of modern submersible motor technology, high-quality treated hydraulic components and the solvent-free ceramic coating **ceram**,

Wilo sewage pumps guarantee long-term safe operation – all the time – even for the most demanding fluids and most difficult constraints.

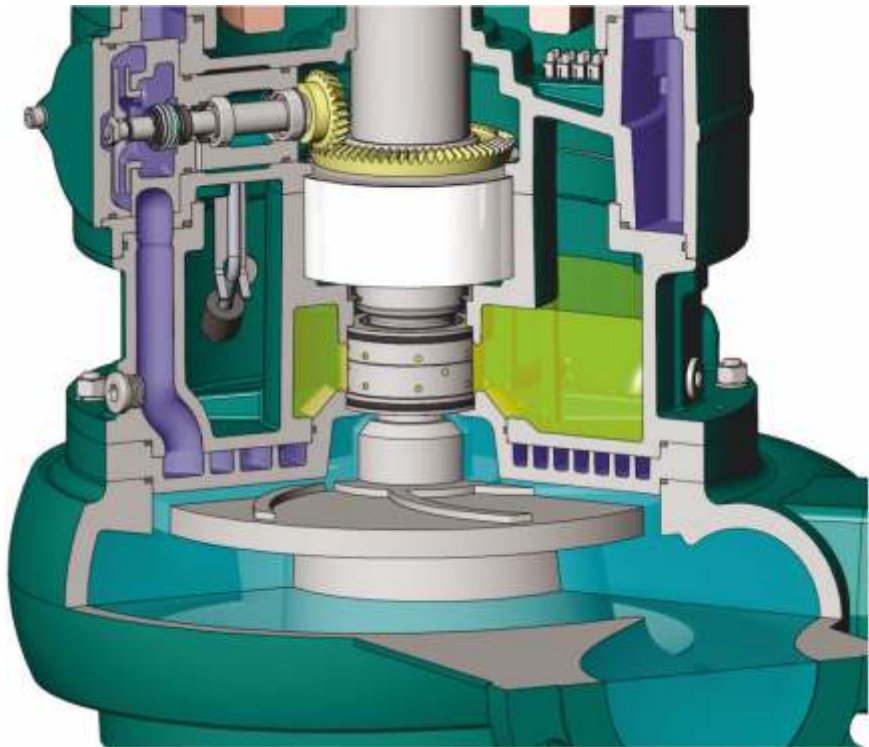
- Motor features
- High operational safety
  - Easy maintenance
  - Internal closed cooling circuit



**Ceram.**  
**Lifelong corrosion protection.**

With **ceram**, Wilo offers reliable protection against corrosive and abrasive fluids. This solvent-free, ceramic based coating guarantees the perfect corrosion protection of our products.

Ceram coatings are available in different versions (C0, C1, C2 and C3). For use in especially critical fluids, the individual versions can also be combined with each other. With **ceram**, a cost-effective alternative solution compared to special materials can also be offered.



Ceram quality	Layers	Thickness [mm]	Application
Ceram C0	1	0.4	Complete outer and inner coating
Ceram C1	1 – 3	1.5	Impeller and suction port coating
Ceram C2	1	1.5	Coating of the pump housing (inside)
Ceram C3	1	3	Coating of the pump housing (inside)

### Reference List:

Sr. No.	Customer name	Mining Product	Type of Mine	Approx Flow-range (M3/hr)	Approx Head-range (mtrs)	Approx Installation of WILO Pumps	Area/State
1.	Andra Pradesh Mineral Development Corp Ltd.	Baryte	Open Cast	136 to 818	80 to 140	18	Andrapradesh
2.	Bharat Coking Coal Limited	Coal	Open Cast + Underground	136 to 1091	80 to 632	250	Jharkhand
3.	Bengal Emta Coal Mines Limited	Coal	Open Cast	136 to 545	80 to 140	100	West Bengal
4.	Central Coalfields Limited	Coal	Open Cast + Underground	135 to 818	50 to 300	200	Jharkhand
5.	Eastern Coalfields Limited	Coal	Open Cast + Underground	40 to 576	30 to 350	250	West Bengal Jharkhand
6.	Hindustan Zinc Limited	Zinc	Open Cast + Underground	100 to 500	125 to 600	500	Rajasthan
7.	Hutti Gold Mines Limited	Gold	Open Cast	120 to 270	80 to 370	5	Karnataka
8.	Hindustan Copper Ltd	Copper	Open Cast + Underground	136 to 272	100 to 300	50	Jharkhand
9.	Hindalco Mines	Coal + Bauxite	Open Cast + Underground	136 to 272	100 to 300	6	Jharkhand
10.	Mahanadi Coalfields Limited	Coal	Open Cast + Underground	72 to 648	40 to 350	150	Odisha
11.	MOIL Ltd	Manganese Ore	Open Cast + Underground	150 to 892	30 to 200	15	MP State
12.	NLC India Limited	Coal & Lignite	Open Cast	135 to 1080	90 to 150	130	Tamil Nadu
13.	NMDC	Iron Ore	Open Cast	100 to 250	150 to 500	400	Chattisgarh
14.	Northern Coalfields Limited	Coal	Open Cast	342 to 1703	100 to 200	40	MP State
15.	NTPC Limited	Coal	Open Cast	136 to 272	100 to 500	30	Jharkhand
16.	Panem Emta Coal Mines Limited	Coal	Open Cast	136 to 545	80 to 140	20	Jharkhand
17.	Steel Authority of India Limited	Coal & Iron Ore	Open Cast + Underground	136 to 272	100 to 500	100	Jharkhand
18.	South Eastern Coalfields Limited	Coal	Open Cast + Underground	80 to 1100	60 to 330	400	Chhattisgarh & MP
19.	StateSingareni Collieries Company Limited	Coal	Open Cast + Underground	27 to 272	10 to 500	400	Telangana
20.	Tata Steel Limited	Coal & Iron Ore	Open Cast	136 to 545	100 to 500	300	Jharkand
21.	Western Coalfields Limited	Coal	Open Cast + Underground	288 to 720	150 to 200	35	Maharashtra



# PRACTICAL SUPPORT FOR YOUR DAILY WORK.

## ALWAYS AT YOUR SIDE: WILO SERVICES.

We work hard to make your life easier. That is why our range is not only limited to high-quality products and systems that you can count on at any time. We also provide intelligent services for all project phases, from design and configuration through to commissioning and maintenance. We keep you informed about the very latest technologies and trends and provide attractive options for project financing. We are always available – with personal, competent and local services in over 60 countries and more than 2,500 Wilo engineers worldwide.



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