

Metso Beneficiation Solutions

Maximizing Ore and Water Recovery

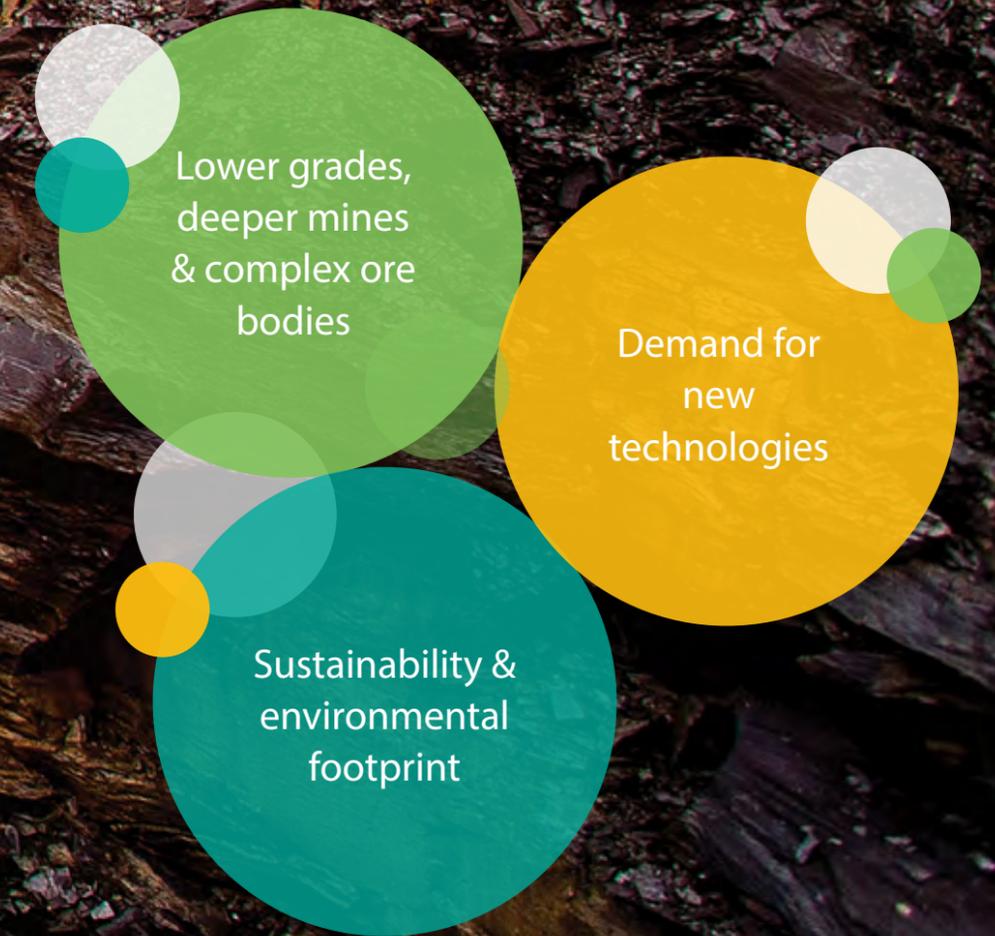


Integrated
packages
for your
processing needs

Demand for efficient process solutions is growing

Mining business environment is undergoing a constant change. Deteriorating ore bodies, mines going deeper and finding sustainable solutions are pressing issues today. The industry is striving hard to optimize costs, improve efficiencies and find ways of doing sustainable and economically viable mining for long-term survival.

Metso's sustainable and efficient beneficiation solutions bring together our years of expertise and knowledge with a full range of capabilities that deliver the right process, equipment and technology for optimizing customer operations.



Metso Beneficiation Solutions

Metso Beneficiation Solutions for minerals processing aim for maximizing ore recovery while optimizing operations costs.

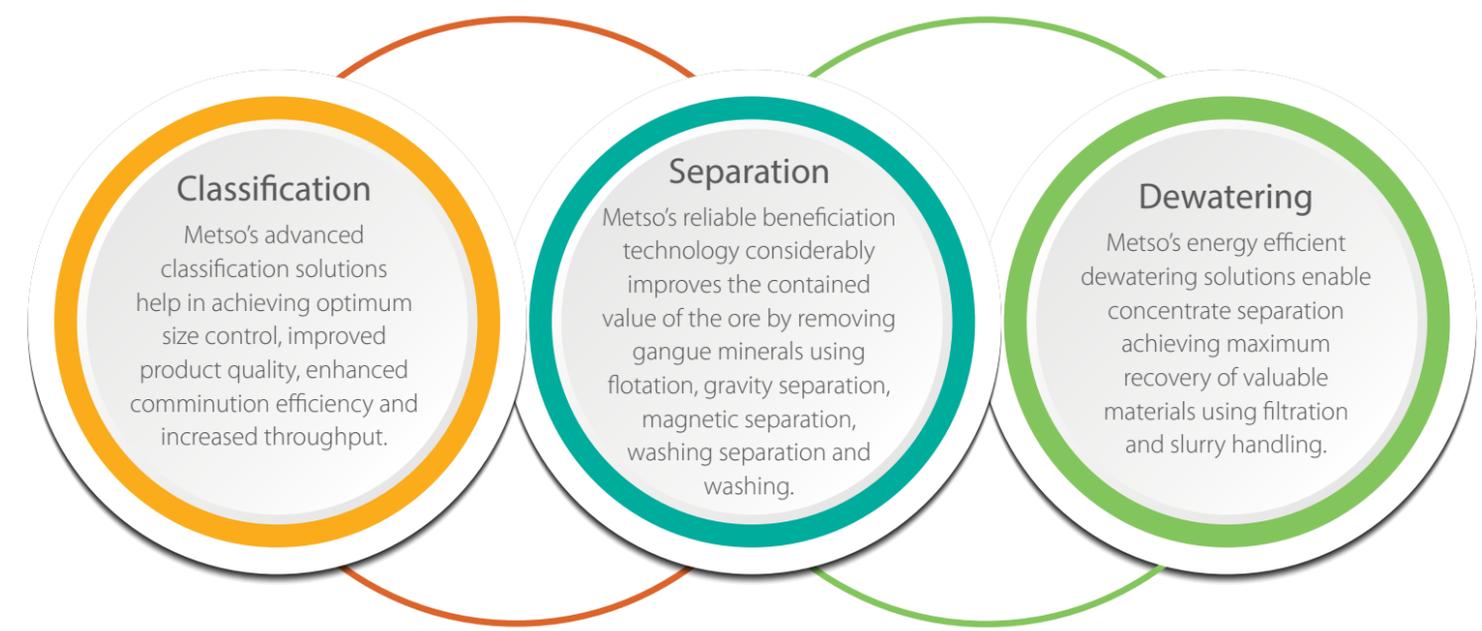
Proven solutions
to address any
mineral processing
challenge

Integrated packages for maximizing ore and water recovery

From plant modules to complete solutions, Metso offers world class technology for the beneficiation a wide variety of ores such as copper, gold, iron, lead, zinc, platinum and industrial minerals.

Maximizing Ore and Water Recovery is our ultimate goal and promise

Delivering a combined value with our Beneficiation Solutions



Classification

Next generation technology delivering high value performance

With more than a century of experience, Metso's advanced classification solutions embrace the latest technology and know-how, helping customers to achieve optimum size control across the mineral value chain.

Whether dry or wet classification, Metso has the right capabilities to deliver high unit capacity and exceptional separation efficiency for a wide range of applications.

Our extensive range of solutions

UltraFine Screens



Most accurate, cost-effective separation

MHC™ Series Hydrocyclones



Improved process performance, uptime

Spiral Dewaterers



Eco-friendly classification

No matter the particle size, our Classification Solutions give you high quality and throughput

Optimizing your operations through fine Classification technologies

An effective classification process is a key element to improve efficiency and profitability of your operations. Recognized across the process industries for their reliability, Metso's classification solutions address diverse needs, allowing maximum mineral recovery over a wide particle size range.



High mineral recovery



Exceptional separation efficiency



Up to 2 times fine screening capacity



Accurate feed distribution



Modular design for reduced plant footprint



Reduced CAPEX and OPEX



Improved ease of maintenance



Eco-friendly processes



Read more from the following links:

- metso.com/mhc
- metso.com/ufs
- metso.com/dewaterers

Separation

Maximizing recovery throughout your mineral processing operations

With installations in 100+ countries worldwide, Metso is at the forefront of developing separation technology that offers both maximized recovery and low operating costs. Offering superior metallurgical performance, our separation solutions help in improving the mineral value of the ore.

From simple washing to more complex sub-process, Metso provides industrial expertise and specific solutions best suited to your processing needs.

Our extensive range of solutions



RCS flotation
Maximum flotation recovery



Microcel™ flotation columns
For higher concentrate grades



DR flotation
High Aerating Open Flow Flotation



Magnetic separators
Excellent selectivity, highest recovery

No matter the mineral type, our Separation Solutions give you enriched ore

Boosting productivity and profitability with Separation Solutions

Maximizing mineral recovery is an essential component for improving the profitability of plant operations. Metso's reliable separation solutions considerably improve the contained value of the ore by removing gangue minerals using flotation, gravity separation and magnetic separation.



Proven recovery **>20%**



Recovery of fine particles **< 1mm** and smaller



Increased uptime



Highly reliable separation efficiency



Low OPEX



Low energy consumption



Less mechanical maintenance



Advanced process control and automation



Read more from the following links:

- metso.com/rcs
- metso.com/flotation-columns
- metso.com/magnetic-separators

Dewatering

Versatile solutions for achieving the most efficient and sustainable results

Avoiding wastage of water is the goal we share with you. Metso offers reliable and energy efficient dewatering solutions to meet tough demands of improving process efficiency and ensuring sustainability. We have unique and advanced capabilities to dewater easy and difficult ores.

With proven expertise in dewatering technology, our solutions are helping customers achieve optimum product quality during the entire mining operations.

Our extensive range of solutions

Vertical pressure filters  Smarter mineral recoveries	Inclined plate settler  Compact thickening and clarifying solution	Tube press  Exceptionally clear filtrate	Spiral dewaterers  Reliable operations in mill scale handling
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No matter the mineral state, our Dewatering Solutions give you a drier product with lowest possible moisture content

Enabling economic and environmental sustainability with Dewatering Solutions

Dewatering is a vital step in mineral processing. Removal of the moisture content enables easy and cost-effective handling and transportation of minerals. Metso's effective dewatering solutions make it possible to reduce the environmental impact on site by producing a completely dry concentrate along with recycling the water recovered during processing.

 Lowest possible moisture content	 Quicker installation
 Up to 50% smaller plant footprint	 20% lower OPEX
 Increased uptime	 Lower environmental impact
 On-site pilot testing	 High degree of automation and control



Read more from the following links:

- metso.com/vpa
- metso.com/ips
- metso.com/tubepress
- metso.com/dewaterers

Promising Results

20% increase in copper content in concentrate and improved recovery at RTB Bor, Serbia

Together with Metso, the Serbian RTB Bor mine renewed the processing plant at its largest site, VelikiKrivelj. The result was a higher throughput and better recoveries with less energy consumption per ton of processed copper.

Challenge

Outdated flotation cells due to obsolete automation, adding major bottlenecks to the production goals.

Solution

Complete RCS flotation plant was commissioned with advanced automation and process controls.

Result

RTB Bor improves recovery by more than 20% while reducing operating costs at the VelikiKrivelj concentrator plant

➔ [metso.com/showroom/rtb-bor](https://www.metso.com/showroom/rtb-bor)



20%
improved recovery

Unlocking productivity bottlenecks at TISCO's Jianshan Filtration Plant, China

Frequent unplanned shutdowns are costly when plant success depends on performance. With four sets of Metso VPA pressure filters, TISCO Jianshan Iron Mine was able to upgrade the filtration plant's efficiency.

Challenge

Improving plant productivity & controlling frequent unplanned shutdowns

Solution

Integration of four sets of VPA 2050-50 pressure filters to upgrade the filtration plant's efficiency

Result

Cycle time dropped by 18% and efficiency improved by 22%. Reduction in labour costs with only two operators required at the site

➔ www.metso.com/tisco



Approx.
40% savings
in energy

Treatment of mine water underground at a large iron-ore mine

Challenge:
Pumping solid free processed water from underground mine with clean overflow and space issue

Solution:
Installing three units of IPS LTS/E 500 F-8 thickeners at the basement of the mine

Result:
Achieved production of a clean overflow with particles below 20 ppm against the set limit of 100 ppm with Metso's IPS units.



Services built for performance

Metso will provide you with all the necessary services to help make your process run more smoothly. Ask one of our experts for suggestions on packages and services that anticipate and meet your future needs.

Wears and spares

Our inventory has been stocked to support you in all your needs. We stock filter cloths, standard parts, and engineered parts for any area of your beneficiation. We can also offer you further support services throughout the life cycle of your plant machinery. Let us help you today!

Process Optimization

A plant that is working at optimal levels is everyone's goal, and we have solutions to make that happen. We have a strong portfolio in terms of process and controls optimization. Our Vision Systems products such as Visiofroth™ combined with our Advanced Process Controls (APC) solutions work together to help you get the most out of your entire process.

Maintenance and refurbishment

Our services cover you from installation and commissioning, to repairs, refurbishments, all the way to more complex upgrades. Your every plant need can be analyzed and addressed with the help of a Metso services expert. Ask us how we can help you ensure you are getting the performance you need from your equipment.

Life Cycle Services

Metso's Life Cycle Services offers conveniently bundled packages from our entire range of services in customizable, easy-to-manage packages. Our packages range from basic parts to complete solutions for your needs. Our solutions are equipped to cover single-event equipment shutdowns, as well as spanning multiple years for extensive monitoring and coverage. All services are monitored against strict KPIs.



Read more from the following links:
[metso.com/mining/services](https://www.metso.com/mining/services)

The Metso Way -

Making the big difference to our customers

Everything we do is based on deep industry knowledge and expertise that makes the big difference to our customers. Decades of close customer collaboration and adaption to our customers' ever-changing needs have transformed us into a knowledge company.

Through our knowledge and experience, we work with our customers to create solutions that enable them to attain their objectives. We call this **The Metso Way**, which focuses on creating value to our customers. The Metso Way is built upon knowledge, people and solutions.

Knowledge -



We have deep knowledge about our customers' business environment, processes and challenges

People -



Our committed and highly competent people make the difference to our customers

Solutions -



We create the technology and services required to meet our customer needs



Metso Inc.,
metso.com/mining