



Comex
Innovative Industrial Technologies

GOLD

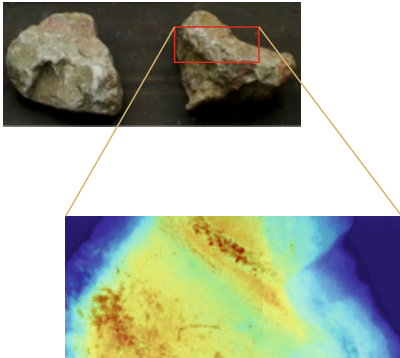
SENSOR-BASED SORTING

DRY ORE PRE-CONCENTRATION

Comex sorting systems use state-of-the-art technologies for dry enrichment of minerals. X-ray analysis is one of the key ones that allow for identifying the materials of various densities, which are not possible to be recognized in the visible light.

These systems are widely used in mining and mineral industry to separate various materials and minerals, such as gold ore.

Possibilities of X-ray analysis



X-ray image of high and medium density inclusions with low density waste rock in background

Comex systems guarantee:

- High efficiency, up to several hundred t/h.
- High separation efficiency, at 95–99%.
- The option to analyze materials with multiple sensors in the same sorting unit, resulting in a more effective separation.
- The option of advanced 2D/3D analysis and material geometry, providing more effective analysis and separation of the main components, as well as small inclusions.
- Exceptionally low total costs of separation at 0.1 EUR/t.
- Complete elimination of water from the separation process.

Additionally, Comex Sorters provide:

- Low investment costs and quick return on investment due to simplified or reduced further enrichment process.
- The possibility to use mobile sorting units installed in containers, allowing for quick installation and easy adjustment to the pre-concentration process.
- Low maintenance costs thanks to remote service and remote process supervision.



CXR-1000 Sorter with XRT and optical sensor

GOLD

Comex sorting systems allow for:

- Decreasing of the waste rock content in further processing steps.
- Significant energy reduction of further processing.
- Possibility for higher quality of the gold concentrate.
- Identifying and accurate separation of low concentrate ores by applying artificial intelligence models in an advanced analysis of X-ray images and other sensor signals.
- Significant reduction or elimination of harmful chemicals, which are necessary for further ore enrichment.
- Significant reduction of flotation waste streams.

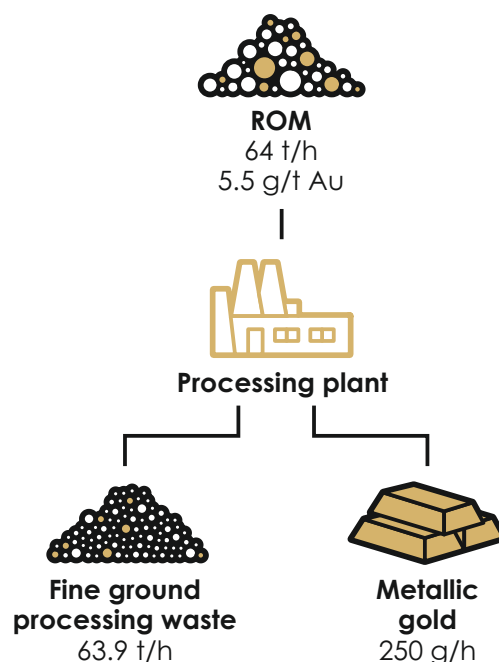
As a result, the improved process by the Sorter, allows for:

- Improving economic conditions and indicators for the existing mines and newly planned investments.
- Significant reduction of the ore enrichment cost.
- Reduction of the water demand for the enrichment process.
- Overall reduction of the total CO₂ emission from obtaining the raw ore material to the final metal production.
- Exceptional reduction of the environmental impact.
- Reducing the procedures connected with transportation and processing of the gold ore and processing wastes.

Typical application

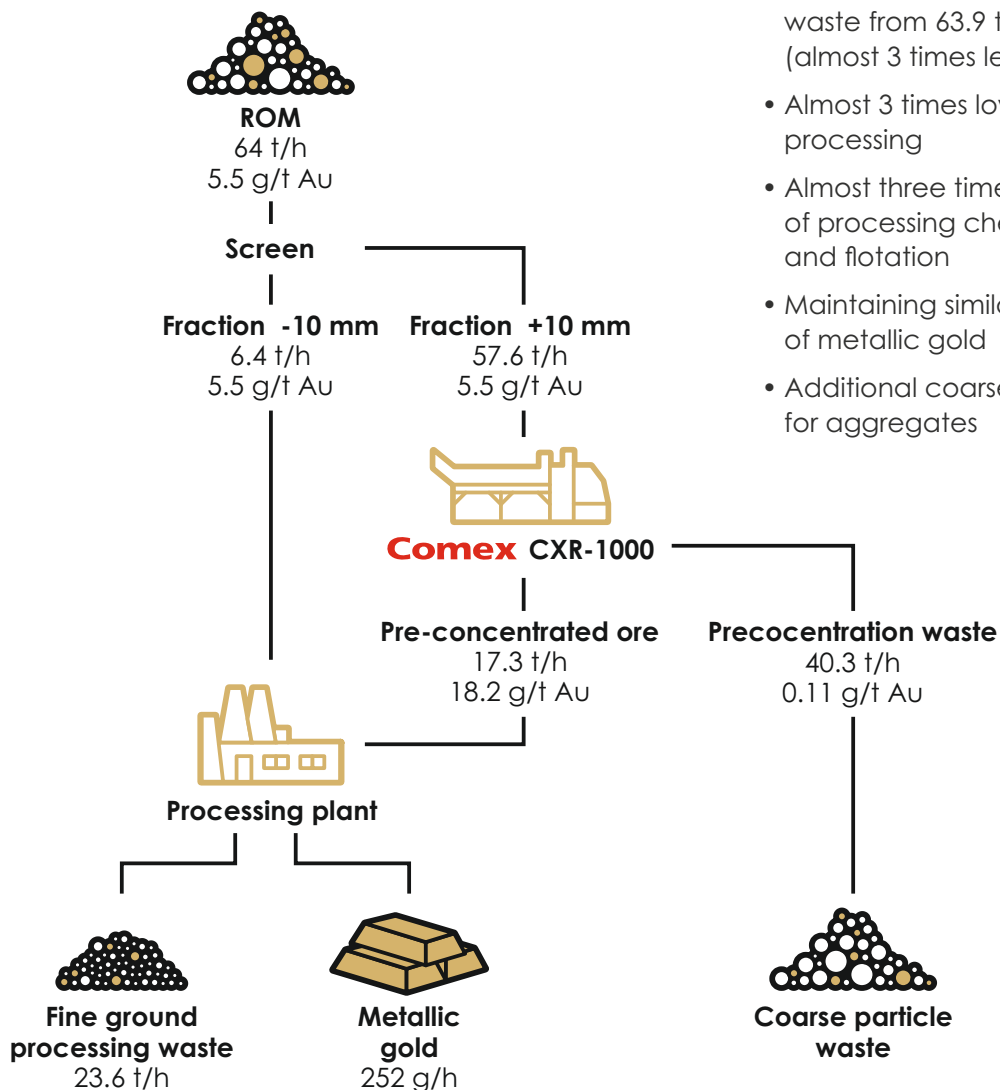
Advanced processing methods (Comex)

Example of traditional processing of the gold ore





Enrichment example with the Comex sorting system



Results from Comex pre-concentration:

- Reduction of the fine ground processing waste from 63.9 t/h to 23.6 t/h (almost 3 times less)
- Almost 3 times lower cost of ore processing
- Almost three times lower consumption of processing chemicals to CIP/CIL and flotation
- Maintaining similar production of metallic gold
- Additional coarse particle fraction for aggregates



Comex specializes in providing technological solutions for sensor-based separation of different materials. We create advanced, unique and highly innovative solutions for mining industry and other areas.

All this to help:



MINIMIZE
COSTS



INCREASE PRODUCTION
EFFICIENCY



IMPROVE THE FINAL
PRODUCT QUALITY



REDUCE ENVIRONMENTAL
IMPACT OF INDUSTRIAL PROCESSES





COMEX POLSKA SP. Z O.O.

HEADQUARTERS

ul. Kamieńskiego 51
30-644 Kraków, Polska
tel: +48 12 255 14 24
fax: +48 12 255 14 23
krakow.poland@comex-group.com

OŚWIĘCIM BRANCH

ul. Gospodarcza 2C
32-600 Oświęcim, Polska
tel: +48 33 845 03 13
fax.: +48 33 44 54 619
osw.poland@comex-group.com

SERVICE AND LOGISTICS DEPARTMENT

tel: +48 33 845 03 13 ext. 4
tel: +48 33 44 54 618

www.comex-group.com

 [/company/comex-group](https://www.linkedin.com/company/comex-group)