



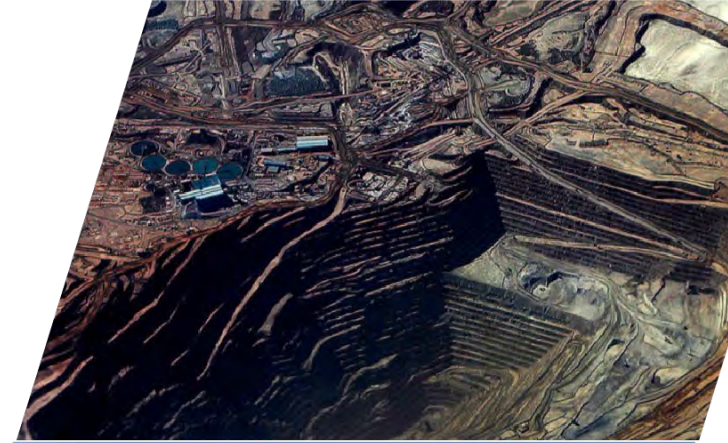
# ADVANTAGES OF ELASTOMERS EPUR





## USING ELASTOMERS & PUR

- Upgrading ore plants
- Saving maintenance costs
- Extending service life



- 30 years of experience in research in Warsaw University of Technology in Material Engineering.
- Company established in 1990
- Implementation of several international patents in field of elastomers L-PUR.
- 2004- Implementation of quality control system according to norms PN-EN ISO 9001:2001
- 2007- Start cooperation with KGHM - Polish Copper Ore Plant
- 2010- Hydrotransport department developed
- 2015- Start of CNC department, R&D team build
- 2017- first Lubas products in Chile Sierra Gorda SCM
- 2018- New CNC machining center, CAD/CAM licences
- 2018- New screen casting department
- 2018- economic prize of the President of Poland







WE ARE GLOBAL



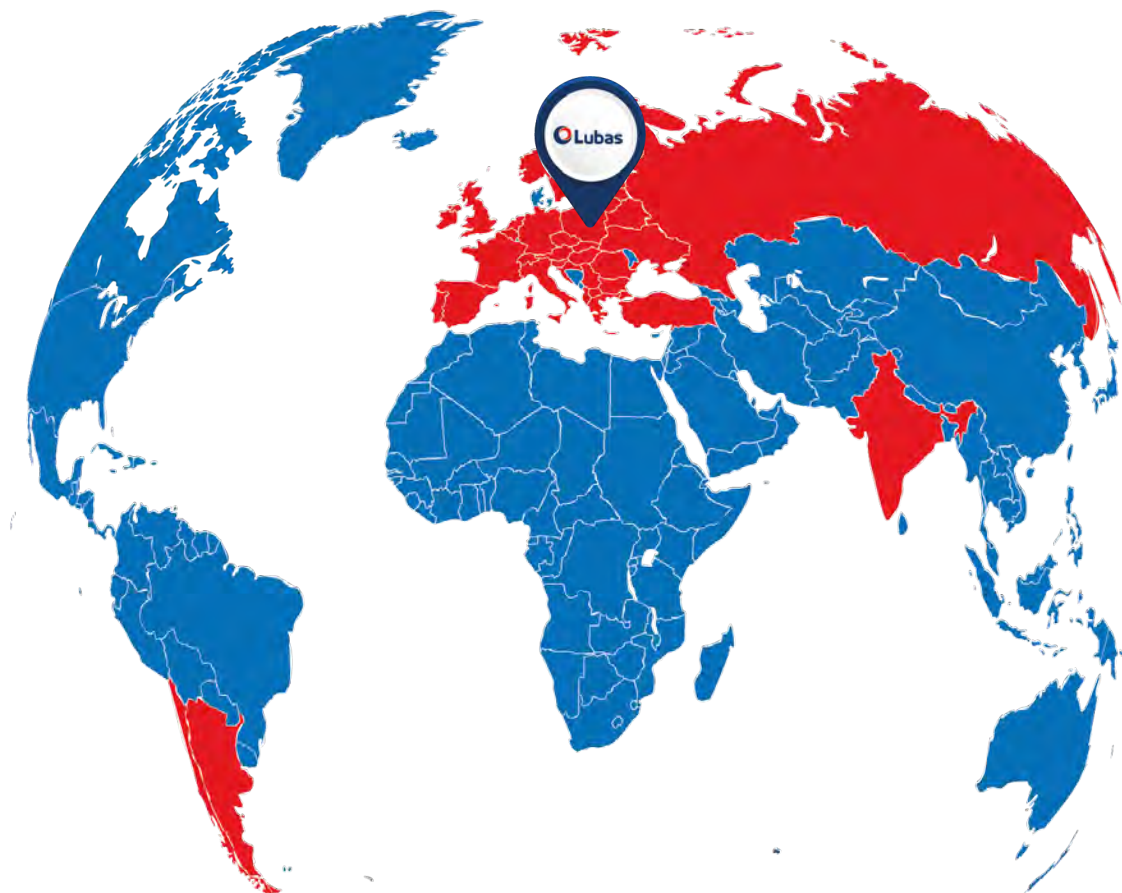
200+  
employers



20+  
supported  
industries



30 000 m<sup>2</sup>  
company's area



50 000+  
ready-to-use  
products



3500+  
satisfied clients



10  
products providers





## What is L-PUR



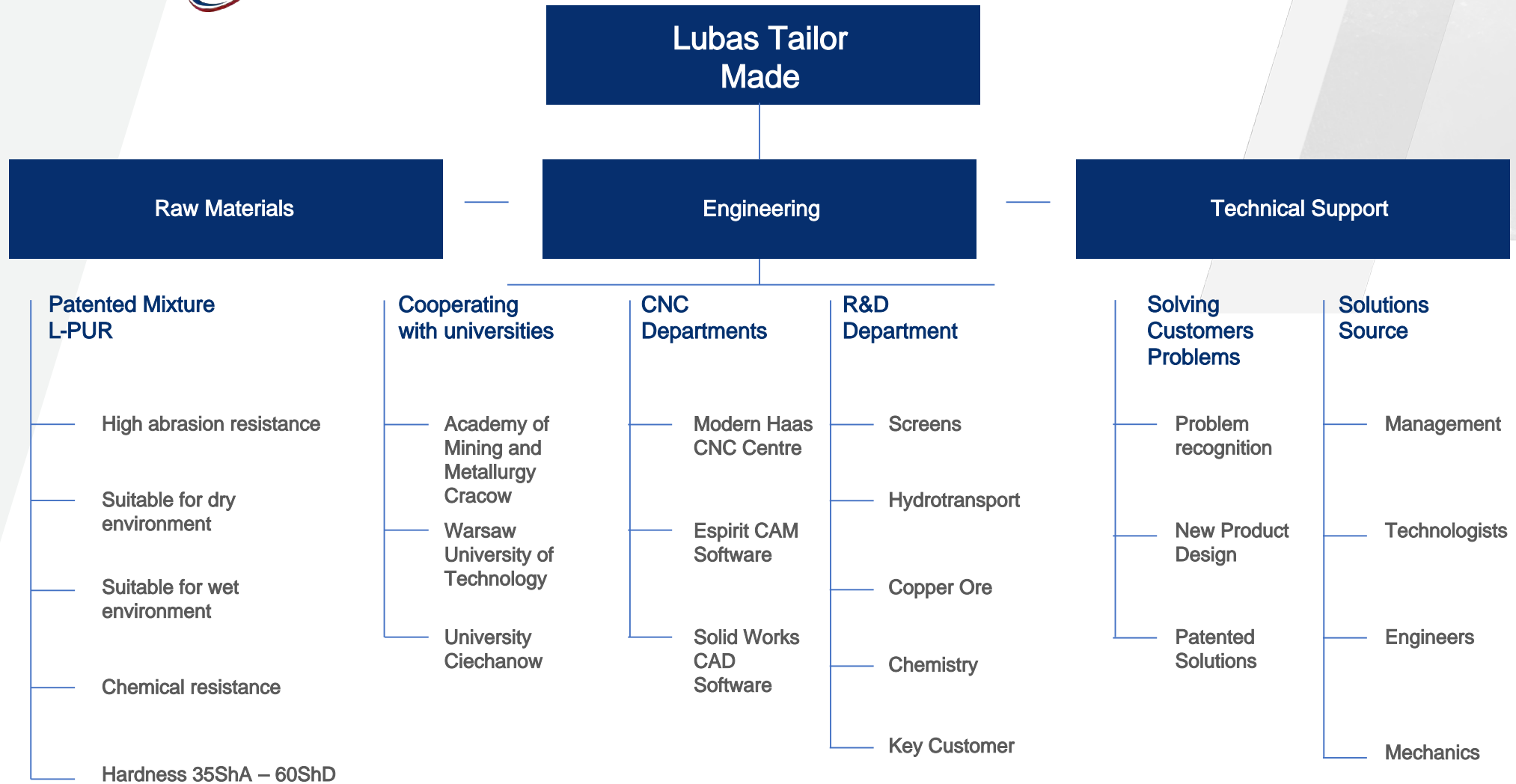


L-PUR is our special patented mixture. It belongs to the group of the elastomers. They have an ability for reversible deformation without interrupting structural continuity. Appropriate proportions of polymers gives to mixture expected physical and chemical features. L-PUR could be using in many industry branches.



- Wide range of hardness 35-98 ShA
- High elasticity in whole range hardness elongation at break 100-800%
- High abrasion resistance  $\leq 10$  do 100 mm<sup>3</sup> (PN ISO 4649)
- Tensile strength 20-70 MPa (PN ISO 37)
- Work temperature from -40°C to 120°C
- High resistance for tearing and cracking
- Good resistance for dynamic load
- Good damping properties
- High resistance to all weather conditions
- Resistance to a number of acids, solvents and petroleum oils, fat, seawater, strong oxidants
- Self-extinguishing
- Resistance  $\geq 1 \times 10^9$  norm PN EN ISO 4589
- Oxygen index  $> 21$  norm PN EN ISO 4586
- They do not soil co-operating elements
- Density 1.1-1.28 g/cm<sup>3</sup>









Range of solutions



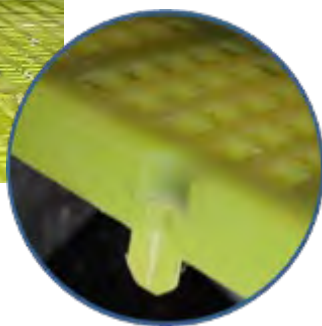
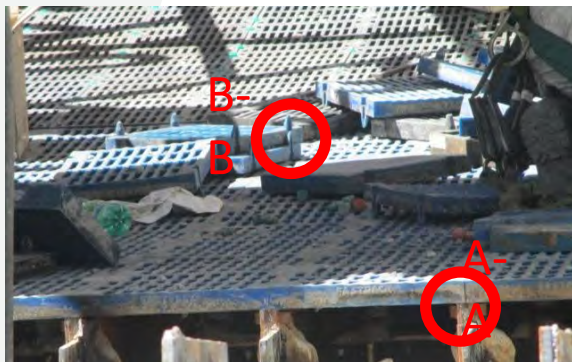


## 1. Regranulation and screening machines

### 1. REGRANULATION AND SCREENING MACHINES

- SCREENS
- SIDE PANELS
- SHELVES
- EQUIPMENT





Pin style screen is the most popular type of screen in mining industries. Our solution doesn't need special ferrules but only a hole.

**L-PUR advantages**

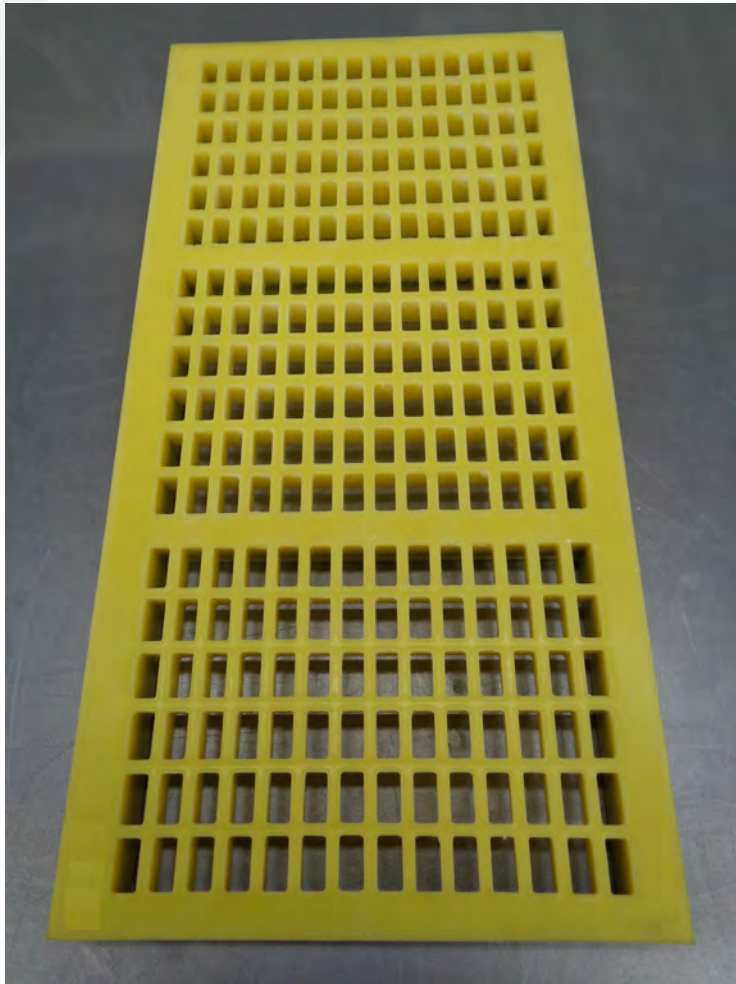
- flexible and strong slots
- self-cleaning and blocking and clogging
- long life-time
- We can produce layered panels with two different hardness.

Screen dimension:  
1 ft x 1 ft (305x305)  
Mounted by special diffusing pins  
Sealed and flat deck  
Quick mounting and dismounting



## L-PUR screens test on Sierra Gorda mine

### 1. REGRANULATION AND SCREENING MACHINES



Result: 200% longer life than previous screens.  
Annual savings: 780 000 USD.



We prove our reliability and become screen panels suppliers for Sierra Gorda SCM.



Belt conveying transport

- Plate scrapers on and under drum
- Preliminary system scrapers
- Segment scrapers on drum PRECLEAN
- Dumping— flat plates
- Dumping— wave plates
- Apron seals
- Strips sligings
- Rollers comb-shaped
- Rollers smooth

Conveyor belt scrapers:

- Martin Engineering
- Metso
- Hosch
- Flexco
- Sandvik

Scrapers type:

- Replacement blades
- V-plow







Self-cleaning system for belt conveyor

2. BELT CONVEYORS

Two layered scraperplates

We offer all types of scraperblades



- We make plates and aprons for belt conveyors
- Abrasion resistance is up to 400% higher than rubber materials
- Special material composition preventing belt damage and premature wear out

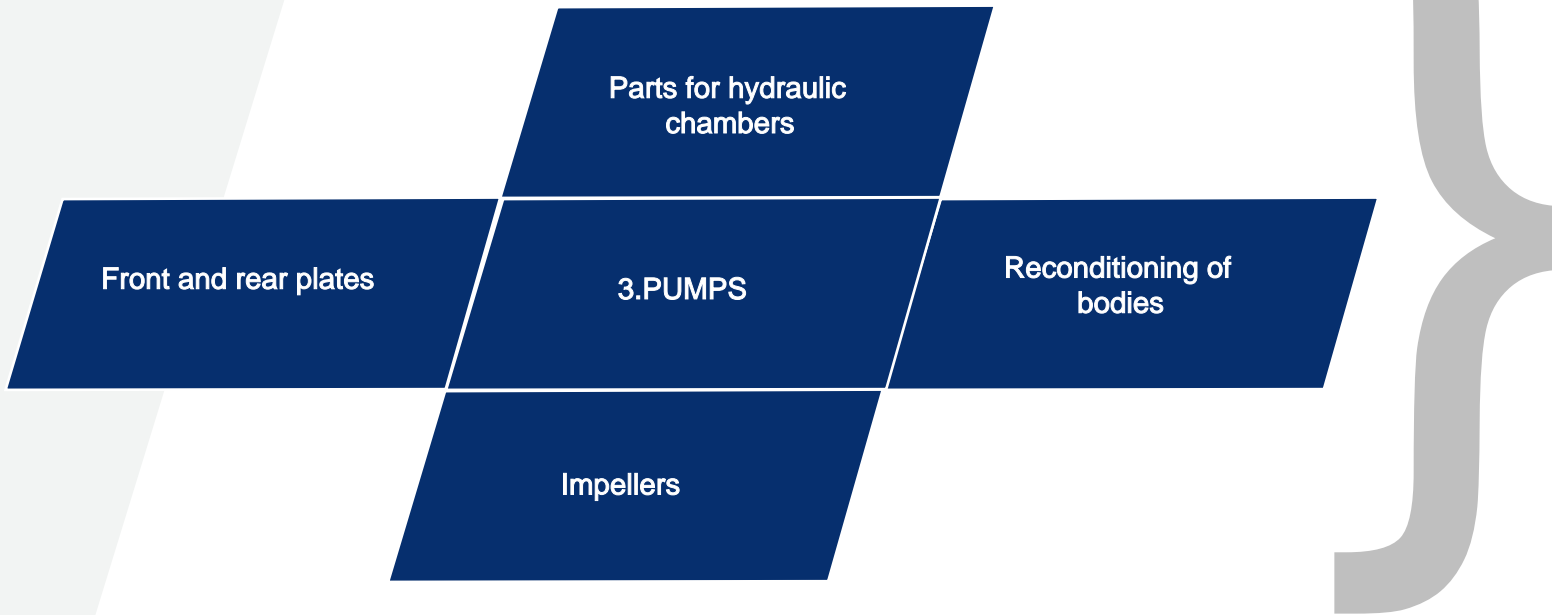


## OUR OFFER

### Supporting and distance rings

- Used for heavy loaded conveyors
- Used for fast conveyors





Full kits for:

- WARMAN
- KREBS
- LINATEX
- VASA
- METSO

L-PUR components allows pumps to increase service life. Substantial energy savings thanks to innovative LUBAS design.







PowerWafapomp kits  
for all pump types used  
in KGHM



- In cooperation with KGHM employees, we designed and produced a pump liner and impeller which **uses 30% less energy** in specific operating conditions with the same efficiency.
- Liner is dedicated for Powen-Wafapomp slurry pump MF200x150.





Hydrotransport – L-PUR lining

Elbows

Self – supporting pipes

Metal cased pipes

Reducers

Stub pipes



L-PUR Reducers different sizes

We provide solutions up to customer needs





Pipes and elbows

4. HYDROTRANSPORT



Diameter 500mm

Total length 8000 mm





Collector pipes

4. HYDROTRANSPORT





Six years of life time and it is still in use.  
How long yours works?  
How much money you will save by using our products?

While taking measurements of the slurry pump reducer in KGHM plant our engineers found that the reducer is still in operating condition since 2012.



L-PUR reducer, year of production 2012





**Full kits for:**

- Cavex
- Krebs
- AKW
- CDE
- ZAM Kęty



ZAM Kety hydrocyclones with PUR inserts  
Worker is fixing tailor made bath cover plates





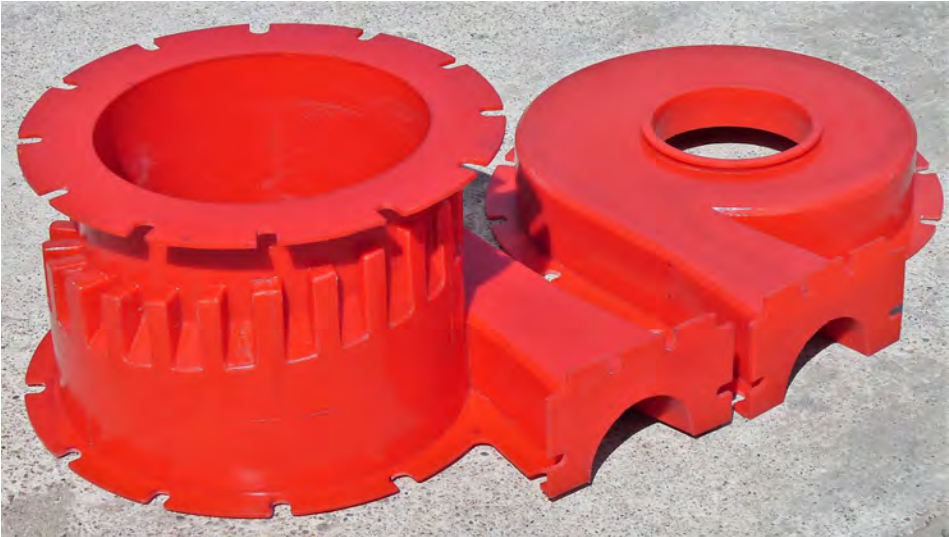
Hydrocyclones kits

5. HYDROCYCLONES



Cavex 500 feed chamber liners

We provide full kits for all types of Cavex hydrocyclones.





- Impellers
- Stators
- Cells
- Liners

Liners for cells: special two colors liners allows  
Maintainers to schedule shut down without risking  
Cell Walls damages.





Outotec impeller and stator. Impeller dia 650



- Thresholds
- Floors
- Bottoms
- Seals
- Screens
- Trommel





L-PUR liner after 2,5 year of work

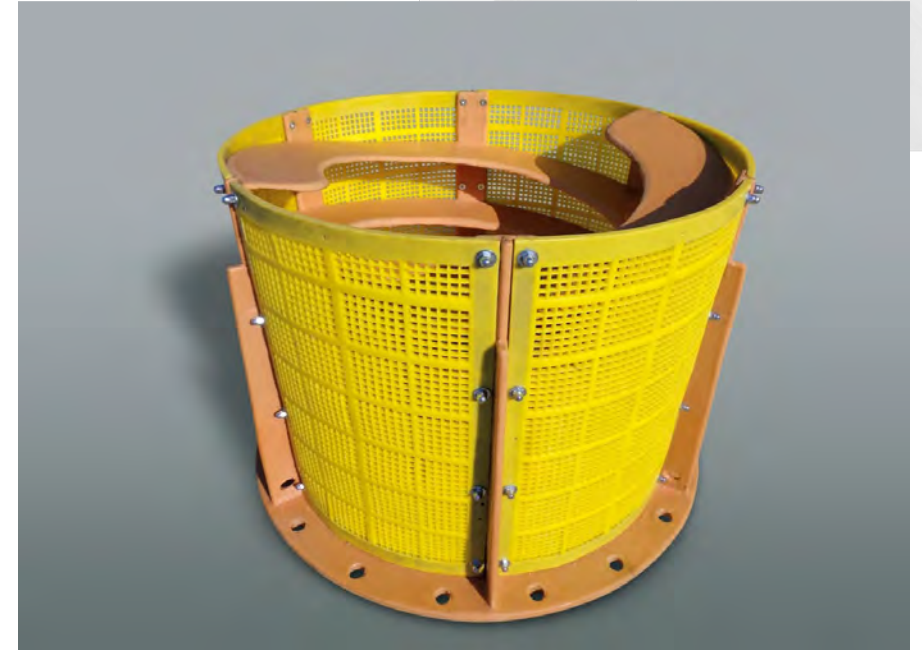
### Example of delivery for KGHM

- Ballmill equipment
- Blade covers for spiral classifier & impeller
- Lifter bars
- Shell plates





Ball mill LPUR lifter bars and liners



Trommel dia. 1600mm height 1300mm  
Slot 14x14  
Sprayed LPUR lining on steel parts  
Molded LPUR panels





Customer satisfaction

1. All our products are tailor made. We cooperate with clients to develop a solution that fulfills all the requirements. Our goal is to become the reference point for other PU producers and products.
2. We interact with all the stakeholders in clients' organizations, hence we understand their particular and specific needs.
3. Our well experienced and innovating engineering team designs and develops products that exceed in most cases clients' expectations.
4. We are permanently in contact with the most important Universities in Poland in order to be State of the Art on R&D and Innovation.

By being focused on the above points, we always aim to add value to our clients, which is to optimize their processes, reduce their operating cost and improve throughput.







Lubas and KGHM partnership in numbers

In 2018 Lubas delivered to KGHM – Polish Copper Ore Plant

25 000 Screen Panels

7000 Scrapers Inserts

1500 Hydrocyclones  
Spare Parts



5 Flotation Cell Types

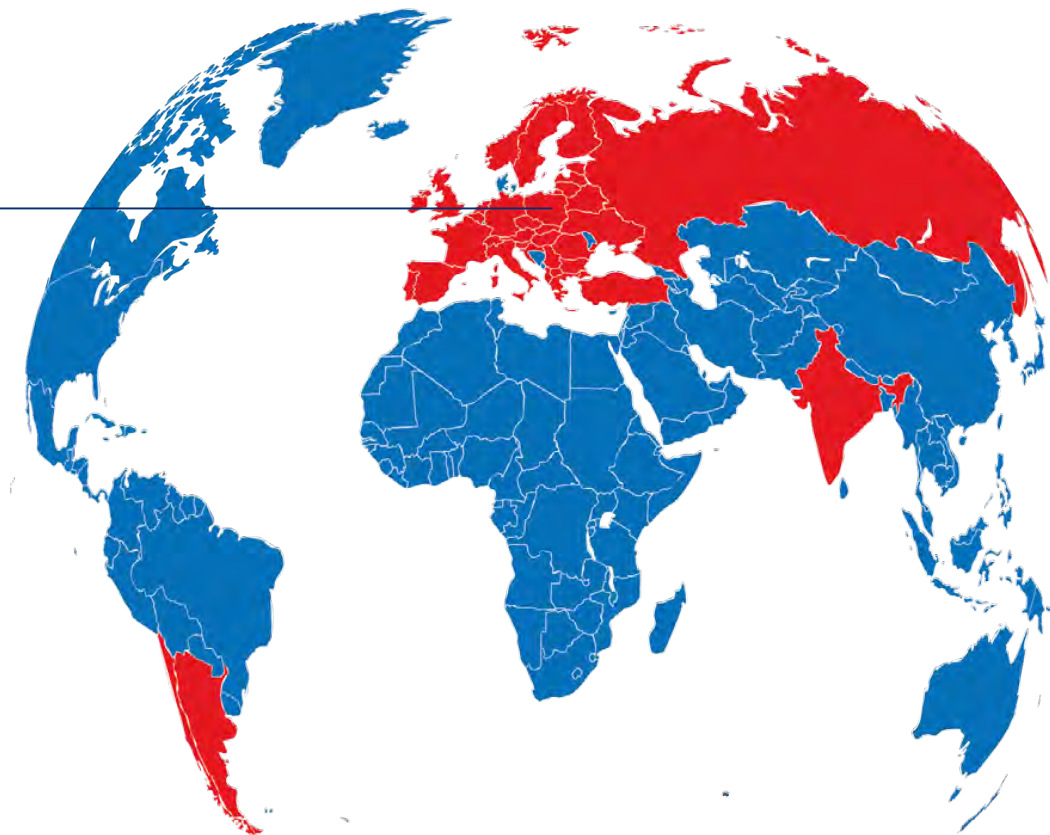
200 km Conveyors Side  
Seals

1200 Slurry Pump  
Hydraulic Parts





Lubas production plant



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