### CAST STEEL CASTINGS

We specialise in manufacturing castings made of cast steel produced according to Polish and European standards. Steel grades based on our internal specifications are also produced.



Our wide offer includes approx. 30 grades of cast steel used to manufacture castings. They are, among other things:

- structural carbon cast steel
- alloy cast steel
- a cast steel for tempering

- a cast steel for quenching with increased strength and wear resistance
- a cast steel to be used in higher temperature conditions.

In addition, we manufacture alloys with chemical composition and properties according to individual orders and customer needs.

Depending on the batch size and the type of moulding, the weight range of cast steel castings is as follows:

- o low- and medium-volume production in machine moulding from 5 kg to 100 kg
- produkcja jednostkowa przy formowaniu ręcznym od 30 kg do 5.000 kg.

Every cast steel casting undergoes heat treatment processes in modern and fully automated furnaces (standardisation, annealing, quenching, tempering, and others).

### CAST IRON CASTINGS

The KGHM ZANAM offers castings made of grey and ductile cast iron, which is included in both national and European standards.



Manufacturing these cast irons using electric arc furnaces allows us to obtain metals of the highest quality, required chemical composition, properties, and structure, meeting the requirements of the most demanding customers. The wide offer includes castings made of:

grey cast iron

- ductile cast iron
- alloy cast iron.

Cast iron castings can undergo heat treatment processes according to customer requirements and needs.

Depending on the batch size and the type of moulding, the weight range of cast iron castings is as follows:

- o low- and medium-volume production in machine moulding from 3 kg to 60 kg for grey and
- one-off production in manual moulding from 10 kg to 5,000 kg for grey cast iron, and from 10 kg to 1,500 kg for ductile cast iron.

#### ADDITIONAL SERVICES

We offer a number of additional services related to the production of castings and steel structures:

- annealing
- blasting and cleaning

grinding and finishing

- visual checks
  - priming and securing
- - and destructive and non-destructive and material and building advice...
- chemical composition testing
- approvals and certificates







### ABOUT KGHM ZANAM



KGHM ZANAM is one of Poland's largest manufacturers of mining machinery and equipment. We provide repair and maintenance services as well as implement specialised industrial investments. The company also manufactured equipment used handling systems, transport units, stone mining, open-pit mines and is a major manufacturer of cast steel and cast iron castings. 100% of the company's shares are owned by KGHM Polska Miedź. The company employs over 2,300 highly qualified employees.

For more information about castings offered by KGHM ZANAM scan the QR code



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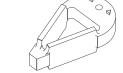




### KGHM ZANAM



CAST STEEL AND CAST IRON CASTINGS



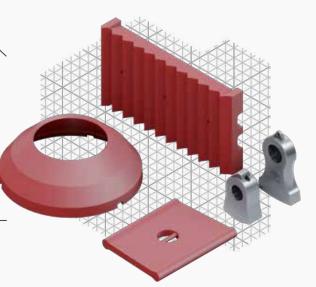
### PRODUCTION PROFILE

The production profile includes about 2,000 product items per year. Such a large volume of available products allows us to meet the expectations, requirements, and needs of every individual customer. KGHM ZANAM has the necessary production potential as well as technological background enabling the comprehensive execution of purchase orders at every manufacturing stage:

- process design preparation
- manufacture or adaptation of foundry models
- casting
- heat treatment
- machining
- finished product testing.

#### Castings for crushers

Castings for jaw, cone, impact, and hammer crushers
Range:
movable and fixed jaws, cones, and casings, counterblow and bearing bars, expansion and fuse plates, linings, plates, hammers, etc.



#### **Castings for grinders**

Parts for ball, bar, and hammer grinders used in the processing of metal ores, minerals, and coal. Range: linings, armour plating, feed, rams, armours, barriers, sieve plates,

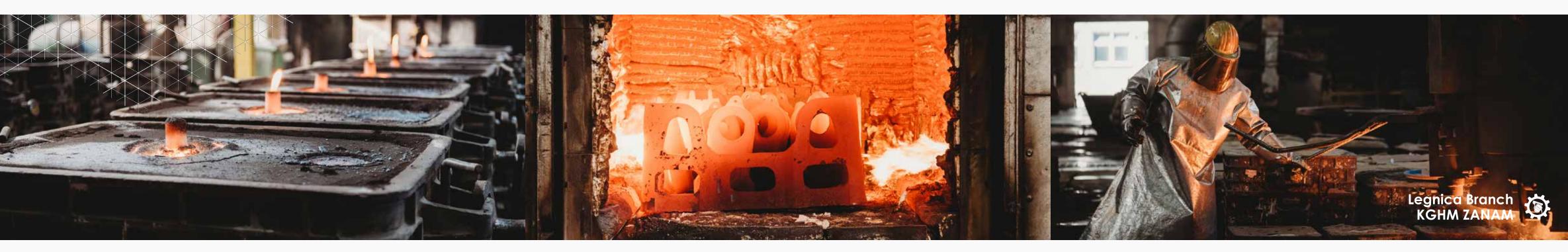
journal protection, etc.



# Castings for scrap metal shredders

Parts for shredders and grinders used in scrap recycling.
Range:
hammers, grids, sieve plates, linings, etc.





### PRODUCTION QUALITY AND COST OPTIMISATION

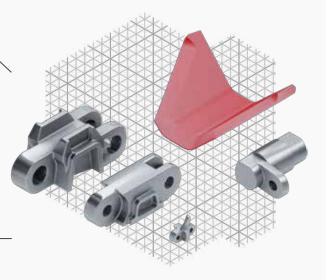
We have solid modelling software SolidEdge, which is used to create and read 3D solids and flat drawings. The software makes it possible to determine the weight of the offered castings more accurately and to prepare mould technology and casting documentation. The foundry also uses Magma Soft, which is mould filling and coagulation simulation software used to reduce times required to manufacture test castings, optimising casting manufacturing costs by increasing output.

We have implemented an integrated quality assurance system based on PN-EN ISO 9001:2015-10, PN-EN ISO 14001:2015-09, and PN-ISO 45001:2018-06. Experienced staff, modern technical facilities, and certificates ensure high quality of our castings.

# Wear-resistant castings

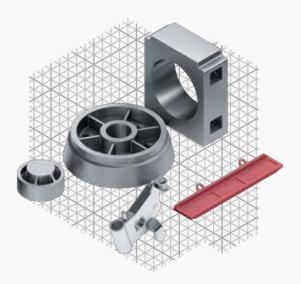
for working parts of wheeled and tracked machines, excavators, and loaders. Range: bucket teeth and tooth blades, bucket corners, track links, covers for blades, scrapers, etc.

Wear-resistant castings



## Castings of structure and drive elements

Parts for heavy-duty mining, construction, agriculture, and railway machines.
Range:
joints, brake calliper bodies, wheel hubs, running wheels, bushings, rollers, pins, bearing housings, slides, etc.



# Other castings and individual projects

Castings for various purposes such as anode plates, dies, casting moulds, grating, retorts, bodies, covers, pipes, elbows, straight connection pipes, tees, dust ducts, brackets, lids, rotors, and others.

