St. Petersburg Precision Alloys Plant

founded in 1857

PZPS

pzps.tech

About the Company

OOO “PZPS” is a high-tech, rapidly growing company that produces cold-rolled strips from precision alloys of the highest quality paying careful attention to metallurgical traditions and using technologies that meet all modern requirements.

The application sphere of our company's products is very wide. It ranges from basic household appliances to unique strips for the space and aircraft industries.

Our mission is to lead in the engineering, development, research and manufacturing of products made from precision and special-property alloys and steels as the final stage of the metallurgical process and the basis of the technological chain is to provide the Russian industry with advanced devices and instruments. Being one step ahead our aim is to put into practice our customers’ new and unique ideas, expressed in our alloys and steels, using our scientific potential and production capabilities.

ISO 9001:2015
Certiied

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Full-cycle metallurgical production

We produce cold-rolled strip from precision alloys, stainless and high-carbon steel grades using metallurgical production of full cycle: smelting, hot and cold rolling, intermediate and final heat treatment.

We manufacture products in accordance with GOST(State Standard, Russian National Standard) and international standards.

We produce analogues of alloys and welding strips: Kovar, Supermendur, Permendur, Permalloy, Invar, Inconel, Hastelloy, Kanthal, Havar, Vacoflux, HiperCo;
Welding belts made of stainless steel grades with improved quality.

We use only high-quality primary raw materials to obtain particularly accurate tape characteristics.

The scientific and technical facilities of our company enables us to produce a tape that meets the specifications provided by the customer.

Produce

the following types of cold-rolled strips

thickness: 0,003-4 мм

Width: 2-250 мм

01

from precision soft magnetic alloys;

02

from magnetically hard precision alloys;

03

with specified elasticity properties;

04

for superconductor components;

05

with a specified thermal coefficient of linear expansion;

06

made of corrosion-resistant, heat-resistant and heat-resistant steel and alloys;

07

with high electrical resistance;

08

heat-treated from high-carbon steel grades;

09

for magnetic recording;

10

strips based on nickel, cobalt, chromium according to customer specifications and imported analogues.

11

from structural and instrumental steel grades.

Forged and cast blanks from precision, special, stainless alloys and steels weighing up to 500 kg.

Production Capacity

The various workshops of the plant perform certain technological tasks

1

Electric steelmaking workshop

Equipped with modern melting equipment, including induction melting and vacuum furnaces, with a total capacity of up to 600 tons/month and equipment for charge and refractory materials preparation.

2

Hot rolling workshop

Equipped with a unique hot rolling mill that can produce up to 600 tons of hot-rolled strip per month with a width ranging from 80 to 270 mm and a thickness between 2.0 and 4.0 mm. It also has a steam-powered forging hammer that can handle up to 650 tons of forged billets per month. In addition, as well as equipment for descaling and surface treatment of forging blanks.

At the request of our customers, we can provide hot-rolled steel strips up to 16 millimeters thick.

3

Cold rolling workshop

Equipped with high-performance cold rolling mills with a capacity of up to 600 tons/month, modern surface finishing lines, longitudinal and transverse cutting lines for preset sizes, and unique edge trimming module.

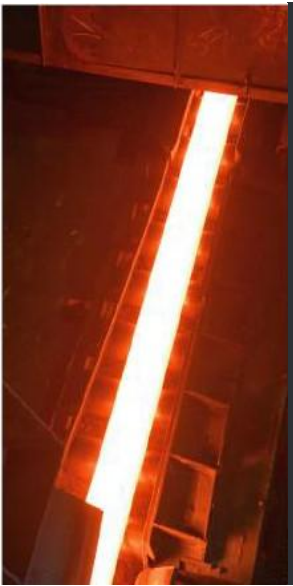
Production Capacity

Auxiliary workshops

5

The plant is equipped with tooling and mechanical workshops for the production of tooling, parts, and tools using lathes, milling machines, and grinding machines, among other equipment.

There is a repair and maintenance workshop to keep buildings and structures in good working order.



4

Heat treatment workshop

Equipped with various modern furnaces designed for heat treatment (hardening, tempering, annealing, air-hardening) of precision alloys and carbon steel grades.

6

Types of smelting

Two vacuum induction furnaces 500 kg each.

Five open-type induction furnaces 1 ton each.

Two electroslag refining furnaces 1 ton each.

Quality control

The plant's products are subjected to rigorous quality control in our five testing laboratories. Through careful monitoring, we ensure high quality and accurate specifications for our products.

01

The X-ray spectral laboratory monitors the chemical composition at all stages of production.

02

The mechanical laboratory measures the mechanical properties of each manufactured product.

03

The metallographic laboratory studies the microstructure of manufactured alloys and conducts analytical and research work.

04

The physics laboratory investigates magnetic properties, electrical resistance and temperature coefficient of linear expansion.

05

The linear-angular measurement laboratory monitors the surface and geometric parameters of the products.

100+

The plant's product range includes over 100 different types of precision alloys in cold-rolled strips.

300+

The plant employs more than 300 people.

Our customers

ООО “PZPS” supplies products to enterprises in the aerospace industry, machine engineering, radio electronics, electrical engineering, instrument engineering, aircraft manufacturing, shipbuilding, and the nuclear sector.

KALASHNIKOV GROUP

KAMAZ

ЗАВОД ПОЛУПРОВОДНИКОВЫХ ПРИБОРОВ

TECHNODINAMIKA

BELAZ

АЭРОЭЛЕКТРОМАШ

АО «САРАПУЛЬСКИЙ ЭЛЕКТРОГЕНЕРАТОРНЫЙ ЗАВОД»

ЛЕНСЕ

Scientific Research Center

Broad-based scientific research and development of modern projects based on OOO “PZPS” production capacities and intellectual property, exploring new trends in metallurgy, improving technological processes, financing innovative ideas, and attracting young specialists, teams, and companies these are the goals of our organization.

01

Development and mastering of advanced technologies for smelting, rolling, and heat treatment of precision alloys and steels.

02

Production of pilot and industrial batches of products.

03

Research of new materials and production of pilot batches of products with improved physical and mechanical properties.

04

Production of our own standard samples of steels and precision alloys.

Learn more↗ pzps.tech/nic

Company History

In the middle of the 19th century, the industrial revolution of Russian industry was rapidly taking place in St. Petersburg, including the organization of an iron foundry and a bronze plant on June 21, 1857. The company was founded with an emphasis on the production of iron castings and bronze products. Over the course of more than a century and a half of the plant's history, its name and product range have changed, owners have changed, technologies and production approaches have developed, and historical eras have replaced each other outside the territory of the plant. But the plant has always worked continuously up to the present day, carrying through the years the care of metallurgical traditions, preserving the team and looking to the future with confidence.

The plant was founded in 1857

1857

Our Achievements

Our company is the final stage of metallurgical process and the basis of the technological chain for further processing of products into finished high-tech products and devices for various sectors of the Russian industry.

We striving to be leaders in the development, mastery, production in the field of precision alloys and follow the program for the development of metallurgy in the Russian Federation.

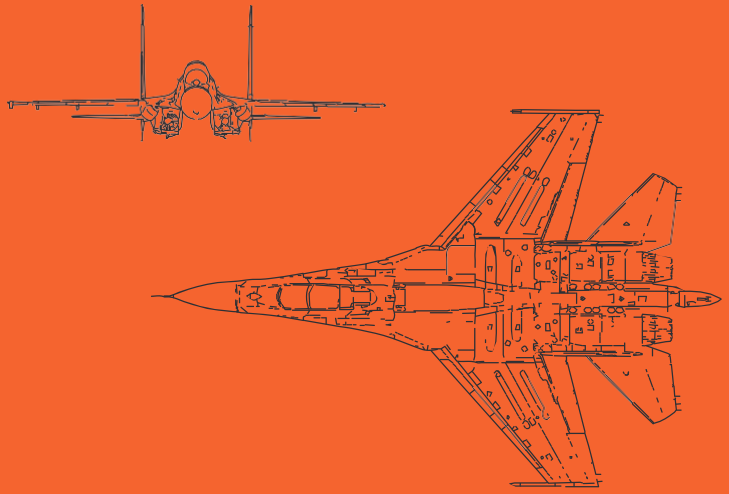
application

Electromotive units in aircraft construction, helicopter construction, rocket engineering, military engineering, UAVs and other civilian use.

Cobalt-Iron Alloys

01

PERMENDUR
27CoCr, 49Co2VA-Vi



These are precision alloys belonging to the group of precision soft magnetic alloys.

Alloy KOVAR
Alloy 29NiCo

02

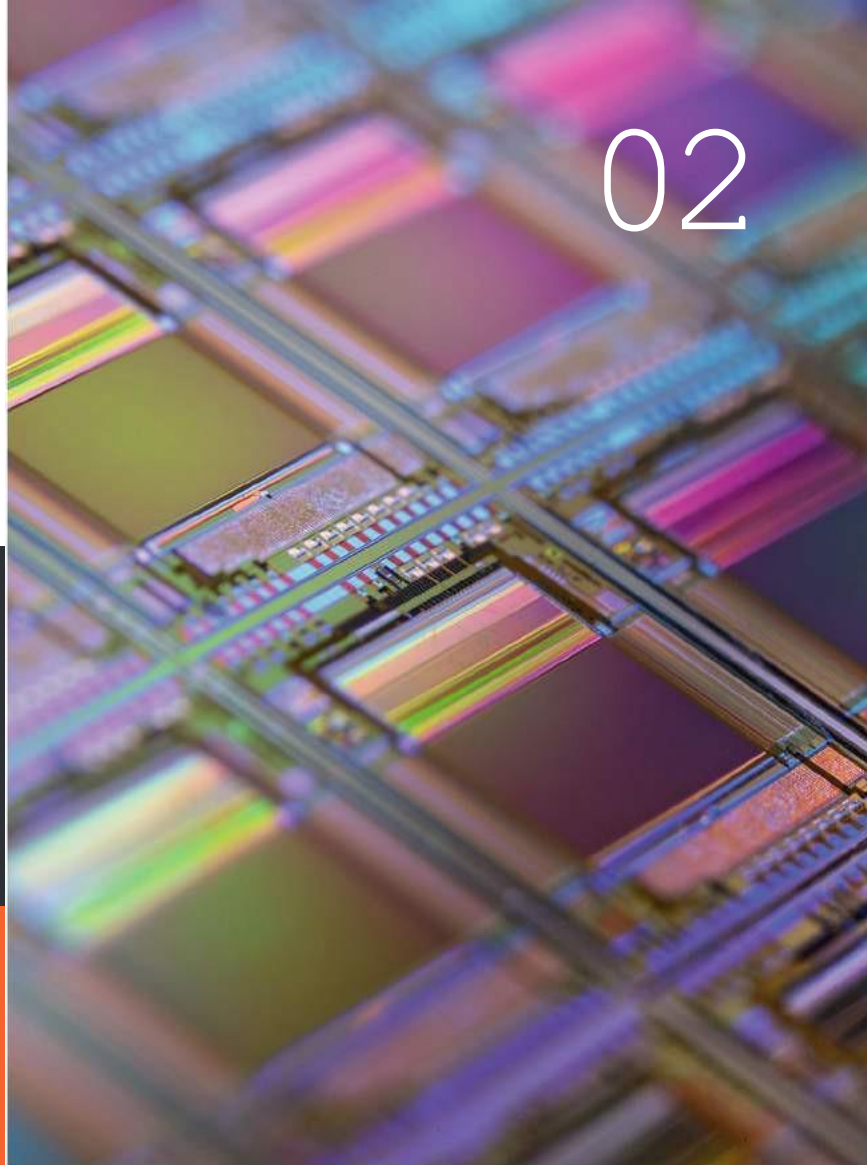
It is a precision alloy that refers to alloys with a given thermal coefficient of linear expansion. Successful development is underway to reach industrial supplies.

applications

In the production of cermet enclosures for integrated circuits and microelectronics. In switching technology.

Major customers

АО «Завод полупроводниковых приборов», АО «Завод «МАРС», Manufacturers of Relay Equipment.



Special property alloys which are being developed

03

Alloy NM23HU-IL, alloy with the strip thickness of 3-5 microns. Production of fixed-value, precision, protected, metal foil resistors.

Heat-resistant austenitic steel, heat-resistant alloys XH78T, NN 625, NN718 Production of grids and components for gas turbine generators.

Production of substrates for superconductors, analogues of alloy NN C-276 and NN 600.

Major customers:

АО «High-tech Scientific Research Institute of Inorganic Materials named after Academician AA Bochvar», АО ГМК «Norilsk Nickel», Суперокс (ООО С-Инновации), Непубличное акционерное общество «Ресурс».

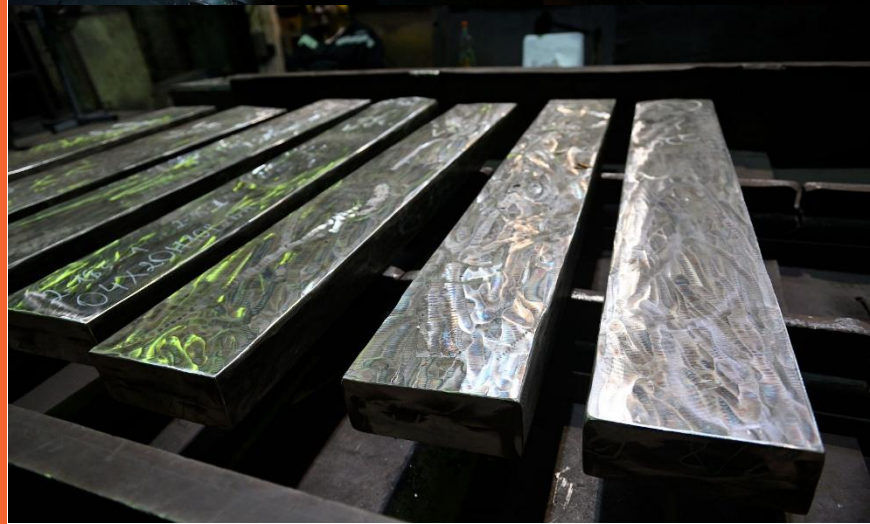
Cobalt-Chromium-Nickel Alloys

04

High corrosion resistance and the ability to maintain its physical and mechanical characteristics at temperatures up to 400 °C opens up extensive application possibilities for the alloy.

applications

Assembly of movable units for electrical measuring devices; Production of skeleton parts for implants, connecting staples for suturing internal organs and soft tissues, and stitching of blood vessels; Creation of springs for watch mechanisms, particularly those operating in aggressive atmospheres and high humidity conditions;
Development of elements for clockwork mechanisms, relays, and chronometers, among other products;
Manufacturing of cylindrical spring elements for devices and equipment operating at temperatures up to 400 °C;
Manufacture of medical instruments, including needles.



Nickel alloys

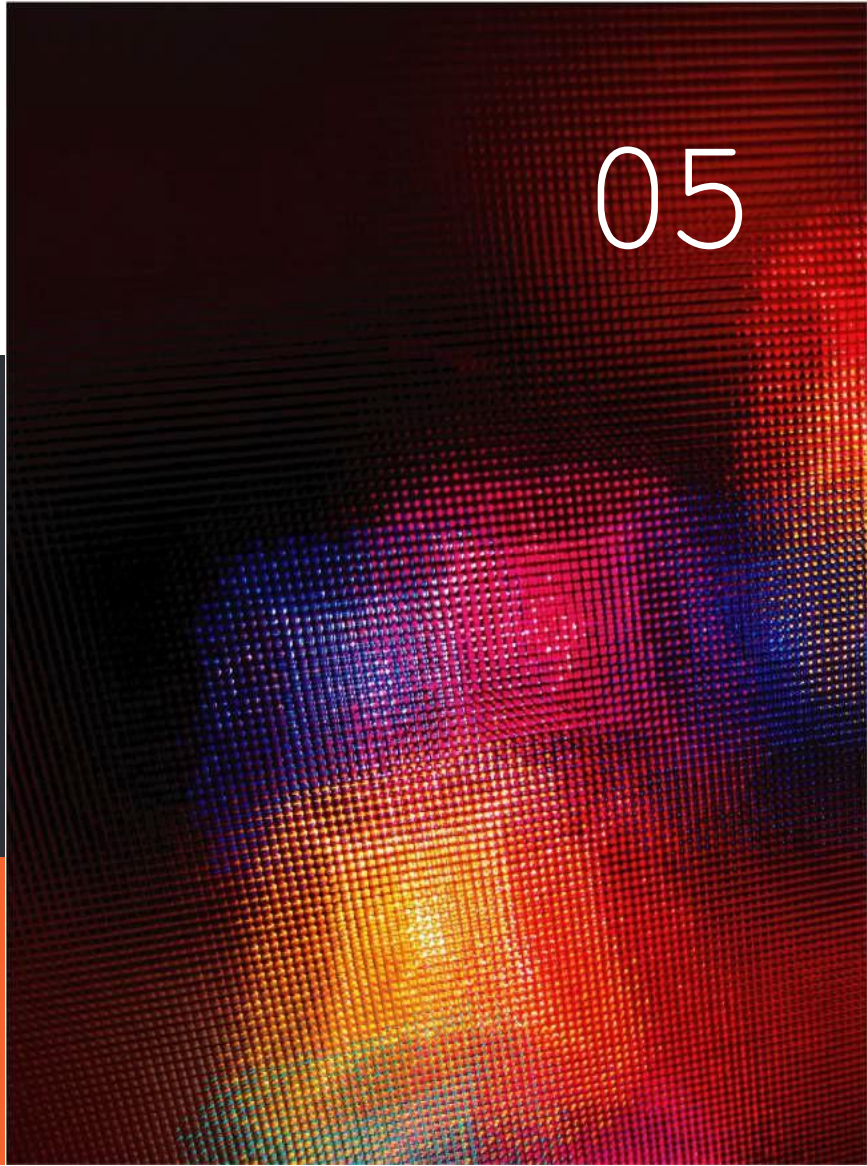
79NiMo, 80NiMo, 81NiMoA.

05

Highest magnetic permeability in weak fields. Shielding of electromagnetic radiation.

Major customers

АО «Мичуринский завод «Прогресс», АО «POLYUS Research Institute of M.F. Stelmakh», АО «ОКБ 78».



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