



Joint stock company “**POLOTSK-STEKLOVOLOKNO**”

World experience in glass fiber production

The Republic of Belarus
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www.polotsk-psv.by



About our company

Type of activity:
Production of glass fiber and articles on its basis

- Year of formation: 1958
- Number of employees: ~ 4000 persons
- Industrial complex area: >50 ha
- Equipment stock: ~ 5000 pieces



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About our company

Types of glass:

- E-glass
- Types of silica glass:
(SiO_2 , 95 ±1 %
and SiO_2 , 99 ±1 %)
- High-modulus
VMP glass
- Basalt

Range of products:

About 900 types
of products

Fields of application:

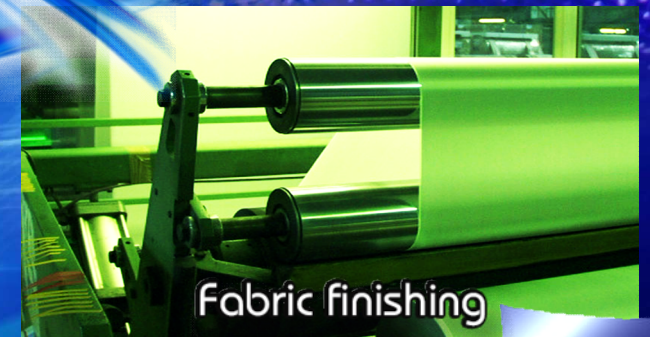
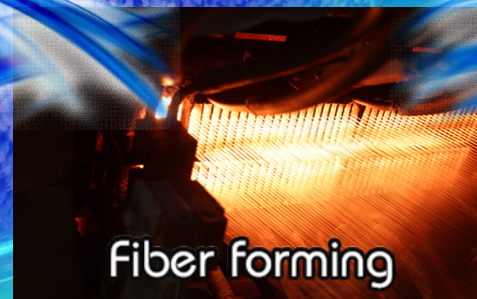
automotive industry, aircraft,
shipbuilding,
military-industrial complex,
metallurgy,
electrical-technical
industry, building industry
and so on



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About our company

Complete cycle of technological processes



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Geography of deliveries

Export-oriented company

Export: > 90 %

Geography of deliveries: > 50 countries of the world on 5 continents

- CIS countries:
(including Russian Federation ~ 45%) ~60
- Europe: ~30
- South – East Asia and Persian Gulf countries: ~10



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Geography of deliveries

Main sales markets

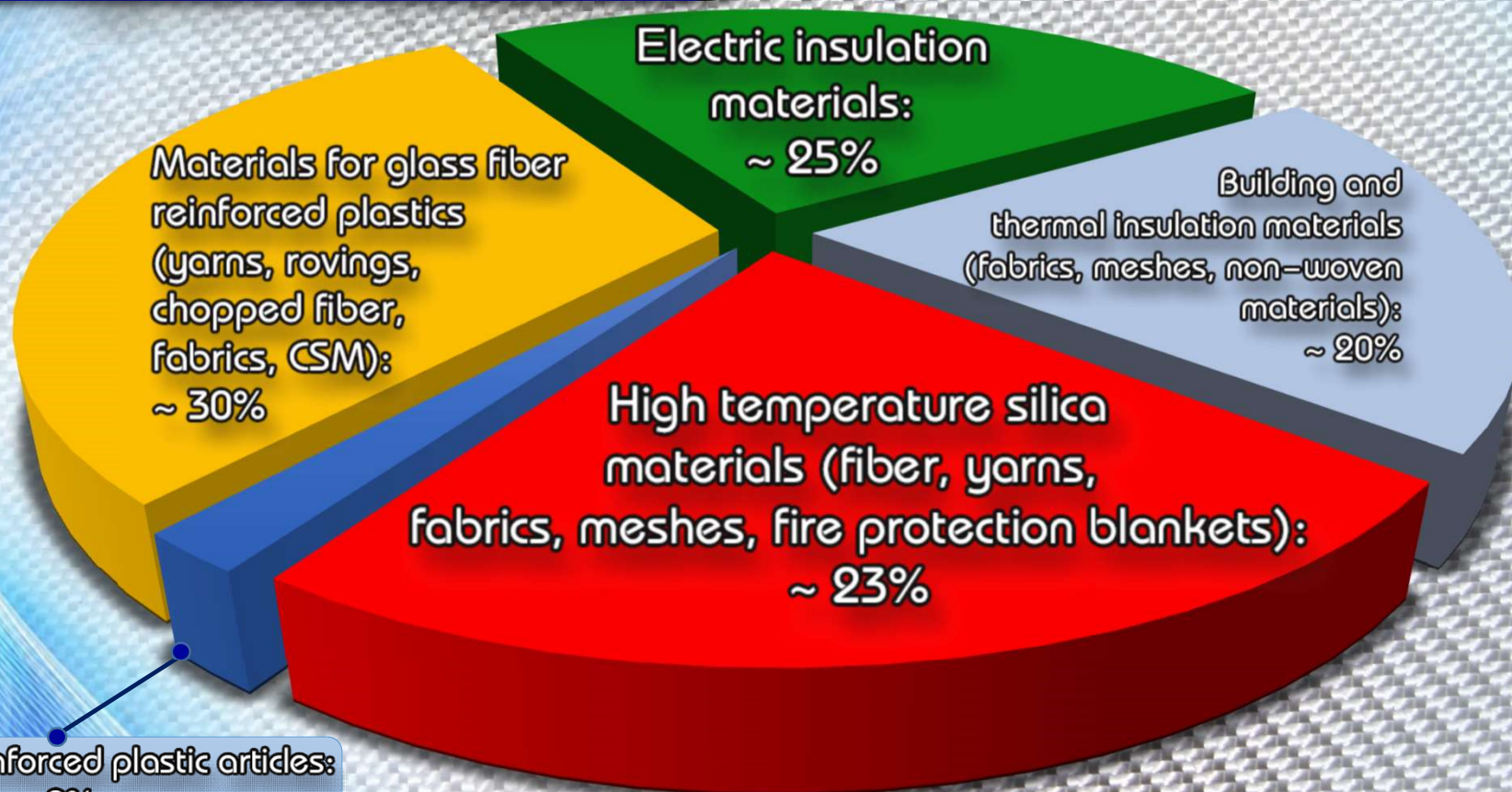


Organization of forwarding and delivery of cargo by any transport means of any cargo quantity to a given point of the Earth "to the door" and in time.



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Main types of products:



Glass fiber reinforced plastic articles:
~ 2%



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High temperature silica materials

Types of silica glass:

- N° 11 with SiO_2 – $95 \pm 1\%$
(operation temperature up to $+1100^\circ\text{C}$)
- Puresil with SiO_2 – $99 \pm 1\%$
(operation temperature up to $+1200^\circ\text{C}$)

Types of materials:

- Fiber
- Yarns, including sewing yarn
- Fabrics
- Filtering meshes
- Ready-made articles

Superb high temperature insulation
for critical industrial branches



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High temperature silica materials

Fields of application

For manufacturing of fire protection articles

- Welding blankets, fire protection blankets, screens and curtains

High temperature industrial insulation

- Insulation of furnaces, turbines, atomic power stations, oil platforms, equipment

In metallurgy

- As a filter for molten metal refining

In automotive and aerospace industry

- Insulation of gas exhaust systems and others

As raw materials for articles

- Thermal insulation mats and sleeves



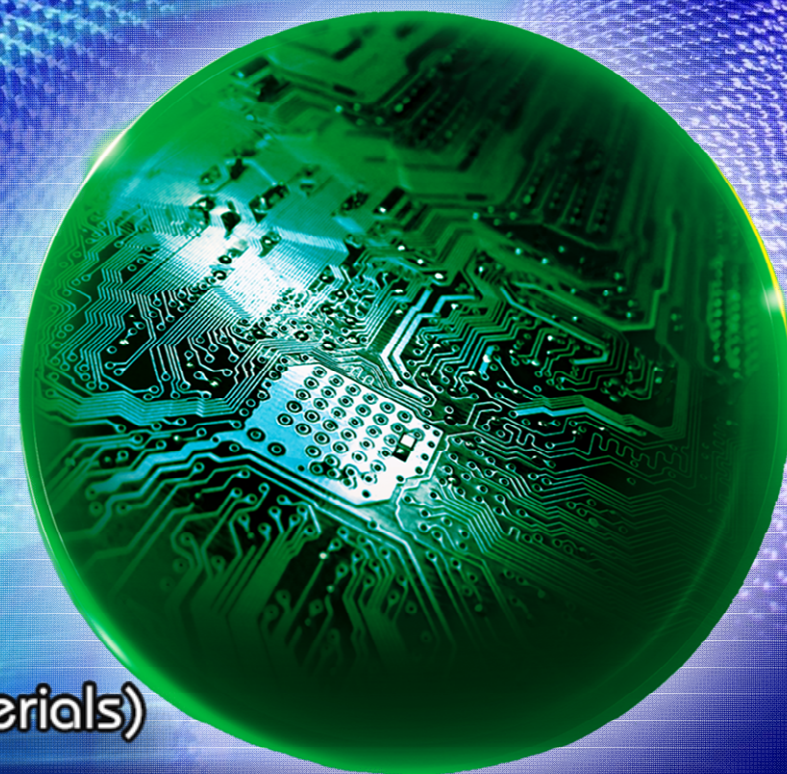
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Electric insulation materials

Electric insulation glass fabrics with surface density from 24 to 400 g/m² are used for production of:

- Foiled laminates (printed circuit board basis)
- Technical plastics
- Flexible insulation (varnished glass fabrics, micanites, micaceous laminates, mica-like materials)

Application in production of blocks, panels, computer circuits, devices, insulation of electric motors and electric machine units, electric circuits.



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Building and thermal insulation materials

- Fabrics as the basis of rolled roofing materials
- Building glass meshes, including façade mesh, for interior furnishing, road meshes
- Glass meshes for reinforcement of cutting (abrasive) wheels
- Building fixtures
- Thermal insulation non-woven materials (mats)

Application practically in all branches of industry – from building of underground utilities to roofing installation and repair



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Glass fiber reinforced materials

Types of materials:

- Rovings (including direct-rovings and spray-up roving)
- Yarns
- Chopped fiber
- Glass fabrics (including roving fabrics)
- Chopped strand mat (CSM)

Application in the field of composite industry



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Glass fiber reinforced materials

Fields of application

For production of composites:

- in aircraft industry, shipbuilding, car building, automotive industry
- in production of different glass fiber reinforced plastic structures and articles (playgrounds, stadiums, swimming pools and so on)
- in military-industrial complex

As technical insulation:

- thermal, electric and acoustic insulation

As raw material for production of woven and non-woven products:

- meshes, tapes, fabrics, cords, glass tissue, glass mats

And others:

- filler for engineering plastics and press materials
- cylindrical articles, different profiles



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Glass fiber reinforced plastic articles

● Goods for sports, tourism and leisure:

- boats
- spinnings, fishing rods
- walking sticks
- skiing sticks

● Glass fiber reinforced plastic articles for infrastructure:

- sandboxes
- children's chutes
- boxes for urban ore
- glass fiber reinforced plastic seats



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Basalt fiber and products on its basis

Raw material for production – rocks of basalt group.

Unique combination of properties

- Extended range of application temperatures (up to +700 °C)
- Increased mechanical strength (25% higher, than E-glass)
- Increased chemical resistance in alkaline, acidic medium, as well as in sea water
- Low price in comparison with high cost of special designation glasses

Basalt is in intermediate position between E-glass and special fibers (silica, carbon, aramid and others)



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Basalt fiber and products on its basis

Fields of application

Basalt roving:

- production of basalt fabrics, geogrids, thermal insulation mats; composites (pipes, armature, profiles and others)

Basalt yarn:

- production of fabrics, tapes, meshes, cords

Chopped basalt fiber:

- as reinforcing filler for fibrous concrete; production of basalt mats, composites

Basalt fabric:

- production of composites, thermal insulation mats; as a filter for cleaning of waste gases; as thermal and heat insulation of industrial equipment, furnaces, pipe works, turbines and other hot surfaces



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Own scientific and practical center

- ✓ In order to develop and implement new types of products and technologies the company has its own scientific and practical center.
- ✓ The company is characterized by a high share of innovative products in overall production volume (around 30 %)

The most significant developments:

- ✓ technology of production of silica fibers;
- ✓ technology of production of spray-up rovings;
- ✓ production of basalt fiber and the goods on its basis.



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Thank you for your attention!

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