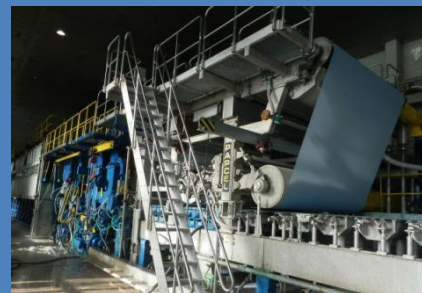


PROMGAZOBORUDOVANIE LLC

TURN-KEY PROJECTS

Engineering design and project development ○ Construction and Assembling works ○ Commissioning and Start-up works
○ Software development and Automation ○ Equipment and engineering constructions manufacturing



Energy and Comfort

About company

Promgazoborudovanie LLC works on the market of Republic of Belarus and abroad, providing full range of services, upon engineering design and project development, construction and assembling works, commissioning and start-up works in the next spheres of gas-supply and energy systems for plants and industrial sites of different specializations: machine construction, metalwork, chemical and petrochemical industry, light and food industry, forestry and woodworking industry, building materials production industries, agricultural sphere and real estate development and construction.

Company mission:

Due diligence of customers' needs, research and direct realization of optimal decisions to obtain effective results with due consideration of latest researches, best practice, experience.

Partnership:

Promgazoborudovanie LLC is an official representative of further world-scale gas equipment manufacturing companies:

Tecnoclima S.p.a., MADAS S.r.l, Promienniki Gazowe Sp.z o.o, IBS Industrie-Brenner-Systeme GmbH, AZ INTEC GmbH, Viessmann UAB, Flowair Głogowski i Brzeziński Sp.j., SIA INTRA EM, TcheliabinskSpetsGrazhdanStroy LLC, Production association KLIMATVENTMASH LLC.

2002

Promgazoborudovanie LLC starts its business activity (engineering design and project development in gas industries, equipment sale)

2011

Increase of number of engineers, launching of automation department and subdivision of building and start-up and commissioning works

2013-2015

Obtaining of the Certificate of the 1st category on performance of general design engineer functions, ISO 9001:2015, OHSAS 18001:2007

2016

Start of own gas equipment production and obtaining of all necessary documents, including Declarations and Certificates on:
GRU (gas-distributing unit) ○ Gas flow metering station
Gas control unit ○ Bock-modular boiling room
Control cabinet and automatic process control system

2017-2018

Start of gas infrared transmitters production and obtaining of all necessary certificates on gas infrared transmitters HC and HT.
Declaration of compliance Eurasian Economic unit on GRU (gas-distributing unit) and Gas flow metering station dated 12.12.2017

2019-2020

- Enlargement of activities and obtaining of rights on the gas systems and equipment production , supervised by Gospromnadzor
- Manufacturing, delivery , installation of GRU, GRP of different types and capacity, including:
 - GRP of cabinet type, capacity: 32300m³/h, Pin=12Bar, Pout=6Bar
 - GRP of cainet type for grain drying complexes, capacity: 4000m³/h , Pin=6Bar, Pout=0,35Bar
 - Modular GRP for thermal power plants. Capacity 25000m³/h, Pin=6Bar, Pout=4Bar

Complex approach

○ Gas-supply systems

○ Heating systems, ventilation and conditioning systems

○ Automation systems

Full cycle of works during turn-key project implementation: from inspection to (past)warranty service

Inspection

✓inspection and examination of sites and technical process;

Design and estimate works

✓pre-design documentation;
✓technical and economic assessment;
✓analysis and calculation of energy efficiency;
✓design and estimate documentation;

Delivery of equipment

✓selection and delivery of equipment and systems to the site of the customer;

Construction and installation work

✓fulfillment of construction and installation works;

Commissioning works

✓autonomous adjustment of automatic process control system on the site;
✓complex adjustment of automatic process control system with production machinery;
✓fulfillment of operational tests;

Training and consulting

✓training of specialists of the customer;
✓support service and warranty service of delivered equipment;
✓consulting and technical support.



Advantages of the company



- **competence**
- **timeliness and quality**
- **well-adjusted business process**
at all stages of cooperation with the customer
- **team of professionals**
own staff of specialists and workers
- **«turn-key» projects**
engineering and construction
- **quality audit system**
- **own production**
- **long-term cooperation**
with European companies and producers

More than **400** objects of diverse complexity

Whereof there are

the large-scale investment projects:

- Svetlogorsk cardboard mill ○ Dobrush paper factory
- BELGEE ○ Group of companies Alutech ○ GrodnoAzot ○ Belaruskali ○ Krasnoselskstrojmaterialy, Belarusian Cement plant, Krichevcementnoshifer ○ Gomel DSK ○ Industrial park Great Stone
- Stadler ZAO ○ BNBK ZAO ○ Group of companies Alutech
- DiaMond (shopping mall more than 50 000 m²)
- Mogilevenergo ○ Brestenergo

Results of 2002- 2020

More than **500** objects of diverse complexity, whereof

More than **390** objects have been built by Promgasoborudovanie

Technologies for air heating and cooling

Depending on technical characteristics of the building, specialty of manufacturing technology, Promgazoborudovanie LLC applies different systems for heating and cooling of rooms

Roof-tops (for air heating and cooling)

(Roof-tops), using both gas and water in work (wall-mounted, roof, standing-alone).



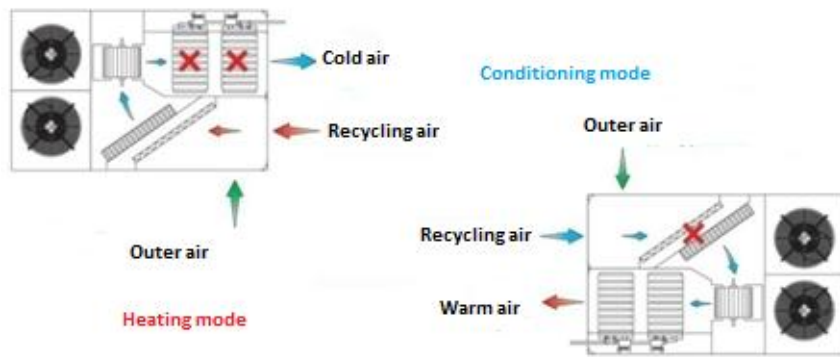
*Pic. of Group of companies Alutech (Client of Promgazoborudovanie LLC)

Gas infrared transmitter (for heating):

- GIT HT: dark (pipe);
- GIT HC: light (ceramic).

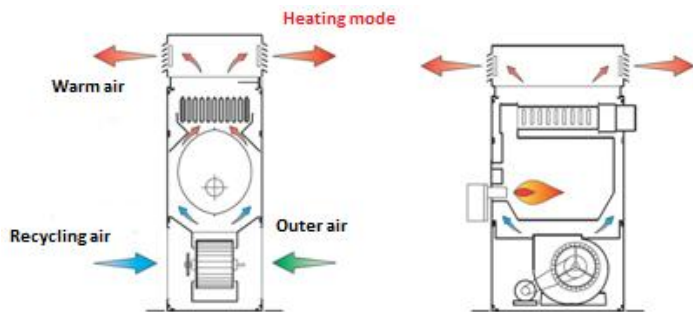


Technologies Roof-top



Roof-tops today are an alternative, **less consuming** technology for air heating and cooling during building and exploitation of buildings with different floor space.

The main advantage of Roof-tops lies in getting of both warm and cool air from one unit and creating microclimate in a production area. One unit can heat or cool till 33 600 м3 of air volume.



*Pic. from website «Technoclima»



*Pic. Industrial site Group of companies Alutech (Client of Promgazoborudovanie LLC)

Roof-top technologies



*Pic. of Group of companies Alutech (Client of Promgazoborudovanie LLC)

Main advantages:

especially for production, logistics areas and other facilities of big floor space

➤ There is no need to build boiling room (central heating plant) for heating. As a consequence:

- Absence of intermediate heating agent (water/ vapors);
- Absence of cleaning system and arrangement of heating agent;
- Decrease of capital and exploitation costs.

- Use gas and water in work;
- Independent units with direct energy transmission during heating and cooling of a room;
- Quick achievement of necessary temperature conditions;
- Maintenance of optimum floor space temperature irrespective of changing climatic conditions;
- Work in irregular and constant mode;
- Units can be rooftop, wall-mounted, can be installed near building (inside and outside);
- Possibility to work only in ventilating mode;
- Simple-to-operate, service and exploitation;
- Automatic system of management;
- Workable in harsh climate.

Realized projects with ROOFTOP technologies

Realized projects:

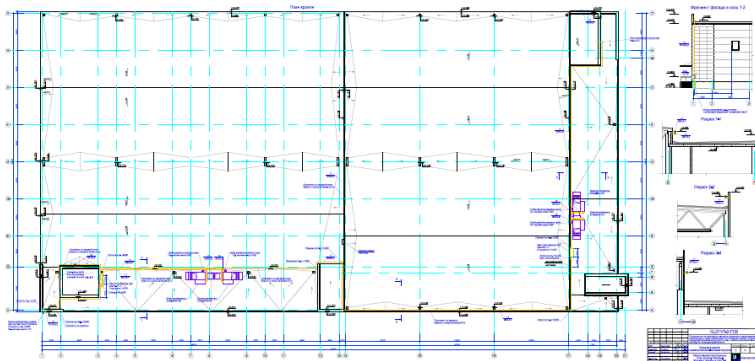
(construction project-project approval – preparation of site for all necessary systems – assembling – start-up and adjustment – automation– maintenance)

Shopping centers and malls:

- «Asstor-Vest» LLC, Brest
- Shopping mall «DiaMond city», Minsk
- Hypermarket mall, Minsk
- Dzerzhisk poultry farm
- Group of companies Alutech

Warehouses and logistics centers:

- «Halex» LLC, g. Minsk
- «Prilesje» FLLC, Minsk region



*Design of warehouse made for a Client by Promgazoborudovanie LLC



*Own Pic (building site-client of Promgazoborudovanie LLC)



Gas Infrared Transmitters (GIT)

Main advantages*:

- **low investment costs**
(most investment expenses are compensated during 2-3 years);
- **low running costs**
(costs for heating are 50-70% lower per year in comparison with heating from TPP);
- **long service life (up to 20 years);**
- **min noise emission at workplaces;**
- **easy to assemble and disassemble, are simple in service;**
- **quick heating and temperature maintenance at given level (thank for adapter);**
- **local and zonal heating (single-point).**

*According to energy-efficient equipment directory of IFC

Types of Gas Infrared Transmitter (GIT):

GIT dark



GIT light



Application fields:

GIT is used for heating of buildings with ceiling high not less than 3 meters:

- manufacturing companies;
- warehouses;
- sports infrastructure;
- agricultural buildings;
- shelters;
- shopping halls and show-rooms;
- workshop;
- laboratories (except rooms with pharmacology, food industry and where instruments are produced);
- loading platforms;
- greenhouses;
- bus depot and fire department;
- show room for cars selling.

Gas Infrared Transmitter HT

«DARK» GIT (low-intensity)

GIT HT — this is an infrared transmitter, that generates heat during combustion of air mixture in a closed system.

Radiation element : metal pipe.

Kinds of radiators: U-shape or line.

Installation point: under a roof. Heat radiation goes from above to a zone where people work.

Usage: for partial and full heating of the room.

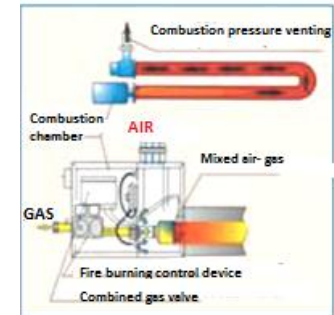
Application of GIT HT:

- in big buildings like pavilions;
- in rooms with ceiling height is not less than **3-4 meters**, where it is necessary to distribute heat (infrared) radiation on the maximum square upon condition of rather small floor-to-ceiling height;
- in narrow space buildings.

Operational mode *:

Its work is similar to GIT HC, but with lower temperatures: 350—450 °C.

GIT HT consists of burner, screen tube, reflector, branch for exhaust gases



Due to combustion gas, surface of tube incandescences, heat gives out mainly in the shape of emission. Vertical allocation of temperature inside the building is similar to «light» GIT.

*Manual for power efficient equipment IFC (International financial organization)



*Pic. from website of Promgazoborudovanie company-partner

Gas Infrared Transmitters HC

«Light» GIT HC (high-intensive transmitters) :

Heating temperature : 850 – 1000 °C.

Radiation element: fireproofed ceramic burner.

Usage: for heating of high-ceiling workplaces with ceiling not less than 5-6 meters.

Transmitter specific feature: combustion of gas-air mixture at surface of burner and inside.



Specifications of usage :

When using GIT HC it is important to regulate output of exhaust gas.

When building transmitters into drop ceiling, exhaust gas is output through gas outlet and exhaust ventilation.

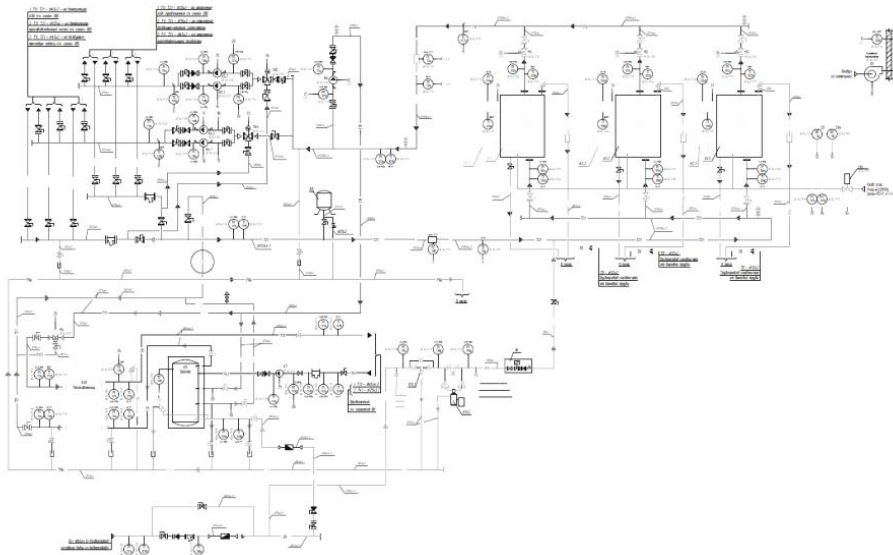
In other cases exhaust gas that is directed inside building, is output by means of exhaust ventilation, placed over items in the ceiling.

Fresh air input is provided by ventilation holes or inlet ventilator.



*Pic. from industrial site (Client of Promgazoborudovanie LLC)

Block-modular boiling rooms



Specialists of Promgazoborudovanie LLC provide full services list of installation and startup of energetic module BMB (block-modular boilers):

- *Project engineering of stand-alone, roof or inbuilt BMB (by agreement with the customer and necessity of BMB construction, its power);*
- Procurement and manufacture BMB ;
- Construction of BMB;
- Assembling and start-up and commissioning;
- Automation of BMB ;
- Service and maintenance.

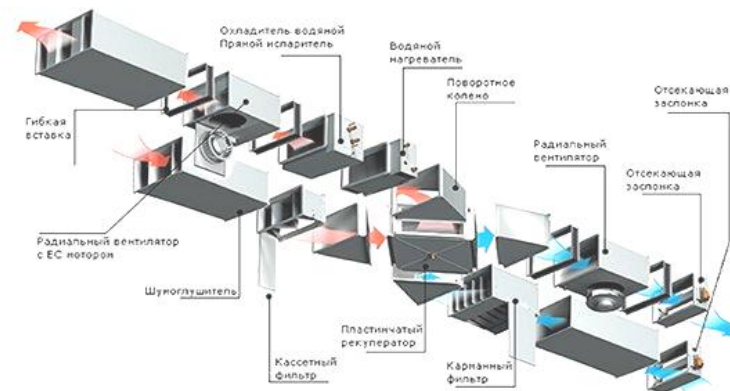
Realized projects:

- Teniza, Minsk (*design and construction*);
- Ozerco, Minsk region (*building*);
- PMK-1, Minsk (*building*);
- Hospital, Stolbcy (*building*);
- Hypermarket mall (*design*);
- Dubovliany, Minsk region (*design*);
- Prodmir (*design*);
- Ratomka (*design*);
- Krasnoselsk building materials (*design and installation works, leak check, burner replacement, gas and automation*);
- Minsk aircraft repair plant (*design, assembling, leak check, burner replacement, gas and automatization*) etc.



Ventilation systems

- Building entrance and loading areas air and heat curtains
- Input-exhaust ventilation for:
 - industrial sites of different floor space;
 - industrial space;
 - administration buildings, logistic warehouses, garages.



List of services:

- project constructing;
- assembling;
- start-up and commissioning;
- technical servicing and maintenance.

Specialists of Promgazoborudovanie LLC also render services:

- emissions analysis;
- automation of ventilation system.



*Pic. (Building site of Promgazoborudovanie LLC)

Gas-supply of industrial site

Promgazoborudovanie LLC produces Gas-Distributing Units, Gas-Control Units and Gas Metering Units on its own production area.

Specialists:

- construct gas supply and automation systems,
- work out software and control box;
- perform commissioning works and service.



Gas supply



Promgazoborudovanie LLC participated in realization of several large-scale investment project:

- Construction of the plant on production of bleached sulfate pulp, volume 400 thousand per year based on OJSC «Svetlogorsk cardboard mill»;
- technical reequipment of «Dobrush paper factory «Geroj Truda» OJSC Holding company «Belorusskie oboi» with foundation of manufactory of coated and uncoated board. Project of gas-supply system biogas unit was worked out;
- Construction of plant on manufacture of cars Geely «BELGEE» near Peresady, Borisov region;
- modernization of Orsha linen factory.



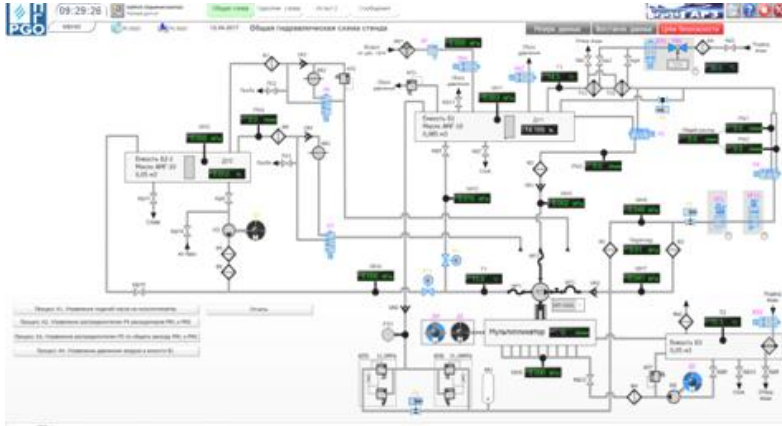
*Own Pic (Industrial site of Promgazoborudovanie LLC)

Realized projects (clients)

- «Belaruskalii» OJSC, Group of companies «Niva»
- LLC «BelEmsa», «MTZ» OJSC
- «Alumintechno» JLLC,
- «Krichevcementnoshifer» OJSC, «Kuzlitmash» OJSC,
- «Mogilevenergo», «Gomselmash» OJSC,
- «Smorgon aggregate plant» OJSC,
- «StalColor» LLC,
- «Gomel plant of casting and normals» OJSC,
- «Tutaev engine plant» OJSC
- «Gomel DSK» OJSC, «Svetlogorsk cardboard mill» OJSC
- «Dobrush paper factory «Geroj truda», «Belarussian wallpaper» OJSC,
- « BELGEE »

Automatic process of control system

In sphere of gas supply and energy, mechanic engineering, metal working, light and food industry, wood and woodworking sector, manufacture of construction material



Promgazoborudovanie LLC has its staff of highly-qualified specialists in the sphere of automation of technical process and manufacturing.

Specialists:

- construct automation systems;
- work out engineering documentation on control box;
- work put software;
- perform commissioning works and service.



*Own Pic. (industrial site, where the Promgazoborudovanie LLC equipment were installed)

Realized projects (clients):

- «558 ARZ» OJSC, Baranovichi (project constructing, shipment; commissioning works);
- «Krasnoselskstroyaterials» OJSC (project constructing, shipment, commissioning of control systems);
- «Minsk aircraft repair plant» (project constructing, delivery of equipment, automatic process of control systems, commissioning works of gas boilers control systems);
- «BELGEE» (project engineering, shipment, commissioning of heating and ventilation) etc.

Automated emission control systems

In the sphere of energy industry, chemical and petrochemical industry, wood and woodworking sector, manufacture of building materials

Promgazoborudovanie LLC renders complex decisions in the sphere of over emissions and gas analysis:

- site search and working out of technical enquiry
- working out of engineering papers
- shipment
- assembling and commissioning works
- stuff training
- metrological certification
- service and maintenance
- diagnostic and equipment maintenance.

Taking into consideration specificity of equipment allocation, specialists received training on industrial alpinism.



Realized projects:

Promgazoborudovanie LLC organized shipment, assembling commissioning works, metrological certification on further sites:

- RUP «Mogilevenergo»: Bobrujskaya TPP-1 and TPP -2 subsidiaries;
- RUP «Brestenergo» subsidiary Baranovichi heating system;
- RUP «Gomelenergo» subsidiary of Mozyrskaya TPP;
- «Svetlogorsk cardboard plant» OJSC;
- «Belaruskalij» OJSC and etc.

Supply chain

Gas equipment

Project and industrial site analysis
selection of equipment



Order, logistics, custom (in the
presence of the equipment -
shipment from the warehouse)



Delivery of equipment to
the building site



Construction and installation works-
commissioning works -Automatisation



(Post)warranty service,
maintenance

Heating equipment

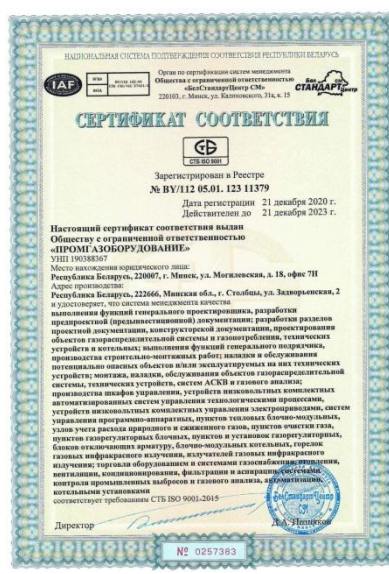
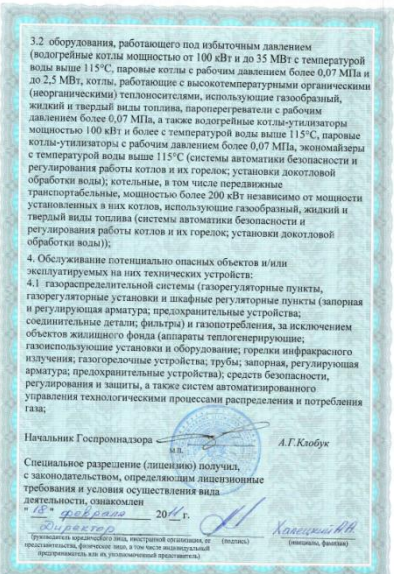
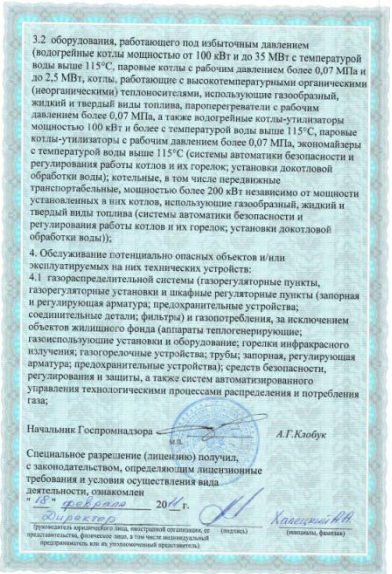
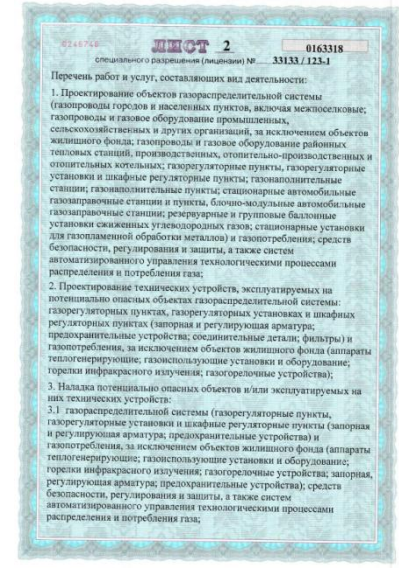


Ventilation and conditioning

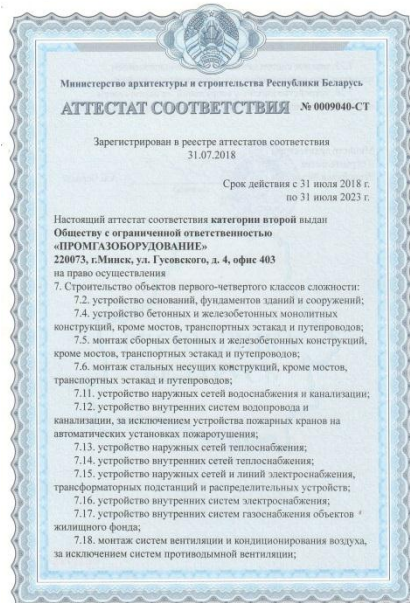
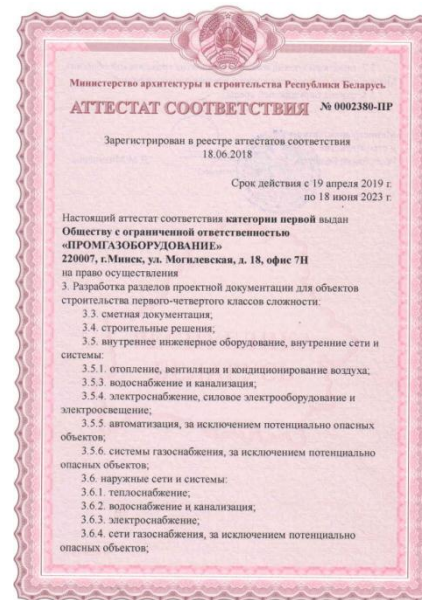
Efficient processes «Order-
Logistics-Custom formalities-
Delivery to the customer» provide
equipment delivery to the building site
well-timed, professional builders and
service engineers ensure construction
and installation, commissioning works
of high quality and further service.



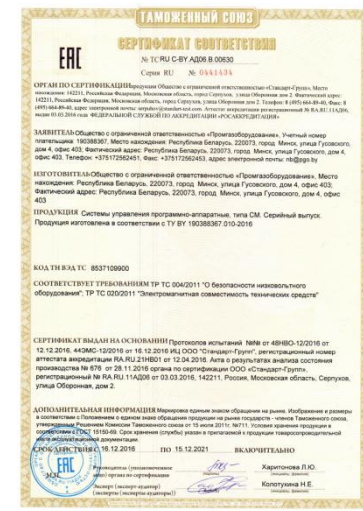
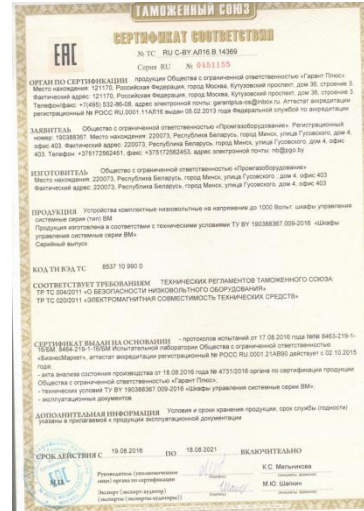
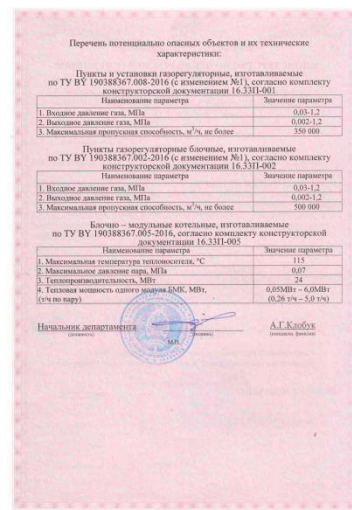
Licenses and Certificates



Licenses and Certificates



Licenses and Certificates



Система Добровольной Сертификации
Транспарент Квалити Сертификейш
 Орган по сертификации ООО «ЭкспертКонсалтингГрупп»
 Российская Федерация 214013, г. Смоленск, ул. Маршала, д. 9, оф. 11
 № РОСС RU.31948.04TKCO

СЕРТИФИКАТ СООТВЕТСТВИЯ
Выдан Обществу с ограниченной ответственностью
«Промгазоборудование»

Республика Беларусь, 220007, г. Минск, ул. Могилевская, д. 18, офис 7Н
 УНП 190388367

НАСТОЯЩИЙ СЕРТИФИКАТ УДОСТОВЕРЯЕТ
 Система менеджмента безопасности труда и охраны здоровья применительно к
 деятельности, указанной в Приложении № 1, которое является неотъемлемой частью
 сертификата

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ
ГОСТ Р 54934-2012 (ISO 45001:2007)

Сертификат выдан на основании решения
 о выдаче сертификата соответствия № 1174 от 18.11.2019 г.

Регистрационный № РОСС RU.04TKCO.0004.BMK.00085

Дата регистрации 18.11.2019 г. Срок действия до 18.11.2022 г.

Эксперт по сертификации



Бултыгина Н.А.

Настоящий Сертификат обладает юридической силой только в том случае, если он выдан в соответствии
 с требованиями, указанными в Приложении № 1, которое является неотъемлемой частью сертификата.
 «ЭкспертКонсалтингГрупп» и «Промгазоборудование» несут ответственность за достоверность информации, содержащейся в этом Сертификате.
 На основании решения эксперта, принятого в соответствии с № 1174 от 18.11.2019 г.



Appendix №1
 is the integral part of the certificate of conformity
 № РОСС RU.04TKCO.0004.BMK.00085

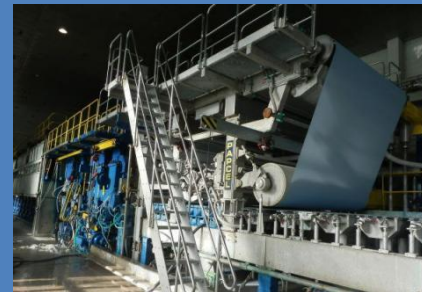
The occupational health and safety management systems in the design, engineering and
 manufacturing of technical devices, equipment and engineering units (refined boilers,
 gas control points, gas pressure regulating and metering stations, gas control and
 distributing units, block-modular boiler rooms, system control cabinets, hardware control
 systems, complete devices for voltages up to 1000V, Automated emission control and
 monitoring systems), executing the construction and assembling works, commissioning
 and start-up works, maintenance and repair works of gas supply systems, feed supply
 systems, heating, water supply systems, industrial inner and outer sewage systems,
 electrical power supply systems, automation and telemetry, ventilation, air conditioning,
 filtration and aspiration, emissions monitoring,
 supply of equipment and materials.



Certification expert

Бултыгина Н.А.

Engineering design and project development ○ Construction and Assembling works ○ Commissioning and Start-up works
○ Software development and Automation ○ Equipment and engineering constructions manufacturing



Energy and Comfort

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