





### Dear colleagues!

OJSC Gomelstroymaterialy represented by ISO PROFIT OÜ Company is looking for the partners to promote BELTEP® thermal insulation stone wool on the European Union market. We are ready to provide beneficial price, European quality of the product and efficiency in deliveries. We are interested in cooperation with construction companies or distributors.



JSC "Gomelstroymaterialy" is the few holder of the international certificate for biological solubility EUCEB.

### Production of mineral wool slabs

Mineral wool production has been in the enterprise since 1965. In 2005 JSC "Gomelstroymaterialy" introduces to the international building market the unique wall and roof insulation material – insulation slabs made of mineral wool under the trademark BELTEP.

Slabs are produced on a modern production line of Czech machinery company

«Frydlantske Strojirny — Rasl a syn s.a.» using the technology of dry forming from mineral wool and synthetic binding agent with waterproofing modifyingagent.

In order to ensure the growing needs of the domestic market and increasing exports of these products in 2008, JSC "Gomelstroymaterialy" put into operation a second production line with the installation of similar equipment.

The project allowed to switch to the production of thermal insulation materials with higher physical and mechanical, thermal and operational indices, which greatly enhanced the competitiveness of these products on both the domestic and foreign markets, has expanded its product range, it allowed to produce mineral wool slabs with a thickness of 30 to 200 mm and a density of 30 to 200 kilograms per cubic meter depending on the grade.







Wall and insulation materials manufactured in our plant represent quality and reliability in construction and are a guarantee of success for consumers, and alsobusiness confidence.

# BELTEP

### THERMAL INSULATION MINERAL WOOL SLABS

Non-flammable and hydrophobic insulation Efficient heat insulation, excellent sound insulator, durable building material

Mineral wool for thermal insulation slabs BELTEP is produced on the base of basalt fiber. Its insulating properties are based on the chaotic arrangement of the fibers and the content between a large number of air pores which have



a low thermal conductivity. During manufacturing the compacted cotton carpet passes through a heat treatment, curing, cutting and finally packaging.

Thermal insulation slabs of mineral wool BELTEP – is the choice of the majority of construction companies. They do not have restrictions on the use: they are used in the construction, reconstruction and repair of buildings and structures, regardless of the type of buildings and degree of fire resistance.

BELTEP – is the best choice for insulation of walls, roofs, floors, attics, balconies, ceilings, basements. Objects built or reconstructed by such a material, have high thermal protection and acoustic indicators, they also have improved comfort.

#### Products

### STAGES OF PRODUCTION

Stone wool insulation BELTEP

#### Stage 1

#### **Getting of silicate melt**

BELTEP manufacturing process starts with the delivery of the basic

materials in a cupola furnace, where under certain conditions melting process occurs and one can get silicate melt.

#### Stage 2

#### Processing melt into a fiber

Stage 3

Preparation of the binder solution

#### Stage 4

#### **Products manufacturing**

Formed layer of wool is delivered by the conveyor into pendulum separator, which puts a thin layer of

wool in the multilayer carpet of the required thickness. Then the carpet enters the stacking conveyor, passes through the weighing conveyor, the prepress, which serves for compacting and creating a structure of a spatial orientation of the fibers, forming the required thickness and density of the carpet. Then the carpet enters the heat treatment chamber, where under the influence of hot air the binder is solidified and after compacting the structure with the spatial orientation of the fibers is created.







From heat treatment chamber the mineral wool carpet enters the cooling table and then into the setting of slitting, a measuring device and into the setting of cross cutting, where the fi- nal formation of slabs occurs.

#### Stage 5

#### Package

Mineral wool slabs BELTEP are packaged into technology packets,

easy to transport. If necessary, the packets are stacked on pallets and additionally hooped with stretch-hood film that allows to upload products without the use of manual labor and store outdoors.

## QUALITY

JSC "Gomelstroymaterialy" is the few holder of the international certificate for biological solubility EUCEB.

Materials produced by EUCEB members meet the standards of the European Union Health and Environmental Safety (Item Q of the European Directive 97/69 / EC).

In order to ensure that the fiber complies with the environmental criteria all tests and supervision procedures are regularly carried out by independent expert organizations. Therefore EUCEB certificate is a guarantee of quality of the product and the trademark of the organization - the testimony of its international recognition.





### UNIQUE FEATURES of wool BELTEP



#### EASY INSTALLATION

Mineral wool slabs BELTEP are not subjected to shrinkage and thermal movement. Insulation keeps its geometrical dimensions for the entire period of operation. If necessary, mineral wool BELTEP of low density can be cut with a knife, and denser one – by using a hacksaw.



### SAFETY AND ECOLOGICAL COMPATIBILITY

Mineral wool BELTEP is safe in installation and operation, does not contain asbestos impurities. It has a very low emission of dust particles and chemicals. All products have passed the appropriate hygienic control and certification.



#### THERMAL INSULATION PROPERTIES

The mineral wool BELTEP consists of extremely thin, randomly interwoven fibers, between which there is air, which provides them with a small density (from 30 to 200 kg/m<sup>3</sup>). This provides them with a low thermal conductivity (from 0.035 to 0.042 W / (m \* K)). The lower thermal conductivity - the better the insulating properties of the material. The mineral wool brand BELTEP reduces heat loss in winter and protect you and your home from heat in summer.



### MECHANICAL STRENGTH

Slabs of the mineral wool BELTEP possess such strength characteristics that allow to use them in different systems and to ensure consistent quality, reliability and durability of these systems. All the marks of slabs BELTEP have been tested, they have the necessary technical certificates and certificates confirming the specifications declared by the manufacturer.



### CHEMICAL RESISTANCE

Basalt wool BELTEP has a high resistance to organic substances. No solvents or alkaline or mildly acidic environment have an impact on it. Under the conditions of normal humidity mineral wool BELTEP does not cause corrosion.



#### HYDROPHOBIC PROPERTIES

Thermal insulation materials are the most effective in the dry state. Even a small amount of soaking water has deteriorated the thermal characteristics of insulating materials. Mineral fibers of wool BELTEP in their nature have water-repellent properties. Moreover, in the process of the production of wool BELTEP water-repellent additives are added, thus expanding the boundaries of the material usage and to make its installation in a variety of climatic conditions. The moisture content in the rock wool BELTEP under normal operating conditions is less than 0.5% of the units of weight. Compared to many other materials, mineral wool BELTEP is highly

#### Products

vapor permeable. Mineral wool insulation slabs BELTEP are good in passing steam and they almost always stay dry, which in its turn affects the healthy microclimate in the building - on the one hand, and durability - on the other.

Stone wool insulation BELTEP



#### FIRE PROPERTIES

The main component for the production of mineral wool BELTEP is 100% natural, environmentally friendly material basalt. Its melting point is about 1,500°C. These thermal insulation products BELTEP satisfy the most stringent fire safety requirements and can be used as fire insulation and fire protection systems.



#### A HIGH LEVEL OF NOISE REDUCTION

Rock wool has a high level of sound absorption.



#### DURABLE IN USE

The term of service of rock wool for more than 70 years.

Products

### UNIVERSAL

See Physical and mechanical properties of slabs BELTEP on page 24-25.

#### ECO LIGHT

Heat and sound insulation of frame structures and other components of residential buildings and industrial buildings, in which the insulation does not accept external load: in vertical and inclined walls in the attic; in the attic ceilings; in the floors covered with all types of coats on the joists with the laying of insulation between joists; in the frame walls and partitions; in pitched roofs; in false ceilings.

It is allowed to use this material as the thermal insulation of the process equipment, thermal installations and pipelines with surface temperatures up to +400°C.



#### LIGHT EXTRA

Unstressed heat and sound insulation in horizontal and vertical constructions, including constructions of pitched roofs, attic rooms, attic ceilings, floors on boarding joists with all types of coats, in constructions of framed walls and partitions. First (inner) layer in ventilated systems of warmthkeeping when arranging two-layer insulation.



#### LIGHT

Heat insulating layer in constructions of three-layer walls, partially or fully made of small-pieces wallings. First (inner) layer in ventilated systems of warmthkeeping when ar-ranging two-layer insulation. Thermal and sound insulating layer in constructions of partitions, floors on boarding joists, ceilings, above-cellar partitions with the lattice frame.



#### UNIVERSAL

Heat insulating layer in constructions of three-layer walls, partially or fully made of smallpieces wallings, including insulation with windbreak for low-rise buildings, cottages type buildings, individual houses; in ventilated facade insulation systems of low-rise buildings, cottage type buildings, individual houses with singlelayer insulation with the mandatory windscreen; in the three-layer concrete and reinforced concrete wall panels.

The first (inner) layer in the wall panels with piecemeal assembly. The thermal insulation core in the joints between the concrete and reinforced concrete wall panels. Insulation of industrial equipment, ductwork, piping, refrigeration units, tanks, ventilation chambers and channels.

As filter elements of gas cleaning systems.



### FOR VENTILATED FACADES

See Physical and mechanical properties of slabs BELTEP on page 24-25.

#### VENT 25

Insulation layer in hinged facade systems with air gap at a single-layer insulation performance.

The second (outer) layer of hinged facade systems with air gap for two-layer insulation performance.

The second (outer) layer in the wall panels with piecemeal assembly.

Insulation layer in the construction of three-layer walls with a ventilated air gap.



#### VENT 50

Insulation layer in hinged facade systems with air gap at a single-layer insulation performance.

The second (outer) layer of hinged facade systems with air gap at two-layer implementation of isolation.

Insulation layer: in the construction of three-layer walls with a ventilated air gap; in the wall panels with piecemeal assembly.



### FACADE SLABS WITH ARRANGING PLASTERING SYSTEM

See Physical and mechanical properties of slabs BELTEP on page 24-25.

2

1



Facing Adhesive solution, reinforced with polypropylene mesh BELTEP FACADE, FACADE 12, FACADE 15 Adhesive solution Laying of ceramic or silicate brick

#### FACADE

Insulation layer when arranging facade insulation systems of low-rise buildings, cottage type buildings, individual buildings.

#### FACADE 12

Insulation layer when arranging light plaster systems of facade insulation; fire belt in light plaster systems of facade insulation using combustible insulation.

#### FACADE 15

Insulation layer when arranging light plaster systems of facade insulation; insulation slope (door, window) in plaster systems of facade insulation.

#### FACADET

Insulation layer: in the three-layer concrete and reinforced concrete wall panels; when applying heavy plaster insulation systems, including unheated basements structures, car parks, garages, etc.; in hinged facade systems with air gap at a single-layer insulation performance. The second (outer) layer of hinged facade systems with air gap at two-layer implementation of isolation.



### FOR COMBINED ROOFS

See Physical and mechanical properties of slabs BELTEP on page 24-25.

#### ROOF 30, ROOF 35

The lower layer of two-layer thermal insulation of combined roofs.

#### ROOF 60

Single-layer insulation of combined roofs.



BELTEP ROOF B60 BELTEP ROOF 30, ROOF 35

Waterproofing carpet

Vapour control layer

Bearing deck



#### ROOF B60

The upper layer of the two-layer thermal insulation of combined roofs.

#### ROOF 70

Single-layer insulation of combined roofs with the high loads on the roof.

#### ROOF 80

Single-layer insulation layer and the upper two-layer thermal insulation of combined roofs with the high loads on the roof.



### FOR SANDWICH-PANELS

See Physical and mechanical properties of slabs BELTEP on page 24-25.

#### SANDWICH, SANDWICH C

Insulating layer in three-layer metal wall slabs.

Metal slab
BELTEP sandwich, sandwich C
Metal slab
1
2
3

#### SANDWICH K

The thermal insulation layer in three-layer metal covering slabs (roofing).



### FOR THE FLOORS WITH INCREASED BASIC LOADS

See Physical and mechanical properties of slabs BELTEP on page 24-25.

#### FLOOR 125

Thermal and sound insulation layer in the construction of residential floors, including "floating" floors, underfloor heating; attic floors made of reinforced concrete slabs.



#### FLOOR 190

Thermal and sound insulation layer in the construction of floors of public and industrial buildings, including "floating" floors, underfloor heating; attic floors made of reinforced concrete slabs.



Stone wool insulation BELTEP

#### Physical and mechanical properties of BELTEP slabs:

Slab mark	Density, kg/m³	Thickness, d, mm	Thermal conductivity at a temperature 10°C, λ10, W / (m · K), not more than	Thermal conductivity at a temperature $25^{\circ}C, \lambda 25,$ W / (m · K), not more than			
UNIVERSAL SI	UNIVERSAL SLABS						
ECO LIGHT	25	100,150,200	0,0340	0,0377			
LIGHT EXTRA	35	50-200	0,0350	0,0375			
LIGHT	50	40-200	0,0350	0,0360			
UNIVERSAL	60	30-200	0,0350	0,0358			
SLABS FOR VE	NTILATED FAC	CADES					
VENT 50	75	50-200	0,0330	0,0364			
VENT 25	90	40-180	0,0350	0,0375			
FACADE SLAI FOR THREE-L	3S WITH ARRA AYER REINFOF	NGING PLAST	TERING SYSTEM	vi, slabs			
FACADE T	80	50-200	0,0340	0,0365			
FACADE SLAB	S WITH ARRAI	NGING PLAST	ERING SYSTEM	1			
FACADE	110	50-180	0,0350	0,0377			
FACADE 12	135	40-160	0,0370	0,0392			
FACADE 15	150	30-160	0,0370	0,0395			
SLABS FOR CO	OMBINED ROC	DFS					
ROOF 30	105	50-180	0,0350	0,0371			
ROOF 35	115	60-180	0,0360	0,0369			
ROOF 60	160	40-150	0,0370	0,0390			
ROOF 70	170	40-150	0,0380	0,0391			
ROOF B 60	185	30-60	0,0400	0,0407			
ROOF 80	200	30-140	0,0420	0,0418			
FOR THE FLOO	ORS WITH INC	REASED BASIC	LOADS				
FLOOR 125	125	50-180	0,0360	0,0390			
FLOOR 190	190	30-150	0,0400	0,0419			
SLABS FOR SANDWICH-PANELS							
SANDWICH	105	100-160	0,0420	0,0406			
SANDWICH S	115	100-160	0,0420	0,0425			
SANDWICH K	125	100-160	0,0420	0,0426			

#### Physical and mechanical properties of BELTEP slabs:

Compressive resistance under 10% linear deformation, σ10 kPa, kPa, not less than	Ultimate plane strength of the slab, ot kPa, not less than	Level of concentrated load, N, not less than	Ultimate pull strength of layers, omt kPa, not less than	Vapor permeability, μ, mg/(m·h·Pa)
0,5	0,6			0,600
0,5	0,8			0,598
0,5	1,1			0,592
0,5	1,4			0,576
10			5,0	0,567
15			7,5	0,549
10			5	0,560
25			10	0,523
40			15	0,482
50			15	0,472
30		350	7,5	0,530
40		850	7,5	0,527
60		850	15	0,456
70		850	15	0,440
60		1100	15	0,407
80		850	15	0,360
25		350	7,5	0,504
70		650	15	0,392
60			70	0,530
80			100	0,524
100			100	0,504

#### Products

#### The values for all marks of slabs:

Humidity, %, not more	0,5
Water absorption (short), kg / m², not more	1,0
Combustibility, class	A1

#### Dimensions of slabs:

The length of the slab, mm: 1200; 1000. The width of the slab, mm: 600; 1000. The width of slabs by mark "Sandwich", "Sandwich S" and "Sandwich K" mm: 630, 660, 1000. Manufacturing of slabs of other sizes on consumer's demand. The thickness of the slabs in these ranges has a pitch of 10 mm.

 Notes





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