



**BASALT**  
CATALOG

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## ABOUT COMPANY

"**BASALT**" company was founded in 2015 in the Jizzakh region, Farish district (Republic of Uzbekistan).

Location - basalt quarry "Asmansai".

The following enterprises operate under the brand "BASALT":

- **JV LLC "MEGA INVEST INDUSTRIAL"** - production of Basalt Roving, Basalt Fiber, Basalt Composite Pipe;
- **JV LLC "GEOBASALT PRODUCTS"** - production of Basalt Geogrid;
- **JV LLC "BAZALT WOOL"** - production of Basalt Wool.

In the first half of 2022, it is expected to launch and increase the capacity of the joint venture JV LLC "ECOBASALT GROUP" for the production of Basalt Composite Pipe, in order to expand and apply a new innovative material.

The main activities of the Companies JV LLC "MEGA INVEST INDUSTRIAL", JV LLC "GEOBASALT PRODUCTS", JV LLC "BAZALT WOOL", JV LLC "ECOBASALT GROUP" under the brand "BASALT" is the extraction, processing and production of innovative composite materials from basalt rocks.

The company's slogan is "Innovation for a secure future".

Qualified, highly motivated and dedicated employees guarantee high-quality service and strict order of execution of production processes.

To achieve the best quality of our products, we try to use high-tech equipment that meets all international standards.

The "BASALT" team participates in various international and national exhibitions and forums:

- **"7th Turkish-Arab Exhibition of Building Materials and Technologies, Interior Design and Furniture"**
- **"Made in Uzbekistan in Azerbaijan Baku 2021"** - exhibition "Days of Uzbekistan" in Azerbaijan;
- **"Energy-efficient materials and technologies in the Republic of Uzbekistan, the state of the market and prospects for its development to promote green construction in the country"** - business forum within the framework of a joint project of the United Nations Development Program, the Global Environment Facility and the Ministry of Construction of the Republic of Uzbekistan "Assistance in the development of energy-efficient rural housing in Uzbekistan";
- **"BUILD EXPO UZBEKISTAN 2021"** - the 8th International Specialized Exhibition of the Construction Industry;
- **"CHZ YAPI FUARI - TURKEY BUILD ISTANBUL 2021"** - exhibition of construction, building materials and technologies in Turkey;
- The Second International Forum **"Key Trends in Composites: Science and Technology"** at the Bauman Moscow State Technical University in the Russian Federation;
- **"JEC WORLD 2019"** - the leading international composite exhibition in France;



# BASALT ROVING

Basalt roving is a man-made inorganic material obtained from natural basalt minerals by melting them and then converting them into fiber. Basalt roving production is based on obtaining basalt melt in smelting furnaces and free flowing through special devices made of platinum or heat-resistant materials.

Basalt roving is an untwisted thread that consists of basalt continuous fibers. In terms of physicochemical and mechanical properties, BCF have great prospects as a reinforcing material in the production of special concretes and composites on a polymer matrix, operating in aggressive environments.



#### TECHNICAL SPECIFICATIONS

Mechanical properties	Unit of measurements	Value	Standard
Lineardensity	tex	600, 1200, 2400, 4800	GOST 6943.1-2015
Filament diameter	micron	9-22	GOST 6943.2-2015
Specic tensile strength	mN / tex	No less than 600	GOST 6943.10-2015
Average elastic modulus	hPa	80	—
Elongation at break	%	2,0-4,5	GOST 6943.10-2015
Moisture contents	%	No more than 2%	GOST 6943.8-2015
Mass loss on ignition	%	No less than 0,4%	GOST 6943.8-2015
Application temperature	°C	-250 to 850	—
Designed for use in lubricant	--	Epoxy and phenolic resins	
Drum outer diameter	mm	230 / 300	GOST 29101
Drum inner diameter	mm	150 / 220	GOST 29101
Drum height	mm	250 / 250	GOST 29101
Drum weight, approximate	kg	9 / 15	GOST 29101
Material	—	Basalt	
Colour	--	Dark olive	



# ADVANTAGES OF BCF TECHNOLOGIES

For the production of BCF, a single-component, nature-prepared, environmentally friendly raw material is used - basalt rocks. The cost of basalt raw materials is very low and in the cost of BCF production is less than 5 - 7%.

BCF production is one-stage technology - nature has performed the primary enrichment, melting and homogenization of basalt. Basalt is heated and melted in the furnace only once, which makes it possible to obtain the required product - BCF with a minimum of energy consumption.

Further processing of BCF into materials is carried out using "cold technologies". BCF production technologies are environmentally friendly, energy-saving and refer to nanotechnology, because ensure the production of continuous fibers with diameters of 6 - 21 microns, length up to 60 km, with high characteristics in terms of strength, elasticity, chemical and thermal resistance

# ADVANTAGES OF BASALT ROVING.

1. Application temperature: from -250 to +850 °C
2. Structural strength over the entire temperature range
3. Wide range of applications
4. Resistance to aggressive media (alkalis and acids)
5. Durability
6. Environmentally friendly material.
7. There are used no toxic binders in production
8. Low hygroscopicity
9. Compatibility with other materials
10. Technological efficiency



Basalt rock is crushed to a fraction of 5 – 20 mm. The crushed basalt is fed into the stone to the smelting furnace with the help of batching loaders. Basalt melts in the furnace at high temperatures of 1400 – 1600 ° C. Basalt turns to melt. Further, the melt enters the feeder of the furnace and passes through a plurality of holes in the nozzle feeder, which is made of platinum-rhodium alloy. Elementary basalt fibers are fed from the spinneret to the sizing device. The winding machine winds continuous fibers onto bobbins. The primary yarn is rewound into the coils of the roving from the bobbins with the help of a rope-bundling machine

## COMPARATIVE CHARACTERISTICS OF BASALT ROVING.

No	Parameter (characteristic)	Fiberglass	Mineral ber	Basalt (BCF)
<b>Mechanical characteristics</b>				
1	Apparent density, kg/m <sup>3</sup>	12-25	25-40	15-23
2	Elementary ber diameter, μm	4-12	4-10	9-22
3	Fiber length, mm	15-50	16	1875
4	Elastic modulus, kgf/mm <sup>2</sup>	to 7200	5400...8000	9100...11000
5	Compaction factor during operation	1,6	1,8	1,2
<b>Residual tensile strength (after heat treatment), %,</b>				
6	20 °C	100	100	100
	200 °C	92	95	98
	400 °C	52	60	85
	600 °C	sintering	20	76
<b>Temperature characteristics</b>				
7	Application temperature range, °C	-60...+250	-180...+450	-250...+850
8	Thermal conductivity coeicient, W / m °C	0,038...0,042	0,04...0,047	0,031...0,034
9	Sintering temperature, °C	600	850	1100
<b>Acoustic characteristic</b>				
10	Sound absorption coeicient	0,8...0,92	0,75...0,95	0,95...0,99
<b>Chemical resistance (weight loss),%</b>				
11	in water	6,2	4,5	1,6
	in an alkaline environment	6	6,1	2,75
	in an acidic environment	38,9	24	2,2
12	Water absorption in 24 hours,%	1,7	0,95	0,02



01



02



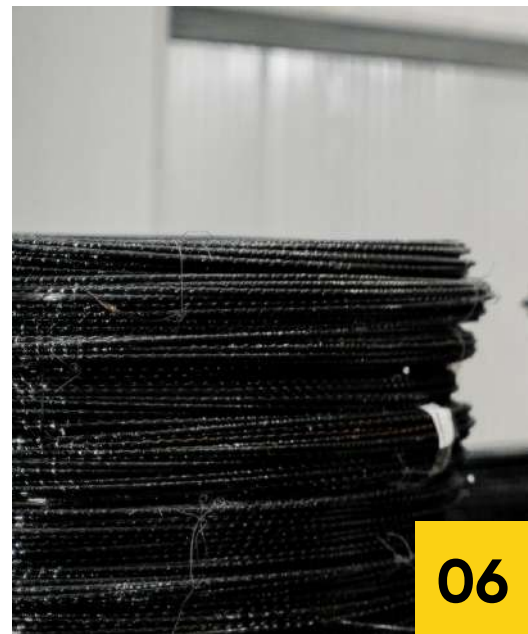
03



04



05



06

## APPLICATION AREA

1. Knitted fabrics made of basalt roving.
2. Chopped basalt fiber
3. Basalt roving cord.
4. Geotextile materials.
5. Basalt composite pipe
6. Production of profiled basalt fiber reinforced polymers.



# BASALT FIBER

Basalt fiber is a short length of basalt fiber used as an additive in various types of concrete, asphalt concrete and any mixtures based on cement and gypsum. Basalt fiber can be used in almost all structures and building materials: plasters, putties, tile adhesives, any screeds and bases, reinforced concrete products and structures. Fiber is used as an additive in various types and types of concrete, asphalt concrete, building mixtures and mortars as a reinforcing additive. The addition of fiber eliminates cracking and the problem of chipping edges and corners of products when they are stripped, and also significantly improves their appearance and quality of surface finish.

## TECHNICAL SPECIFICATIONS:

Cut length, mm	(3; 6; 13; 15; 18; 25; 27; 50) ±1,5
Elementary fiber diameter, μm	(9; 13; 17) ±1,5
Humidity,% no more	2,0
Content of substances removed during ignition,%, not less	0,3
Non-penetration of the batch weight,%, not more	5,0
Elastic modulus, kg/mm <sup>2</sup>	9100 - 11000
Thermal conductivity coefficient W / mK	0,031 - 0,038
Chemical stability, weight loss,%, after 3 hours of boiling. H <sub>2</sub> O / 2N NaOH / 2N HCl	2 / 6,0 / 2,2
Application temperature of fiberglass products, to C	from - 250 to + 850

### ADVANTAGES

- ✔ Does not absorb liquid.
- ✔ Slows down the delamination of concrete and mortars.
- ✔ Reduces labor intensity compared to classic reinforcement.
- ✔ Does not require additional changes in the technology of preparation of building mixtures.
- ✔ The cost of basalt fiber is much lower than metal mesh.
- ✔ Abrasion resistant concrete surface.
- ✔ Increases the flexural and axial tensile strength of the concrete structure.
- ✔ The fire resistance of concrete structures is increased.
- ✔ Increases compressive strength in concrete.
- ✔ Increases impact resistance and splitting resistance in structures.

# COMPARATIVE CHARACTERISTICS

INDEX	BASALT FIBER	PROPYLENE FIBER	GLASS-FIBER	STEEL FIBER
Material	Basalt fiber	Polypropylene	Fiberglass S or E	Carbon steel wire
Tensile strength, MPa	3500	150-600	1500-3500	600-1500
Elastic modulus, hPa	Not less than 80	35	75	190
Elongation coefficient,%	2-4,5	20-150	4,5	3-4
Melting temperature, CO	1450	160	860	1550
Resistant to alkalis and corrosion	High	Questionable	Only S fiberglass is resistant	Low
Density, g/cm	2,6	0,91		

## SCOPE OF BASALT FIBER



**CEMENT SCREED**



**PRECAST CONCRETE**



**PLASTERING MORTARS**



**FOOTING OF BUILDINGS AND STRUCTURES**



**CONCRETE AND CONSTRUCTION CEMENT-SAND MORTARS**



**FOOTING AND WALLS**



**CONSTRUCTION PRODUCTS**



**CEMENT-SAND SCREED**



**ARCHITECTURAL PRODUCTS  
FROM EXTRA STRONG CONCRETE**



**ASPHALT CONCRET PAVEMENT**



**CELLULAR CONCRETE BLOCKS (GAS  
CONCRETE, FOAM CONCRETE)**



**CONCRETE AND CONSTRUCTION  
CEMENT-SAND MORTARS**



**CELLULAR CONCRETE BLOCKS  
(GAS CONCRETE, FOAM CONCRETE)**



# BASALT GEOGRID

Basalt geogrid is made from basalt rovings (untwisted threads) of infinite length, freely superimposed on each other and stitched with polyester (basalt, nylon) thread with chain stitches using knitting machines. Basalt fiber has a very high resistance to chemically aggressive media (5 times higher than the same properties of glass fiber), and therefore is not damaged in contact with saline solutions, withstanding almost any operating conditions without losing its performance

## ADVANTAGES

- Absolute chemical inertness. Unlike polyester geogrid, basalt mesh is resistant to aggressive chemicals.
- Environmental safety. Thanks to natural raw materials - basalt stone, the material is 100% safe product.
- The ideal price-performance ratio. Basalt road grid has the highest performance properties at a low cost.
- Installation all year round. Due to its resistance to the scorching sun and frost, road construction using basalt grid can be carried out in any weather.
- Incredible flexibility. Even at subzero temperatures, the basalt road grid does not lose its physical and mechanical characteristics.

## WHY BASALT ROAD GRID IS BETTER THAN METAL?

Parameters	Aluminum	Steel
density is lower	1,4 times	3,9 times
tensile strength greater in thermal	4,2 times	7,7 times
conductivity less in	400 times	128 times
electrical resistance (basalt is an insulator)	conductor	conductor
high resistance to aggressive media	susceptible to electrical corrosion	not stable

# Technical Parameters of the Construction Geogrid

SYMBOLS OF BASALT GEOMESH		BASALT SBNP FACADE		BASALT SBNP MASONRY		BASALT SBNP UNIVERSAL	
		30(50x50)	30(25x25)	30(25x8)	50(25x8)	50(50x50)	50(25x25)
Weight per unit area, g / sq.m.		140	140	140	275	270	270
Breaking load, not less, kN/m	along	30	30	30	50	50	50
	across						
The elongation at break of not more than%	along	4	4	4	4	4	4
	across						
Permissible loss of tensile strength after 25 freeze-thaw cycles, not more than, %		10	10	10	10	10	10
Mass fraction of substances removed during calcination, not less than, %		18	18	18	18	18	18
The dimensions of the lumen side of the cells (+ 2%), mm		50x50	25x25	25x8	18	50x50	25x25
Maximum roll width (+2%), cm		540	540	540	540	540	540

# Road Geogrid Technical Parameters

SYMBOLS OF BASALT GEOMESH		BASALT SBNP ASPHALT CONCRETE			BASALT SBNP POUND		
		50(40x40)	100(40x40)	150(40x40)	50(40x40)	100(40x40)	150(40x40)
Weight per unit area, g/sq.m.		280	550	850	300	570	870
Breaking load, not less, kN/m	along	50	100	150	50	100	150
	across						
The elongation at break of not more than%	along	4	4	4	4	4	4
	across						
Permissible loss of tensile strength after 25 freeze-thaw cycles, not more than, %		10	10	10	10	10	10
Mass fraction of substances removed during calcination, not less than, %		18	18	18	18	18	18
The dimensions of the lumen side of the cells (+ 2%), mm		40	40	40	40	40	40
Maximum roll width (+2%), cm		540	540	540	540	540	540

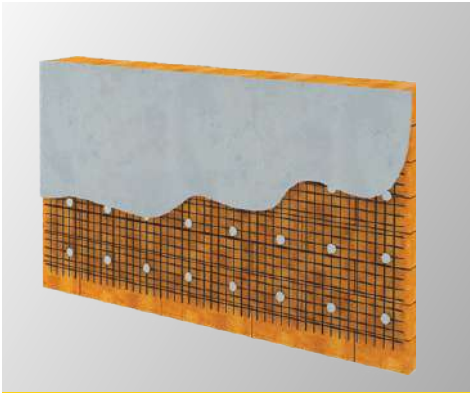
# APPLICATION AREA



1. CONSTRUCTION GEOGRID



GEOGRID - MASONRY



GEOGRID - FACADE



2. ROAD GEOGRID



GEOGRID - ASPHALT CONCRETE



GEOGRID - POUND



3. ENCLOSING GEOGRID



GEOGRID - UNIVERSAL



GEOGRID - UNIVERSAL



# BASALT COMPOSITE PIPE



Basalt Composite Pipe is one of the most important innovative and promising representatives of the group of basalt composite products. High physical and mechanical properties and resistance to aggressive environments have determined their wide application in key areas of industry. The solution to the urgent issue in the fight against corrosion of pipelines is to switch to Basalt Composite Pipes made of basalt plastic.

## TECHNICAL SPECIFICATIONS

Nominal diameters:

Nominal diameters are designated by the abbreviation DN and are indicated in millimeters. The company manufactures products of the following

Nominal pressure:

The pressure classes are designated by the abbreviation PN and are indicated in bar. Nominal pressure classes – PN1 (free-flow), PN6, PN10, PN16, PN20, PN25, PN32. It is possible to manufacture products with nonstandard pressure parameters.

Nominal ring stiffness:

Stiffness classes are designated by the abbreviation SN and are indicated in N / m. Standard grades are SN2500, SN5000, SN10000. Depending on the conditions of the project, it is possible to manufacture products with other stiffness indicators.

Diameters, mm		Nominal stiness (SN), Pa				Nominal stiness (SN), Pa			
		5 000		10 000		5 000		10 000	
Nominal	Outer	Nominal pressure (PN), atm.				Nominal pressure (PN), atm.			
		1, 2, 4	10	10	16	1, 2, 4	10	10	16
		Wall thickness, mm				Pipe weight without coupling, kg / m			
300	314,0	5,1	4,9	5,2	5,1	9,2	8,6	9,4	9,2
350	366,0	5,9	5,7	5,9	5,7	12,4	11,7	12,4	12,1
400	412,5	6,8	6,4	6,6	6,4	16,0	14,8	15,5	15,1
450	463,5	7,6	7,1	7,2	7,0	20,2	18,5	19,2	18,7
500	514,5	8,5	7,7	7,9	7,6	24,9	22,3	23,2	22,6
600	616,5	10,1	9,1	9,2	8,9	35,8	31,6	32,5	31,5
700	718,5	11,8	10,5	10,5	10,2	48,7	42,5	43,3	42,0
800	820,5	13,5	11,8	11,8	11,5	63,5	55,0	55,7	53,9
900	922,5	15,2	13,2	13,1	12,7	80,3	69,1	69,5	67,4
1 000	1 024,5	16,9	14,6	14,5	14,0	99,1	84,8	85,0	82,3
1 200	1 228,5	20,3	17,1	17,1	16,5	142,6	119,7	120,4	116,6
1 400	1 432,5	23,7	19,9	19,7	19,1	194,0	162,1	162,0	156,8
1 600	1 636,5	27,1	22,6	22,4	21,6	253,2	211,0	209,8	203,0
1 800	1 840,5	30,4	25,3	25,0	24,2	320,4	266,4	263,8	255,2
2 000	2 044,5	33,8	28,1	27,6	26,7	395,4	328,1	323,9	313,2
2 200	2 248,5	37,2	30,6	30,2	29,2	478,3	393,7	390,1	377,3
2 400	2 452,5	40,6	33,4	32,9	31,8	569,1	468,1	462,6	447,2

## BASIC TECHNICAL DATA OF BASALT COMPOSITE PIPE

Indicators	unit of measurement	Indicator value
Rigidity	N/m <sup>2</sup>	2500, 5000, 10 000
Density	g/cm <sup>3</sup>	1,7 - 1,9
Hydraulic coecient Hazen-Williams		150
Ambient temperature	0C	от -50 до+50
Temperature of the transported medium	oC	от -40 до +50 (до +70)
Coef. Thermal linear expansion	10-6 m/1oC	24 - 30
Coecient of thermal conductivity	Вт/(м•°C)	0,25 – 0,33
Poisson's ratio (axial / annular) v <sub>hl</sub> / v <sub>lh</sub>		0,08-0,1/0,22-0,29
Circumferential tensile strength	N/mm <sup>2</sup>	220 - 440
Axial tensile strength	N/mm <sup>2</sup>	110 – 130
Circumferential bending strength	N/mm <sup>2</sup>	330 - 370
Peripheral exural modulus	N/mm <sup>2</sup>	8 130 – 23 800
Axial tensile modulus	N/mm <sup>2</sup>	3 600 – 14 000
Peripheral modulus of elasticity in tension	N/mm <sup>2</sup>	5 100 – 29 000

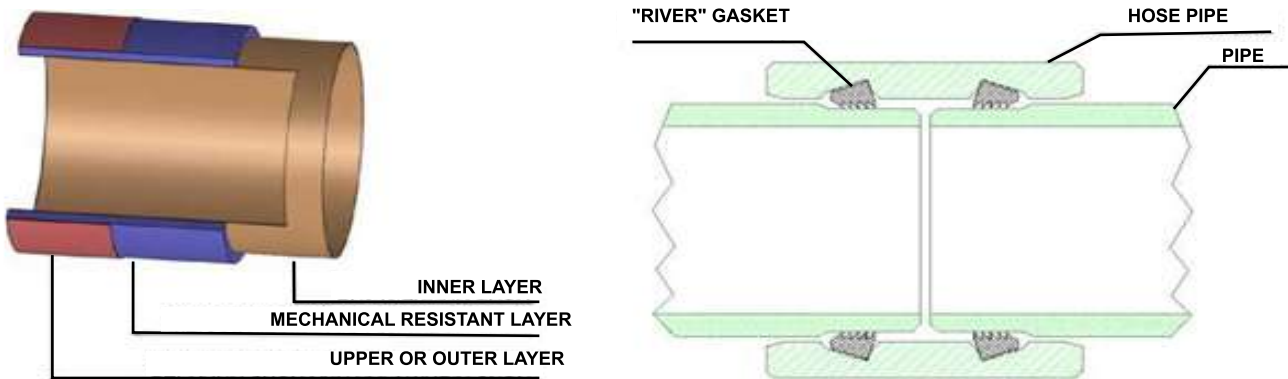


# CONNECTION TYPES

The production line is equipped for the production of couplings designed for operating pressures up to 25 bar. For higher pressures, special connections must be used (e.g. laminated, flanged or other types of connections)

## ADVANTAGES OF THE COUPLING WITH "RIVER" TYPE GASKET.

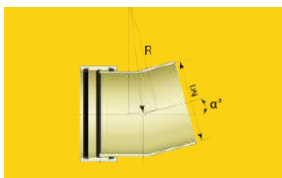
- ✔ Flexibility of piping systems - allows axial movements up to 3°, depending on the pipe diameter.
- ✔ Installation time is very short and no special tools are required.
- ✔ Specially designed "River" type gasket ensures tightness of pipe joints.



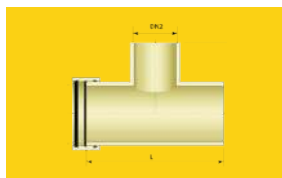
## SHAPED PRODUCTS (ELBOWS)

The production technology allows us to offer a wide range of fittings of a standard nomenclature and to produce customized products. Fittings are standardly equipped with a sleeve fitted at one end. When ordering fittings of large diameters, it is necessary to take into account the technical possibility of transporting the finished product or assembling it on site. Below are the standard fittings.

SEGMENT ELBOWS



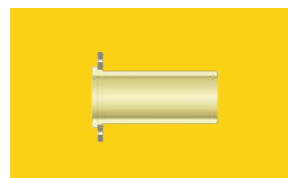
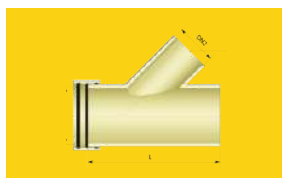
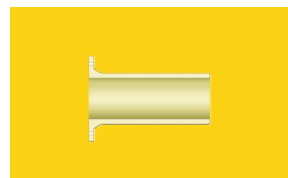
EQUAL AND REDUCED TEE



CONCENTRIC AND ECCENTRIC REDUCERS



FLANGE MANIFOLDS



# COMPARISON TABLE

Indicator	Basalt Composite Pipe	Cast iron pipe	Epoxy coated steel pipe	PVC pipe	High-density polyethylene (HDPE) pipe
<b>Corrosion resistance</b>	Good	Very poor corrosion resistance. A cement coating of the inner layer is required. Bituminous or other coating of the outer surface of the pipe. Cathodic protection required	Very poor corrosion resistance. A cement coating of the inner layer is required. Bituminous or other coating of the outer surface of the pipe. Cathodic protection required	Bad in an alkaline environment.	Good
<b>Maintenance</b>	Not required	The outer coating may peel off over time due to damage during shipping, installation and the environment. Periodic maintenance required	The outer coating may peel off over time due to damage during shipping, installation and the environment. Periodic maintenance is required.	Periodic maintenance is required.	Periodic maintenance is required
<b>Lifetime</b>	More than 80 years	Due to pipe corrosion, the service life is 20 - 30 years	Due to pipe corrosion, the service life is 20 - 25 years	The service life of PVC pipes is 15 - 20 years, depending on the operating conditions	The service life of PE pipes is 20 - 30 years, depending on the operating conditions
<b>Underground application</b>	Optimal design for specific conditions based on internal pressure and rigidity requirements is achieved through a flexible manufacturing process	Service life is reduced by corrosion on the outer surface of the pipe	Service life is reduced by corrosion on the outer surface of the pipe	Not suitable for inground applications	Uneconomic design due to very large pipe wall thickness
<b>Internal roughness</b>	Hazen-Williams coefficient (C) = 150. Lower flow rate for fluid transfer.	C=120. The fluid transfer rate is higher.	C=120. The fluid transfer rate is higher.	C=150	C=150
<b>Specific gravity</b>	1.8 - 1.9	7.05	7.85	1.4 - 1.45	0.95
<b>Weight</b>	A light weight	6 times heavier than basalt composite	3-4 times heavier than basalt composite	Heavier than basalt composite due to thicker pipe wall	Heavier than basalt composite due to thicker pipe wall
<b>Manipulation</b>	Very easy handling due to the light weight of the pipe	Difficult, due to the large weight of the pipe	Difficult, due to the large weight of the pipe	Very easy	Easy
<b>Wall thickness</b>	Shallow wall thickness due to optimal design.	At a certain pressure, the wall thickness is more than that of basalt composite pipes	At a certain pressure, the wall thickness is more than that of basalt composite pipes	At a certain pressure, the wall thickness is more than that of basalt composite pipes	The wall thickness is more than that of basalt composite pipes
<b>Tensile strength</b>	600-800 Mpa	Minimum 420 Mpa	Minimum 420 Mpa	50 Mpa	35 - 60 Mpa
<b>Elastic modulus</b>	50 Gpa	150 - 170 GPa	210 - 240 GPa	3 GPa	5 Gpa
<b>Hydraulic impact</b>	The best indicator among pipes made of other materials	Large hydraulic impact. Special device required	Large hydraulic impact. Special device required	Not good enough to cope with the hydraulic impact	Not good enough to cope with the hydraulic impact

# ADVANTAGES

## Corrosion resistance:

- ✔ Long-term efficient operation.
- ✔ No need for cladding, insulation, cathodic and other forms of corrosion protection.
- ✔ Low maintenance costs.
- ✔ Almost constant hydraulic characteristics over time.

## Light weight (1/4 weight of steel, 1/8 weight of cast iron, 1/10 weight of concrete):

- ✔ Low transportation costs (pipe in pipe)
- ✔ There is no need to use expensive equipment for loading and installing pipes.

## Large standard lengths (6, 12 m):

- ✔ Fewer connections reduces installation time,
- ✔ Lower cost of transporting long pipes.

## Excellent hydraulic performance:

- ✔ Extremely smooth bore.
- ✔ Hazen-Williams coefficient,  $c = 150$ .
- ✔ Manning's coefficient,  $n = 0.009$ .
- ✔ Colebrook-White coefficient,  $k = 0.001$ .
- ✔ Low friction losses reduce pumping costs and operating costs.
- ✔ Minimal deposits reduce cleaning costs.
- ✔ Excellent abrasion resistance.

## Couplings with "RIVER" type sealing system:

- ✔ Impermeable joints to prevent infiltration and leakage.
- ✔ Ease of pipe connection shortens installation time.
- ✔ Suitable for small deviations in the direction of the pipeline and for soil settlement without the use of additional fittings.

## Flexible manufacturing process:

- ✔ Customized pipe diameters to maximize flow rates and simplify installation in pull-through pipeline rehabilitation projects.
- ✔ Custom pipe lengths available for maximum flexibility in direct procurement of pipes or pullthrough piping.

## Advanced tube design technology:

- ✔ Various stiffness and pressure grades to meet engineering requirements for pipe structures.
- ✔ Features of the material can reduce the cost of pipes when they are calculated for a pressure wave or water hammer.
- ✔ Compliance of products with strict quality standards (ISO, AWWA, ASTM, DIN-EN, etc.).

## APPLICATION

1. Drinking water pipelines
2. Pressure and non-pressure systems of domestic and industrial sewerage;
3. Piping systems for irrigation and melioration;
4. Drainage pipelines and wells;
5. Storm sewage systems;
6. Technological pipelines;
7. Sea water intakes and outlet collectors;
8. Wastewater treatment pipelines;
9. Cooling and engineering systems of power plants;
10. Fire extinguishing pipelines;
11. Renovation of pipelines;





**BASALT**





# **BASALT REBAR**



Basalt Rebar is made from basalt roving (in the form of rods), which are located parallel to each other and are connected with resin.

The rods most often have a spiral surface due to the fact that the relief on the basalt shaft provides better adhesion to concrete. Made of volcanic stone – Basalt Rebar become strong, lightweight, corrosion resistant.

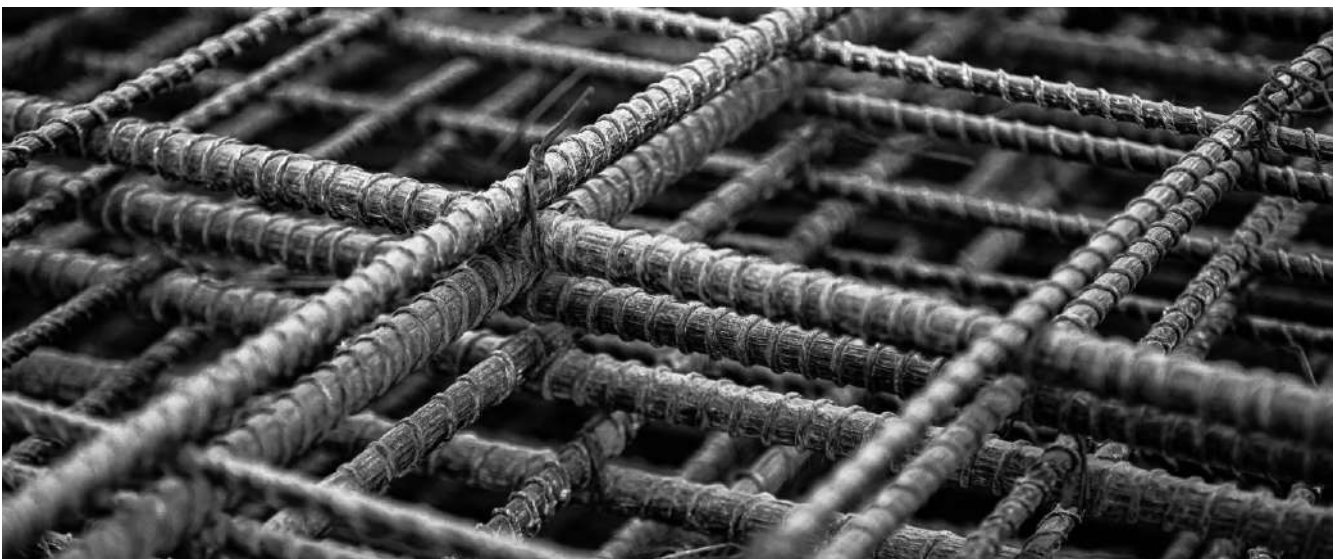


## TECHNICAL SPECIFICATIONS

No	Outer diameter (mm)	Weight for 1 running meter (g)	Q-ty of running meters in t	Package
1	4	30	33 333	Coil of 200 rm
2	6	50	20 000	Coil of 200 rm
3	7	75	13 333	Coil of 100 rm
4	8	90	11 111	Coil of 100 rm
5	10	125	8 000	Coil of 200 rm
6	12	195	5 128	Whips norm 11.7m
7	14	270	3 704	Whips norm 11.7m
8	16	350	2 857	Whips norm 11.7m
9	18	450	2 222	Whips norm 11.7m
10	20	550	1 818	Whips norm 11.7m
11	22	630	1 587	Whips norm 11.7m
12	24	760	1 316	Whips norm 11.7m

## ADVANTAGES

- \$ More than 40% cheaper than steel analog
- 💧 Corrosion resistant
- ⚖️ 4-6 times lighter than steel equivalent
- 🚚 Transportation savings
- 🔧 3-5 times faster at installation
- 🕒 100 years of service life



## COMPARATIVE CHARACTERISTICS

PROPERTIES	BASALT REBAR	METAL REBAR
DENSITY	2 t/m <sup>3</sup>	7,85 t/m <sup>3</sup>
CORROSION	Corrosion-resistant material of the first group of chemical resistance	It breaks down with the release of corrosion products
THERMAL CONDUCTIVITY	0 W/m <sup>2</sup> °C	48 W/m <sup>2</sup> °C
STRENGTH	1200 MPa	390 MPa
WORKING TEMPERATURE	from -70 to +100° C	from -70 to +50° C
ELECTRICAL PROPERTIES	Dielectric	Electric wires
ECOLOGICAL SAFETY	Environmentally friendly - does not emit harmful and toxic substances	Environmentally friendly
SHAPE RETENTION UNDER LOAD	Straight line with elastic linear dependence under load before failure	Curved line with yield plate under load
TRANSPORTATION	Coils of size D = 1.15 m	Rods 6-12 m long
SAVING RESOURCES IN USE	Stable prices; Savings in transportation due to weight reduction; No welding machine used	Not price stability; Expensive transportation; The need for a welding machine
DURABILITY	Predicted durability of at least 80 years	Based on building codes

## BASALT REBAR REPLACEMENT TABLE

Correspondence of diameters in case of equal strength replacement of reinforcement  
**Diameter, mm**

Steel reinforcement A-III (A400C) class	6	8	10	12	14	16	18	20	22	25	28	32
	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Basalt reinforcement	4	6	7	8	10	12	14	16	18	20	22	24

Equal strength replacement of steel reinforcement - selection of composite reinforcement of such a diameter, at which its strength will correspond to the strength of metal

# SCOPE OF BASALT REBAR

## Residential and non-residential construction



## Road and railroad construction



## Concrete products





# BASALT WOOL

Basalt Wool with a density of 50–200 kg/m<sup>3</sup> – these are rather rigid slabs that can be used to insulate interfloor floors, load-bearing structures, upper layers in a load-bearing roof device and other load-bearing structures. Basalt Wool has special characteristics that combine heat resistance with long-term stability. It is made from molten basalt rock, which is converted into fiber with characteristics that no other insulation material has.

In particular, the characteristics of this thermal insulation material are:

- energy savings
- reduction of pollution
- noise absorption
- reducing the risk of fires
- protection of life and property in case of fire

The main difference between Basalt Wool and other types of insulating materials is the fact that basalt-based heat-insulating material can withstand temperatures exceeding 1000 °C. Thus, this product has a higher fire resistance than other insulating materials. This factor becomes decisive in critical situations, for example, in the event of a fire, when people have to leave the premises, and firefighters extinguish the fire before the building is completely engulfed in flames and destroyed.

## WHAT IS THE DIFFERENCE OF BASALT WOOL FROM ROCK AND GLASS WOOL

Rock wool can have different technical characteristics. Depending on the raw material, it can be basalt, glass or slag. Giving preference to a certain type of thermal insulation, rely on its parameters. Basalt products will last much longer. Even after decades, the building does not shrink and retains thermal insulation. In favor of rock wool is also evidenced by its ability to reduce noise levels, therefore it is preferable for urban buildings and structures near highways and railways. Glass wool can be chosen for temporary structures because it is cheaper. Slag materials are also suitable for a limited budget, but should not be used in very humid environments.

## WHAT TO CUT BASALT WOOL WITH

In production, the material is cut on machines. At home, you can use a clerical knife. It is sharp enough, but only suitable for slabs of small thickness. Thicker mats are cut with a special metal hacksaw. It is necessary to cut carefully, without pulling the fibers. Measure with a ruler and mark with a pencil the lines along which the cut will go.

## PRECAUTIONS DURING OPERATION

Insulation materials are environmentally friendly, but you need to be careful when working with them. When tiles are cut, microparticles are released into the air and can enter the lungs. You should wear a respirator or at least a gauze bandage. It is also recommended to protect your eyes with special glasses or a mask. In general, basalt is not dangerous. When it gets on the skin, it does not cause allergies, itching or other symptoms.



## ADVANTAGES

### Thermal insulation:

- ☑ Basalt fiber has high porous qualities, so the material has excellent thermal insulation characteristics. Rock wool retains heat well, keeping it warm in winter and cool in summer.

### High noise absorption:

- ☑ Basalt wool has a high soundproofing ability. This is due to the fact that basalt fibers are woven chaotically, and the space is filled with air, due to which sound waves are retained.

### High temperature resistance:

- ☑ Rock wool has high temperature resistance to sudden changes in temperature, which makes it suitable for use in extreme conditions.

### Non-flammable and high fire resistance (1000°C):

- ☑ Rock wool does not burn under any circumstances. During production, the material is subjected to high heat treatment, therefore it can withstand temperatures up to 1000 ° C.

### Durability:

- ☑ Basalt insulation will serve you for many years. Having made the insulation with this material, you will forever forget about the problems with the cold.

### Moisture resistance:

- ☑ The material is impregnated with water-repellent compounds, which ensures high moisture resistance. In addition, high vapor permeability allows excess water vapor to be removed from the room.

### Geometry, good compression resistance:

- ☑ Rock wool retains its geometric dimensions, the expansion of the fibers does not occur throughout the entire service life.

### Environmental friendliness:

- ☑ The last and most important property of basalt insulation is environmental friendliness. The material is harmless to both people and the environment. In addition, basalt wool has biological and chemical resistance.

### Easy and fast installation:

- ☑ Ready-made mineral wool is easily and quickly installed during installation, and does not require special knowledge and skills.

# APPLICATION



WOOL FOR FACADE



WOOL FOR VENT FACADE



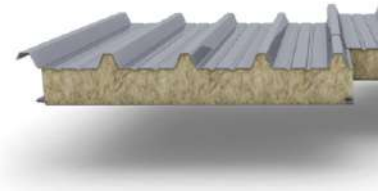
WOOL FOR ROOF



WOOL FOR FLOOR



UNIVERSAL WOOL



WOOL FOR SANDWICH PANELS

# TECHNICAL SPECIFICATIONS

PRODUCTS	THERMAL CONDUCTIVITY AT 25 S, W/(M*K)	HUMIDITY % BY WEIGHT, MAX	WATER ABSORPTION INTO WATER, % BY WEIGHT	COMPRESSIVE STRENGTH AT 10% LINEAR DEFORMATION, KPA MIN.	TEAR-OFF STRENGTH OF LAYERS, KPA MIN.	ORGANIC MATTER CONTENT, % BY WEIGHT, MAX
<b>UNIVERSAL</b>						
50 kg/m <sup>3</sup>	0,032	0,3	10	-	-	1,5
60 kg/m <sup>3</sup>	0,032	0,3	7	10	-	1,3
<b>VENT</b>						
80 kg/m <sup>3</sup>	0,023	0,2	6	23	5,8	3,8
100 kg/m <sup>3</sup>	0,022	0,2	3	28	5,9	3,5
<b>FACADE</b>						
100 kg/m <sup>3</sup>	0,022	0,2	3	28	5,9	3,5
120 kg/m <sup>3</sup>	0,027	0,4	8	32	7,5	3,8
150 kg/m <sup>3</sup>	0,032	0,5	6	37	10,2	4,0
<b>ROOF</b>						
110 kg/m <sup>3</sup>	0,027	0,4	8	32	7,5	3,8
140 kg/m <sup>3</sup>	0,032	0,5	6	37	10,2	4,0
160 kg/m <sup>3</sup>	0,032	0,5	7	45	10,2	4,0
190 kg/m <sup>3</sup>	0,033	0,5	7	48	11,6	4,1
<b>FLOOR</b>						
130 kg/m <sup>3</sup>	0,027	0,4	8	32	7,5	3,8
190 kg/m <sup>3</sup>	0,033	0,5	7	48	11,6	4,1

# CERTIFICATES

Certificate of Registration



## MANAGEMENT SYSTEM CERTIFICATE

This is to certify that the Management System of the

JV LLC MEGA INVEST INDUSTRIAL

Republic of Uzbekistan, Jizzakh region, Farish district,  
Osmonsoy basalt quarry, Site "Osmonsoy-1"

Has been assessed and found to be in Compliance with the requirements of  
Standard detailed below

ISO 9001:2015  
Quality Management System

This certificate is valid for the following Services

Supply of basalt fiber and basalt products

Certificate No.: SISTEMA/UZE/0621Q208

First Surveillance Date: 04.05.2022      Issue Date: 04.06.2021  
Second Surveillance Date: 04.05.2023      Expiry Date: 03.06.2022  
Re-Certification due on: 04.05.2024

Verify the certificate: [www.sistemacerts.com](http://www.sistemacerts.com)






Managing Director

The Organization's documentation and Implementation has been reviewed and found to comply with the relevant standard rules. This Certificate of Registration is based on the evaluation of the mentioned scope and also responsible for maintaining the responsibilities of the relevant standard rules, if any changes in the Activities of the Company, this certificate invalid. The validity of certificate is subject to Successful Completion of surveillance audit on before due dates and its only valid after successful surveillance with continuation later issued by us. QUALITY SISTEMA Certifications and Inspections Pvt Ltd. Corp. Off. FV, SS-III, Sector-17, LDA Colony, Kirti Road, Lucknow-226002.

CE Compliance

## Declaration of Compliance

This Declaration of Compliance is here by issued to the below named company.

Applicable Directive(s):  
Construction Products Regulation – Regulation (EU) No  
305/2011

General Information

Applicant — JV LLC Mega Invest Industrial  
Republic of Uzbekistan, Jizzakh region, Farish  
district, Osmonsoy basalt quarry, Site "Osmonsoy-1"

Manufacturer — JV LLC Mega Invest Industrial

Product Description — 1. Basalt Roving Fibres  
2. Basalt Fibres (Chopped)  
3. Basalt Masonry Mesh  
4. Basalt Rebar  
5. Basalt Geogrid

Trade Mark — JV LLC Mega Invest Industrial

Intended Usage On: — Used as reinforcement in construction




Issued on 03-Jun-2021



CE Compliance

Certificate number: OS683249

This certificate is valid from 03-Jun-2021 until 02-Jun-2022

This Certificate is issued under following conditions:  
The product is declared by the applicant as complying with the applicable  
directives. UR has performed a review of the technical information of the  
product. The applicant is required to inform UR of any changes to its product  
design and technical documentation. The CE mark may be used by the  
applicant, for this product, under the sole responsibility of the applicant.



Certification Manager

UNIVERSAL REGISTRARS

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