



## ANALYSIS AND INDICATORS OF BASALT THREAD

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### ABSTRACT

The article analyzes basalt textured fiber at the "MEGA TEXTILE" enterprise and provides information on its composition, where and how it is obtained.

### KEYWORDS

Basalt fiber textured yarn, yarn strength, number of turns.

### INTRODUCTION

Analysis of physico-mechanical properties of yarns made in the laboratory of "MEGA TEXTILE" M.CH.J.

Physico-mechanical properties of Bazart thread ( untwisted thread)

$N_e$	$N_m$	T	$U_m\%$	$CV_m\%$	EL	RKM	KR
12/1	20	50	0.24	42.47	2.31	152.515	0-6



S Variation index of V-threads (change in thread)

RKM is the relative tensile strength of the thread

EL is the deformation of the thread when the force is applied

KR is the number of turns in the thread

Physico-mechanical property indicators of Bazart yarn (in the case that the yarn is twisted)

$N_e$	$N_m$	T	$U_m\%$	$CV_m\%$	EL	RKM	KR
12/1	20	50	0.24	38.26	2.20	210.52	192

Basalt fiber - produced from mineral fertilizers (basalt rocks) by melting and turning the solution into fibers. Basalt fibers are a natural raw material of magmatic origin. Continuous fiber, staple fiber, short fibers and thin fibers are produced and used from basalt raw materials. Continuous fibers, solid and composite materials and products, fabrics and non-woven materials, heat-insulating fabrics and plates, thin fibers, high-quality heat- and sound-insulating fabrics (fabrics, plates, cardboard), filtering materials are produced from basalt fiber. Basalt fibers are produced from igneous basalt rocks. In addition, basalt fibers are resistant to moisture and have high fire resistance. Basalt fibers have a diameter of 8 - 20 microns, the length of the fibers is 25 - 50 kilometers and more. The diameter of the elementary fibers is 6 - 12 microns, the length is 5 - 12 mm. Fine basalt fibers (STBF). The elementary diameters are 0.5 - 3 microns, the length is 10 - 50 mm. The continuous fibers of basalt solutions have much higher strength properties. The tensile strength of basalt fibers is from 2800 to 4800 MPa. Basalt fibers are highly resistant to chemically active substances (acids, alkalis, salt solutions) as well as to high temperatures and open flames. Resistance of basalt fibers to ordinary drinking water and sea water is 100%, alkalis 96% and acid 94%. Due to the high strength of basalt fibers and their high resistance to chemicals, they are used in the production of concrete and asphalt concrete reinforcement, pipelines,

reservoirs for the chemical and petrochemical industry, hydraulic engineering, coastal and marine construction. Basalt fibers can be used for a long time at temperatures from 200 C to + 600 C. Basalt fibers are fire-resistant, they are also resistant to temperature effects of + 90, ... + 1200 C during a fire. Heat-insulating and fire-resistant materials based on basic and ultra-thin fibers withstand normal fire, do not emit smoke when heated and exposed to flame. The hygroscopicity of basalt fibers is 6 times lower than that of glass fibers. In the aviation and shipbuilding industry, heat- and noise-insulating materials based on very thin basalt fibers are used, because they do not absorb excess moisture, do not burn, and are resistant to high temperatures. Basalt fibers are used in the production of insulating fabrics for dielectrics, electromagnetic radiation, radio rays and magnetic fields, as well as in the production of antennas. These properties make basalt fibers more durable than glass fibers and chemical fibers. Basalt fibers are more resistant to erosion and other microorganisms. Fabrics made from basalt fibers are widely used in the construction industry, automobile industry, aviation industry, shipbuilding and energy industry. Basalt texture is a very important raw material in these industries due to its durability and strength, as well as heat resistance. The properties of basalt fibers, their strength, fire resistance, resistance to various external influences and chemical substances, increase the



demand for the use of basalt fibers in the production of heat-resistant materials, as well as fire-resistant fabrics.

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