Introduction - What Is Basalt Rock Fiber?

This is not a kind of rock that you would normally see outside of your residence, or for that matter really anywhere else that you may travel to or visit. Believe it or not, Basalt Rock is actually created from the lava that comes out of the volcanoes as they erupt, and as they eventually cool down to a reasonable level. In fact, Basalt has been deemed to be the most common rock that is found from within the earth's crust.

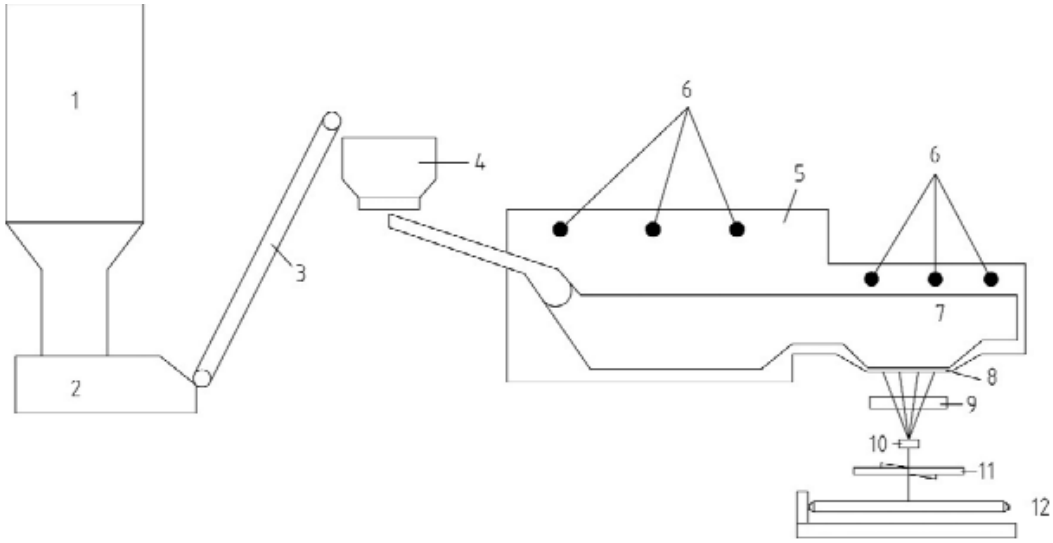
The quality of Basalt Rock that is created is a function of three individual components:

- The source of lava, and the specific type of it that comes out from the volcano when eruptions occur;
- The cooling rate of the lava (these will of course vary greatly, depending upon where the volcano is located geographically in the world);
- Any other elements from the external environment that comes into contact with lava is it continues in the cooling process.

From here, the Basalt Rock is then transformed into various fibers, which are typically used for construction purposes, such creating new buildings, building bridges, etc. In order to create these fibers, the Basalt Rock is first collected from its point of origin, and then it is transferred over to a different location to where it where it can be reheated back to levels of 1,450 to 1,500 degrees Fahrenheit.

It is important to note here that the Basaltic Rock is actually crushed into a very fine powder before it is heated once again.

The equipment that has primarily been used so far to make these Basalt Fibers is known as Platinum Rhodium Alloy Bushing, the crusher, an applicator, any special chemical compounds that have to be used, the conveyor belt, a roving machine, and the loom. All of this can be seen in the illustration below:



1-Bin, 2-Feeder, 3- Lift conveyor, 4- Quantitative feeder, 5- Primary melting zone of raw materials, 6- Natural gas nozzle, 7- second stage melting zone (front furnace), 8- Platinum odium alloy bushing , 9- impregnating compound configuration equipment, 10- buncher, 11- Fiber tensioner, 12- Automatic fiber winding machine

Figure 2. Manufacturing process of Basalt fiber.

(SOURCE: 1).

At the end of this process, the fibers are then created. The fibers that are deemed to be the most usable for commercial purposes have a chemical composition that is moderately high in acidity (at least 46% silica based and low iron content).

The Applications For Basalt Rock Fibers

As it was mentioned earlier Basalt Rock fibers are primarily used for construction purposes, as it offers a number of key advantages over other materials (this will be further discussed in the next section of this article). Another great usage for it is also in the development of new roads, highways, and other rural routes. It is also a great fixing agent when any type of road needs to be fixed, whether it is due to heavy usage, or threats from the external environment, such tornadoes, wind, and hail storms.

Another popular application of Basalt Rock fibers is the automobile industry. Foe example, it can be used for the following:

- Fortifying the cylinders in the car engine;
- The creation of brake pads;
- The development of insulation pads for the exhaust system;
- The creation of fillers for the muffler;
- Making new parts for either the interior or exterior of the car;
- Creating thermoplastic compounds for other components of the car that needs it.

Other far reaching examples include:

- The creation of industrial filters;
- Developing thermal barriers;

- The manufacturing of composite materials that can be used for producing sporting goods;
- Building the blades for wind power turbines;
- The creation high pressure pipes for the transportation of different types of fluids;
- Creating anything that is related to maritime transportation, such as:

    *Boats

    *Yachts

    *Ship hulls

    *Surf boards

Finally, it used for building reinforcement of nuclear facilities, and even in agriculture, in the creation of new irrigation pipes.

The Advantages Of Basaltic Rock Fibers

Some of the strategic advantages are as follows:

- It has far better mechanical qualities and features when compared to Fiberglass;
- It is far cheaper to put into production when compared to Carbon Fiber;
- It is a considered to be a "green" product in the sense that it is deemed to be environmentally friendly, without polluting the Earth's atmosphere;
- It is deemed to have the following properties:

    *It has god mechanical based properties

    *It is acid – alkali resistant

    *It has robust electrical properties

    *It has a very high degree of permeability

    *It can be used for sound proofing

    *It has a high degree of insulation qualities

    *It can be used to create fire retardant textiles, especially for firemen

    *When compared to other fiber based compounds, it has on average a 20% elasticity rate

    *It is highly resistant to acids and other forms of alkali

    *It possesses no biological harm to humans or other forms of life

    *It is very environment friendly, thus it can be recycled very easily

The Market Segmentation of Basaltic Rock Fiber

One of the key questions you might be asking is who actually makes Basalt Rock Fiber? At the present time, there are a limited number of key players in the market, and these include the following vendors:

- Kammeny Vek
- Hengdian Group
- ISOMATEX BSALTEX NV
- Mafic SA
- Shanxi Yaxin Group
- Jiangsu Green Materials Valley New Material T & D Co
- Sudaglass Fiber Technology

At the present time, it is the Pacific Rim that commands the market share for the demand of Basalt Rock Fiber. The main driver here are both the automotive and transportation industries. North America, primarily the United States, is deemed to be the second largest consumer of Basalt Rock Fiber, driven by the demand in the construction industry, and the need for eco friendly building material.

Europe can be positioned in third place, fueled by the demand for more advanced composites in the automobile industry. In sharp contrast, it is South America and the Middle East that will have the least demand for Basalt Rock Fibers, as the demand for substitutes is much higher.

From an economic standpoint, the price of Basalt Rock Fiber is much higher than other, comparative products. The main reason for this is that are the limited number of vendors manufacturing it. But it is expected that in the coming years,. The price should drop as production ramps up on a global basis.

Conclusions

Overall, this article has examined Basalt Rock Fiber is, and the potential for its market dominance in the coming years. If you are considering using it, please contact us today, so that we can answer any questions you may have, or provide any other kind of assistance.

Sources

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