



INDUSTRIAL SAFETY ISSUES IN BASALT FIBER TECHNOLOGY

SEPTEMBER, 2018



Basalt fibers
GREEN REINFORCEMENT

**Production of Basalt Textile Fiber is based on
International Patent # PCT/GE02/00005 GE 04 993**

Basalt stone mining



Basalt stone melting
on 1400 degrees



Primary thread is
assembled into roving



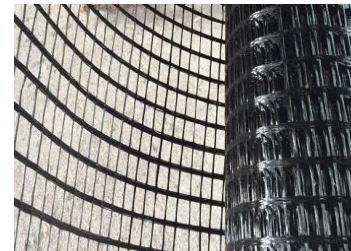
Rebar



Rebar mesh



Chopped fibers



Geogrid



Laminates



Non-woven

Basalt Fibers LLC industrial group, together with leading German research centers, developed basalt reinforcement products technologies

IAB Weimar:

Weimar Institute of Applied Construction Research

IBU Trier:

Institut für Bauverfahrens und Umwelttechnik

TU Chemnitz

Institute of Lightweight Structures and Polymer Technology

TU Dresden

Institute of Construction Materials

Carbon Concrete Composite- C³

- Research project with 140 Partners
- .Basalt fiber based projects with:

HTWK Leipzig

TU Berlin

TU Dresden- ITM, IFB



TECHNISCHE UNIVERSITÄT
CHEMNITZ



- ✓ Basalt fibers production is ecologically clean
 - Production of the fiber is the result of the basalt rock physical melting
- ✓ Non-residual
 - Technological outcome coefficient of the textile roving from the basalt rock is $\eta = 0.9$
- ✓ Minimum CO_2 emission among high temperature technologies
 - Production of 1kg basalt textile fiber, emits only 0,6kg CO_2



Fiber production

stone fraction: approx. 40mm



processing basalt stone

melting temp: 1400°C



melting process

assembled Roving



forming fiber

Furnace department

✓ The technological process is held on

← 1400 °C →



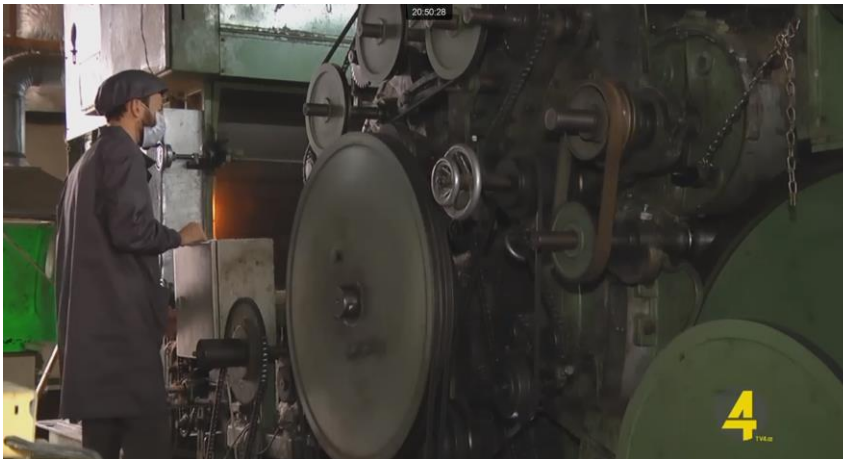
Assembling and knitting department



- ✓ The technological process is held in industrial climatic conditions



Nonwoven department



- ✓ The technological process is exceptional with the increased level of dust

Rebar department



- ✓ The use of organic binders in the technological process requires intensive local suction systems



Thank You
For
Attention