PRODUCT

BASALT FRP REBAR

Basalt FRP rebar represents non-metallic reinforcement rods of various actual lengths and outer diameter with dimensions from #2 to #8. Basalt FRP rebar is produced by the method of pultrusion and epoxy resin. Due to unique performance properties, it is an effecient and cost effective alternative to steel reinforcement.

Our production method allows us to compete in cost to steel rebar when taken into account equal strength replacement.

BASTECH®

Basalt Engineering LLC
188 Brooke Road
Winchester, VA 22603
USA

www.basalt-usa.com
E: info@basalt-usa.com
T: 1-888-244-7865

KEY FEATURES & BENEFITS

BASTECH® basalt fiber reinforced polymer (BFRP) offers numerous innovative benefits to construction and infrastructure industries. Offering an alternative and distinct advantage over steel rebar.

- Tensile strength 2.5 times that of steel
- Totally resistant to seawater / alkaline
- Carbon footprint 60% less than steel – fully sustainable life cycle
- 30% Reduction in concrete coverage
- Transparent to radio frequencies
- Non-conductive, non-magnetic and UV-stable

APPLICATIONS

- Seawall and Marine related construction
- Ground work foundations
- Concrete structures and slabs
- Precast concrete units
- Infrastructure - bridges & highways - Pavement
- Sprayed Concrete installations
- Submersed concrete structures
- Roads, ports, airports

BASALT ENGINEERING

ABOUT US

Basalt Engineering, LLC is a manufacturing company based in Virginia, USA producing a range of downstream products from Continuous Basalt Fiber (CBF) for the construction industry. These products include BASTECH® Basalt Fiber Reinforced Polymer Rebar.

TECHNOLOGY

BASTECH® FRP Rebar is a cost effective and environmentally frendly substitution for steel

In production of BASTECH® rebar only two components are used: Continuous Basalt Fiber (CBF) and inert resin. CBF is a product of a single step extraction from molten basaltic rock without the use of any chemicals. Basalt Rock is a single-component resource of natural origin; it is an ecologically clean raw material. CBF is then mixed with resin and pultruded through a pultrusion line to produce final product.

BENEFITS

The process requires pulltrusion of basalt roving mixed with resin through production lines. The production lines can be custom configured to the customer's specifications. The product complies with ACI440, ASTM D7957, ASTM D8448, and FDOT 932-3 requirements.

Sustainable	The main components of Bastech® rebar - basalt fiber is manufactured directly from basalt rock in a single-melt process, and comprises only a single raw material. On average 60% less CO2 than steel
Stronger	Bastech® rebar is 5 times lighter and 2.5 times stronger than its steel counterpart
Rust free	Bastech® rebar is naturally resistant to alkali, rust, microorganisms and acids

BASTECH® Rebar Data Sheet - 2023

		#3	#4	#5	#6	#7
Guaranteed tensile strength	Mpa	1296	1001	1004	937	902
[ASTM D7205]	ksi	188	145	146	136	131
Minimum tensile modulus	Gpa	54	50	49	50	48
[ASTM D7205]	ksi	7787	7235	7138	7251	6963
Guaranteed transverse shear capacity	Mpa	198	187	178	173	177
[ASTM D7617]	ksi	29	27	26	25	26
Resin		epoxy				
Effective cross-sectional area	mm^2	81.7	139.3	214.6	310.3	401.3
[ASTM D7205]	in^2	.127	.216	.333	.481	.622
Effective diameter	mm	9.5	12.7	15	19.1	22.2
	in	.375	.5	.625	.750	.875
Nominal cross-sectional area	mm^2	71	129	199	284	387
[ASTM D7957 Table 3]	in^2	.11	.20	.31	.44	.60
Weight	lbs/ft	.102	.18	.281	.404	.545

BASALT ENGINEERING