

润强丝®-VI

Polyacrylonitrile Fiber



Brief Introduction

RQS®-VI is comprised of short, thin fibers, predominantly comprised of Polyacrylonitrile (PAN), with a non-circular section shape made by wet spinning for fiber-reinforced high-performance concrete and mortar. The fiber possesses excellent dispersion in cement-based materials with an effective bonding property between fiber and the matrix due to the surface treatment of hydrophilic modification. RQS®-VI can decrease and impede the plastic and drying shrinkage of cement-based materials. It can also significantly improve the crack-resistance, impermeability, impact and fire resistance of cement-based materials.

Product Features

- **Unique cross section shape.** The bonding property between PAN fiber and the cement matrix material is excellent due to its non-circular cross section.
- **Excellent ageing resistance and adaptability.** Thermal-oxygen aging resistance and a resistance to UV aging capacity are significantly increased by a unique anti-ageing treatment. Chemical property is extremely stable and also it has excellent compatibility with other concrete admixtures.
- **Effectively reduce micro-cracks and permeability.** RQS®-VI is dispersed uniformly in concrete/mortar, can effectively prevent crack emergence and development, hinder aggregate segregation, reduce bleeding and prevent crack settlement. Under a dosage of 0.1% in volume, the cracking area of concrete/mortar can be decreased by more than 90%.
- **Impact and wear resistance increase.** RQS®-VI fiber is able to absorb the shock energy in concrete/mortar, and effectively reduce the stress concentration and enhance the impact resistance.

Technical Data

Following data are the typical characteristics of RQS®-VI, which can be adjusted slightly depending on customer's needs.

Item	Value	Item	Value
Fiber type	monofilament	Elongation at break, %, ≤	20
Diameter, μm	10-20	Resistance to alkali, %, ≥	98.0
Length, mm	6,12 (or customize)	Anti-ageing	Excellent
Density, g/cm ³	1.18±0.01	Thermal conductivity	Extremely low
Tensile strength, MPa, >	500	Stability	Excellent
Elastic modulus, GPa, >	7.0	Safety	Non-toxic

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Method of Use and Matters Needing Attention

- **Dosage** : The standard range of the RQS®-VI addition is 0.60~1.80kg/m³.
- **Length choice**: 12~19mm fiber for concrete and 3-12mm for mortar.
- **Mixing**: Mixing time should be lengthened for good fiber dispersion.
- **Design advice**: Do not use the polypropylene fiber to substitute the structural strengthening materials. Do not reduce main structure size.

Packaging and Storage

- **Packaging**: Paper package with 0.6kg/bag, 1.0kg/bag, the packaging materials are plastic film bags or water-soluble paper bags; large packages are plastic bags or cartons with net weight of 10kg or 15kg. Other specification packages are available according to user 's requirements.
- **Storage**: The packages should be stored in a cool and dry place. Protection from water should be ensured during transportation. The maximum product life is within two years if maintained in the proper conditions.

Security Matters

RQS®-VI contains no hazardous substances that require labeling. However, using standard handling procedures with the product is recommended.

Technology and Service Characteristics

To guarantee the desired concrete performance, we provide a technical consulting service dealing with the design of concrete mix proportion and experiments on the optimization of mix proportion. Our technical staff offers an on-site directing service for free.

NOTE : Field service, where provided, does not constitute supervisory responsibility. Suggestions made by SOBUTE whether verbal or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, but not SOBUTE, are responsible for carrying out procedures appropriate to the specific application.



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江苏苏博特新材料股份有限公司
Sobute New Materials Co.,Ltd.

地址：江苏省南京市江宁区醴泉路118号 211103
电话：025-52837588 传真：025-86630885
网址：www.cnjsjk.cn Email: info@cnjsjk.cn



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GB/T19001-2016 idt ISO9001: 2015
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