

Binder+ – 3D-reinforcement solutions

An acrylic fiber that binds mortar mixture components, creating a highly cohesive 3-dimensional network with enhanced mechanical performance and durability.

The use of Binder+ fiber in plaster and cement matrices provides a solution to overcome common problems resulting from curing [water evaporation] these materials.

Properties

Strength without brittleness

Strongly fiber-bound 3D structure and cohesive action of Binder+ allowing:

- Tensile strength in the cement matrix due to high elastic modulus of the fiber
- Crack and micro-crack prevention during “green phase” [prevents plastic shrinkage]
- Effective bridge mechanism provided by the use of fibers with the optimal aspect ratio [a very wide range of length-diameter ratios are available]
- Chemical and mechanical adherence to the cement matrix

Thermal and chemical resistance

PAN fiber’s high resistance to most chemical and physical agents provides a solution for durable reinforcement.

- Resistance to outdoor exposure [no rust or UV alterations]
- Resistance to the growth of mildew, fungi, etc.
- Resistance to cement alkalinity, acids and organic solvents
- Thermal resistance
- Long term stability

Applications

- Industrial mortars
- Shot concrete
- Floor screed
- Repair mortar
- Stucco
- Plaster
- Fine graded materials



Recommended usage conditions of Binder+

Binder+ was especially designed to allow easy and convenient handling. The special finish provides excellent dispersion in aqueous cement mixtures. Binder+ fiber is supplied in small PE or hydro-soluble bags (0.25 – 1.5 kg) and big bags (10 – 15 kg).

Reference dosing

| Material | L62 |
|----------------------------|-----------------------------------------|
| Mortars, renders, plasters | 0.10 – 0.15 % total mass of the mixture |
| Concrete | 450 – 550 g/m ³ |

Material data of Binder+

| Typical properties | Units | L62 | | | |
|-----------------------------------|-------------------|-----------------------------------------------------|-----------------------------------------------------|----------------------------------------------------------------|--------------------|
| Fiber count | dtex | 0.9 | 2.5 | 6.7 | 17 |
| Cut length* | mm | 4, 6, 8, 12, 24 | 4, 6, 8, 12, 24 | 4, 6, 8, 12, 24 | 4, 6, 8, 12, 24 |
| Nominal diameter | µm | 10 | 16 | 27 | 43 |
| Number of fibers per g (cut: 6mm) | | 1851900 | 666700 | 248800 | 98050 |
| Tenacity min. | cN/tex / g/dtex | 60 / 6.0 | 50 / 5.1 | 46 / 4.5 | 38 / 3.8 |
| Tensile strength min. | MPa | 690 | 580 | 520 | 440 |
| Elongation | % | 14 – 18 | 14 – 18 | 14 – 18 | 16 – 20 |
| Elastic modulus | cN/tex / GPa | 900 / 10.6 | 890 / 10.4 | 840 / 9.8 | 690 / 8.1 |
| Appearance | | Staple fiber in bundles | | | |
| Color | | Raw white | Raw white | Raw white | Raw white |
| Cross-Section | | Kidney shaped | Kidney shaped | Kidney shaped | Kidney shaped |
| Lustre | | Bright | Bright | Bright | Bright |
| Density | g/cm ³ | 1.17 | 1.17 | 1.17 | 1.17 |
| Residual solvent DMAC | % | <0.3 | <0.3 | <0.3 | <0.3 |
| Heat resistance | | Good short-term processing temperature up to 220 °C | | | |
| Acid resistance | | Good | Good | Good | Good |
| Alkali resistance | | Good | Good | Good | Good |
| Hydrolysis resistance | | Good | Good | Good | Good |
| Application | | Industrial mortars Shot concrete Floor screed | Industrial mortars Shot concrete Floor screed | Repair mortar Stucco Plaster Fine graded materials | Mortar Concrete |

* Other cut lengths available on demand

