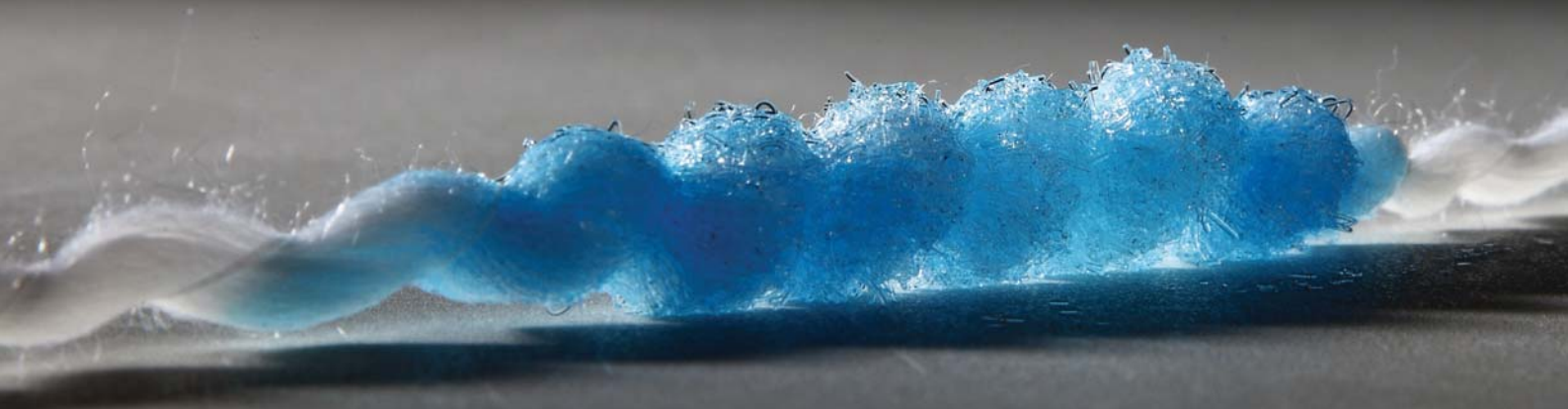




SAF™ | CABLE

Cost-effective, clean and
lightweight water-blocking



Why water-block?

Damaged cables can start to take on water. A SAF™ water-blocking spun yarn incorporated into a cable will rapidly absorb the water at the point of damage and swell to form a water impermeable barrier, blocking any further water ingress. Any resulting cable damage is then minimal, fully contained and easy to locate and repair.


The logo for SAF™ consists of the letters 'S', 'A', and 'F' in a bold, blue, sans-serif font. The 'S' and 'A' are connected at the top, and the 'F' is positioned to the right of the 'A'. A small 'TM' trademark symbol is located at the top right of the 'F'.

Super Absorbent Fibre

SAF™ is the optimal technology choice for water-blocking and can add a new high performance dimension to your power cable product offering. Not only is it easy to spin with other staple fibres, integration within the final yarn is more uniform compared to using a coating or a powder. The absorption rate and swell height can meet specification by selecting the most appropriate SAF™ grade and fibre blend.

Spun SAF™ yarns offer cable manufacturers a cost-effective and lightweight solution. Supplied on bobbins (size to suit manufacturing requirements) they are easy to onward process, require fewer line stops and can be wrapped around and/or placed along the length of the cable in voids vulnerable to water ingress. They are also suitable for smaller spaces where other 'dry' technologies are often too bulky and likely to dust.

SAF™ water-blocking spun yarn technology reduces the mess, and associated maintenance costs that are common when using a 'wet' compound or loose powder and can withstand extreme temperatures sometimes experienced during cable operation. They also negate the need for different tapes/widths and so less working capital is tied up in stock.



Water-Blocking – Your Choice

Introducing SAF™ spun yarns provides many benefits along the supply chain:

- Improved super absorbent distribution and performance
- Rapid absorption
- Control of absorption rate and swell height via SAF™ grade and fibre blend
- Potential combination with cable strengthening materials
- One yarn type can be used throughout
- Easier handling/installation
- Resistance to thermal degradation
- Lighter weight cables
- Cost-effective solution for protection of the whole cable

An independent report has shown that using SAF™ spun yarns can:

- Reduce water-blocking raw material costs by 35% when used throughout the whole cable
- Have a large impact on cable weights, with reductions of circa 90%* compared to using a tape or compound. This dramatically impacts logistic and installation costs
- Save up to 90% on installation costs compared to preparing a 'wet' filled cable end

*this figure is based on using a SAF™ spun yarn in the first six layers of a power cable core



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when used throughout
the whole cable

Weight reductions of up to
90%*
compared to using a
tape or compound

Save up to
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SAF™

- SAF™ absorbs water rapidly
- SAF™ is highly absorbent - up to 200 times its own weight in demineralised water
- SAF™ looks and handles like a textile fibre
- SAF™ spun yarns result in consistent absorption performance and media integrity throughout
- SAF™ only begins to thermally decompose extremely slowly at temperatures $>200^{\circ}\text{C}$
- SAF™ fire retardant grades are available, (LOI >40)
- SAF™ fibre density is 1.4g/ml
- SAF™ can be blended with a range of synthetic and natural fibres. Polyester is a popular choice
- SAF™ is a non-irritant and safe to handle
- No adhesives or thermal bonding required



Cable Product Range Overview and Technical Data

Code explanation, E.g. 102/52/10C 102 = product ref 52 = staple length (mm) 10 = dtex C=Cable

102/52/10C

- Standard fibre grade
- Offers a good balance of gel quality and absorbency properties, particularly under load

102/80/10C

- Standard fibre grade for semi worsted conversion processes
- Offers a good balance of gel quality and absorbency properties, particularly under load

112/52/10C

- Low wet-integrity fibre grade
- Higher free swell than type 102/52/10C
- Useful when absorbing water or solutions with a high salt content

Fibre type	Staple length (mm) (Mean Value)	Moisture content (%) (Typical)	Count (dtex) (Mean value)	PH (Saline extract) (Mean value)	15-min free swell capacity (0.9% saline)	15-min free swell capacity (dm)	0.3 psi absorption under load (0.9% saline)	0.3 psi absorption under load (dm)
52mm								
102/52/10C	50	14	9	5.5	48	>120	30	45
112/52/10C	50	14	9	5.5	60	>160	22	95
80mm								
102/80/10C	78	14	9	5.5	48	>140	30	45

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