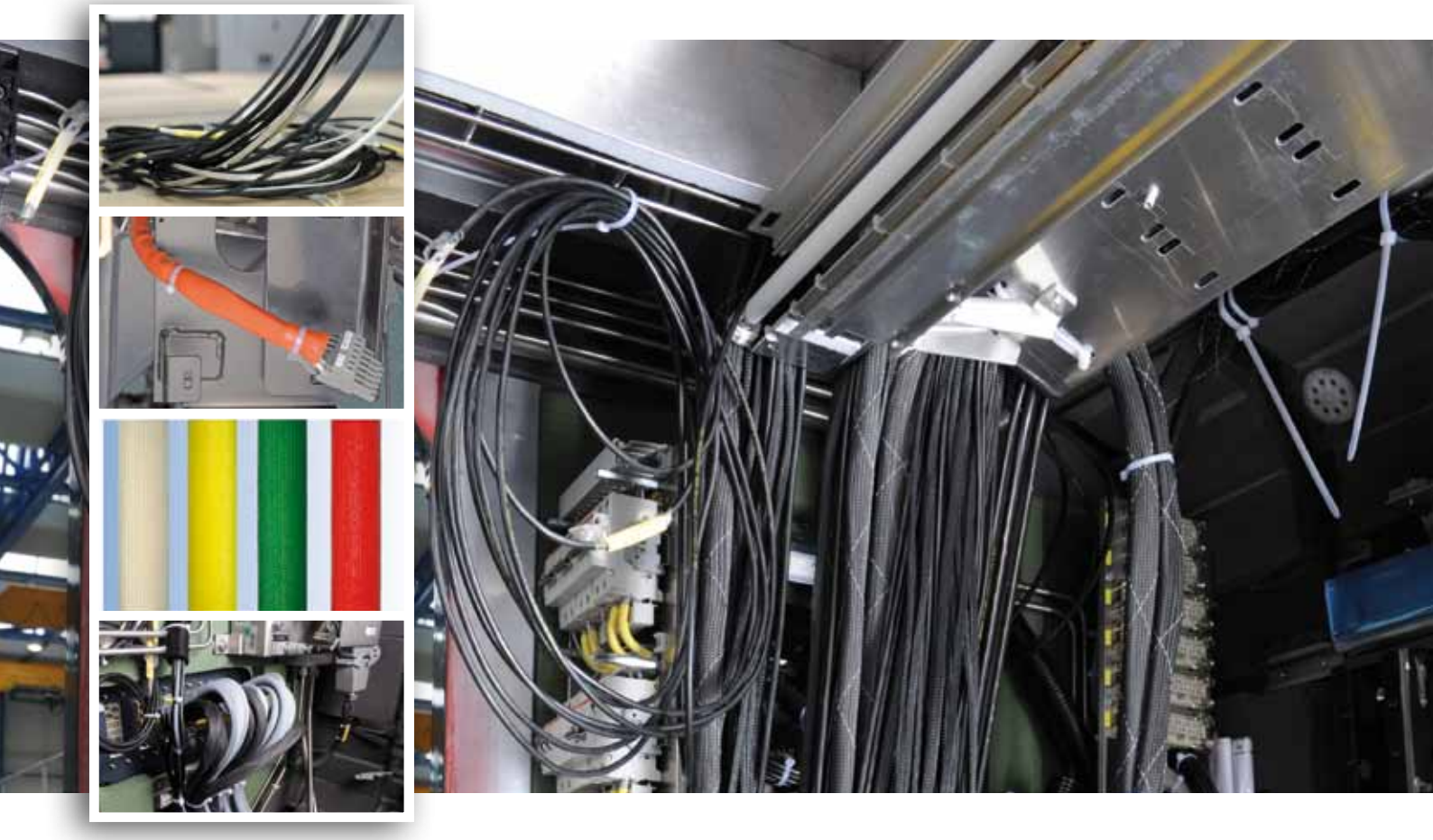
AGROflex and AGROtube

Braided Sleevings and Braided Glass Fibre Sleevings



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AGROflex
Braided sleevings made of polyester and polyamide

Braided tubes made of polyester and polyamide have been part of the range of products offered by AGRO for many years. Why then should this issue be of interest?

In cooperation with renowned customers, we have defined the product properties which are especially important for the user and have tried together with production technicians to translate these criteria into improved products.

The most notable change is the more pointed braid angle in which the individual threads are interwoven. This new way of braiding, combined with a slightly thinner monofilament in the polyester version (0.22 mm as opposed to the 0.25 mm of the predecessor product) results in an extremely flexible tube and in outstanding tube-fitting qualities. The meshwork can be fitted on to areas twice as large as its nominal width.
The more pointed braid angle permits smoother insertion of cords and cables even across long distances. The individual filaments run virtually parallel to the cables and do not get in their way as an obstruction or “catching area”.

Both the polyester and the polyamide braided sleeves have been tested in accordance with the latest rail vehicle standards (CENT/TS 45545-2) and can therefore be safely used in this application area.

For which applications do we recommend a polyester braided tube, and when is it more advisable to use a polyamide meshwork?

If it is important that the braided hose is especially flexible, when available space is limited, or narrow bends are required, we recommend the **polyester** braided sleeving (i.e. for control cabinets, electric appliances, and rail vehicle construction). It goes without saying that the polyester meshwork is more cost-effective than one made of polyamide.

The braided tube made from **polyamide** with a monofilament thickness of 0.25 mm is especially abrasion-resistant and therefore recommended for extremely dynamic applications (i.e. robotics, automation, machine and plant engineering).

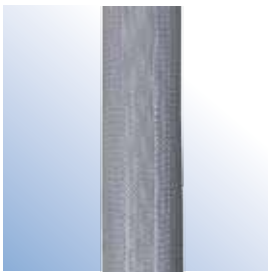
AGROflex PET
Braided cable sleeving polyester

Material:	Polyester PET
Monofibre:	Ø 0.22 mm
Characteristics:	Easy assembly even in case of long distances. Highly flexible, resistant to abrasion, free of cadmium, chrome 6, formaldehyde, nickel, plumb, PVC, halogenes and graphite, non inflammable acc. to DIN 75200 (FMVSS 302), good resistance ot fuel, mineral oils and fatty matters
Approved:	CENT/TS 45545-2 (HL2 black, HL3 grey) DIN 5510-2 (S4/SR2/ST2) NF F16-101 (I2/F1)
Temperature range:	-50°C / +150°C
Expansion:	Expansion ratio 1:2

Braided cable sleeving
Black matt

Art.-Nr.	NW	⌀min mm	⌀max mm	OFB %	
6875.40.03	3	3.0	6.0	86	200
6875.40.04	4	4.0	8.0	85	200
6875.40.05	5	3.0	10.0	89	200
6875.40.08	8	6.0	14.0	81	150
6875.40.10	10	8.0	20.0	79	150
6875.40.15	15	13.0	25.0	81	100
6875.40.20	20	15.0	30.0	77	100
6875.40.24	24	24.0	38.0	82	100
6875.40.36	36	34.0	60.0	78	100
6875.40.50	50	45.0	80.0	82	50

Braided cable sleeving
Grey matt



Art.-Nr.	NW	⌀min mm	⌀max mm	OFB %	
6875.70.03	3	3.0	6.0	86	200
6875.70.04	4	4.0	8.0	85	200
6875.70.05	5	3.0	10.0	89	200
6875.70.08	8	6.0	14.0	81	150
6875.70.10	10	8.0	20.0	79	150
6875.70.15	15	13.0	25.0	81	100
6875.70.20	20	15.0	30.0	77	100
6875.70.24	24	24.0	38.0	82	100
6875.70.36	36	34.0	60.0	78	100
6870.70.50	50	45.0	80.0	82	50

OFB = percentage of the surface covered by fabric

Price information upon request

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AGROflex PA
Braided cable sleeving polyamide

Material:	Polyamide PA 6.6
Monofil:	Ø 0,25mm
Characteristics:	Highly flexibile, good abrasion resistance, free of cadmium, formaldehyde, halogenes and graphite, non inflammable acc. to DIN 75200 (FMVSS 302), good resistance to fuel, mineral oils and other chemical products
Approved:	CENT/TS 45545-2 (HL3) DIN 5510-2 (S4/SR2/ST2) NF F16-101 (I3/F2)
Temperature range:	-40°C / +125°C
Expansion:	Expansion ratio 1:2

Braided cable sleeving polyamide
Black

Art.-Nr.	NW	⌀min mm	⌀max mm	OFB %	
6850.40.03	3	2.5	6.0	85	100
6850.40.04	4	3.0	8.5	91	100
6850.40.05	5	4.0	10.0	95	100
6850.40.06	6	4.0	9.0	85	100
6850.40.08	8	6.0	11.0	90	100
6850.40.10	10	7.0	13.5	90	100
6850.40.12	12	9.0	17.0	94	100
6850.40.14	14	10.0	22.0	85	100
6850.40.16	16	14.0	23.0	87	100
6850.40.18	18	16.0	24.0	88	100
6850.40.20	20	18.0	27.0	83	100
6850.40.22	22	18.0	32.0	84	50
6850.40.24	24	21.0	34.0	71	50
6850.40.25	25	18.0	34.0	85	50
6850.40.30	30	26.0	40.0	88	50
6850.40.35	35	28.0	40.0	88	50
6850.40.40	40	28.0	42.0	93	50
6850.40.45	45	38.0	58.0	84	50
6850.40.50	50	35.0	80.0	88	50
6850.40.70	70	55.0	80.0	91	50

OFB = percentage of the surface covered by fabric

Grey upon request

Price information upon request

AGRO
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AGROtube FRS
Braided glass fibre sleeving with silicone coating

Thermal protective qualities for high-temperature applications

Mechanical kink protection of wires and cords

With the AGROtube FRS braided glass fibre sleevings, AGRO is extending its range of braided sleevings to include products for use in high-temperature applications.

Properties

Coated with a heavy-duty silicone dispersion, the meshwork made from glass filaments is extremely flexible, permanently elastic, abrasion-resistant, water-repellent and temperature-resistant up to a maximum of 250°C. As a mechanical kink, abrasion and heat protection, such meshworks have become indispensable in cable set production. The smooth inner walls make it easy and quick to push through individual leads.

As insulation tubes with excellent electric insulation properties, AGROtube FRS can in principle be endowed with any degree of electric strength, the standard strength being 2.5 to 10 kV.

The even surface of the tubes is not adhesive – sticking to other materials is thus prevented.

AGROtube FRS braided glass fibre sleevings with silicone coating have high restoring force (the meshwork slides back into its original position after it has been pulled open for insertion), which is of vital importance for installation and subsequent insulation in the connection areas.

Areas of application

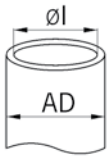
Silicone-coated braided glass fibre sleevings are ideally suited for use in the construction of rail vehicles, transformers, electric motors, current and instrument transformers, and in the automobile industry. The electric protective qualities are sought after in the construction of electric motors for wires and cords. Thermal protective properties are important for coil connections or connecting lines of machines under intense thermal conditions.

A classic application area of these products is the electric appliances industry (whiteware) where both good dielectric values and high temperature resistance are vital.
In contrast, for use as roll covers, e.g. in continuous furnaces, high abrasion resistance and the anti-adhesive effect of the coating are of great importance.

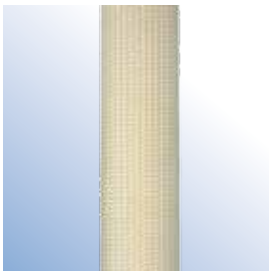
Potential buyers of AGROtube FRS braided glass fibre sleevings include manufacturers of transformers, voltage converters, instrument transformers, electric motors, rail vehicles, electric appliances as well as suppliers of heating systems and control technology and in electrical engineering and the automotive supply industry.

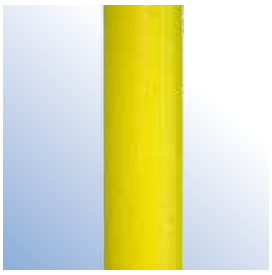
AGROtube FRS
Braided glass fibre sleeve with silicone sheath

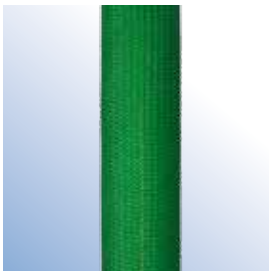
Dielectric strength 2.5 kV



Material:	E-glass braid
Sheath:	Silicone FRS
Characteristics:	highly flexible, abrasion resistant, heat-resisting with excellent electric properties. Non
Flammability:	FMVSS 302 (DIN 75200)
Temperature range:	-40°C / +240°C
Dielectric strength: (DS)	2.5 kV







Braided glass fibre sleeve
Dielectric strength 2.5 kV

Typ-Nr.	trans-parent	gelb yellow	schwarz black	grün green	rot red	Ø I Code	DF DS	Ø I mm	Ø A mm	
6877.	10.	30.	40.	50.	60.	**010.**	**25**	1.0	1.8	50
6877.	10.	30.	40.	50.	60.	**015.**	**25**	1.5	2.3	50
6877.	10.	30.	40.	50.	60.	**020.**	**25**	2.0	2.8	50
6877.	10.	30.	40.	50.	60.	**025.**	**25**	2.5	3.4	50
6877.	10.	30.	40.	50.	60.	**030.**	**25**	3.0	3.9	50
6877.	10.	30.	40.	50.	60.	**035.**	**25**	3.5	4.4	50
6877.	10.	30.	40.	50.	60.	**040.**	**25**	4.0	4.9	50
6877.	10.	30.	40.	50.	60.	**045.**	**25**	4.5	5.4	50
6877.	10.	30.	40.	50.	60.	**050.**	**25**	5.0	6.0	50
6877.	10.	30.	40.	50.	60.	**060.**	**25**	6.0	7.0	50
6877.	10.	30.	40.	50.	60.	**070.**	**25**	7.0	8.0	50
6877.	10.	30.	40.	50.	60.	**080.**	**25**	8.0	9.0	50
6877.	10.	30.	40.	50.	60.	**090.**	**25**	9.0	10.0	50
6877.	10.	30.	40.	50.	60.	**100.**	**25**	10.0	11.2	50
6877.	10.	30.	40.	50.	60.	**120.**	**25**	12.0	13.2	50
6877.	10.	30.	40.	50.	60.	**140.**	**25**	14.0	15.4	50
6877.	10.	30.	40.	50.	60.	**160.**	**25**	16.0	17.4	50
6877.	10.	30.	40.	50.	60.	**180.**	**25**	18.0	19.4	50
6877.	10.	30.	40.	50.	60.	**200.**	**25**	20.0	21.5	50
6877.	10.	30.	40.	50.	60.	**220.**	**25**	22.0	23.5	50
6877.	10.	30.	40.	50.	60.	**250.**	**25**	25.0	26.5	50
6877.	10.	30.	40.	50.	60.	**280.**	**25**	28.0	29.6	50
6877.	10.	30.	40.	50.	60.	**300.**	**25**	30.0	31.6	50

That‘s how to compose the product number:

Typ-Nr. 6877 . Colour number . Ø I Code . Digit Dielectric strength 25

6877.50.035.25 stands for a green sleeving with inner diameter of 3.5 mm and a dielectric strength of 2.5 kV

Price information upon request

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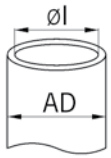
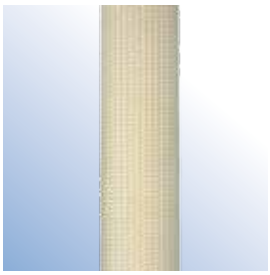
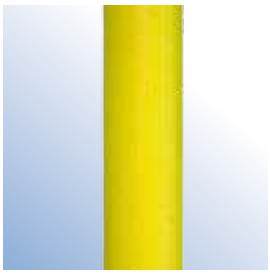
AGROtube FRS
Braided glass fibre sleeve with silicone sheath

Dielectric strength 4.0 kV



Material:	E-glass braid
Sheath:	Silicone FRS
Characteristics:	highly flexible, abrasion resistant, heat-resisting with excellent electric properties. Non
Flammability:	FMVSS 302 (DIN 75200)
Temperature range:	-40°C / +240°C
Dielectric strength: (DS)	4.0 kV





Braided glass fibre sleeve
Dielectric strength 4.0 kV

Typ-Nr.	trans-parent	gelb yellow	schwarz black	grün green	rot red	Ø I Code	DF DS	Ø I mm	Ø A mm	
6877.	10.	30.	40.	50.	60.	**010.**	**40**	1.0	2.0	50
6877.	10.	30.	40.	50.	60.	**015.**	**40**	1.5	2.5	50
6877.	10.	30.	40.	50.	60.	**020.**	**40**	2.0	3.0	50
6877.	10.	30.	40.	50.	60.	**025.**	**40**	2.5	3.5	50
6877.	10.	30.	40.	50.	60.	**030.**	**40**	3.0	4.0	50
6877.	10.	30.	40.	50.	60.	**035.**	**40**	3.5	4.5	50
6877.	10.	30.	40.	50.	60.	**040.**	**40**	4.0	5.0	50
6877.	10.	30.	40.	50.	60.	**045.**	**40**	4.5	5.5	50
6877.	10.	30.	40.	50.	60.	**050.**	**40**	5.0	6.2	50
6877.	10.	30.	40.	50.	60.	**060.**	**40**	6.0	7.2	50
6877.	10.	30.	40.	50.	60.	**070.**	**40**	7.0	8.2	50
6877.	10.	30.	40.	50.	60.	**080.**	**40**	8.0	9.2	50
6877.	10.	30.	40.	50.	60.	**090.**	**40**	9.0	10.2	50
6877.	10.	30.	40.	50.	60.	**100.**	**40**	10.0	11.3	50
6877.	10.	30.	40.	50.	60.	**120.**	**40**	12.0	13.3	50
6877.	10.	30.	40.	50.	60.	**140.**	**40**	14.0	15.3	50
6877.	10.	30.	40.	50.	60.	**160.**	**40**	16.0	17.3	50
6877.	10.	30.	40.	50.	60.	**180.**	**40**	18.0	19.4	50
6877.	10.	30.	40.	50.	60.	**200.**	**40**	20.0	21.4	50
6877.	10.	30.	40.	50.	60.	**220.**	**40**	22.0	23.4	50
6877.	10.	30.	40.	50.	60.	**250.**	**40**	25.0	26.4	50
6877.	10.	30.	40.	50.	60.	**280.**	**40**	28.0	29.4	50
6877.	10.	30.	40.	50.	60.	**300.**	**40**	30.0	31.4	50

That's how to compose the product number:

Typ-Nr. 6877	.	Colour number	.	Ø I Code	.	Digit Dielectric strength 40

6877.50.035.40 stands for a green sleeving with inner diameter of 3.5 mm and a dielectric strength of 4.0 kV

Price information upon request

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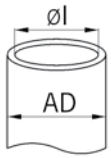
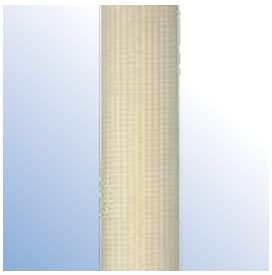
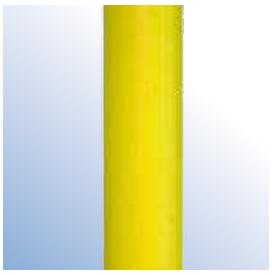
AGROtube FRS
Braided glass fibre sleeve with silicone sheath

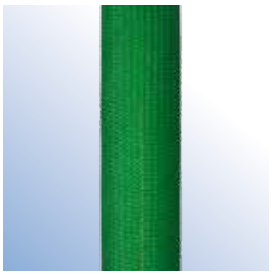
Dielectric strength 7.0 kV



Material:	E-glass braid
Sheath:	Silicone FRS
Characteristics:	highly flexible, abrasion resistant, heat-resisting with excellent electric properties. Non adhesive surface with outstanding oil and diesel fuel resistance
Flammability:	FMVSS 302 (DIN 75200)
Temperature range:	-40°C / +240°C
Dielectric strength: (DS)	7.0 kV







Braided glass fibre sleeve
Dielectric strength 7.0 kV

Typ-Nr.	trans-parent	gelb yellow	schwarz black	grün green	rot red	Ø I Code	DF DS	Ø I mm	Ø A mm	
6877.	10.	30.	40.	50.	60.	**010.**	**70**	1.0	2.0	50
6877.	10.	30.	40.	50.	60.	**015.**	**70**	1.5	2.5	50
6877.	10.	30.	40.	50.	60.	**020.**	**70**	2.0	3.0	50
6877.	10.	30.	40.	50.	60.	**025.**	**70**	2.5	3.5	50
6877.	10.	30.	40.	50.	60.	**030.**	**70**	3.0	4.0	50
6877.	10.	30.	40.	50.	60.	**035.**	**70**	3.5	4.5	50
6877.	10.	30.	40.	50.	60.	**040.**	**70**	4.0	5.0	50
6877.	10.	30.	40.	50.	60.	**045.**	**70**	4.5	5.5	50
6877.	10.	30.	40.	50.	60.	**050.**	**70**	5.0	6.2	50
6877.	10.	30.	40.	50.	60.	**060.**	**70**	6.0	7.2	50
6877.	10.	30.	40.	50.	60.	**070.**	**70**	7.0	8.2	50
6877.	10.	30.	40.	50.	60.	**080.**	**70**	8.0	9.2	50
6877.	10.	30.	40.	50.	60.	**090.**	**70**	9.0	10.2	50
6877.	10.	30.	40.	50.	60.	**100.**	**70**	10.0	11.3	50
6877.	10.	30.	40.	50.	60.	**120.**	**70**	12.0	13.3	50
6877.	10.	30.	40.	50.	60.	**140.**	**70**	14.0	15.3	50
6877.	10.	30.	40.	50.	60.	**160.**	**70**	16.0	17.3	50
6877.	10.	30.	40.	50.	60.	**180.**	**70**	18.0	19.4	50
6877.	10.	30.	40.	50.	60.	**200.**	**70**	20.0	21.4	50
6877.	10.	30.	40.	50.	60.	**220.**	**70**	22.0	23.4	50
6877.	10.	30.	40.	50.	60.	**250.**	**70**	25.0	26.4	50
6877.	10.	30.	40.	50.	60.	**280.**	**70**	28.0	29.4	50
6877.	10.	30.	40.	50.	60.	**300.**	**70**	30.0	31.4	50

That's how to compose the product number:

Typ-Nr. 6877	•	Colour number	•	Ø I Code	•	Digit Dielectric strength 70

6877.50.035.70 stands for a green sleeving with inner diameter of 3.5 mm and a dielectric strength of 7.0 kV

Price information upon request

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