



Highfrequency



- for large-area shielding of high-frequency electromagnetic waves
- very good tear resistance with soft quality, antistatic, elastic
- 100 % textile properties
- elastic knitted fabric for a wide range of applications
- **Organic Cotton, kbA (controlled organic cultivation)**

- The New Antiwave quality is a right-left jacquard knit, in a combination of combed organic, certified organic cotton and silver coated polyamide

The coating does not consist of controversial nano-silver, but of 20 % pure silver that surrounds the entire polyamide fibre. The metallic silver is absolutely harmless to human health and to nature.

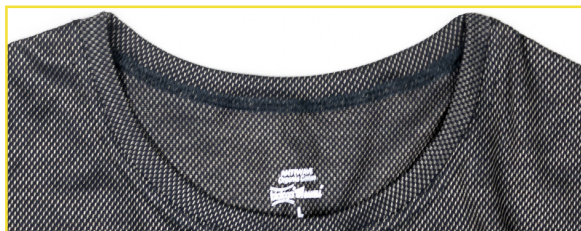
Pure silver has a natural antibacterial effect and can also have a positive effect on skin problems as well as excessive sweating and body odour.

Thanks to the innovative fabric construction and the use of high-quality materials, this knitted fabric protects against electromagnetic radiation with an efficiency of > 99 %. This is confirmed by an expert opinion by the EMF test lab Bavaria.

Particularly suitable for making linen, pillowcases, blankets, etc.

New Antiwave is a particularly easy-care quality. A high-quality finish ensures that the shielding property is retained even after several washes. Due to the antibacterial effect of the silver, washing at 30 - 40 °C is sufficient.

**Order-No.: 100990, 100992, 100993**  
Short-Desc.: AW Woman-Shirt black - S, M, L



### Shielding knitted fabric

#### AW Woman-Shirts - black

Type	MHz	dB	in %
DVB-T2	470 - 690	26	> 99,0
LTE / 5G wide	700 - 750	26	> 99,0
GSM, LTE	920 - 960	26	> 99,0
GSM, LTE	1800 - 1880	23	> 99,0
DECT	1880 - 1900	23	> 99,0
LTE, 5G wide	2110 - 2170	21	> 99,0
W-LAN 2400	2400 - 2500	20	~ 99,0
5G fast	3400 - 3700	17	~ 98,0
W-LAN 5200	5150 - 5350	13	~ 95,0

#### Technical data

available sizes:	S, M, L ≈ 36/38, 40/42, 44/46
thickness:	ca. 0,5 mm ± 10 %
colour:	black / silver
basis weight:	ca. 125 g/m²
mesh size:	< 0,1 mm x 0,1 mm opaque
composition:	89 % Cotton (Organic) 9 % Polyamide 2 % Silver
properties:	very good tear resistance with soft quality, antistatic, elastic
wash cycles:	~ 40 x
basis of examination:	IEEE Standard 299™-2006
shielding effectiveness:	max. 26 dB (> 99 %)

#### Care instructions

	particularly gentle washing (delicate or wool wash cycle at 30 or 40 °C)
	gentle ironing on level 1 (iron at low temperature)
	bleaching not allowed No detergents with bleach
	do not tumble dry
	no dry cleaning

#### Scope of application

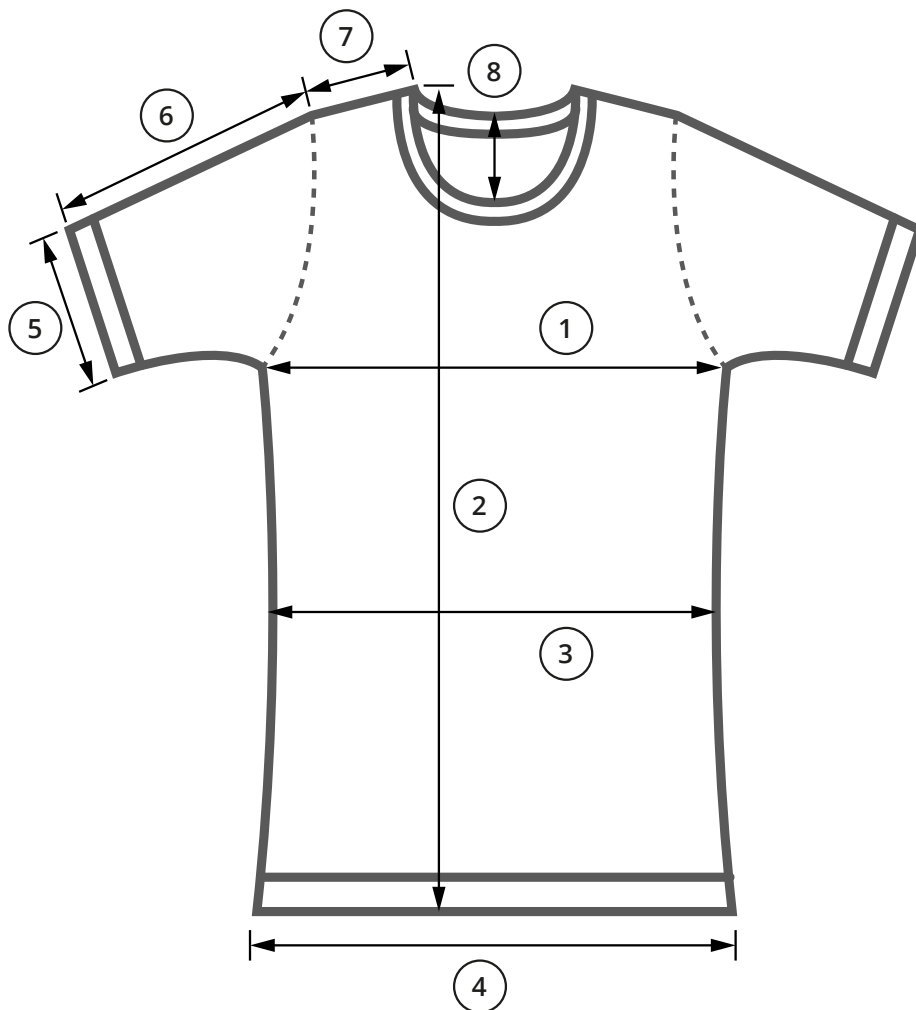
public areas, home  
can be used as outerwear or underwear



New Antiwave - Sizes/Dimensions

Woman-Shirts

No.	Dimensions (in cm)	S 36/38	M 40/42	L 44/46	XL 48/50	Tol ±
1.	Bust	43	47	51	54	3 %
2.	Total length	63	63	67	70	3 %
3.	Waist	39	43	47	50	3 %
4.	Seam bottom	46	50	54	57	3 %
5.	Arm width	14,5	15,5	16,5	17,5	3 %
6.	Arm length	22	22	22	23	3 %
7.	Sholder width	10	10	10,5	11	3 %
8.	Neckline	10	10	10	10	3 %

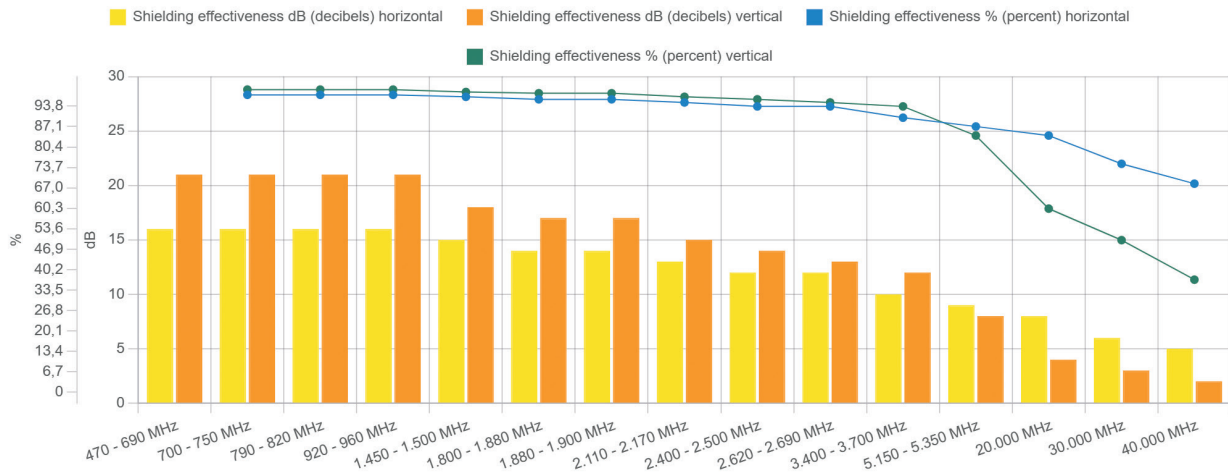




Type	MHz	Description
DVB-T2	470 - 690	digital video broadcasting – terrestrial, 2nd generation, TV via antenna
LTE / 5G wide	700 - 750	from 4G, now 5G NR without beamforming / MIMO
GSM, LTE	920 - 960	from 2G - D1, now 5G NR without beamforming / MIMO
GSM, LTE	1800 - 1880	from 2G - D2, E network, now 5G NR without beamforming / MIMO
DECT	1880 - 1900	wireless phone
LTE, 5G wide	2110 - 2170	from 3G, formerly UTMS, now 5G NR without beamforming / MIMO
W-LAN / WiFi 2400	2400 - 2500	wireless LAN
5G fast	3400 - 3700	5G NR - new frequency band with beamforming / MIMO
W-LAN / WiFi 5200	5150 - 5350	wireless LAN

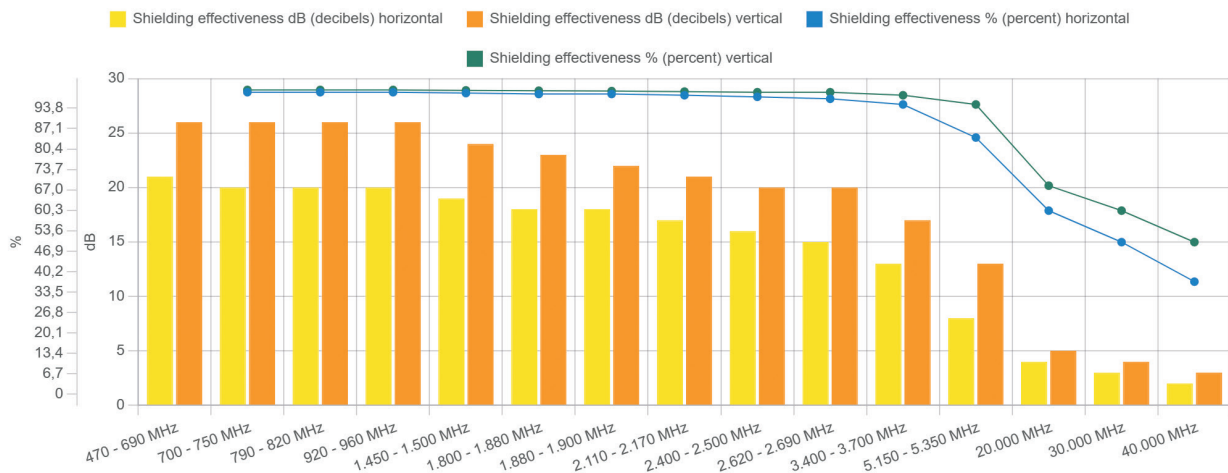
Shielding values according to test report: EMF Test Lab Bavaria

Shielding effectiveness - Antiwave OC black - unstretched - 470 MHz bis 40.000 MHz (40 GHz)



1.000 MHz = 1 GHz -/- (according to test report EMF Test Lab Bavaria)

Shielding effectiveness - Antiwave OC black - stretched - 470 MHz to 40.000 MHz (40 GHz)



1.000 MHz = 1 GHz -/- (according to test report EMF Test Lab Bavaria)



**Home textiles**

**Washing instructions incl. symbols (DIN EN ISO 3758:2012)**

**Content - Washing options**

Detergent.....	1	Washing test - Biologa Danell shielding textiles.....	4
Machine washing.....	2	Further information.....	12
Hand wash.....	3	Frequently asked questions.....	12

**Applies to the following products**

HOME TEXTILES	Topas CS, Topas SN, Swiss Shield Naturell, Swiss Shield Evolution, Swiss Shield Daylite, Swiss Shield Wear, Swiss Shield Ultima, Sunshine 64, Dali, Picasso, New Antiwave
CANOPIES	Topas-BE, Topas-BD, Topas-BU, TOPAS-SN Swiss Shield Naturell-BE, Swiss Shield Naturell-BD, Swiss Shield Naturell-BU Swiss Shield Evolution-BE, Swiss Shield Evolution-BD, Swiss Shield Evolution-BU Swiss Shield Daylite-BE, Swiss Shield Daylite-BD, Swiss Shield Daylite-BU
CLOTHING	Antiwave Women-Shirts, Shorts, Leggings, Antiwave Men-Shirts, Shorts, scarfs, Beanies

**Best care**

**Detergent**

**Tested and recommended detergents**

**Ecover / Wool and delicates detergent**

Ingredients:

- 5-15 %: Anionic surfactants
- < 5 % Non-ionic surfactants
- Soap
- Fragrances - Limonene
- Preservatives
- 2-Brom-2-Nitropropan-1,3-Diol
- Water
- Table salt
- Citric acid

**Sodasan / Wool & Fines**

Ingredients:

- < 30 % water
- 5-15 % sugar surfactant (non-ionic surfactant)
- Coconut fatty alcohol sulphate (anionic surfactant)
- < 5 % evaporated salt
- Alcohol (ethanol)
- Vegetable lecithin
- Citrate
- Natural perfume oil
- Limonene
- Geraniol
- Preservative
- 2-Brom-2-Nitropropan-1,3-Diol

**Detergent and laundry quantity**

**Detergent quantity:**

- Always use as less detergent as possible. As a rule, umbrella textiles are only slightly dusty.
- **Ecover: approx. 20 ml**
- **Sodasan: approx. 20 ml**  
(Further detergent recommendations:
- Sonett sensitive detergent
- Sonett olive detergent for wool and silk
- Sonett Olive Detergent for Wool and Silk sensitive

**Quantity shielding textiles**

- Fill the laundry drum only with shielding materials.
- You will find the max. laundry load in the delicates programme in the instructions for your washing machine. (usually 1.2 - 1.5 kg)

**Wash test**

Biologa shielding textiles can usually be washed 40 times and more. The screening attenuation, as with all screening textiles, decreases during this process, but the remaining function still fulfils a strong high-frequency reduction (min. 90 %).

You can see the complete washing test in the appendix (page 10).

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Washing machine

Machine washing

Individual steps

**M1: 30 °C delicates/wool wash / DO NOT SPIN!**  
 This wash cycle has a particularly gentle mechanical treatment. Reduce the amount of laundry considerably (fill the drum only up to one third). Set the appropriate washing programme.  
 (Antiwave products 40 °C delicates)

**M2: Do not bleach**  
 Bleaching is not possible. Use only bleach-free detergents. If in doubt, try on a concealed area or sample.

**M3: Do not tumble dry**  
 The textiles do not tolerate tumble drying.

**M4: Do not iron hot**  
 Maximum temperature of the iron soleplate of 110 °C. Also corresponds to the iron temperature level „polyacrylic/polyamide (nylon) /acetate“. Do not iron with steam. Iron with a dry intermediate cloth if necessary. Do not warp.

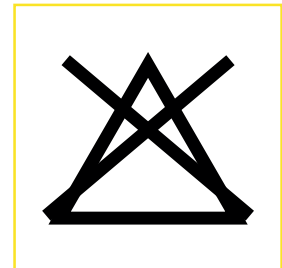
**M5: Professional cleaning**  
 Dry cleaning is not possible. Do not treat with solvents. Do not use stain removers containing solvents.  
 No wet cleaning possible.

**M6: Natural drying (optional)**  
 Drying on the clothesline in the shade

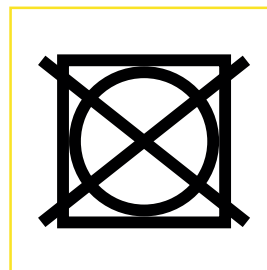
**M7: Natural drying (optional)**  
 Drying on the clothesline from a dripping wet state in the shade



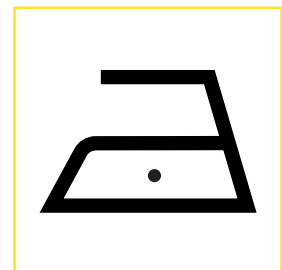
M1: WASH / SPIN



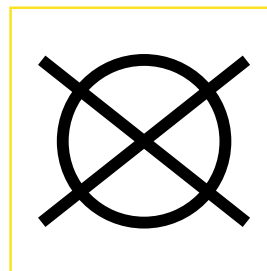
M2: BLEACHING



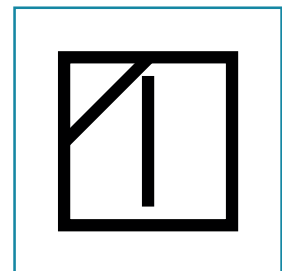
M3: TUMBLER - DRYING



M4: IRONING



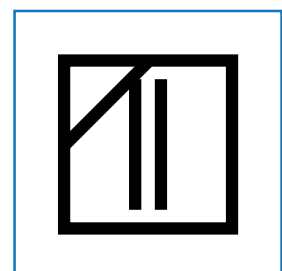
M5: Professional cleaning



M7: NATURAL DRYING 1

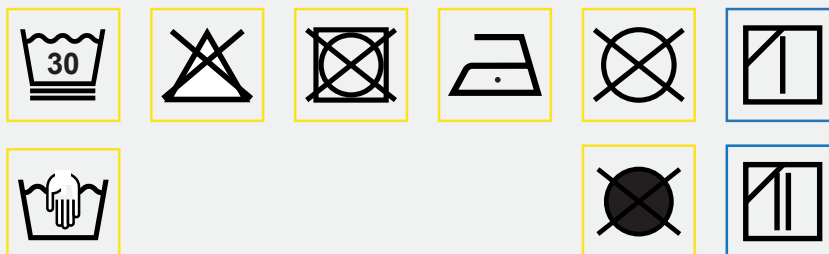
Pre-drying

See Fig. 1 (next page)



M8: NATURAL DRYING 2

General overview of applicable washing symbols



CARE CODE: **AXXAXBX**



Washbasins, tubs

Hand wash

Individual steps

H1: Hand wash,

Water temperature lukewarm to max. 30°C.

1. Fill your washbasin or, depending on the size, your bathtub with lukewarm water.

2. Add a teaspoon of detergent (e.g. ecover / Sodasan). Wool detergent, mild detergent without chlorine, without bleach, without optical brighteners. Do not use fabric softener.

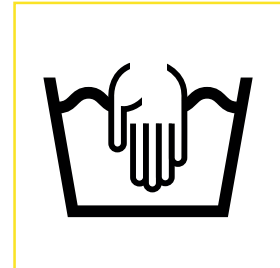
3. Place the textile in the water. Soaking time is usually not necessary as the textile is usually only slightly dusty and not excessively soiled. If so, then less than one minute.

4. Place the textile floating in the water, avoid kneading, wringing, rubbing, strong rubbing and twisting.

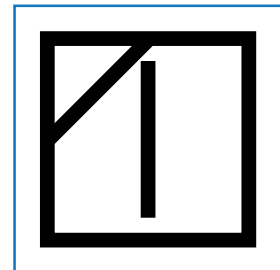
5. Rinse the textile in clean water. Do not spray or rinse under running water. Repeat the process approx. 2 x

6. For pre-drying and subsequent damp hanging, it is recommended to lay the textile on a towel and gently roll it up including the textile. You can also treat the textile as described under H2.

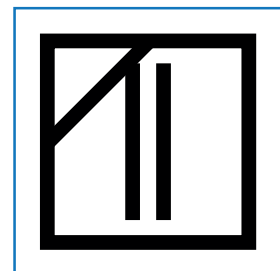
7. Dripping wet hanging without the towel technique is also possible as indicated in H3.



H1: Hand wash



H2: Natural drying  
Clothesline - Shade



H3: Natural drying  
Clothesline dripping wet - shade

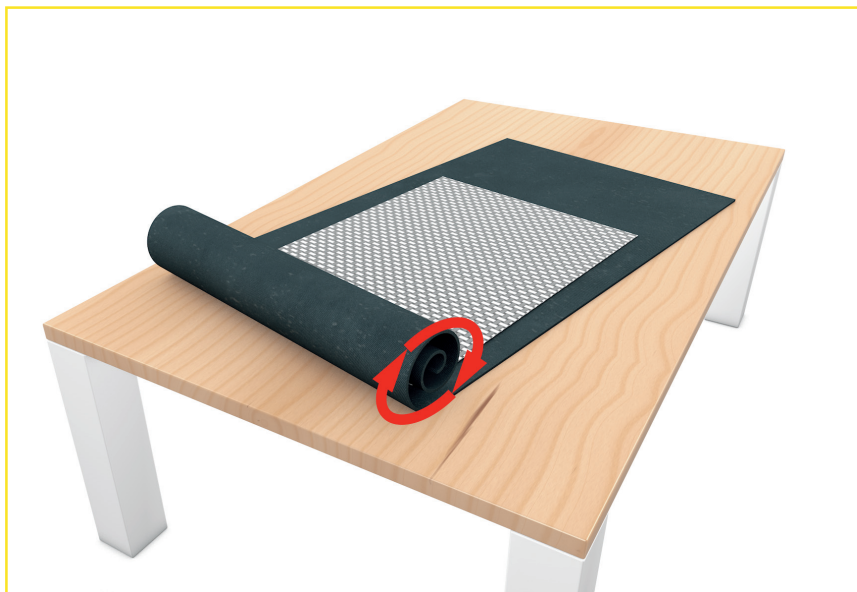


Fig. 1: Pre-dry in towel - hand wash and machine wash

The above information corresponds to the current state of development. In any case, they are to be regarded as non-binding, as we have no influence on the washing and the conditions regarding water etc. vary locally. Claims arising from this information are therefore excluded. The same applies to the commercial and technical advice and information provided free of charge and without obligation. We therefore recommend that you carry out your own tests to determine whether the product is suitable for the intended use. With the publication of these versions, all previous technical information (leaflets, installation recommendations and other versions intended for similar purposes) become invalid.

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