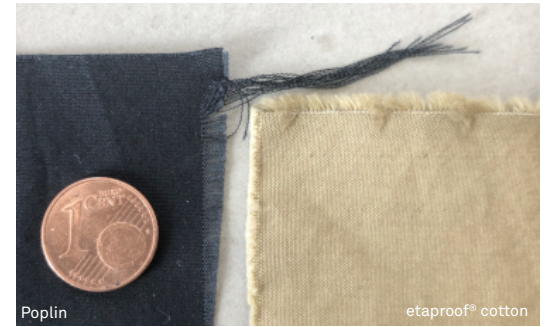


TEXTILE INFORMATION

FACE MASKS - FABRICS & MAKING

Homemade face masks are getting a lot of attention these days. We see pictures of nurses wearing homemade face masks made from funny printed fabrics, and textile suppliers use search engine terminology like "anti virus fabrics" or "facemask cotton" on their websites. We should keep in mind that facemasks are medical products made from technical textiles meant to protect lives. Homemade face masks cannot compare to these masks but they are better than nothing when it comes to preventing small droplets of saliva from spreading while we speak or cough.

Find below some ideas on materials and product design features which may help with regard to functional decisions when you start making your face mask from fabrics easily available in retail.



PLANT FIBRES - GOOD IDEA!

TRADE DESCRIPTION Poplin is a dense and fine plain weave fabric. Available in 100% cotton, it is easy to sew, has a soft next to skin comfort and can be washed at high temperatures to remove micro-organisms or viruses – so using it for face masks is a good idea. Cotton shrinks 5 – 8% after its first washing, so wash it once before sewing.

If you use a white cotton, linen or hemp fabric, you can boil it in the washing machine with your other clothes at 95°C. Be careful with single dyed or printed plant fibers, they cannot hold the dyestuff very well – their colour is "bleeding".

WOVEN FABRIC Do not use knitted fabrics such as jersey. Because of the fabric's elasticity its permeability is higher, and direct contact to the mouth encourages the soaking of the product and so lessens the level of protection. Use flat ribbon endings (these can be made of cotton jersey) instead of rubber band – rubber cannot be washed at 95°C.

COUNT THREADS PER CM NOT GRAMM PER M²

In order to keep infectious particles from travelling around, density is the most important textile parameter of woven textiles. For judging a fabric's density its weight is irrelevant. (There are heavy but loose fine fabrics which are made from heavy twines). The finer the yarn the more threads per centimeter in weft and warp direction. Standard silk fabrics for neckties, for example, have 140 threads per centimeter in warp direction. This means small pore volume but really dense fabric. Woven cotton fabrics like etaproof® are wind and waterproof because of a dense weave construction and extremely fine twine. This cotton is particularly suitable for outdoor jackets.

NON WOVEDS - SMART & SEAMLESS

SYNTHETIC FIBERS Professional PFF masks and surgical face mask are made from synthetic fibers. They are so-called non-wovens, for which crosslayers of loose fibers are fixed together by heat. Synthetic fibers are extremely tear-resistant and thermoformable. You can make 3D shapes by using moulds or by pleating them. They will never lose their shape, as cotton masks do after having been washed. Synthetic fibres like polyester or polyamide are hydrophobe and less hygroscopic, that means they do not absorb water or moisture, or if they do, only to a very low degree; thus also dirt and microbes will not be transported to the inner side of the filament.

FINISHING Synthetic fibres may have a dirt repellent finish or a finish with additives such as antibacterial chemicals or silver ions.

JOINING Another aspect of chemical fibers is that you do not have to sew, you can produce surgical face masks by using textile bonding technology. This is a melting process where layers and ribbon endings are bonded by heat or ultrasonic. The edges of heat-cutted synthetic nonwovens do not fray.



RAW MATERIAL | TRADE DESCRIPTION

Careful with the terminology: raw material (e.g. cotton), textile construction (woven), trade description (Glen Check resp. Glen Plaid = overlaid checks of different sizes), brand name (Burberry®).

Here are some natural raw materials with soft next-to-skin-comfort, high washing temperature resistance and easy availability in the retail sector:

- cotton 
- flax (linen fabric) 
- hemp 
- lyocell (Tencel®) 
- modal 

PLEATED OR SHAPED CUTTING PATTERN



In general, there are two types of face masks made from plain textile material. The pleated version is made for fitting a lot of people, and it often comes in one size only. A better fit and cover will be achieved with the ergonomically shaped mask for which you can find up to 9 different cutting pattern sizes.



Both shapes can be manufactured as double layer. Leaving the sides open will allow you to additionally put a nonwoven removable layer inbetween the layers so as not to get the mask too wet too soon.

LINKS:

<https://www.fast.ai/2020/04/13/masks-summary/>