

A fabric blank, method of manufacturing such fabric blank and
a garment comprising the fabric blank

The invention relates to a fabric blank, comprising a first yarn consisting of a polyamide or polyester or blends of any of these materials with cotton. The invention further relates to a method of manufacturing such a fabric blank and to a garment comprising the fabric blank. the invention is in particular applicable to garments and corsetry.

Garments and corsetry, such as girdles, panties, body suits, swim suits, brassieres and the like usually are fabricated by providing a fabric blank which is either knit, warp knit or woven from, for example, synthetic fiber yarn, such as nylon or polyester yarn, regenerated fiber yarn, such as rayon, acetate or cuprammonium rayon yarn, natural fiber yarn, such as cotton, silk, flax, or wool yarn. It is known in the art to vary the yarns in thickness and to use different kind of yarns to achieve at desired characteristics of the fabric blank, so that different areas of the garment can be given different properties. Even though the knit structure already makes the garment resiliently stretchable, vertically and horizontally, it may be an option to insert elastic yarns in order to optimize the characteristics of the fabric blank with regard to the intended garment. Normally, polyurethane is used as a basic material for elastic yarns.

The fabric blank can then be cut along the outline of the desired garment, and preferably, the cutting is performed in a cutting machine (pressure, click out) or in a sewing machine that also simultaneously sews decorative and/or elastic banding along the cut edges so as to create a finished edge of the garment.

The outline of a garment is arranged on the fabric blank in such a manner that longer edges of the garment are brought in coincidence with the edges of the fabric blank. This relates, for example, to the edge of a brassiere below the breast cups or the leg hems of a panty.

Sometimes, it would be desired that a curved hem is provided for wearer's comfort and improved appearance of the garment. It is, however, not possible to simply cut these curves, because the hems are formed by a selvedge of the blank which would become frayed if it is cut.

In this respect a brassiere is known wherein the fabric is laminated to another layer, for example by glueing, so that a composite is formed which can be cut without fraying. However, the optical appearance and wearer's comfort are degraded.

It is the object of the invention to provide a fabric blank which offers the possibility to provide curve sections even at the selvages of the blank without the risk that the cut becomes frayed.

This object is solved by a fabric blank as defined in claim 1.

According to the invention, a second yarn is included into at least a portion of said fabric blank, said second yarn being polyether-based and thermally bonded to said first yarn. This additional yarn may be a melt spinning spandex which has advantageous characteristics which make it suitable for garments, such as soft tightening power, sufficient alkali resistance, good setting ability and excellent binding performance. By heat fusing the second yarn to the first yarn, it is possible to avoid ravel, curl and slip-in.

It is also possible to insert an elastic yarn into at least a portion of said fabric blank, and it may be that the portion comprising the elastic yarn and the portion comprising said thermally bonded yarn are different from one another or are overlapped.

A method of manufacturing a fabric blank as described above comprises that steps of:

- a) weaving, knitting or said first yarn;
- b) inserting said second yarn into at least a portion of a fabric blank during or after weaving or knitting said first yarn; and
- c) optionally, inserting an elastic yarn into the same or another portion of said fabric; and
- d) heat fusing said second yarn to said first yarn.

The process allows for a wide range of processing temperatures, and it is preferred that the temperature during heat fusing is between about 110 °C and 190 °C. The suitable fusing temperature will depend on the fineness of the yarns, the material of the yarns. Yarn breakage by overly high temperature must avoided.

A garment comprising the fabric blank as defined above is characterized in that at least one portion of the fabric blank comprising said thermally bonded yarn is in a region subjected to cut during production of said garment.

Said garment may be a brassiere, and said portion comprising said thermally bonded yarn extending below a breast cup.

Said garment may also be a panty, a body suit or a swim suit, and said portion comprising said thermally bonded yarn extending in the leg hem part.

The above and other objects, features and advantages of the invention will become more apparent from the following description when taken in conjunction with the accompanying drawings in which:

- Figure 1 is a schematic stitch representation for explaining a condition in which thermally bonded yarn is inserted in a ground stitch;
- Figure 2 is a schematic representation illustrating a condition in which the yarns are thermally bonded to another where part of the fabric is cut away;
- Figure 3 is a representation similar to that of Figure 1, additionally including an elastic yarn;
- Figure 4 is a representation similar to Figure 2, including elastic yarn;
- Figure 5 is a schematic representation of a part of a fabric blank to produce a brassiere; and
- Figure 6 is a schematic representation of a part of a fabric blank to produce a panty-girdle or pants.

In Figure 1, numeral 10 indicates loops of inelastic yarn knitted in a ground stitch. The inelastic yarn may be a polyamide or a polyester. A second yarn 12 passes each single loop, so that, after been thermally bonded to said inelastic yarn 10, the configuration of loops is stabilized.

Figure 2 shows the situation where part of the fabric is cut away, but the structure of the ground stitch is fixed by the thermally bonded sites of inelastic yarn 10 and thermally bondable yarn 12.

Figure 3 is a similar representation to that of Figure 1, where additionally an elastic yarn 14 is inserted to impart strength and elasticity to the fabric.

Figure 4, which is similar to Figure 2, shows that when part of the fabric is cut, the fabric is still fixed by the bonding sites of inelastic yarn 10 and thermally bondable yarn 12.

It has turned out that, if polyester or polyamide is chosen as material for the inelastic yarn 10, the thermally bondable yarn 12 must be polyether-based.

Figure 5 depicts how a brassiere can be produced using the fabric blank of the invention. It is assumed that the breast cups 20 are knitted by a ground stitch comprising inelastic yarn or inelastic and elastic yarn, a reinforced section 22 below the breast cup comprising fabric which additionally includes elastic yarn, for example polyurethane yarn, and a third section 24 comprises a stitch similar to Figure 3, namely including inelastic yarn, elastic yarn and thermally bondable yarn. After heat fusing, it is now possible to cut along line 26 to achieve at a curved edge without the risk that this edge become frayed.

Figure 6 shows how a panty-girdle or a pant can be produced using the fabric blank of the invention. The main part 30 is knitted by a ground stitch comprising inelastic yarn or inelastic and elastic yarn, optionally blended with cotton. The main part 30 is provided with a ham region 32 defining the cut outs for the legs by a cutting line 34. Sections 36, indicated by slanted lines, is at first integral with the ham regions 32. They comprise a stitch similar to Figure 1, namely including inelastic yarn and thermally bondable yarn, or similar to Figure 3,

including inelastic yarn, elastic yarn and thermally bondable yarn. After heat fusing, a cut is made along line 34, and sections 36 are discarded.

The features disclosed in the foregoing description, in the claims and/or in the accompanying drawings may, both separately and in any combination thereof, be material for realising the invention in diverse forms thereof.

Claims

1. A fabric blank, comprising a first yarn (10) consisting of polyamide or polyester or blends of any of these materials with cotton, characterized in that a second yarn (12) is included into at least a portion of said fabric blank, said second yarn (12) being polyether-based and thermally bonded to said first yarn (10).
2. The fabric blank of claim 1, characterized in that an elastic yarn (14) is inserted into at least a portion of said fabric blank.
3. The fabric blank of claim 2, characterized in that said portion comprising the elastic yarn (14) and said portion comprising said thermally bonded yarn (12) are overlapped.
4. The fabric blank of claim 2, characterized in that said portion comprising the elastic yarn (14) and said portion comprising said thermally bonded yarn (12) are different from one another.
5. A method of manufacturing a fabric blank according to any of claims 1 to 4, comprising the steps of:
 - a) weaving or knitting or warp knitting said first yarn;
 - b) inserting said second yarn into at least a portion of fabric blank during or after weaving or knitting said first yarn; and
 - c) optionally, inserting said elastic yarn into the same or another portion of said fabric; and
 - d) heat fusing said second yarn to said first yarn.
6. The method of claim 5, wherein the temperature during heat fusing is between about 110 °C and 190 °C.
7. A garment, comprising the fabric blank of any of claims 1 to 4, characterized in that at least one portion of the fabric blank comprising said thermally bonded yarn is in a region subjected to cut during production of said garment.

8. The garment of claim 7, wherein said garment is a brassiere, and said portion comprising said second yarn extends below a breast cup.
9. The garment of claim 7, wherein said garment is a panty, a body suit or a swim suit, and said portion comprising said second yarn extends in the leg hem part.