Knitting Technology

Module - 1 : FAQ

Q1 If one desires to knit a fabric panel made of 100 loops in the width direction and 100 along the length and if it takes two seconds to complete one cycle of operation by means of a knitting pin (Fig.1) and 4 seconds with the help of the contraption (Fig. 2), then quantify the productivity difference.

Ans.: With the knitting pin total time taken would be 100x2x100 = 20,000 seconds while on the contraption the total time required would be 100x4 = 400 seconds. This accounts for a productivity jump of 100 times. This is equal to the number of loops along the width direction.

Q2 How many supply packages of yarn would be required to knit the pieces of knitted fabric shown in Figs. 3 and 4?

Ans.: One package for Fig. 3 while four packages for Fig. 4.

Q3 What would result out of multiplying course spacing and wale spacing?

Ans.: The product would represent the area covered by one loop.

Q4 Differentiate between interlacing, interlooping and intralooping

Ans.: Interlacing results when two yarns cross each other (weaving). Interlooping results when loops formed by different yarns are looped together (Fig.4) while intralooping occurs when loops formed by the same yarn are looped together (Fig.3).

Q5 Comment on the relative stability of the corresponding knitted and woven fabrics prepared from yarn having zero coefficient of friction.

Ans.: The woven fabric would disintegrate when shaken strongly while the knitted fabric would retain its integrity owing to positive binding at the zones of intersection between yarns.

Q6 What would be the difference in appearance between technical back side and the technical front side of a weft knitted fabric made of simple and similar loops?

Ans.: The technical back side would exhibit concave and convex arcs of yarn (the needle and sinker loops) while the technical front side would reveal many short and nearly parallel yarn segments (the loop arms).

Q7 What apparent property differences can be expected between a plain woven fabric and a weft knitted fabric made of simple and similar loops?

Ans.: A plain woven fabric would exhibit higher resistance to tensile deformation along the principal directions and would have similar appearance on both of its sides. The bending behavior of the knitted fabric across its plane would be governed by its technical sides.

Q8 If the Fig.8 is turned through $\pi/2$ radians, then in which plane would the needle be moving and what view of the wale line would be presented to the viewer?

Ans.: The needle would move along the plane of the paper and the wale line would show up as a chain of bent line segments.

Q9 If the half loop is between the operator and the new yarn during the loop formation process then from which side of the loop must the needle penetrate to catch the new yarn?

Ans.: From the front side of the loop

Q10 Compare the Figs. 6, 7 and 10 and note down the similarities and differences. Comment on the expected nature of tensile behavior of the two constructions in the two principal directions.

Ans.: Similarities: Each face of both warp and weft knitted constructions exhibit homogeneity in terms of nature of loop, i.e. all loops on a given surface are similar.

Dissimilarities: The sinker loops of Figs. 6 and 7 are symmetrical, which is not the case in Fig. 10. Moreover the loops in Fig. 10 are inclined either to the right or to the left of the wale line while those are Figs. 6 and 7 are aligned along wale lines. Each wale line of Fig. 10 is developed through interlooping while intralooping develops the entire construction in Figs. 6 and 7.

The weft knit construction is expected to exhibit lower modulus and higher elastic stretch along the course as compared to the wale direction while the reverse can be expected in the warp knit construction.