

about absence of pores of any format. The effect of full density of an arrangement of threads in structure of a woven fabric is provided not only limiting rapprochement of wefts prior to the beginning of mutual contact ( $S_{wft}^{lim} = 0$ ), but also limiting rapprochement of a warp threads on distance equal to thickness of wefts  $S_{wp}^{lim(0.4266)} = 2b_{wft(0.4266)}$ . The view A evidently shows continuous filling by wefts spaces between threads of the warp, interfering to a way free and labyrinth to flow of substances.

The superlimiting density of a fabric on a weft in a combination to limiting density on a warp also, but in a greater measure, excludes free and labyrinth flows through a woven fabric.

As continuation of the analysis of porosity of a woven fabric pertinently to note the important circumstance representing special interest for developers of filters:

Permeability of the woven fabric on gas, the liquid

and particles of substances is possible not only by "free" and "labyrinth" the course, but also by penetration between fibers in structure of woven threads.

Certainly, volumetric speed of permeability through labyrinths of backlashes between fibers of threads in a woven fabric it is essential decreasing.

For increase of durability of strengthening armature of composite materials everyone are more widely used the aramide fibers, in particular one of the first invented – Kevlar. If strengthening a composite only in one direction for economy of expensive fiber the combination of big and rather small diameters of a warp and a weft threads is used. It leads to reception of extreme values of the order of phases of a structure: about the first or about the ninth.

On Figure 6 two variants of porosity of a woven fabric of one kind of a fiber are presented at use Kevlar threads of a warp and a weft of different thickness for formation of phase  $N_F = 9.8$ .

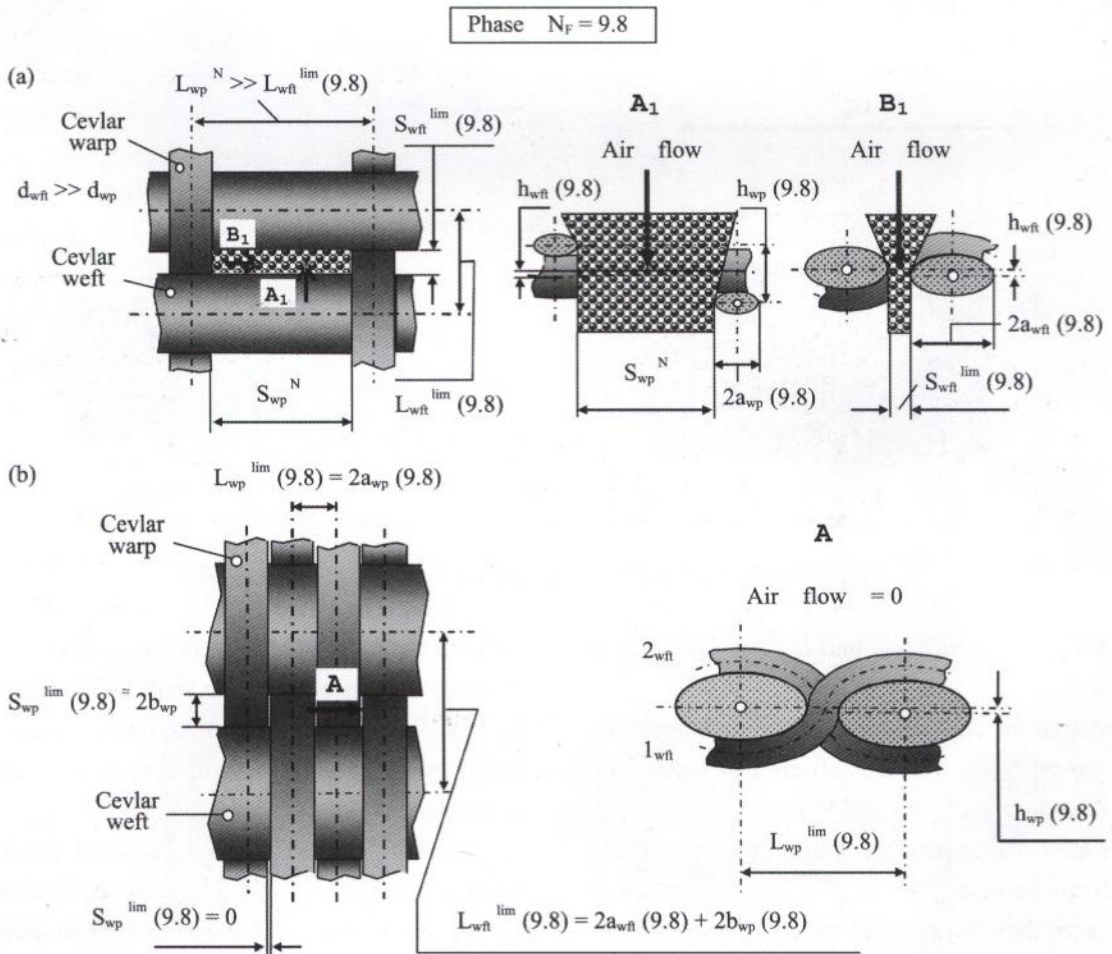


Fig. 6. Porosity of woven fabric of phase 9.8 with normal and limit density.