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Application of Continuum Mechanics in the Textile Fabrics

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Textile fabrics represent complicated structures. The mechanical properties of these formations are possible to describe on the basis of theirs specific idealization. One of the methods of problem solving of the mechanics textiles is substitute of the textile formation by continuous environment – continuum. The substitute continuum has identical mechanical properties like testing textile fabric. Geometrically and physically for the non-linear properties of the substitute continuum is necessary to apply an apposite descriptions of states of stress as well as deformation. In that case these descriptions have to be conjugated couple of tenzors of tension as well as deformation. Unlike the solid bodies, the uniaxial stress of fabric textile does not capture its mechanical properties. That is why the strength hypotheses are no use for them.

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