Predicting Air Permeability of Nylon Parachute Fabrics

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Abstract:

Parachute is used to slow the motion of an object through an atmosphere by creat drag. Its performance is considerably affected by the variation of fabric air permeabil Fabrics air permeability is affected by several factors such as porosity which depe mainly on the fabric and yarns construction. In this study , a theoretical model v formed to predict the air permeability of a parachute plain weave structure depending the geometrical parameters, such as the yarn count, ends per cm, wefts per cm, fal thickness, yarn diameter and fiber density. Furthermore, a theoretical model of por systems is based on D'Arcy's lows was used. The experimental results were confirr by examining 24 samples of 100% nylon plain fabrics produced with different y count and density. Linear Regression model was used to improve the theoretical mo The results revealed that, the proposed model is efficient for the calculation the air fl rate of nylon parachute fabrics.

Keywords:

Parachute
Air permeability
Porosity
Air velocity
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