

Investigation of Physical Performance of Denim Fabrics Washed with Sustainable Foam Washing Process

Authors : Hazal Yılmaz, Hale Karakaş

Abstract : In the scope of the study, it is aimed to investigate and review the performance of denim fabrics that are foam washed. Foam washing was compared as an alternative to stone washing in terms of sustainability and performance parameters. For this purpose, seven different denim fabrics, which are both stone washed and foam washed separately in 3 different washing durations (30-60-90 mins), were compared. In the study, the same fabrics were processed with both foam and stone separately. The washing process steps were reviewed, and their water consumption values were compared. After washing, a total of 42 fabric samples were obtained, and tensile strength, tear strength, abrasion, weight loss after abrasion, rubbing fastness, color fastness tests were carried out on the fabric samples. The obtained test results were reviewed and evaluated. As a result of tests, it has been observed that the performance of foam washed fabrics in terms of tensile, tear strength and rubbing fastness test results are better than stone washed fabrics, and it has been seen that foam washed fabrics' color fastness test results are as stone washed. As a result of all these tests, it can be seen that foam washing is an alternative to stone washing due to its performance parameters and its sustainability performance with less water usage.

Keywords : denim fabrics, denim washing, foam washing, performance properties, stone washing, sustainability

Conference Title : ICMTCCCE 2024 : International Conference on Materials, Textiles, Chemistry and Chemical Engineering

Conference Location : Zurich, Switzerland

Conference Dates : January 11-12, 2024