

Tarih : 21.08.2020
Sayı : 825775
Konu : Bilirkişi Raporu

SHORT REPORT ON ENERGY AND WATER CONSUMPTION OF NATURAL DYEING

In this report, natural dyeing trial carried under my supervision on 20th of August 2020 at the textile finishing facilities of Sadırlar Alliance Tekstil A.Ş. located at Geyve, Sakarya was summed up, and water (L), electricity (kW), steam and heat (kcal) consumptions per one kilogram of cotton fabric during natural dyeing were presented.

To calculate the energy and water consumption during natural dyeing, depending on the field of activity of the company, three different knitted fabrics, namely pique, rib, and single jersey fabrics, were chosen to form a batch of 1255 kg fabric. For preparation of the fabric before coloration, bleaching was carried using natural bleaching agents. After bleaching was achieved, 330 kg of fabric out of 1255 kg was selected for natural dyeing. Dyestuffs and auxiliary chemicals used for natural dyeing as well as dyeing recipe and dyeing process conditions were investigated, cost of the natural dyeing process calculated, and a detailed technical report was prepared and presented to Sadırlar Alliance Tekstil A.Ş. However, due to the confidentiality agreement between me and Sadırlar Alliance Tekstil A.Ş., and as the entire process is a trade secret, such details were not included in that short report. The detailed report included water, energy, and steam consumption during natural dyeing; the heat loss factor was taken as 1.25 for calculations of consumptions during bleaching and dyeing. Consumptions were read via electronic counters and checked and verified by reading on machine screens.

The calculation included not only the water, electricity, steam, and heat consumptions for bleaching and natural dyeing, but also the final expenditure as well as the individual water, electricity, steam, and heat expenditures for finishing processes applied after natural dyeing.

CONCLUSION:

Natural dyeing trial carried under my supervision on the 20th of August 2020 at the textile finishing facilities of Sadırlar Alliance Tekstil A.Ş. located at Geyve, Sakarya was investigated. It is determined that water consumption per kg of cotton fabric for the total of bleaching, natural dyeing, and finishing operations is 11.63 Liters. For the application of the natural dyeing process developed by the company and using the available machinery, electricity consumption per kg cotton knitted fabric was calculated to be 0.54 kW, and total heat consumption per kg cotton knitted fabric including that for heating the steam to be used during bleaching and dyeing processes as well as that consumed for heating the oil to be used at the stenter for drying and curing processes was calculated to be 2.392 kcal.

Kindly submitted for your information.



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Tarih : 27.08.2020
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SHORT REPORT ON ENERGY AND WATER CONSUMPTION OF NATURAL PRINTING

In this report, natural printing trial carried under my supervision on 26th of August 2020 at the textile finishing facilities of Sadırlar Alliance Tekstil A.Ş. located at Geyve, Sakarya was summed up, and water (L), electricity (kW), steam and heat (kcal) consumptions per one kilogram of cotton fabric during natural printing were presented.

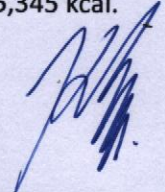
To calculate the energy and water consumption during natural printing, depending on the field of activity of the company, 200 kg single jersey fabric was chosen. For preparation of the fabric before printing, bleaching was carried using natural bleaching agents. After bleaching was achieved, dyestuffs and auxiliary chemicals used for natural printing as well as printing recipe and printing process conditions were investigated, cost of the natural printing process calculated, and a detailed technical report was prepared and presented to Sadırlar Alliance Tekstil A.Ş. However, due to the confidentiality agreement between me and Sadırlar Alliance Tekstil A.Ş., and as the entire process is a trade secret, such details were not included in that short report. The detailed report included water, energy, and steam consumption during natural printing; the heat loss factor was taken as 1.25 for calculations of consumptions during bleaching and drying. Consumptions were read via electronic counters and checked and verified by reading on machine screens.

The calculation included not only the water, electricity, steam, and heat consumptions for bleaching, printing, fixing, and steaming, but also the final expenditure as well as the individual water, electricity, steam, and heat expenditures for finishing processes applied after natural printing.

CONCLUSION:

Natural printing trial carried under my supervision on the 26th of August 2020 at the textile finishing facilities of Sadırlar Alliance Tekstil A.Ş. located at Geyve, Sakarya was investigated. It is determined that water consumption per kg of cotton fabric for the total of bleaching, natural printing (including print paste preparation, dyestuff preparation, washing off of printing screen and blanket), and finishing operations is 32,23 Liters. For the application of the natural printing process developed by the company and using the available machinery, electricity consumption per kg cotton knitted fabric was calculated to be 0,407 kW, and total heat consumption per kg cotton knitted fabric including that for heating the steam to be used during bleaching and printing processes as well as that consumed for heating the oil to be used at the stenter for drying and curing processes was calculated to be 5,345 kcal.

Kindly submitted for your information.



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