

Wastes Generated in an Airjet Cotton Weaving Mill

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Abstract

The work reported in this article is an account of wastes generated in an air jet weaving industry producing 100% cotton fabrics for export market. Mainly two types of wastes were categorized e.g. (i) wastes related to only warp – wastes belong to this category are gara waste, sizing waste, knotting waste, gaiting/tying waste, beam residue, loom setting waste and waste related to auxiliary selvedge; (ii) wastes related to only weft – wastes belong to this category are; auxiliary selvedge (also known as cut fringe); waste due to faulty cones and loom setting waste etc. The study involves collection of data of 11 different qualities (construction wise) for various types of wastes mentioned above. Extent of warp waste in knotting, gaiting/tying-in, loom setting and as beam residue was found insignificant whereas warp wastes in warping and sizing zone was found significant. On the other hand, Weft waste due to cut fringe and faulty cones was found significant, but weft waste due to loom setting was found insignificant.

Key Words: Wastage, Weaving, Woven Fabric, Cotton weaving, Air-jet, Warp wastes, Weft wastes, Auxiliary Selvedge, Material wastage, Resource utilization.

| WARP WASTE | | | | | | | | | |
|------------|------------|------|--------------|------|----------------|------|---------------|---------|---------|
| ID | Gara waste | | Sizing waste | | Knotting waste | | Gaiting waste | Residue | Setting |
| | Lbs | % | lbs | % | lbs | % | | | |
| A | 80.7 | 2.85 | 9.76 | 0.35 | 1.33 | 0.05 | 0.05 | 0.05 | 0.03 |
| B | 83.2 | 2.85 | 9.52 | 0.33 | 1.43 | 0.05 | 0.05 | 0.05 | 0.04 |
| C | 79.2 | 2.85 | 9.56 | 0.34 | 1.74 | 0.06 | 0.05 | 0.06 | 0.05 |
| D | 95.1 | 3.29 | 4.98 | 0.17 | 0.9 | 0.03 | 0.02 | 0.03 | 0.03 |
| E | 89.7 | 2.85 | 8.21 | 0.26 | 1.23 | 0.04 | 0.04 | 0.04 | 0.03 |
| F | 113.4 | 3.51 | 8.43 | 0.26 | 1.69 | 0.05 | 0.03 | 0.03 | 0.04 |
| G | 83.8 | 2.85 | 8.64 | 0.29 | 1.44 | 0.05 | 0.05 | 0.03 | 0.04 |
| H | 90.9 | 2.79 | 10.83 | 0.33 | 1.27 | 0.04 | 0.06 | 0.04 | 0.04 |
| I | 72.4 | 2.14 | 9.01 | 0.27 | 1.06 | 0.03 | 0.05 | 0.03 | 0.04 |
| J | 60.9 | 2.14 | 7.59 | 0.27 | 0.89 | 0.03 | 0.05 | 0.03 | 0.04 |
| K | 115.3 | 3.51 | 7.21 | 0.22 | 1.72 | 0.05 | 0.03 | 0.04 | 0.04 |

| ID | Total Fabric Prod | WEFT WASTE | | | | | | | |
|----|-------------------|-------------------|------|--------------------|------|----------------------|------|------|-------------|
| | | Due to cut fringe | | Due to faulty cone | | Due to loom settings | | | Total Waste |
| | | yd | lbs | % | Lbs | % | yd | Lbs | |
| A | 5670 | 37.97 | 2.32 | 13.5 | 0.83 | 2 | 0.56 | 0.03 | 3.18 |
| B | 5330 | 47.59 | 2.32 | 15 | 0.73 | 2 | 0.74 | 0.04 | 3.09 |
| C | 5652 | 35.33 | 2.32 | 14.5 | 0.95 | 3 | 0.78 | 0.05 | 3.32 |
| D | 10198 | 43.71 | 2.32 | 11 | 0.58 | 3 | 0.54 | 0.03 | 2.93 |
| E | 5790 | 33.60 | 2.32 | 14 | 0.97 | 2 | 0.48 | 0.03 | 3.32 |
| F | 7856 | 39.28 | 2.32 | 11 | 0.65 | 3 | 0.63 | 0.04 | 3.01 |
| G | 5012 | 51.91 | 2.32 | 11 | 0.49 | 2 | 0.86 | 0.04 | 2.85 |
| H | 4396 | 31.40 | 2.32 | 11 | 0.81 | 2 | 0.60 | 0.04 | 3.18 |
| I | 5316 | 51.53 | 2.32 | 11 | 0.50 | 2 | 0.81 | 0.04 | 2.85 |
| J | 5332 | 50.33 | 2.32 | 7 | 0.32 | 2 | 0.79 | 0.04 | 2.68 |
| K | 7916 | 37.70 | 2.32 | 7 | 0.43 | 3 | 0.60 | 0.04 | 2.79 |

Full paper is not available. The speaker can be contacted for further details