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# CHARACTERISTICS ANALYSIS OF THE STUDY MATERIALS REQUIRED FOR MEN COAT PRODUCT

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***Abstract***: *Garments is a means of artistic creation with not only the function of defense of the body and regulating physiological functions, but also by its beautifying. In order to achieve men coat product, we have the possibility to choose the material from a group of three materials that are completely different of yarn contents. After comparing measurements made for three types of materials were found in the composition of the material has a higher percentage of wool meets most conditions necessary for wearer comfort so is the material most commonly used to make the clothing for winter season.*
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*The difference between the material properties and material transformation phases in the product have been presented in order to emphasize the need for close co-working between professionals involved in making a fashion product from yarn, yarn, fabric and garment finishing product.*
*The types of materials used for making winter outerwear products greatly influences the design and technological design processesin their turn textiles are directly dependent on the characteristics by their structure. The difference between the material properties and material transformation phases in the product have been presented in order to emphasize the need for close co-working between professionals involved in making a fashion product from yarn, yarn, fabric and garment finishing product.*
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***Key words:*** *woven fabrics, structure, longitudinal stripes, features, density, fineness*

## 1. INTRODUCTION

In order to achieve men coat product, we have the possibility to choose the material from a group of three materials that are completely different of yarn contents.[1]

As hygienic requirements imposed on priority material are required laboratory experiments to reveal them. Table 1 presents the basic characteristics of the materials used for the product for coat garment for men.

***Table 1:*** *The basic characteristics of the materials*

| Crt. no. | Name | BUCEGI | VIANA | ELITA |
|---|---|---|---|---|
| **0** | **1** | **2** | **3** | **4** |
| 1 | Yarn content | 90% wool, 10% celo | 85% wool, 15% celo | 70% wool, 30% sintetic yarns |
| 2 | Yarn fineness | 14,5 Nm | 35Nm | 33Nm |
| 3 | Yarn density in U | 161 | 220 | 228 |
| 4 | Yarn density in B | 142 | 215 | 275 |
| 5 | Specific mass | 180±15 | 140 ±10 | 87±10 |
| 6 | Specific mass | 162 ± 14 | 196 ± 14 | 79±9 |
| 7 | Width | 90 ± 2 | 140 ± 3 | 90±1 |
| 8 | Breaking load in U | 485 | 410 | 320 |
| 9 | Specific mass in B | 440 | 396 | 190 |

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 10 | Bond of woven fabric | Pânză | - | - |
| 11 | Stretching resistance in U | 18,1 | 18,5 | 15 |
| 12 | Stretching resistance in B | 24,2 | 19,2 | 17,3 |
| 13 | Dimensional changes in U | 2 | | 1,5 |
| 14 | Dimensional changes in B | 1,5 | | 1 |
| 15 | Finishing treatments | Bleached, boiled, bleached, mercerized | Raveled, bleached, mercerized | Bleached, boiled, antistatic treatment |

## 2. AIR PERMEABILITY

Air permeability was determined for each material from the set of three items of clothing for the completion of the coat men product.[2]

Following laboratory assessment determined that the best air permeability of BUCEGI material and has the lowest material is ELITA. Air permeability depends on the humidity of the sample and the thickness and porosity of its specific mass. First place occupied by BUCEGI fabric material is justified by a minimum thickness of 23 mm, through his structure was rare. BUCEGI material has a density in the warp de $D_o$ = 228 yarn/10cm, and a weft density of $D_o$ = 275 yarn/10cm, low values compared with the other materials. ELITE has the maximum material thickness compared to the other material due to a compact structure than the first fineness of yarns.

After determinations carried out, the obtained values are centralized in **Table 2** and in **Figure 1**.

***Tabel 2:*** *Air permeability*

| Crt. No. | Article | q(l/h) | Qmedium | Pa | l | Y | Rp | Dp | Q |
|---|---|---|---|---|---|---|---|---|---|
| 1 | BUCEGI | 1800 | 1870 | 115,58 | 11137,58 | 0,42 | $0,36X10^{-3}$ | 3 | $10,15X10^{3}$ |
| 2 | | 1900 | | | | | | | |
| 3 | | 1900 | | | | | | | |
| 4 | | 1850 | | | | | | | |
| 5 | | 1900 | | | | | | | |
| 6 | VIANA | 3450 | 3400 | 28,33 | 2068,09 | 0,48 | $0,23X10^{-3}$ | 3 | $9,07X10^{3}$ |
| 7 | | 3200 | | | | | | | |
| 8 | | 3450 | | | | | | | |
| 9 | | 3450 | | | | | | | |
| 10 | | 3450 | | | | | | | |
| 11 | ELITA | 4175 | 4395 | 36,62 | 2673,62 | 0.23 | $0,08X10^{-3}$ | 3 | $4,38X10^{3}$ |
| 12 | | 4300 | | | | | | | |
| 13 | | 4400 | | | | | | | |
| 14 | | 4700 | | | | | | | |
| 15 | | 4400 | | | | | | | |

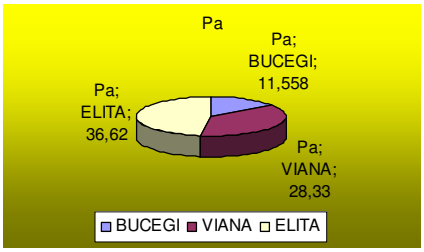


***Fig.1:*** *Air permeability*

## 3. VAPOUR PERMEABILITY

The vapor permeability and resistance to vapor permeability of each material from the set of the three materials for the completion of the product coat men's clothing.[3]

After determinations carried out, the values obtained are centralized in **Table 3** and **Figure 2**

***Tabel 3:*** *Vapour permeability*

| Crt. No. | Article | Mi | Mf | Pv | $\mu$ | $\delta$ | Rv |
|---|---|---|---|---|---|---|---|
| 1 | BUCEGI | 157,1 | 156,8 | 0,25 | 31,88 | 0,48 | 0,015 |
| 2 | VIANA | 177,1 | 177,05 | 0,14 | 18,21 | 0,23 | 0,012 |
| 3 | ELITA | 165,9 | 165,77 | 0,15 | 19,40 | 0,23 | 0,011 |

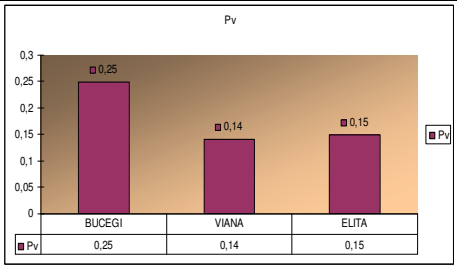


***Fig. 2:*** *Vapour permeability of the three materials proposed for product realization garment - men coat.*

The first place is occupied by the material justified by high fineness of yarns, textured yarns of wool and anti - wrinkle treatment applied its finishing department treatment increases the rate of evaporation.[4] The texture has a favorable influence on the permeability of the vapor. Not only first justified by structural parameters and finishing treatments but the last. Viana material was subjected to antistatic treatment during the finishing process. This is due to retention of moisture vapor permeability decreases.

## 4. HYDROPHILICITY

Hydrophilicity analysis can be done by comparing its numerical values or how they evolve over time

***Tabel 4 :*** *Hydrophilicity*

| **Crt. No.** | **Article** | **VARIATION OF CAPILLARY ASCENSION** | | | | | | **SPEED** | |
|---|---|---|---|---|---|---|---|---|---|
| | | **U** | | | **B** | | | **U** | **B** |
| | | 2,0 | 5,0 | 8,0 | 2,0 | 5,0 | 8,0 | | |
| 1 | BUCEGI | 33 | 50 | 58 | 15 | 40 | 53 | 1,725 | 1,662 |
| 2 | VIANA | 77 | 30 | 38 | 15 | 28 | 46 | 0,535 | 0,45 |
| 3 | ELITA | 10 | 22 | 22 | 10 | 10 | 10 | 0,381 | 0,25 |

It can be isolated the hydrophilicity of from their porosity of the material in that volume of liquid absorbed which is subject to the overall pore volume. Factors influencing the hydrophilicity are:

- The material structure
- Yarn composition.

After laboratory assessment may conclude that VIANA material is the most hydrophilic and ELITE material is least hydrophilic. In laboratory conditions, the method comprises exposing the sealed environment with a relative humidity of 100% of by the material specimens dried at $105+110^0$C, or conditioned and determining the amount by vapor absorbed in 24 hours.

## 5. THE WETTABILITY

Graphs allow an overall assessment of the behavior in terms of wettability, pointing out that special treatment antistatic obvious influence this parameter.

For article VIANA, the application of anti-wrinckle treatments and simple dressing adversely affect wettability feature, the article BUCEGI lies on the first place and ELITA article that although treated with antistatic treatment, which accused that has a poor wettability ranging is the second lowest place.

***Tabel 5:*** *The werrability*

| Crt. No. | Article | Sl | t | Mo | Mu | H | hmed | ih |
|---|---|---|---|---|---|---|---|---|
| 1 | BUCEGI | $10^{-2}$ | 25 | 1,05<br>1,51 | 1,62<br>1,63 | 7,87<br>7,88 | 10,74 | 0,82 |
| 2 | VIANA | | | 0,89<br>0,89 | 0,96<br>0,97 | 8,32 | 7,88 | 0,49 |
| 3 | ELITA | | | 1,91 | 2,08<br>2,11 | 8,89<br>8,90 | 8,99 | 0,7 |

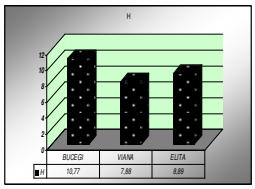


***Fig. 3:*** *The wettabilitty*

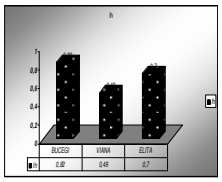


***Fig. 4:*** *The wettabilitty*

Experiments have revealed that by wettability properties acquired through completion are of limited duration. Generally after ten washes a garment reduces its wettability at half the value obtained after treatment by wettability.The wettability is due to the nature of the starting material, it significantly increased if the mixture contains staple yarn.

In laboratory tests it was determined:

- Treatment of materials antipilling reduce the ability to absorb water vapor.
- Increased porosity material including a large air mass increases yarn wettability.

## 6. CONCLUSIONS

After comparing measurements made for three types of materials were found in the composition of the material has a higher percentage of wool meets most conditions necessary for wearer comfort so is the material most commonly used to make the clothing for winter season. For an overview of experimental results, we try a tabulation thereof, described in **Table 6**.

***Table 6****: Centralization of obtained results*

| Crt. No.. | Article | Pa | Pv | Wettab. | H% | Total | Yarn composition |
|---|---|---|---|---|---|---|---|
| 1 | BUCEGI | 1 | 3 | 4 | 1 | 9 | 90% wool, 10% celo |
| 2 | VIANA | 2 | 1 | 3 | 2 | 8 | 85% wool, 15% celo |
| 3 | ELITA | 3 | 1 | 1 | 2 | 7 | 70% wool, 30% sinthetic yarns |

The types of materials used for making winter outerwear products greatly influences the design and technological design processesin their turn textiles are directly dependent on the characteristics by their structure. The difference between the material properties and material transformation phases in the product have been presented in order to emphasize the need for close co-working between professionals involved in making a fashion product from yarn, yarn, fabric and garment finishing product.

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