

ARTIGO REF: 6774

## **DEVELOPMENT OF A NEW PERSONAL PROTECTIVE EQUIPMENT FOR THE PROFESSIONAL COOKING STAFF THROUGH FUNCTIONAL DESIGN**

**Nuno J.R. Belino<sup>1(\*)</sup>, A.V.T. Silva<sup>2</sup>, R. Paul<sup>3</sup>**

<sup>1</sup>University of Beira Interior, Textile Science and Technology Department, Covilhã, Portugal

<sup>2</sup>University of Beira Interior, Textile Science and Technology Department, Covilhã, Portugal

<sup>3</sup>Hohenstein Institute, Boennigheim, Germany

(\*)*Email*: belino@ubi.pt

### **ABSTRACT**

Cooking related professions are closely associated with specific tasks carried out in a very hazardous environment, with continued exposure to high temperatures for long periods of time along with a very intense physical activity. For this reason, we intend to develop a PPE capable to prevent and minimize the effects of thermal stress on those professionals. Additionally, we seek to define a new trendy line for those pieces of cloth with innovative materials, shapes/silhouettes and imagery.

It is known for a fact that the majority of the cooking staff develop their work under inappropriate conditions, normally, closed and small spaces, sometimes with poor illumination and ventilation, excessive noise and, particularly, extremely heated environment. The aforementioned situation leads to an accelerated tiredness, increasing of negligent and insecure actions and, finally, to work accidents. According to Wsterlund (1998) thermal stress caused by heat can be defined as the situation in which the human body faces serious problems regarding the dissipation of excessive heat into the surrounding environment. Olgay (1973) proved that this continued situation can provoke serious damages, such as: exhaustion, dehydration, head ache, dermatological problems, male infertility, cramps, psychological problems, fatigue, thermal shock and in the utmost severe situation, death.

Having full knowledge of the working conditions in which these professionals perform their activity and taking into account the data collected from a survey conducted amongst these workers (77 interviews) authors decided to develop an innovative and cost effective PPE, made with patches of knits and fabrics, with carefully chosen materials placed in selected areas, so as to tackle the reported main problems. Thus, a thermal barrier comprised by a laminated aerogel plate will be placed in the frontal area, most directly exposed to heat, whereas quick extraction of perspiration will be achieved through a patch of knit containing micro polyester dri-release and Seacell Active. Jersey knit structure will permit an improved flexibility, freedom of movement, elasticity and air permeability. A customized stylish design, well-adjusted to the job requirements, completed our approach.

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