Utilizing functional properties of warp knitted fabrics in the forensic evidence field

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Abstract:
The forensic evidence is one of the important scientific departments in achieving justice through the establishment of physical evidence that lifted from the scene as tracers be dealt with in the laboratory to convert it to physical evidence useful in exile or proof which helps eliminate to reach true of the accused and the rest of the perpetrators, particularly after the development of quality organized crime. Uses warp knitted fabrics has multiplied in recent times due to its characteristics and functional specifications gained from the diversity of compositions constructions and its raw materials, and in the case of exposure these fabrics to external forces (such as deformation - damage - stresses - etc) we can take advantage of analysis structural organization to know the reasons for these changes by using modern techniques to strengthen forensic elements. After reviewing the previous studies in the same field we found it has not been exposed to warp knitting fabrics in the field of forensic evidence, so the aim of this research is to provide an analytical study on the impact of the functional properties and composition of warp knitting fabrics and its raw materials toward the stresses, cutting and depravity forces and analysis of the impact of and means to strengthen the assault forensic evidence. nine warp knitting samples were produced used different constructions and compositions (mixing cotton with polyester 65:35 % - mixing polyamide 6 with Lycra by 83: 17% - mixing polyamide 6.6 with Lycra 17:83% - polyester 100%). Conducted many laboratory tests to evaluate the functional properties of produced warp knitted fabrics using different structures of composition (gunshot test using a weapon pistol 9 mm - fabric weight – fabric thickness – bursting strength - air permeability - the number of rows/cm and number of columns/cm), it was also an analysis of the lost and the damage and determine the ratios remnants by using modern techniques, and then schedule the test results and statistical representation. The results proved that the damage area of approximately (3: 2) times the loss space, and that the loss space in fabrics vary depending on the weight, thickness and raw material using constant distance, and it was found that the remnants ratios above all was less than in the gunshot just 4 meters, while it can be greater when the inlet shot while carrying as far we are from the slot in the entry of the bullet.

Key words:
Knitting warp, forensic evidence, functional properties, Installation certain amount

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