

## Experimental Investigation of Stain Removal Performance of Different Types of Top Load Washing Machines with Textile Mechanical Damage Consideration

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**Abstract :** One of the main targets of the washing machine is to remove any dirt and stains from the clothes. Especially, the stain removal is significantly important in the Far East market, where the high percentage of the consumers use the top load washing machines as washing appliance. They use all pretreatment methods (i.e. soaking, prewash, and heavy functions) to eliminate the stains from their clothes. Therefore, with this study it is aimed to study experimentally the stain removal performance of 3 different Top-Loading washing machines of the Far East market with 24 different types of stains which are mostly related to Far East culture. In the meanwhile, the mechanical damage on laundry is examined for each machine to see the mechanical effect of the related stain programs on the textile load of the machines. The test machines vary according to have a heater, moving part(s) on their impeller, and to be in different height/width ratio of the drum. The results indicate that decreasing the water level inside the washing machine might result in better soil removal as well as less textile damage. Beside this, the experimental results reveal that heating has the main effect on stain removal. Two-step (or delayed) heating and a lower amount of water can also be considered as the further parameters

**Keywords :** laundry, washing machine, top load washing machine, stain removal, textile damage, mechanical textile damage

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