

















































Final Year Project Showcase Batch-2018 Year 2022

Department: Textile Engineering		
Programme: Textile Sciences		
1	Project Idea	The aim of this project is to reduce deviation in fits and shrinkages of stretched denim jeans by analyzing the effects of acid and bleach washing at different time, temperature and concentrations in wash recipes.
2	Process	In order to accomplish the above stated aims, the objectives which have to be fulfilled are: To study and understand the effects of acid and bleach washing on various parameters. To analyzing the reasons for fits and shrinkages variation. Propose the possible alternative corrective measures through iterative processes.
3	Outcome	The effect of acid and bleach washing of the denim garments under investigation could be perceived by comparing the physical and mechanical properties namely shrinkage%, GSM, yarn count, EPI and PPI, tensile strength, tear strength and K/S. These results interpreted a clear view of the impact of various parameters on several properties of blankets along with the basic five pocket jeans in order to look into the effects of washing by altering recipes with different combinations.
4	Evidence (Theoretical Basis)	Today, in the apparel industries deviation in fits and shrinkages is regarded as one of the major concerns which can never be appreciated by consumers thus resulting in the withdrawal of orders hence the company will experience a significant loss. Through this project we have outlined a strategy that renders how to design the process to assist industries work more efficiently. The key focus of this project was to explore the reasons for this unenviable constraint that will eventually lead towards variation in measurements of the garment. Among several wash classes we have selected acid and bleach washing methods as only limited work has been done on these methods. The above stated problem can be resolved through several different ways but among these techniques one way was to investigate the effects of various parameters involved in wash cycle which were responsible to impart deviation in fits and shrinkages on stretch denim jeans. Hence, before starting the experimentation work on washing processes parameter identification was one of the most important finding to be considered. The followed parameters for this research includes time, temperature, amount of stones, amount of PP and bleach.

		This project was initiated with blanket making that were washed with different wash classes of acid and bleach namely light acid, medium acid, light bleach and full bleach. Afterwards, this approach was stretched towards the manufacturing of basic five pocket jeans in order to analyze these effects on garment which was done by various combinations in washing recipes.
5	<p>Competitive Advantage or Unique Selling Proposition (Cost Reduction, Process improvement, Attainment of any SDG (Sustainable Development Goal),</p> <p>Denim washing is the most critical finishing stage performed on garment which is carried out by utilizing a series of treatments for obtaining the desirable results.</p> <p>During this span of wash cycle, garments are highly influenced thus fibre receives a great decline which ultimately gets damage due to heavy mechanical agitation and the detrimental effects of chemicals that are used in wash recipes. Today, in the apparel industries the deviation in fits and shrinkages are considered as one of the major issues which can never be entertained by consumers resulting in abrogation of orders hence the company will experience a huge loss.</p>	
a	<p>Attainment of any SDG (e.g. How it is achieved and why it is necessary for the region)</p>	<p>The Sustainable Development Goals (SDGs) are the blueprint to achieve a better and more sustainable future for all.</p> <ul style="list-style-type: none"> • SDG#8: Decent Work and Economic Growth • SDG#9: Industry, Innovation and Infrastructure • SDG#10: Reduced Inequalities • SDG#12: Responsible Consumption and Production <p>Above SDG attained in this project.</p>
b	<p>Any Environmental Aspect (e.g. carbon reduction, energy-efficient, etc.)</p>	In future we will be working on environmental aspects.
c	<p>Cost Reduction of Existing Product</p>	By analyzing different factors effecting on overall wash recipe we have optimize washing recipe which will ultimately reduced overall chemical costs for denim washing.
d	<p>Process Improvement which Leads to Superior Product or Cost Reduction, Efficiency Improvement of the Whole Process (e.g. What is the issue is current process and what improvement you suggests)</p>	<p>The prime focus of this project was to explore the reasons for this undesirable flaw that would eventually lead towards variation in measurements of the garment.</p> <p>we have created different combinations by varying time, temperature, amount of stones, amount of PP and bleach every time by using Minitab.</p> <p>In such a manner these effects were evaluated on various garment properties This is how this project would help industries to reduce deviation in fits and shrinkages on garment.</p>
e	<p>Expanding of Market share (e.g. how it expand and what is the problem with the current market)</p>	Denim industries are now taking measures and are shifting towards sustainable production methods and are concerned for manufacturing environmental friendly jeans. There are several different issues that have been encountered in our project during acid and bleach washing. Which can be considered as future projects which can be beneficial for industry.
f	<p>Capture New Market (e.g. Niche market or unaddressed segment)</p>	
6	<p>Target Market (Industries, Groups, Individuals, Families,</p>	All Denim industries and customers

	Students, etc) Please provide some detail about the end-user of the product, process, or service																																																																																																																																																																																																																										
7	Team Members (Names along with email address)	ERAJ NASEEB erajnaseeb06@gmail.com SAMIA SHOAIB samiaasho@gmail.com ARSHMA IMAM arshmaimam@gmail.com MARIA HABIB mariahabib916@gmail.com																																																																																																																																																																																																																									
8	Supervisor Name (along with email address)	Engr Sehrish Naveed sehrish.naveed@neduet.edu.pk Dr Muhammad Ali alimughal@neduet.edu.pk																																																																																																																																																																																																																									
10	Pictures (If any)	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="20">BLEACH WASH</th> </tr> <tr> <th rowspan="2">BW</th> <th rowspan="2">GSM</th> <th colspan="2">TEAR</th> <th rowspan="2">K/S</th> <th colspan="2">TENSILE</th> <th rowspan="2">SH%</th> <th rowspan="2">AW</th> <th rowspan="2">SAMPLE</th> <th rowspan="2">TIME</th> <th rowspan="2">TEMP.</th> <th rowspan="2">AMOUNT</th> <th rowspan="2">GSM</th> <th colspan="2">TEAR</th> <th rowspan="2">K/S</th> <th colspan="2">TENSILE</th> <th colspan="2">SH%</th> </tr> <tr> <th>WP</th> <th>WT</th> <th>WP</th> <th>WT</th> <th>WP</th> <th>WT</th> <th>LENGTH</th> <th>WIDTH</th> </tr> </thead> <tbody> <tr> <td></td> <td>308.5</td> <td>19.46</td> <td>32.73</td> <td>15.57</td> <td>48.21</td> <td>22.8</td> <td>0</td> <td></td> <td>2B</td> <td>15</td> <td>50</td> <td>3</td> <td>372.7</td> <td>15.24</td> <td>30.74</td> <td>5.08</td> <td>26.54</td> <td>20.54</td> <td>0.26667</td> <td>20</td> </tr> <tr> <td></td> <td>308.5</td> <td>19.46</td> <td>32.73</td> <td>15.57</td> <td>48.21</td> <td>22.8</td> <td>0</td> <td></td> <td>3B</td> <td>15</td> <td>60</td> <td>3</td> <td>373.8</td> <td>8.98</td> <td>14.55</td> <td>0.49</td> <td>18.32</td> <td>7.55</td> <td>1.4</td> <td>20.1333</td> </tr> <tr> <td></td> <td>308.5</td> <td>19.46</td> <td>32.73</td> <td>15.57</td> <td>48.21</td> <td>22.8</td> <td>0</td> <td></td> <td>4B</td> <td>10</td> <td>50</td> <td>6</td> <td>369.2</td> <td>17.4</td> <td>31.2</td> <td>7.17</td> <td>30.51</td> <td>8.38</td> <td>0</td> <td>18</td> </tr> <tr> <td></td> <td>308.5</td> <td>19.46</td> <td>32.73</td> <td>15.57</td> <td>48.21</td> <td>22.8</td> <td>0</td> <td></td> <td>5B</td> <td>15</td> <td>60</td> <td>6</td> <td>388.6</td> <td>13.33</td> <td>22.35</td> <td>2.24</td> <td>19.09</td> <td>6.16</td> <td>0.93333</td> <td>20.6667</td> </tr> <tr> <td></td> <td>308.5</td> <td>19.46</td> <td>32.73</td> <td>15.57</td> <td>48.21</td> <td>22.8</td> <td>0</td> <td></td> <td>6B</td> <td>15</td> <td>50</td> <td>6</td> <td>378.4</td> <td>14.77</td> <td>26.55</td> <td>6.91</td> <td>17.88</td> <td>18.11</td> <td>2</td> <td>20</td> </tr> <tr> <td></td> <td>308.5</td> <td>19.46</td> <td>32.73</td> <td>15.57</td> <td>48.21</td> <td>22.8</td> <td>0</td> <td></td> <td>7B</td> <td>10</td> <td>60</td> <td>3</td> <td>365.2</td> <td>19.46</td> <td>29.73</td> <td>11.12</td> <td>26.44</td> <td>19.48</td> <td>0.13333</td> <td>17.7333</td> </tr> <tr> <td></td> <td>308.5</td> <td>19.46</td> <td>32.73</td> <td>15.57</td> <td>48.21</td> <td>22.8</td> <td>0</td> <td></td> <td>8B</td> <td>10</td> <td>50</td> <td>3</td> <td>353.4</td> <td>14.99</td> <td>28.4</td> <td>9.14</td> <td>23.66</td> <td>20.78</td> <td>0.53333</td> <td>19.6</td> </tr> <tr> <td></td> <td>308.5</td> <td>19.46</td> <td>32.73</td> <td>15.57</td> <td>48.21</td> <td>22.8</td> <td>0</td> <td></td> <td>9B</td> <td>10</td> <td>60</td> <td>6</td> <td>377.6</td> <td>11</td> <td>17.72</td> <td>0.76</td> <td>20.96</td> <td>9.94</td> <td>0.13333</td> <td>20.4</td> </tr> </tbody> </table>	BLEACH WASH																				BW	GSM	TEAR		K/S	TENSILE		SH%	AW	SAMPLE	TIME	TEMP.	AMOUNT	GSM	TEAR		K/S	TENSILE		SH%		WP	WT	WP	WT	WP	WT	LENGTH	WIDTH		308.5	19.46	32.73	15.57	48.21	22.8	0		2B	15	50	3	372.7	15.24	30.74	5.08	26.54	20.54	0.26667	20		308.5	19.46	32.73	15.57	48.21	22.8	0		3B	15	60	3	373.8	8.98	14.55	0.49	18.32	7.55	1.4	20.1333		308.5	19.46	32.73	15.57	48.21	22.8	0		4B	10	50	6	369.2	17.4	31.2	7.17	30.51	8.38	0	18		308.5	19.46	32.73	15.57	48.21	22.8	0		5B	15	60	6	388.6	13.33	22.35	2.24	19.09	6.16	0.93333	20.6667		308.5	19.46	32.73	15.57	48.21	22.8	0		6B	15	50	6	378.4	14.77	26.55	6.91	17.88	18.11	2	20		308.5	19.46	32.73	15.57	48.21	22.8	0		7B	10	60	3	365.2	19.46	29.73	11.12	26.44	19.48	0.13333	17.7333		308.5	19.46	32.73	15.57	48.21	22.8	0		8B	10	50	3	353.4	14.99	28.4	9.14	23.66	20.78	0.53333	19.6		308.5	19.46	32.73	15.57	48.21	22.8	0		9B	10	60	6	377.6	11	17.72	0.76	20.96	9.94	0.13333	20.4
BLEACH WASH																																																																																																																																																																																																																											
BW	GSM	TEAR		K/S	TENSILE		SH%	AW	SAMPLE	TIME	TEMP.	AMOUNT	GSM	TEAR		K/S	TENSILE		SH%																																																																																																																																																																																																								
		WP	WT		WP	WT								WP	WT		LENGTH	WIDTH																																																																																																																																																																																																									
	308.5	19.46	32.73	15.57	48.21	22.8	0		2B	15	50	3	372.7	15.24	30.74	5.08	26.54	20.54	0.26667	20																																																																																																																																																																																																							
	308.5	19.46	32.73	15.57	48.21	22.8	0		3B	15	60	3	373.8	8.98	14.55	0.49	18.32	7.55	1.4	20.1333																																																																																																																																																																																																							
	308.5	19.46	32.73	15.57	48.21	22.8	0		4B	10	50	6	369.2	17.4	31.2	7.17	30.51	8.38	0	18																																																																																																																																																																																																							
	308.5	19.46	32.73	15.57	48.21	22.8	0		5B	15	60	6	388.6	13.33	22.35	2.24	19.09	6.16	0.93333	20.6667																																																																																																																																																																																																							
	308.5	19.46	32.73	15.57	48.21	22.8	0		6B	15	50	6	378.4	14.77	26.55	6.91	17.88	18.11	2	20																																																																																																																																																																																																							
	308.5	19.46	32.73	15.57	48.21	22.8	0		7B	10	60	3	365.2	19.46	29.73	11.12	26.44	19.48	0.13333	17.7333																																																																																																																																																																																																							
	308.5	19.46	32.73	15.57	48.21	22.8	0		8B	10	50	3	353.4	14.99	28.4	9.14	23.66	20.78	0.53333	19.6																																																																																																																																																																																																							
	308.5	19.46	32.73	15.57	48.21	22.8	0		9B	10	60	6	377.6	11	17.72	0.76	20.96	9.94	0.13333	20.4																																																																																																																																																																																																							
11	Video (If any)	https://drive.google.com/file/d/1LPoVleSDtocKr3KtTlhyngiX8Kfq90NR/view?usp=sharing																																																																																																																																																																																																																									