# Application of 5S System in the Sample Section of an Apparel Industry for Smooth Sample Dispatch

**Adnan Maroof Khan and Md. Mazedul Islam**
Department of Textile Engineering, Daffodil International University, BANGLADESH

## Abstract

*In an Apparel Manufacturing Industry and in case of factory merchandising, the role of the Sample Section is really very important. Whatever may be the quality or productivity of the production floors, the factory merchandising section will not be able to build up a good business relationship with the buyer if they fail to timely dispatch quality samples to buyers. The samples produced at the sample section, are vital parameters through which the buyers judge the highlighting performances of the factory. When they do not receive samples timely and without adequate quality, they get frustrated with the factory or with the factory merchandising team, which results to the cancellation of the orders or the declination in rewarding future orders to that factory. These can really affect the overall factory economy. The goal of these articles is to find out the Sample Section dilemma and formulate possible as well as applicable solutions, which will save the factory from loosing potential orders from renowned customers (buyers).*

**Keywords:** Apparel Industry, Merchandising, 5S, Management, sample section.

## Introduction

Before confirming orders to the factory, the buyer actually evaluates the skill of the factory to determine whether they will be able to meet the desired standard. Even, it has been observed upon several occasions that, although factory was very successful in providing quality samples within given time, the final output from the production floor were not up to the satisfactory level. But in those cases, buyer did not bother to give further more orders to the factory. Many factories were seen to get away with their wonderful buyer feed-back approaches with good factory merchandising communications. In this case the role of Sample Section is really very vital, because proper feed-back with buyer is not really possible without the efficient cooperation of the Sample Section. That is why, role of Sample Section is so important. Again, most of the times, it was found out that, not exactly due to the workmanship of the Sample Section personnel, the sample has failed, rather, the failure on most occasions are due to management issues[1]. Sample Section is a very busy part of a garments factory. They require handling various types of samples on regular basis. One sample section handles four to five buyers' samples, each buyer works with 10-15 samples seasonally and each style has four to six varieties of samples to be dispatched to buyer[2]. These figure really indicates that, it is really a jam-packed section where there is very limited time given by buyers for sample submission deadlines. Moreover, these samples with adequate quality have to be dispatched within the deadline given by buyer; otherwise, relationship with buyer will be at risk of deterioration. Therefore, the activities of the Sample Section have to be handled and organized in a very efficient manner by wonderful management techniques. The management has to initially find out the reasons, why they are facing problems and after finding out, they need to give potential suggestive theoretical solutions and then, they require to implement those. These steps will hopefully be able to solve these sample section dilemma for the greater interest of the factory and the Apparel Industry of our country.

## General overview of Apparel Industry Sample Section

This is a very important section of an Apparel Industry. The factory merchandising sections depends a great deal on the Sample Section for smooth and proper buyer feed-back. Idea or design of the buyer is needed to be displayed by means of sample submission. Quality and timely sample submission develops wonderful relationship of buyer with the factory. Successful negotiation of orders is possible due to successful approval of samples. Frequent rejection of Samples, sometimes, causes cancellation of buyer orders or it negatively influences buyer not to give future orders to that particular Vendor. This section of the Apparel Manufacturing Industry is immensely work-loaded. Due to huge pressure of work, if the management of this section is not very efficient, then a lot of mistakes may occur. These mistakes of sample making may lead to compel the section to remake the particular sample which will definitely increase the work-load many more. Faulty sample submission will ruin the image of the factory to buyers' point of view and delay in sample submission may generate negative questions on the buyer's mind about the professionalism of the factory[3]. So these are highly required so that Sample Section may work in a better efficient methodology with required discipline to maintain good factory image to buyer. Here, the work-load on the sample section is really a major concerning cause. Various Samples are required to be prepared in the Sample Section. Some of these are mentioned in figure-1.

## The Sample Section Dilemma

Many potential reasons have been identified which are really causing problems in the Sample Section Management. Some major problems like Weak File Management, Weak Inventory Management, Problems Caused due to Dirty Sample Section,

Presence of Less-skilled and Inexperienced Personnel, etc. have been identified. These major causes are affecting the sample section in a lot of ways[4]. If these problems of managerial issues are solved then the Sample Section can really run very effectively. The reasons of sample section dilemma and their impacts in the Apparel Industry are highlighted in table-1.
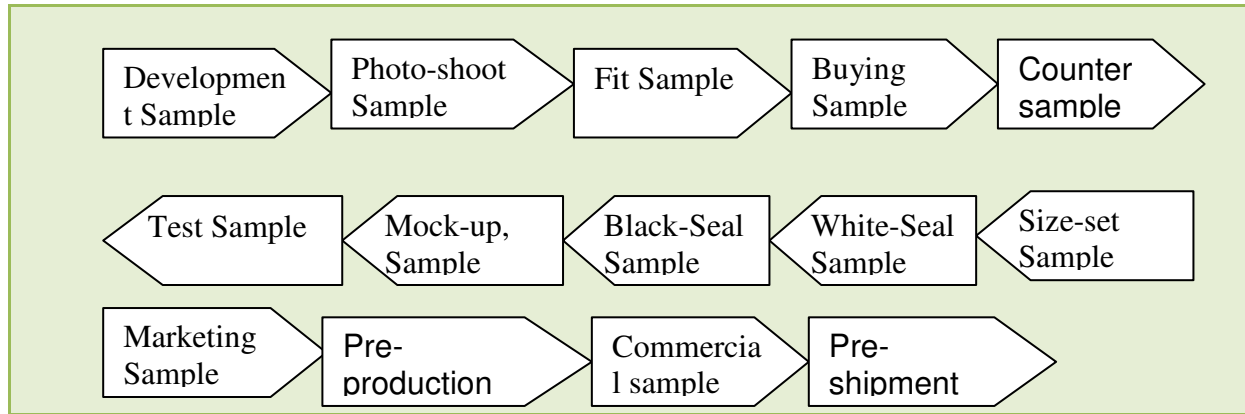


**Figure-1**
**Various Samples required preparing in the Sample Section**

**Table-1**
**Causes of Sample Section Dilemma and its Impacts in the Apparel Industry**

| Causes | Problems | Impacts | Result |
|---|---|---|---|
| Weak File Management | Wrong information to Washing/ Printing/ Embroidery section regarding Wash/ Printing/ Embroidery standard. | Failure of / Late in Sample Submission Deadline | Buyer's Dissatisfaction |
| | Mistake in garment panel measurement. | Sample Rejection | Buyer's Dissatisfaction |
| | Failure in understanding priority of which sample to be completed first. | Failure of timely Sample Submission | Buyer's Dissatisfaction |
| | Untimely follow-up of samples from the Washing/ Printing / Embroidery section. | Failure of Sample Submission Deadline | Buyer's Dissatisfaction |
| Weak Inventory Management | Made mistake by mixing-up fabric (color /yarn count /pattern no.), and trims and accessories like button (size /color /shape), sewing thread (color /ticket no.), etc. of one sample with the other. | Sample Rejection / submission deadline Failure | Unsatisfied Buyer |
| | Wrong Tagging or Missing Counter Sample | Re-work of the whole procedure of Sample Approval | Work-load of Sample Section. |
| Dirty Sample Section | Health hazards to workers by in-take of dust particles causing respiratory problems. | Worker's illness causing failure of submission deadline | Buyer's Dissatisfaction |
| | Workers' injury due to Slippery Floor by un-removed oil drops after m/c maintenance. | De-motivated worker | Panic at work; i.e. slow working |
| | Garment piece / cut panel suddenly falls on the dirty floor containing oil droplets or other dirty particles. | Failure of timely Sample Submission | Buyer's Dissatisfaction |
| | Machine accidents due to friction. | De-motivated worker | Pile-up of unfinished work |
| Less-skilled and Inexperienced Personnel | Technical problems like mismatching of cut panel, mismatched check / stripe, poor seam assembly, etc. | Sample Rejection / Delay in quality sample submission | Unsatisfied Buyer |
| | Limitation in the Supervisory skill of Sample Manager. | Delay in quality sample submission | Work-load of Sample Section. |

## Solutions to the Sample Section Dilemma

Observing the sample section dilemma, it was found that, the problems are occurring due to the management problems and also due to improper house-keeping. In this point of view, the Japanese Management Strategy, i.e. the 5S System, is really effective to minimize or eradicate such problems[5]. That is why; we decided to implement 5S in the Sample Section in order to solve the sample section dilemma.

## 5S- A Japanese Management Philosophy

5S is a Japanese Management Philosophy for safe Working Environment. It is a method for organizing a workplace, especially a shared workplace (like a shop floor, an office space or a factory production floor). The methodology originates from a Japanese housekeeping idea named because of the five Japanese words each designing with a letter Se or Shi. They are seiri, seiton, seiso, seiketsu and shitsuke[6]. The 5S system is a concept for enhancing the work efficiency, environmental safety and standard process flow and implementing this innovative method reduces wastage, which minimizes handling time and increases the profit of an organization (figure-2).

**Step 1: Seiri:** 'Seiri' means 'sorting'. That is, to sort and discard; sorting things into necessary and unnecessary items[6]. Seiri can be applied to the Apparel Industry Sample Section in the following means: i. Appoint experienced and skilled workers. ii. Appoint 1 cutting operator per 1 or 2 buyers' samples. Handle 4 to 6 buyers in 1 sample section. iii. Keep buyer-wise separate storing arrangements which is to be divided into different segments for each styles. iv. Every style-wise storing arrangement shall have different chambers; e.g. for

fabric, PDM file, trims and accessories, counter sample, etc. v. Keep a common separate zone and tag it with 'Miscellaneous zone' and move all the items (deemed necessary) of past orders over there. vi. Replace the old-style items from the cabinet with the current order. vii. Keep only active machineries and remove all inactive and unnecessary machineries. viii. Follow proper documentation. Remove all unnecessary documents. ix. Tag and label each and every section.

**Step 2: Seiton:** Seiton' means 'systematic arrangement'. That is, putting things in order and thus getting organized. Here, organizing refers to the systematic arrangement of equipments, tools and materials to provide workers with the most efficient access[7]. Seiton can be applied to the Sample Section in the following ways: i. Use wooden / Partex-board wall-cabinets at the circumference of the Sample Section and divide it into several zones like: Urgent, Running, Past-Orders, etc. ii. Place the cutting tables (2 or 3) at the boundary portions of the sample room. Keep adequate space for the movements of personnel. iii. Arrange the Sample Manager's sitting arrangement in such a way that, he/she may easily view all the working personnel. iv. Place the Sewing machines, maintaining proper rows and columns with adequate space for all types of worker movement. v. Make arrangement for at least 2 ironing operators to operate at the same time. vi. Arrange for proper lighting and ventilation system in the sample room. vii. The Team Leaders shall have individual note-books to note down their every-day follow-up jobs by making segments like Top Priority, Important, Less-Important, etc. viii. Every style-wise storing arrangement (like drawer) may contain wooden chamber partitions.
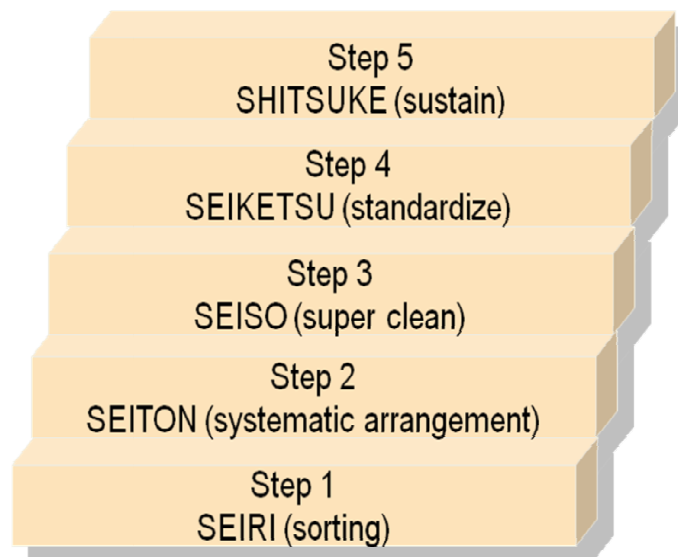
**Figure-2**
**Steps of 5S System**

**Step 3: Seiso:** 'Seiso' means 'shine / super clean'. That is, to keep work areas clean. Seiso is a daily activity for Japanese companies[6,8]. The work area is scoured at the end of each shift. This assures us that regular cleaning and shining saves time in the long run. Seiso can be applied to the Sample Section in the following ways: i. Assign individual cleaning responsibility. ii. Assign one worker to monitor sample section cleanliness. iii. Keep the Sample Room neat and clean. iv. Remove all the sticky-oil and oil-spots from the floor as well as from the m/c surface. v. Keep the Sample Room dust-free. vi. Keep the Trash-bins at every corner of the Sample Room and also by the side of each sewing machine, cutting/ finishing tables, etc.

**Step 4: Seiketsu: 'Seiketsu'** means **'to standardize'**. Here, steps 1, 2 and 3 are maintained properly. To establish standard so that areas stay cleaned up in order to ensure smooth work-flow in the work-place[6]. Seiketsu can be applied to the Apparel Industry Sample Section in the following ways: i. Assign cutting operators to follow-up 1 or maximum 2 buyers' samples. Assign 2 operators if any buyer has huge orders / samples. ii. Cutting operators shall look after the sample section storing inventory of

their respective buyers. iii. They shall also follow-up the sample submission deadline, sample styling, washing, printing, embroidery, etc. instructions /delivery, etc. iv. There shall be routine maintenance of sample section machines, utilities, etc. on regular basis. v. There shall be routine clean-up of the whole sample section on regular basis.

**Step 5: Shitsuke: 'shitsuke'** means **'to sustain'**. That is, to establish procedures for safe working environment[6,10]. This is the step continuation of the habit of implementing the first four steps in order to promote 5S campaign.

Shitsuke can be applied to the Sample Section in the following ways: i. Make first 4 steps 1,2,3,4 – a regular practice. ii. Make it as a discipline in this Sample Section. iii. Arrange at least 1 or 2 hours per week training sessions to motivate and encourage workers why 5S is so important in the working field. iv. Create awareness of work-place discipline, to ensure speedy and safe-disciplined working environment. v. Review and Assess steps 1 to 4, then make correction adjustments and apply in the Sample Section.

**Table-2**
**How far 5S has solved the Sample Section Dilemmas**

| Causes | Problems | Solutions | |
|---|---|---|---|
| | | **General Instructions** | **By means of** |
| Weak File Management | Wrong information to Washing/ Printing/ Embroidery section regarding Wash/ Printing/ Embroidery standard. | Genuine standard found out by proper file management. | applying seiri and seiton |
| | Mistake in garment panel measurement. | Correct measurement sheet found out by pro-per file management. | applying seiri and seiton |
| | Failure in understanding priority of which sample to be completed first. | Proper follow-up and file management. | seiri, seiton and seiketsu |
| | Untimely follow-up of samples from the Washing/ Printing / Embroidery section. | Proper follow-up and file management. | seiri, seiton and seiketsu |
| Weak Inventory Management | Made mistake by mixing-up fabric (color /yarn count /pattern no.), and trims and accessories like button (size /color /shape), sewing thread (color /ticket no.), etc. of one sample with the other. | Proper file management and strong follow-up. | applying seiri, seiton and seiketsu |
| | Wrong Tagging or Missing Counter Sample | Proper file management | seiton, sei-ketsu and shitsuke |
| Dirty Sample Section | Health hazards to workers by in-take of dust particles causing respiratory problems. | Maintaining cleanliness and installing ventilation system | seiton, seiso and seiketsu |
| | Workers' injury due to Slippery Floor by un-removed oil drops after m/c maintenance. | Routine cleanliness time to time at every pre-determined interval | seiso, seiketsu and shitsuke |
| | Garment piece / cut panel suddenly falls on the dirty floor containing oil droplets or other dirty particles. | Routine cleanliness of the sample section including floor. | seiso, seiketsu and shitsuke |
| | Machine accidents due to friction. | Routine cleanliness and maintenance of machines. | seiso, seiketsu and shitsuke |
| Less-skilled and Inexperienced Personnel | Technical problems like mismatching of cut panel, mismatched check / stripe, poor seam assembly, etc. | Proper training / selection of skilled personnel | seiketsu and seiri |
| | Limitation in the Supervisory skill of Sample Manager. | Need to follow 5S | Overall 5S |

**How far the Sample Section Dilemmas were solved by 5S??:** After analyzing the main reasons of the sample section dilemmas, it was found that, if all the solutions given by implementing 5S system be properly applied, then smooth sample dispatch with quality is really possible. These are mentioned in table-2.

## Conclusion

The suggestive solutions provided through this Japanese 5S System application in the sample section of apparel industry reflected as a great effective tool for smooth sample production and dispatch with better quality sample. Hence, also an excellent relation build up with the buyer side and thus a better scope to have more production order for the apparel industry which is highly expected from manufacturer's side. The Japanese 5S System is a very important system for ensuring systematic discipline. Moreover, this is a world-wide acceptable formula which helps in a great deal in solving the managerial level problems. This system is already globally recognized and gained huge fame by improving Productivity, Quality and Safety at work. Many people have applied it everywhere including Houses, Offices, Educational Institutions, Hospitals, Restaurants, etc. and became successful at overall management at their respective fields. So, everybody should implement 5S at every possible section of their day to day life and of course in the apparel industry sample section.

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