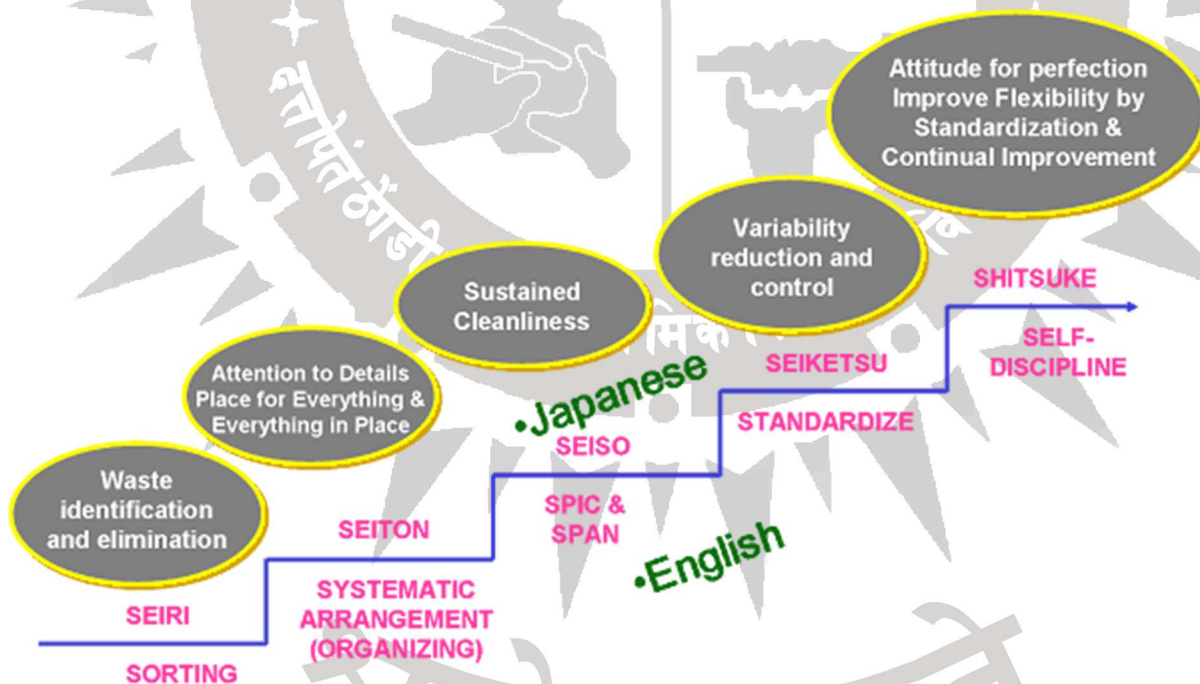


5'S Housekeeping

5's occupies a prominent place as one of the basic tools to enhance the quality of the workplace and it forms the foundation for all improvement efforts. It is an acronym for five Japanese words and denotes a step-by-step approach for developing a clean and well-organized workplace.

The term workplace could mean shop floor, office, manager's desk, garage, store, or any other place. A well-organized workplace provides a healthy and safe work environment and improves productivity by reducing time for locating tools and materials, damage to the materials, etc. A well-designed and implemented program of 5S would instil discipline and change the attitude of employees toward work. It is considered one of the foundation level techniques for continuous improvement.



5s activities are intended to qualitatively change the ways in which people think and behave, and, through these changes, to alter the quality of both equipment maintenance and the work environment.

The 5S List:

The 5 S was invented in Japan and it stands for the five Japanese words that start with the letter 'S': Seiri, Seiton, Seiso, Seiketsu, and Shitsuke. An equivalent set of five 'S' words in English has been adopted to preserve the 5 S acronym- sort, set (in place), shine, standardize and sustain- in the English usage.

1. Seiri (sort)
2. Seiton (straighten or streamline)
3. Seiso (shine)
4. Seiketsu (standardize)
5. Shitsuke (sustain)

1. Seiri (Sort)

The first step of the 5 S processes, seiri, refers to the act of throwing away all the unwanted, unnecessary, and unrelated materials in the workplace. The people involved in seiri must not feel sorry about having to throw away things. The idea is to ensure that everything left in the workplace related to the work. Even the number of necessary items in the workplace must be kept to its absolute minimum. Because of seiri, the simplification of tasks, an effective use of space, and the careful purchase of the items follow.

The most effective method to implement Seiri is to place/ attach a red tag to all unneeded items and move them to a location outside the work area for storage until disposed of. Sorting is an excellent way to free up valuable space and eliminate such things as obsolete stock, used and broken tools, irreparable jigs and fixtures, non-renewable jobs, surplus stocks etc.

Benefits expected from Seiri (sort):

1. Seiri (sorts) saves productive work.
2. It prevents incidents of unnecessary things.
3. It provides clarity as to what is in stock.
4. It reduces unnecessary handling, as there are a smaller number of items to handle.
5. It reduces the number of lockers/cabinets for storage (as numbers of filed papers/items stored are reduced)

2. Seiton (Set in order)

Seiton means systematic, orderly, efficient, and effective arrangement of items in use.

For effective storage, answers to the following questions are required.

What items are to be stored?

Where should the items be stored?

What quantity of the items is generally required to be stored?

Are there any special storage requirements?

How often the items are to be stored or retrieved?

Therefore, section means, "to arrange correctly following the correct method of doing activities and making thorough preparation so that the activities can be performed even if they occur abruptly." Since arranging correctly is a natural follow up activity after segregation, seiri and seiton are often used and practiced together. Some areas which often needs attention are unlabeled tool cribs, cluttered shelves./ lockers, office files, and things lying on the shop floor.

Thus this step of 5 S process can be carried out in the following manner step by step:-

Benefits of Seiton:

1. Easy retrieval of materials.
2. Time taken to search is minimized.
3. Unnecessary purchase is avoided.
4. Categorize files, mails, papers, etc. based on specific criterion viz. subject/title; project; customer/supplier/department/usage.
5. Compartmentalize cabinets/drawers/shelves/desks.
6. Determine the quantity of each item and plan storage according to pre-fixed quantity.
7. Plan storage to ensure easy retrievability (within pre-set target time).
8. Color code items for easy identification.
9. Keep files/binders vertically and not laid out.
10. Plan storage of compact disks to prevent them from getting scratched.
11. Install visual control for the replenishment of stocks and checking missing items.

12. Observe a 'Paper destruction day' once every quarter of the year.

3. Seiso (shine)

Seiso is cleaning the workplace completely so that there is no dust on the floor, machines, and equipment. The objective of seiso is to return items, jigs/fixtures, moulds, equipment, and other utilities and workplaces used during work to their original clean and polished condition by removing scrap and leftovers and wiping all surfaces to make dust/dirt free. The presence of dust can cause abrasions, scratches, blockages, leakages, bad connection (electrical defects), quality defects (e.g. painting on dusty surfaces), variability (e.g. wrong measurements and lack of process control). Since while cleaning, the surfaces are seen and touched, Seiso prevents potential problems by discovering abnormalities, which are still in the initial stages. People generally take pride in working in clean and clutter-free area and sparkling/shining helps to create ownership of the equipment and facility.

Cleaning is not a one-time activity. Some sort of standards of cleaning needs to be developed and regular follow up is necessary to sustain this improvement. This can be done with the help of making checklists the example is shown in below.

The activities necessary to implement Seiso in the organization

1. Keep own machines and workplace clean through sweeping floor and surroundings, dusting to make dirt-free, cobweb free wiping to make oil/grease, free polishing and painting.
2. Clean machines/worktable before the start of the daily routine. Eliminate leakage/spillage.
3. Brainstorm for creative ideas to make cleaning and inspection easier.
4. Clean even places most people don't notice. Remove scrap to avoid scratching.
5. Clean elements to remove dirt that cause sub-standard performance.
6. Clean electrical contacts to avoid bad connections (e.g. electrical contacts, pushbuttons, switches, etc.)
7. Dust off dirt inside the computer to avoid play up.

8. Remove oil and dust before painting to ensure a better finish.
9. Prepare a schedule for cleaning and assign clear-cut responsibilities.
10. Conduct inspection to unearth problems, identify root causes, and establish corrective action.
11. Carry out daily follow-up cleaning to sustain this improvement.
12. Clean up machine, jigs/fixtures, tools/gauges, etc. after use.
13. Place trash bins at strategic places and empty them at the end of the shift/day.
14. Clean up supply lines and coolant tanks; spray point booth, water storage tank, material handling trolleys.
15. Dust off parts, components, items lying on shelves in store.

Benefits of Seiso:

1. Early identification of problems like cracks/oil leakage.
2. Greater confidence of customers.
3. Improved product quality.
4. Pride for the employees.

4. Seiketsu (Standardize)

Seiketshu is repeatedly following of "Seiri", "Seiton" and "Seiso", developing and implementing standard operating procedures and maintaining safe and hygienic conditions at work leading to serene atmosphere. Seiketshu embraces both personal cleanliness and that of the work environment. Its emphasis on 5-S standardization and visual management. Standardization ensures that all assignments are absolutely clear and there is no undefined area. Visual management ensures that communication is simple and effective. Together, they (i.e. standardization and visual management) provide an effective way of continuous improvement.

The activities necessary to implement Seiketsu in the organization are:

1. Mark aisles of sufficient width and ensure that they are free from obstruction.
2. Standardize best practices in work areas & implement them as effective work standards.
3. Create as many visual control systems as possible such as:
4. Display department/office labels and nameplates. Ensure proper ventilation and exhaust.

5. Introduce colour for easy and faster identification (colour codes as shown in above).
6. Place first aid boxes and fire extinguishers at suitable locations and display location maps for fire extinguishers at strategic places.

5. Shitsuke (Sustain)

Shitsuke means self-discipline. It denotes commitment to maintain orderliness and to practice the first 4S as a way of life. The emphasis of shitsuke is the elimination of the bad habits and constant practice of the good ones. Once a true shitsuke is achieved, the personnel voluntarily always observe cleanliness and orderliness, without having to be reminded by the management. One must train oneself to keep the 4S principles and realize that by following the 5S, ultimately the work will become easier.

Shitsuke is the most difficult 'S' to implement and achieve. Since human nature is to resist change, many organizations returns to the status quo (i.e. end up with a dirty cluttered shop) a few weeks following the implementation of 5S.

Methodology of Shitsuke (Sustain)

1. Monitor the refined methods consistently.
2. Maintain the defined methods for continuous improvement.
3. Establish norms and follow them.
4. Keep repeating the 1 to 4 'S'

Benefits of Shitsuke (Sustain)

1. Discipline in the system.
2. Waste reduction.
3. High morale.
4. Neat and cleanliness.
5. Easier to work.
6. Lesser stress at work.

5S Action List

Therefore, in order to ensure 5S gets into the blood of the organization, the following action list needs to be put into place.

- a. Arrange employees training in 5S technique and provide pamphlets / easy to read booklets on 5S practices to all employees.
- b. Practice pick up components/papers/rubbish and promote friendly competition & competitive benchmarking among the departments for 5S.
- c. Observe paper destruction day (say 15th/16th day of the month following each quarter.
- d. Conduct fire drills and practice dealing with emergencies.
- e. Replace equipment after its economic retentive period.
- f. Work together on specific 5S projects.
- g. Insist that employees attend works in uniform and wear safety shoes.
- h. Set aside a short period (say 10 minutes) when everyone must concentrate on 5S (e.g. one day to ensure everything in place, another day to ensure there is no oil or air leaks.
- i. Mark 5 minutes at the beginning or end of the day to practice 5S.
- j. Use visuals to draw attention to 5-S non-conformances and achievements over the period and to create a competitive point.
- k. Audit 5-S housekeeping and follow-up on non-conformances.
- l. Display correct work instructions in the shop and offices and ensure employees perform work according to the laid down standard operation procedures.

Advantages of 5S System

1. Reduction in errors/defects due to standardized procedures.
2. Consistent and improved quality.
3. Higher productivity.
4. Lesser accidents.
5. Higher morale of employees.
6. Gets to work in a clean, organized, and clutter-free workplace.
7. Lesser time to retrieve things when required.
8. More useable space.
9. Reduction in machine downtime.

Disadvantages of using the 5S method:

The major problems with 5S appear when it is not properly understood, used, or implemented.

1 Misunderstanding of what 5S accomplishes

2 Resistance to change ·

3 Not addressing problems in the workplace ·

4 Lack of management support

