

# **PARKIR HOUSE KEEPING IMPLEMENTATION TO INCREASE SAFETY AWARENESS IN ALL BUSINESS PROCESSES**

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## **Abstract**

*This article has two main objectives. The first objective is to implement housekeeping (5S) program as a company culture by improving the safe workplace. The second objective is to increase safety awareness as part of respect for people in the company with better housekeeping would support reliable work flow, increase productivity and personnel satisfaction. 5S began as part of the Toyota Production System (TPS) in early and mid-20<sup>th</sup> century. The main objective is to increase the value of products and or services for customers by eliminating waste from production processes. Among the most common accident causes in many company are unsafe behavior, unsafe action, and unsafe condition which often relate to poor and tidiness. The aim of the program was to improve order and tidiness and consequently safety performance and to achieve better working environment and to reduce accidents caused by slips, trips and falls (on same level).*

**Keywords:** : 5S Program, Safe Workplace, Respect For People, Safety Performance

## **I. Introduction**

The 5S Methodology is a workplace organization strategy, consisting of five Japanese words : seiri, seito, seiso, seiketsu, and shitsuke, meaning sort, set in order, shine, standardize, and sustain.

These pillars are supporting a lean concept, which is including visual management in workplace, how to make the workplace more safe.

5S organize the workplace more efficiently, effectively, and safely, where it keeps the workplace clean, organized, and makes people more easier to do their jobs without wasting time or risking injury.

5S involves assessing everything present in workplace, removing the unnecessary items, organizing things, performing house keeping, until it's achieving consistently as a good habit.

From lean production point of view, workforce injuries and the resulting disruption to the progress of construction work represent waste. Beyond the human suffering, this implies a vast economical problem. Respective cost elements include victim's lost work hours, hours spent on changing work routines, investigation, repair of damages, transportation, capital cost during production stop, insurance expenditures, loss of income, cost of safety measures and medical treatment (Kjellén, 2000).

Good safety practices should be build the foundation of a modern business's safety culture.

## **II. Literatur Review**

### **2.1 Seiri (Sort)**

In workplace we have to determine what needs to be present and can be removed, such as tools, furniture, materials, equipments, etc.

There are some questions that we can ask to do this phase :

- Do we need this items ?
- How frequent we use it ?
- Who uses it ?
- What is the purpose of this items ?
- When was this item last used ?
- How many items do we really need ?

These question help us to determine the value of each item. A workplace might be better off without unnecessary items.

After we are sorting the unnecessary items, we can give the items to people who may need it, we can sell or throw away the items, or we can put into storage. For items that we put on the storage, we have to put *tag* as a sign of information which consist of location, description, etc.

### **2.2 Seiton (Set In Order)**

When we have implemented *sort*, it's more easier to determine what arrangement are most logical. Where should we put, how frequent the items used. The requirement is to make sure all items had place or home.

### **2.3 Seiso (Shine)**

In this phase, we are focusing on cleaning up the workplace, which is including sweeping, mopping, dusting, wiping down surfaces, putting tools, and materials away, etc.

Shine also involving performing regular maintenance on equipment and machinery. Planning for maintenance ahead of time means that business can define the problems earlier and prevent

breakdowns. That means less wastes time and no loss of profit related to work stoppages.

In 5S, everyone takes responsibility for cleaning up their workplace in daily basis to increase the ownership of the place which mean people will be more care and aware of their workplace and the company as well.

#### 2.4 Seiketsu (Standardize)

When the three steps of 5S are implemented, everything is well organized, workplace are cleaned, and equipments/tools is in a good working order. But sometime, in some company its hard to consistently maintain the behavior. So, we have to provide the standard to keep the consistently and make it as a people's habits. Standardize assigns a regular tasks, creates schedules (cleaning, sorting), and post instructions as an activities that become a routines and 5S organizing and cleaning will become a part of people's regular work.

#### 2.5 Shitsuke (Sustain)

Once the standard procedures for 5S are in place, everything will be performing in a good maintaining through the procedures was made. Sustain refer to the process of keeping 5S running smoothly and keeping everyone in the organization involved. The involvement must be from Top-Down management. The highest level management must be participate in 5S Program, as do employees out on the floor such as operators, mechanics, electrician, safety officers, warehouse people, including office staffs. Sustain means making 5S a long term program that will make the business will start to notice continuous positive results.

5S is not only for operational processes only but also can be implement on safety department.

From the safety perspective, 5S is focusing on eliminating risk in workplace by arranging in certain ways. Setting up the workstation more ergonomic, marking intersection where forklifts and pedestrians cross paths with signs, labeling the storage cabinet for cleaning chemicals, etc. These activities are part of 5S program that will increase people's awareness due to potential hazards.

Safety identification is a key issue mapped during Value Stream Mapping process, for each process step, data is collected on opportunities for safety or ergonomic improvement, in addition to tooling requirements, equipment requirements, material required, travel distance, and information requirements.

Determine proper layout of workplace or the tasks to ensure there are no dangerous area, that's what the 5S focus on. Neither approach to safety is right or wrong, the company should be paying attention to safety because of making people safe and safety is important.

### III. Methodology

Effectively implementing 5S can lead to waste reduction, enhanced employee knowledge, and improve productivity.

5S program is the foundation for the success of company business objectives, such as :

- a. Eliminate Non Value Added activities  
Mistaken activities that made by employees, suppliers, contractors, visitors, and other processes (transportation).
- b. Optimize workplace in office area, office area, and or other space utilization.
- c. Improve productivity in all area including employee safety and morale

There's some methodology that we can provide to support 5S implementation :

1. 5S Training  
5S program must be implemented by all employees, from highest level to low level management.  
Everyone have to participate in 5S activities and needs to have training as well.  
It could be done in class room, demonstration, workshop, and or hands on activities.  
We need to make the employees understand why the company is going to start using 5S and why it's important. We have to give them a brief history of 5S, its parts, and its benefits.
2. 5S Audit  
It's common to implement 5S audit to measure the number of 5S violations or percentage of audit compliance. And the audit has to be started from the leader, because leadership is one of the failure of 5S implementation. When leadership doesn't review the audits, it can make the accountability to the failure.
3. 5S Practices (Visual Communication)  
5S can't be effective if people never do practices. "Practices make Perfect. 5S provide the workplace more cleaner and easier to navigate. Visual communication tools can help keep the workplace more organized. Such as labels, floor markings, cabinet and shelf markings, one point lesson and safety campaign.
4. 5S Observation/Assessment (Gemba walk)  
Leadership is very important thing to ensure the 5S program is running smoothly. And the leader has to be participated in all 5S activities. The leader has to understand the business process, whether in the office area and floor area. Leader must do the observation and safety patrol regarding 5S program to see unsafe condition, unsafe behavior, and unsafe action such as LOTO. Leader has to cascade the observation activities to all level management through

brain storming to improve organization awareness. And leader has to implement 5S at the first time or *Lead by Example*.

#### 5. Put 5S activities on safety on KPI

To engage people on 5S involvement, company need to ensure that 5S on safety activity is included on their KPI individually, and group/department. Its for personal appraisal on end of the year.

#### 6. 5S Rewards

Company has to provide 5S rewards to increase safety awareness that also can increase people productivity.

### IV. Implementation And Discussion

Key component of 5S philosophy are safety and good housekeeping practices.

Safety is integral part of the sort, set in order, and shine segment of any 5S project. Standardize and sustain refers to methods used to ensure that safety and good housekeeping is maintained. Visual management such as check sheets can be used to build good habit in all area.

Safety also plays an important role in the 5S audit process. Standard worksheet are developed for each process to help make the process more visual, highlighting safety precautions for each step, in addition to showing where all work in process should be located.

The safety precaution presented on the standard worksheets typically are those resulting from the risk assessment process, a structure approach that results in a ranked listing of the risk involved for each activities.

#### 5S Examples - Sort, Set in Order



See the difference?

1. Sort - All unneeded tools, parts and supplies are removed from the area
2. Set in Order - A place for everything and everything is in its place



5S - Audit					Date	20-Feb	
Auditor : POJ		Score 1: No Activity at Sight-offer, Score 2: Many opportunities for improvement, Score 3: Minimum Acceptable Level, Score 4: Above Average, Score 5: Best Practice					
No.	Office Area	Unneeded objects	Unneeded files	Cables and wires	Waste, equipment and partitions	Total Score March 15	Previous Score February 15
1	Office	2.5	2.5	3	3.5	10	12
2	MT office	2.5	2.6	3	3.5	11.6	12
3	Meeting rooms (all)	3.5	3.5	3.5	3.5	14	14
4	HSE office	3.5	4.5	4.5	3.5	16	16
5	Production office	3	3	3	3	12	12
6	Automation office	2	2	2	3	9	9
7	Customer office	2	2	2.5	2.5	9	10
8	Finance-TPS	2	3	3	3	11	11
9	Finance-TPS	2	3	3	3	11	11
10	Implementation	2	2	2.5	2	8.5	11
11	TPS	3	2	2	3	10	10
12	Laboratory	2.5	3	2	3	10.5	9
13	Maintenance office	2	2	2	3	9	9
14	Reception	3	4	3	3	13	13

5S Lean Audit Checklist - Manufacturing									
Area Audited/shift :	Overall Score	Approved by : Auditor							
Area Supervisor :	Monthly Audit								
Employee Interviewed :	Quarterly Audit								
Audit Team Member :	Team Self Audit	Score							
Date Performed :		0	1	2	3	4	5		
0 = No Progress 1 = Very Poor 2 = Poor 3 = Good 4 = Very Good 5 = Excellent (Best Practice)									
1 SORT : Are there unneeded items in the area ?									
Comment on #1 :									
2 STRAIGHTEN : Do the items are needed have a consistently located, designated homes? When not in use, are their return to their homes?									
Comment on #2 :									
3 SHINE : Are the machine, work stations, floors, walls and all items in the area clean, free from clutter and properly maintained? Are checklists posted and up to date?									
Comment on #3 :									
4 STANDARDIZE : Team has established and documented standard on sort, straighten, and shine (checklist). Are the correct standards being followed, reviewed, and improve?									
Comment on #4 :									
5 SUSTAIN : Have sort, straighten, shine, standardized been fully implemented and functioning well? Are post audits posted and used for improvement?									

5S Lean Audit Checklist - OFFICE AREA									
Area Audited/shift :	Overall Score	Approved by : Auditor							
Area Supervisor :	Monthly Audit								
Employee Interviewed :	Quarterly Audit								
Audit Team Member :	Team Self Audit	Score							
Date Performed :		0	1	2	3	4	5		
0 = No Progress 1 = Very Poor 2 = Poor 3 = Good 4 = Very Good 5 = Excellent (Best Practice)									
1 SORT :									
1.1 Is the area clear of excess computers, printers, faxes, etc ?									
1.2 Is the area clear of excess work (Paperworks not organized) ?									
1.3 Is the area clear of excess personal items ?									
1.4 Is the area clear of excess out of dates manual, forms, etc ?									
1.5 Are the computer files sorted by naming convention ?									
Comment on #1 :									

2 STRAIGHTEN :									
2.1 Are computers and/or laptops located in correct places ?									
2.2 Are necessary office supplies properly identified and stored ?									
2.3 Are hardcopy files properly identified by label and location ?									
2.4 Are visual indicators present to identify current work ?									
2.5 Is the personal items properly identified by label and location ?									
Comment on #2 :									

3 SHINE :									
3.1 Are the computers and keyboards free of grimes and dust ?									
3.2 Are trash containers emptied on regular basis ?									
3.3 Are paper items (memo, etc) up to date ?									
3.4 Are desktop areas organized ?									
3.5 Are cleaning materials easily accessible ?									
Comment on #3 :									

4 STANDARDIZE :									
4.1 Can the employee explain the value of 5S ?									
4.2 Are checklist made visuals ?									
4.3 Are display boards up to date ?									
4.4 Have specific cleaning tasks been assigned ?									
4.5 Are 5S standards posted ?									
Comment on #4 :									

