



5S Methodology



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Introduction

After this game, we will show you more specifically what is the 5S methodology. (Définition de la 5S methodology global en industrie)

Nowadays, every company has to focus on the quality. To do this, it is necessary to organize everything in the company, from workbenches to desktops.

So we are going to introduce this concept, its benefits and its goals then how it works to finally introduce the 5S Method in the workshop Training Center to Thammasat.

The 5S Method is a prerequisite for any progress in an 4.0 industry. Indeed the days when corporate saturation and congestion could be perceived as signs of high activity and good health, are over. The era of total quality leads to the opposite conclusion. The disorder, the saturation, the lack of clarity in a company denote deficiencies in the organization. In this way, improving the working environment is necessary and need to be achieved even before any further progress is taken.

The 5S method is part of the Japanese methods that have emerged in the West in the 1980s and help building a working environment governed by simple, precise and effective rules.

The 5S method corresponds to the first technique to be implemented. It requires perseverance and determination. It works around 5 principles which correspond to the 5 S : SORT, SET IN ORDER, SHINE, STRANDADIZE and SUSTAIN. And the process of installing the method in the workshop requires determination: From the initial formation to the continuous formation passing through the involution of the operators.

Benefits and goals of the 5S Methodology

Why using 5S methodology ? Principally to reach to a total quality. And without order and cleanliness it's impossible. So its necessary to standardize the cleaning, the maintenance and even the product design steps.

By talking about TPM namely Total productive maintenance, 5S methodology permits to install productive work tool and atmosphere.

To sum up, the 5S methodology leads to Security by having a workbench resistance, to efficiency by taking care of the tools, to quality with clean product and workbench, to avoid the few failures with visual surveillance and good operating conditions. And finally, it leads to good work conditions with a clear atmosphere.

Goals:

The benefits are the same and it's necessary to implement different rules in different areas.

In security, the goal is to install the basic rules in the workshop:

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- Wear a helmet, gloves, glasses...
- Clearing the aisles (obstacles...)
- Fix leaks (oils, chemical products...)

In quality and maintenance as we explained before, it's about promoting maintenance and cleaning:

- Level 1 maintenance
- Evolving towards level 2 maintenance

To reach the productivity, we will sustain quality and protection of the tools, promote continuous amelioration and systematize the 5S time part, implement a plan execution time, and train employees by operating modes and instruction sheets.

Its exists two others points interesting to reach. Firstly the human behavior to install a team spirit and moral values in the company by teaching dedication and diligence. And secondly the cost reduction to avoid financial waste and gain margin.

How it works?

It's now time to explain you the principles of the 5S technology.

Principles of the 5S Methodology: Firstly, the main approach is to involve Order and cleanliness in each progress. It begins in transforming the workspace and staff habits. How do we implement this? Simply by a collective actions and fields actions. And obviously in a clean and luminous workshop where everything has been done to reduce inconveniencies the advantages are rapidly visible :

- Reduce the risk of losing products
- Reduce failures on cleaned and followed equipment
- Reduce accident risks
- Working atmosphere gets better
- Empower everyone: Staff is more involved

Success conditions of the 5S Methodology:

Obviously to advance the project to set up the 5S methodology within the workshop, the management is important. But to attain a perfect organization, it's necessary to consider that the project is unusual and must not be treated lightly. So it is important to drive it as a company project. In this way, the management must clearly signify the challenge and the interest of the project. It must grant the necessary importance to the work group in charge and to its constitution.

- Follow the work which is done by the group and stay informed of the details and procedures which had already been decided.

Also the staff commitment without which we could not succeed in this project, is necessary. Indeed operators consideration is essential because they participate to the definition of the

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objectives and the means needed, to the determination of the rules and modalities of following and control. No department should be forgotten. Indeed this project must only concerns production workshops but also technical and administrative departments. In that way, the 5S project become a company project as it involves the entire staff. Progressively, a new state of mind will appear.

Detail of the 5S methodology

5S methodology is composed of 5 S which represent the various steps.

The first one is SORT or Seiri in Japanese. This step consists in eliminating what can interfere with the analysis of the workbench. The second one is set in order or Seiton to make the workbench analyzable. Then , shine or seisou to maintain the workbench clear. The fourth step help to standardize or seiketsu to maintant the workbench functional. Finally, it would be important to sustain or Shitsuke in Japanese to maintain the rules of life. Tidying and cleaning are both part of each progress approach. They transform the workspace and staff habits.

SEIRI procedure : sort

The objective of this step is to get rid of everything which is useless. And to attain this objective, the recommendations are to distinguish the necessary from the useless and to remove the useless. To resume, all the things which are not used must get removed like broken pieces, defective pieces, rusty objects, tools you don't plan to use, unused things, diverse stuff outdated documents or else documents you don't need anymore. Because the human nature is to accumulate, to keep things just in case.

To begin, on a well identified working zone it's important to make a planning of sort, rid and initial cleaning operations, to plan a maintenance assistance; to make the communication table live and use it continuously and finally take pictures and display them.

Then the plan must continue. And during the operation of sort, if some points are problematic immediately the operator must tell his superior and mobilize skills to solve them. In a general way, the methods used are the stick tags, the inventory lists, to analyse each case and doesn't hesitate to dispose of.

SEITON procedure: tidy and locate

The objective is to tidy useful things. And the recommendations consist of placing each thing to a precise and accessible place, in order to find it and tidy it quickly after use. In this way we reduce useless move and time loss. For attain this situation it's important to determine appropriate places for each useful element.

SEISO procedure: Clean and Shine

The objective and recommendation is to regularly clean the workbench. It's completely a new state of mind and discipline. The process is to maintain the tool as it is. In this way, each operator has to ensure his workshop cleanliness. In some companies, the waste rate directly depends on the rigor in cleaning operations.

SEIKETSU procedure: Order and standardize

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The objective in this step is to create a clean atmosphere and systematize the previous stages. The watchword is simple. It consists to entrench methods in spirits and behaviour. This application is under each actor of the company.

SHITSUKE procedure: follow-up and rigour

In this stage, the objective is to standardise the approach and initiate an agreed upon discipline. In this way the watchword is to evaluate the progress.

There is a cycle to apply in the workshop, firstly write what we must do in documents, then do what is written, verify what is applied by auto control or audits and finally modify what is done by formations or simply change the writings.

Method 5S in your university

In ECAM university, we can find different workshop as the FabLab as you see on the picture and video. This is what we imagine for the Training Center in term of organization and method 5S on the workbench. So, we think to place some tags and inscriptions to define all the tools and machines. Moreover, we think about install tools holder as you can see on this video. This workshop respect totally the 5S method and the speaker assembly will be easier.