

FUNDAMENTAL OF INDUSTRIAL MANAGEMENT

Unit -5 5 S and Safety	<ul style="list-style-type: none">• Detailed concept of 5S and safety used in Industries• Integrated Management system
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5S

5S is a system for organizing spaces so work can be performed efficiently, effectively, and safely. This system focuses on putting everything where it belongs and keeping the workplace clean, which makes it easier for people to do their jobs without wasting time or risking injury.

The term 5S comes from five Japanese words:

Seiri (Sort)

Seiton (Set in Order)

Seiso (Shine)

Seiketsu (Standardize)

Shitsuke (Sustain)

1. Sort (Seiri)

1S – a red tag area containing items waiting for removal. Seiri is sorting through all items in a location and removing all unnecessary items from the location.

Goals:

- Reduce time loss looking for an item by reducing the number of items.
- Reduce the chance of distraction by unnecessary items.
- Simplify inspection.
- Increase the amount of available, useful space.
- Increase safety by eliminating obstacles.

Implementation:

- Check all items in a location and evaluate whether or not their presence at the location is useful or necessary.
- Remove unnecessary items as soon as possible. Place those that cannot be removed immediately in a 'red tag area' so that they are easy to remove later on.
- Keep the working floor clear of materials except for those that are in use to production

2. Set in order (Seiton)

2S – simple floor marking. Seiton is putting all necessary items in the optimal place for fulfilling their function in the workplace.

Goal:

Make the workflow smooth and easy.

Implementation:

- Arrange work stations in such a way that all tooling / equipment is in close proximity, in an easy to reach spot and in a logical order adapted to the work performed. Place components according to their uses, with the frequently used components being nearest to the workplace.
- Arrange all necessary items so that they can be easily selected for use. Make it easy to find and pick up necessary items.
- Assign fixed locations for items. Use clear labels, marks or hints so that items are easy to return to the correct location and so that it is easy to spot missing items.

3. Shine (Seiso)

3S – cleanliness point with cleaning tools and resources. Seiso is sweeping or cleaning and inspecting the workplace, tools and machinery on a regular basis.

Goals:

- Prevent deterioration.
- Keep the workplace safe and easy to work in.
- Keep the workplace clean and pleasing to work in.
- When in place, anyone not familiar to the environment must be able to detect any problems within 50 feet in 5 sec.

Implementation:

- Clean the workplace and equipment on a daily basis, or at another appropriate (high frequency)
- cleaning interval.
- Inspect the workplace and equipment while cleaning.

4. Standardize (Seiketsu)

Seiketsu is to standardize the processes used to sort, order and clean the workplace.

Goal:

Establish procedures and schedules to ensure the repetition of the first three ‘S’ practices.

Implementation:

- Develop a work structure that will support the new practices and make it part of the daily routine.
- Ensure everyone knows their responsibilities of performing the sorting, organizing and cleaning.

- Use photos and visual controls to help keep everything as it should be.
- Review the status of 5S implementation regularly using audit checklists.

5. Sustain/Self-discipline (Shitsuke)

Shitsuke or sustain the developed processes by self-discipline of the workers. Also translates as "do without being told".

Goal:

Ensure that the 5S approach is followed.

Implementation:

- Organize training sessions.
- Perform regular audits to ensure that all defined standards are being implemented and followed.
- Implement improvements whenever possible. Worker inputs can be very valuable for identifying improvements.
- When issues arise, identify their cause and implement the changes necessary to avoid recurrence.

Integrated Management System

Integrated Management System (IMS): Integrates all of an organization's systems and processes in to one complete framework, enabling an organization to work as a single unit with unified objectives. It is combination of international Quality Management System, Environment Management system & Occupational Health & Safety management System. An Integrated Management System (IMS) integrates all of an organization's systems and processes in to one complete framework, enabling an organization to work as a single unit with unified objectives. A quality team is concerned with the QMS, often an EHS manager handles both Environmental and Health and Safety issues, etc.

QMS – Quality Management System

A quality management system (QMS) is a set of policies, processes and procedures required for planning and execution (production, development, service) in the core business area of an organization. (i.e. areas that can impact the organization's ability to meet customer requirements.) ISO 9001:2015 is an example of a Quality Management System.

1. ISO 9001 Quality Management Systems
2. AS9100 Aerospace and Defence
3. ISO 13485 Medical Devices
4. IATF 16949 Automotive

EMS – Environmental Management System

An Environmental Management System (EMS) determines and continuously improves an organizations' environmental position and performance.

1. ISO 14001 Environmental Management Systems

SMS – Safety Management System

An OHSMS determines and continually improves an organizations Health and Safety position and performance. It follows an outline and is managed like any other facet of a business, such as with marketing or engineering functions.

ISO 45001 Occupational Health and Safety Management Systems

EnMS – Energy Management System

An EnMS determines and continually improves and organizations' energy usage and impact.

1. ISO 50001 Energy Management System

FSMS – Food Safety Management System

A Food Safety Management System confirms that corporations in the food industry follow certain procedures and guidelines to ensure their products for customer safety.

1. FSSC 22000 Food Safety Certification
2. ISO 22000

ISMS – Information Security Management System

An Information Security Management System determines how your organization should organize and manage its information security.

ISO 27000 Internet Security Management System

Safety

Personal Protective Equipment

Personal Protective Equipment (PPE) is anything that is used to protect the human body from the dangers of hazards. PPE is used to protect a person's eyes, face, ears, head, extremities, respiratory system, and other parts of his or her body. Statistics and other data show that failure to use PPE is a leading cause of accidents.

Every employee and student are responsible for using PPE whenever a task or job requires it. Supervisors and Departmental Safety Coordinators are responsible for making sure that PPE is available and in good working condition. Whenever necessary, departments are required to provide PPE to its employees and students.

Departmental supervisors must ensure that all employees and students know how to use PPE properly. Whenever an employee or student provides their own PPE, then supervisors are responsible for inspecting it and assuring its adequacy and sanitation.

Importance of industrial safety

The danger of life of human being is increasing with advancement of scientific development in different fields. The importance of industrial safety was realized because every millions of industrial accidents occur which result in either death or in temporary disablement or permanent disablement of employees and involve large amount of losses resulting from danger to property, wasted man hours and wasted hours.

More ever, from managerial perspective the importance of industrial safety in any organization may be concluded by following facilitation:

- **Treatment:** industrial safety management provides treatment for injuries and illness at the work place
- **Medical Examination:** it carries out medical examination of staff joining the organization or returning to work after sickness or accident
- Hazards identification.
- Provision of protective devices.
- **Consultancy:** it provides medical advised on other condition potentially affecting health.
- **Education:** it provides safety and health training.

Objectives of industrial safety:

- To prevent accidents in the plant by reducing the hazard to minimum.
- To eliminate accident caused work stoppage and lost production
- To achieve lower workmen's compensation, insurance rates and reduce
- All other direct and indirect costs of accidents
- To prevent loss of life, permanent disability and the loss of income of Worker by eliminating causes of accidents.
- To educate all members of the organization in continuous state of safety
- Mindless and to make supervision competent and intensely safety needed.

A safety programmed includes mainly following four E's.

- **Engineering:** i.e. safety at the design, equipment installation stage.
- **Education:** i.e. education of employees in safe practices.
- **Enlistment:** it concerns the attitude of the employees and management towards the programmed and its purpose. it is necessary to arouse the interest of employees in accident prevention and safety consciousness.
- **Encouragement:** i.e. to enforce adherence to safe rules and practices.