

Concept of 5S and its application, housekeeping and safety

Objectives: At the end of this lesson you shall be able to

- explain 5s concept and its application
- define workshop safety
- define housekeeping and explain its importance.

5S for workplace organization

5S is a systematic approach to workplace organization. This 5S concept quality parameters of workplace organization methodology uses a list of five Japanese words which are;

Seiri, Seiton, Seiso, Seiketsu, and Shitsuke.

Translated in English, they all start with the letter 'S'.

The list describes how items are;

Sorted, Stabilized, Systematically cleaned, Standardized, and Sustained.

5S is the brainchild of Hiroyuki Hirano of Japan, is widely considered as being the basis for Lean Manufacturing as it is concerned with stability and standardization to bring about improved safety, quality, delivery performance and cost control.

Lean Manufacturing is a methodology derived from the Toyota Production System (TPS) which originated in post World War II.

The fundamental principle of TPS is to increase productivity and generate product flow through the value stream by a disciplined and focused effort on eliminating waste.

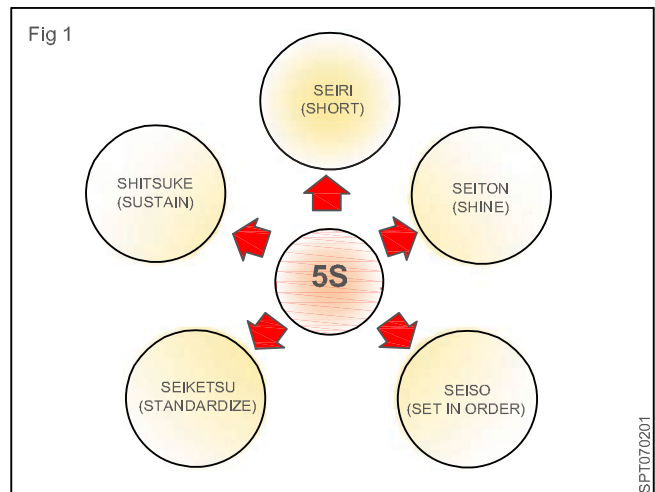
The foundation for TPS is stability, i.e. minimal process variation, this being achieved by standardization of work practices.

The 5S Quality Parameters are

- 1 Sort (Seiri) -
sort out what is needed and get rid of what isn't
- 2 Set (Seiton) -
a place for everything and everything in its place
- 3 Shine (Seiso) -
clean and maintain so always looks like new
- 4 Standardise (Seiketsu) -
make it the standard and follow discipline

5 Sustain (Shitsuke) -

Audit the system and improve it



Workshop Safety and Causes of Accidents

Trainees are required to work on machines, which are power-driven and runs at a high speed. While working on such a machine there is a possibility of accidents.

There are various causes for accident like ignorance, carelessness, fatigue, improper clothing, etc. So an instructor must take all steps possible to see that accident do not occur. If trainees are made to work in an atmosphere, which is unsafe, their performance will not be good and they always have the fear of accident.

Hence safety is a very important factor in a training workshop.

Common causes of accident in an industrial workshop are generally presumed as:

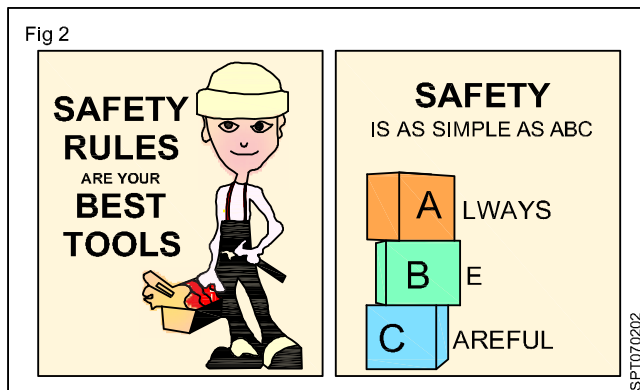
- Human causes;
- Machinery Causes; and
- Other types of causes.

Safety is an important factor which has to be given importance while preparing workshop layout. Accidents can be avoided by

- Providing sufficient knowledge of the workshop safety the training.

- By creating an atmosphere where people work and feel safe.

Along with the heavy machinery a poster containing important safety precautions can be displayed. Fire extinguisher, first aid box must be kept in a proper place.



Safety Slogans:

Whether you are at work, or at home or at play, safety should always be in the front of our minds. Following are few safety slogans which you can remember:

- "A casual attitude towards safety = CASUALTY"
- "Accidents hurt - Safety doesn't."
- "A wound neglected is a wound infected"
- "Do your work with pride, put safety in every stride."
- "Don't be a fool, use the proper tool."
- "Safety starts with 'S' but begins with 'U'!"

Housekeeping

Importance of Good Housekeeping

People can live in any kind of environment but for a decent environment it is important to follow a habit of 'good housekeeping'. In the same way training can be imparted under any conditions. But when the training is imparted in an environment, which creates better students, then teaching will be effective. Hence it is the responsibility of an instructor imparting training to create a positive atmosphere for learning. This is possible only when the trainer adopts the principle of good housekeeping. Good housekeeping is creating a favorite environment and providing sufficient facilities for positive and active learning. Someone in a house arranges the furniture and other items of a house properly and are accessed easily when they are required, then we can say the person has very good knowledge of housekeeping. So good housekeeping means proper placement of everything in proper way.



Elements of Good Housekeeping

Cleanliness:

The first and foremost thing of housekeeping, which has to be taken care is cleanliness. If the place of work or the place where the training is imparted is untidy trainees will not have interest to undergo training in such environment.

Maintenance of Floor:

Floor must be maintained properly. It must be free from oil, grease, water and other slippery things. Floor level must be uniform so that it will not be difficult for fixing machines and also for the movement of men and material.

Placing of Machines:

Machinery items must be placed properly. In running condition, the machines should not cause any sort of damage to the person moving around the machine. Care should be taken to see that heavy equipment has proper foundation. Overcrowding in one place to be avoided.

Gangways:

For the movement of men and material proper gangways and storage space should be provided. It should have minimum width as required and should be marked with suitable color (ex. Yellow or white printed lines for walking).

Storage of Materials:

After obtaining the training materials from the stores the instructor has to store in a proper place. Explosives and Inflammable items should be kept at a distance in order to avoid accidents. Storage must be in such a manner that the material should be available for use at a right time.

Scrap and Waste Materials:

It must be collected before disposing it. For metal scraps, enquires must be made to find out if they can be purchased by some agents, which may be useful for them. Waste items must be disposed-off in a proper manner.

Lighting and Ventilation:

Without proper ventilation and lighting it will not be possible for doing any kind of work at the workshop. Lighting can be made available by using tube lights but care should be taken to see that brightness is not too much and it should not be too dull. Natural lighting is always preferred. Proper lighting avoids accidents and enhances the speed of work. Ventilation must be provided by the use of fans and natural ventilators.

Colour Dynamics:

Colour plays important role in workshops. Proper use of colours in work place, equipments are important. Light colours give or create pleasant atmosphere. Ceiling must be in white, walls must be with light colours, machinery equipments normally in olive green. By looking at the colours we can make out what it exactly means. For example: When the red bulb glows it means 'stop' and when the yellow bulb glows it means 'be ready or alert' and when the green bulb glows it means 'proceed or go'.

Fire Extinguishers and First Aid:

As per the Factory's act every institution is required to have fire extinguishers. Students must be trained to use them if fire breaks out. Carbon dioxide is normally used as a fire extinguisher agent. Some other agents used are Carbon tetra chloride, soda acid foam and sand.

Even after taking all kinds of preventive measures there is a possibility of an accident in case of which all the sections must be able to help themselves without waiting for a doctor. There must be a first aid box, which contains all essential materials by which an injured person can be treated immediately.

Teacher must also train the students how to use it when it is needed. It is absolutely necessary to locate the box in a place where pupil can have easy access. Finally it can be said that a training workshop should be designed keeping in view of all the above aspects which will be an ideal place for imparting training.

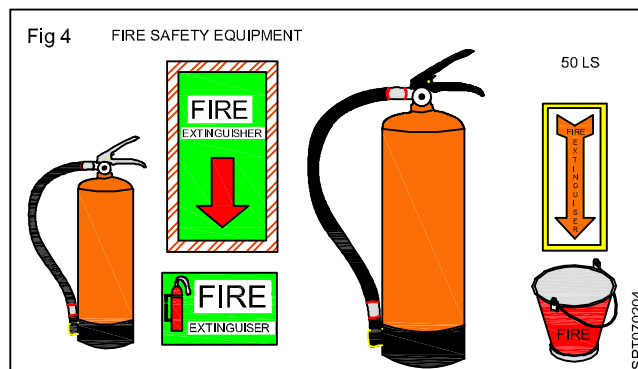
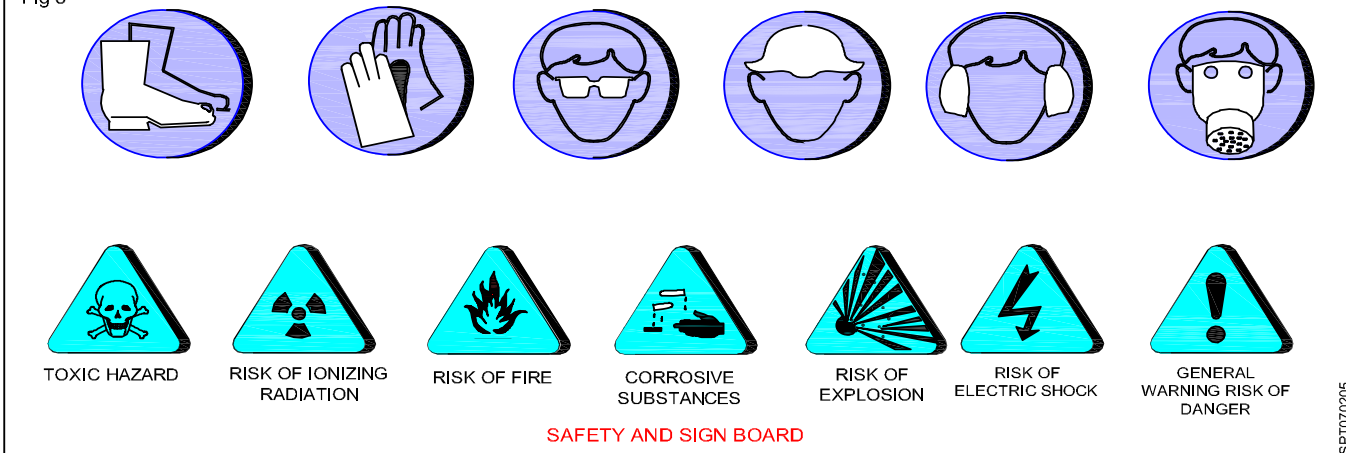


Fig 5



Model Questions

Theory 7.2

- 5 Why 5S is provided?
 - A It is 5 safety slogans
 - B It is for class room management
 - C It is for workplace organisation
 - D It is for first aid
- 6 In the 5S quality parameters of the japanese word seiri refers what in the english language?
 - A Shine
 - B Set
 - C Sort
 - D Sustain
- 7 What is the equivalent in japanese word for shine?
 - A Shitsuke
 - B Seiketsu
 - C Seiso
 - D Section
- 8 Which one of the following is the elements of good house keeping?
 - A Colour dynamics
 - B Shine
 - C Sustain
 - D Sort
- 9 What is the equivalent english work for seiketsu?
 - A Sustain
 - B Shine
 - C Sort
 - D Standardise