

ISO System of Quality Management

The International Organisation for Standardisation (ISO) is represented by association of 91 countries including India. The organization was formed to give more thrust on “Quality System” and well knitted procedures for stringent quality.

The organization is having its headquarters at Geneva, Switzerland and over 5,00,000 organisations worldwide are registered with ISO.

ISO-9001 is a coveted standard not only for the quality of products but also for the systemized planning and management of an organization as a whole.

ISO-9001 registration means the certification of quality systems by third party through the mechanism of registration. This is normally done by accredited independent third party on-site audit of the company’s operation against the requirement of the appropriate standards.

What is ISO-9001:2000 standards?

It is an international Standard against which a company’s Quality Management System(QMS) can be measured, independent of any specific industry or economic sector.

It can also be used as a guide to enhance the company’s existing QMS according to an internationally recognized set of requirements.

ISO9001:2000 system is intended to improve customer satisfaction, reduce the cost of product and improve process efficiency and effectiveness.

It is not a product standard but a Quality system standard. It applies not to product or services but to the process that creates them.

To achieve this generic state, ISO9001:2000 refrains to the greatest extent possible from mandating specific methods, practices and techniques. It emphasizes on Policies, goals and objectives. All of these focus only on one objective that drives any business; meeting customers’ requirements & expectations.

ISO9001:2000 does this by requiring that every business activity affecting quality be conducted in a 3 part never ending cycle of; Planning, Control and Documentation. Hence; Activities affecting quality must be planned to ensure goals, authority and are defined and understood. Activities affecting quality must be **controlled** to ensure that specific requirements at all levels are met, problems are anticipated and averted and corrective actions are planned and carried out.

Activities affecting quality must be **documented** to ensure understanding of quality objectives and methods, smooth interaction within the organization, feedback for the planned cycle and objective evidence of the QMS performance.

PRACTICAL APPLICATION OF THE TOTAL QUALITY MANAGEMENT SYSTEM

The best approach to Total Quality Management System is the adaptation of the ISO9001:2000 quality standards, systems and procedures. The ISO9001:2000 standards are a set of guidelines for developing and demonstrating a *documented* quality system introduced by the International Organisation for Standardisation in 1987 and modified in the year 2000. The International Organisation for Standardisation has its headquarters at Geneva, Switzerland and has a mission to develop industrial standards that facilitate international trade.

STEPS FOR ACHIEVING ISO9001:2000 CERTIFICATION

1. **Documentation** Preparation of Policy, objective, plan and procedure manual.
2. **Implementation** ISO9001:2000 is basically an instruction manual for one's business. It is "Say what you do and do what you say". Implementing ISO means putting it into practice within the organization.
3. **Inspection Audit** When the documents are ready and are implemented throughout the organization, it is time to call the Auditing organization known as the REGISTRAR. Their representatives will inspect documents, do an on-site inspection to verify that the system has been implemented properly and make a report to the REGISTRAR for or against registration.
4. **Registration** When the organisation passes the inspection audit, the company will be registered as an ISO certified organization and enlisted in the registered company directory.

DIFFERENCE BETWEEN ISO SYSTEM AND OTHER QUALITY STANDARDS

Sl. no.	ISO9001:2000	Other Quality Standards
1.	It is not a product quality standard.	Necessarily product quality standard like BIS, FPS, Agmark, Hallmark etc.
2.	It is a Quality Management System standard.	May not have any connection with QMS.
3.	Takes care about Customers' requirements and expectations.	Customer is not the primary focus. Emphasises on conformation to specification.
4.	There is a documented objective & procedure.	May not have any documented objective or procedure.
5.	It is an International standard and enhances global trading.	May not have any international recognition.
6.	The system is generic; i.e. applicable to all organisations.	Applicable to particular type or class of product.

ADVANTAGES OF ISO CERTIFICATION

1. ISO standards are globally accepted in more than seventy countries.
2. It inspires confidence in existing customers and attracts new customers.
3. Optimum utilization of man, machine & materials resulting in higher productivity.
4. Elimination of bottlenecks in production and tension free environment, leading to good human relations.
5. Creation of quality awareness among employees and thus improves company's quality culture.
6. Better product design and improved product or service quality.
7. Creates a philosophy of prevention rather than detection.
8. High level of management confidence helps in taking quick and effective decisions.
9. Reduced price of products & services.
10. Reduced waste.

INDUSTRIAL SAFETY REQUIREMENT & PROCEDURE

EMPLOYER RESPONSIBILITIES

Duties of Employers include to:

- Provide or maintain plant or systems of work that are, so far as is reasonably practicable, safe and without risks to health.
 - Make arrangements for ensuring, so far as is reasonably practicable, safety and the absence of risks to health in connection with the use, handling, storage or transport of plant or substances.
 - Maintain, so far as is reasonably practicable, each workplace under the employer's management and control in a condition that is safe and without risks to health.
 - Provide, so far as is reasonably practicable, adequate facilities for the welfare of workers at any workplace under the management and control of the employer.
 - Provide such information, instruction, training or supervision to workers of the employer as is necessary to enable those persons to perform their work in a way that is safe and without risks to health.
- Management and Supervisors

The following points outline some other Employer responsibilities:

- Providing safety "Induction" training and clear safety rules in the workplace. Under current legislation, an employer cannot penalise or dismiss a worker for reporting an OH&S issue.
- Maintain an injury register. This is compulsory in order to forward claims to the agency with whom the employer has its insurance policy
- Ensure that any safety equipment necessary to perform specific activities is provided e.g. masks, goggles and gloves when using chemicals; hearing protection if using very noisy equipment; protective clothing must be provided in some workplaces.
- Provide for First Aid when there is an accident or illness at work

- To Consult with workers including sharing information about health and safety, giving workers a reasonable opportunity to express their views, and taking those views into account. The best way to consult workers may be to engage in direct discussion as part of everyday work.

WORKER RESPONSIBILITIES :-

Worker have a duty of care under the OH&S Act to:

- Take care for your own health and safety, and that of other people.
- Work in a safe manner by following your Supervisors directions and learning how to use all equipment properly, including obeying all safety signs, following work instructions and wearing any personal protective equipment required.
- Work and use equipment safely and follow any workplace policies, procedures and work instructions. You must not interfere with or misuse any equipment provided for your health and safety and the health and safety of others.
- If you become aware of a hazard or an incident (including near miss) relating to health and safety you should report it to your supervisor immediately.
- Ensure that you are not under the influence of drugs or alcohol while at work and avoid endangering your health and safety and the health and safety of others.
- You must not operate any plant or tools unless trained and authorised to do so. If you are asked to perform tasks or use tools or equipment that you are not trained or qualified inform your supervisor and do not proceed until trained.
- You must not repair or perform maintenance on any plant unless qualified and authorised to do so.
- Assist your supervisor to identify, assess risk and control hazards in the workplace.
- Use any Personal Protective Equipment (PPE) required.
- Keep your work area tidy and remove any hazards.
- Obey traffic rules and demarcation lines.

RISK MANAGEMENT

An employer has moral and legal obligations to provide and maintain a safe and healthy workplace. To effectively manage our business including health and safety in your workplace, it is imperative to identify hazards, assess risks, implement controls and monitor controls.

The terms “hazard identification”, “risk assessment” and “risk control” are commonly used to summarise this systematic approach for managing workplace health and safety.

Definition of a Hazard

A hazard is a source or situation with a potential to cause injury, illness, or damage to property or the environment.

Identify Hazards - any potentially hazardous situations (which may cause injury, illness or disease) in your workplace are to be identified on an ongoing basis before an accident or incident occurs.

The hazard identification process is designed to identify all the possible situations where people may possibly be exposed to injury, illness and disease.

Safety Assessments are required to be conducted in the following circumstances:

- Prior to a new piece of plant or equipment being put into use
- When a new system or work practice is introduced
- When an existing system or work practice is changed
- As part of an incident investigation
- As new information about work practices, substances or plant becomes available
- Compliance with Legislation, Regulations, Codes of Practice, Policies or Procedures.

RISK MANAGEMENT

There are numerous checklists and guidance material available to assist in the identification of various hazards for particular types of work. Once a hazard has been identified and the risks assessed an appropriate control solution can then be implemented.

Assessment of Risks

The purpose of risk assessment is to determine whether there is any likelihood of injury, illness or disease associated with a potentially hazardous situation by considering:

- Whether any person (workers and visitors) would be exposed to the identified situations under all possible scenarios (e.g. during installation, commissioning, erection, operation, inspection, maintenance, repair, service and cleaning of plant)
- What existing measures are in place to protect the health and safety of people who may be exposed.
- How adequate the existing measures are for protecting the health and safety of people who may be exposed.

A matrix is generally used to determine and assign the level of risk according to likelihood and severity of an occurrence.

Implement & Monitor Risk Controls

- If there is any likelihood of an occurrence appropriate risk control measures need to be effectively implemented.
- The primary duty of employers is to eliminate any hazard or reduce the risk as far as reasonably practicable which can be achieved through using the hierarchy of control solutions (see below)
- Once implemented controls should be monitored to ensure their effectiveness.
- Don't just assume it is somebody else's job.
- If safe to do so control the hazard.
- Don't carry out the task until it is made safe
- Report the hazard .
- If the hazard is outside your authority, report the hazard to your supervisor immediately.

HIERARCHY OF CONTROL SOLUTIONS

Eliminate the Hazard

Elimination works by either completely removing a hazard or by removing the hazard which exposes people to risk. Examples of elimination of a Manual Handling hazard may be by redesigning the work area or work flow or the introduction of mechanical systems.

Substitute the Hazard

Substitution involves replacing a hazardous substance, machinery or work process with a non-hazardous or less hazardous one. This may include the use of non- flammable solvents in place of a flammable one or the use of chemicals in a pellet or paste form instead of a powder.

Engineering Controls

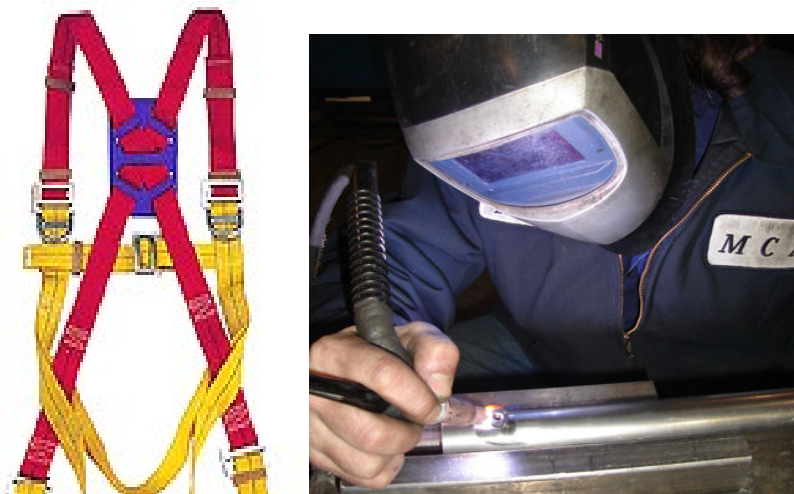
Engineering controls may include modification of tools and equipment or the use of enclosures, guarding, local exhaust ventilation, relocation of plant and automation.

Administrative Controls

Where the hazard can't be controlled through elimination, substitution or engineering processes administrative controls may be used. This includes introducing work practices which reduce risk such as reducing the number of workers exposed, reducing the period of exposure, standard operating procedures\ work instructions, Material Safety Data Sheets, signage, policies and procedures.

Personal Protective Equipment (PPE)

Personal Protective Equipment should only be used where other measures are not practicable. Efforts to remove health and safety risks using higher controls should continue. In general, personal protective clothing and equipment should only be used for short term or emergency procedures or as additional protection when other control measures do not give sufficient exposure control. Where PPE is required to be used the Manager/Supervisor should ensure that it is appropriate for the job, that it fits the operator correctly, that training is provided in its use and that it is cleaned and maintained in accordance to manufacturer's specification.



SLIPS, TRIPS AND FALLS Objectives:-

That workers identify slip, trip and fall hazards and demonstrate a general understanding of minimising and eliminating the risks. That occurrences are reported, recorded and investigated with corrective measures immediately. Slips, Trips and Falls in the workplace are an ever present hazard and can result in far more serious consequences than minor abrasions or bruising.

A slip or fall can cause injury to the arms, legs, back, neck or head. Neck and head injuries can cause damage to the spinal cord and nervous system. Many workers have suffered permanent disabling injuries or death as a result of a fall.

Contributing Factors include--

- Unsuitable footwear
- Floor surface – wet, slippery, obstacles
- Walkway rise – stairs and steps
- Obstructed vision

Solutions to Minimise & Eliminate Slip/Trip Risks

- Shoes – cleated, soft rubber soles and heels with ankle support
- Walking areas clear of obstacles
- Stairways - sturdy handrails
- Sufficient lighting
- Slip resistant mats to risk areas
- Not carrying oversized objects that limit vision
- Not running
- Looking carefully
- Placing safety signs in high risk areas
- Colour highlight raised floor

CHEMICALLY HAZARDOUS SUBSTANCES :-

- Chemicals used in businesses and industry are often toxic, flammable and dangerous to use if they are not handled and stored correctly. The nature of some chemicals can put everyone in the workplace at serious risk of harm.
- Untrained or unsupervised workers mixing or spraying chemicals and other hazardous substances are placing themselves and others at a high risk of injury, which could result in death or permanent disability.
- Chemicals that are designed to kill weeds, insects or fungi can also kill people and can have a significant impact on the environment, as well as workers, contractors, neighbours and anyone who may be passing by during spraying operations.
- Dangers also arise when chemicals and other hazardous substances such as oils, solvents and fuels are not stored correctly (in a locked area), mislabelled or not stored in their original containers, (e.g. in drink bottles).
- If swallowed, these substances can kill someone in a matter of minutes. A thorough knowledge of handling and using chemicals, and basic first aid knowledge are essential.

HAZARDOUS SUBSTANCES

Exposure to Hazardous Substances at Work

The form of a substance affects the way it can enter people's bodies. The three main routes of exposure include;

Breathing (“inhalation”)

Some substances (like dust and fine fibres) stay in your lungs if you breathe them in, others like gases, vapours and dusts/powders, can be absorbed into your bloodstream and carried to other parts of your body. Always wear appropriate PPE when using chemicals and check the types, age and condition of filters in tractor cabs and chemical masks.

Direct contact with skin or eyes

Some chemicals can harm the skin directly, causing burns, irritation, rashes or dermatitis. Some substances can pass right through the skin and enter your bloodstream. If your skin is cut, cracked or dry, substances can pass through into the bloodstream even more easily.

Some substances can seriously burn or irritate your eyes which may happen if liquids splash into your eyes, if you touch your eyes when your fingers have chemicals on them or if a vapour gets into your eyes. If you get chemical in your eyes wash the eyes thoroughly for 15 minutes and seek medical advise.

Swallowing (“ingestion”)

Most people don't swallow harmful chemicals intentionally however you could accidentally swallow them if you eat, drink or smoke after you've been working with chemicals or they are incorrectly labelled.

Dangerous Goods

Don't confuse hazardous substances with dangerous goods – they are classified according to different criteria.

Hazardous substances are classified on the basis of health effects (whether they be immediate or long term), while dangerous goods are classified on the basis of immediate physical or chemical effects, such as fire, explosion, corrosion and poisoning. Dangerous goods can affect property, the environment or people.

Certain areas of the body are far more sensitive to chemicals than others, so make sure you wash all traces of chemicals from your hands before eating, drinking, smoking or using the toilet! ALWAYS wear the correct PPE and wash thoroughly after using chemicals.

ELECTRICAL SAFETY

- Inspect tools and leads regularly, all electrical leads should be tagged. Have worn plugs replaced
- Ensure that portable electrical equipment and leads are connected through an approved Residual Current Device (RCD) or an approved Type safety switch
- Ensure the portable safety switch is tested using the inbuilt test button immediately it is connected to a socket outlet and each day it is used after its connection
- The portable safety switch and all portable appliances must be tested and tagged as per AS/NZ Standards. If the tag is absent or out of date alert your supervisor and remove the equipment

- Faulty appliances and/or leads must be handed to your supervisor. These should be tagged out and removed from service
- Do NOT use double adaptors or piggyback plugs
- All leads to be suspended and not run on floors
- Protect leads passing through doorways
- Keep leads and plugs dry, and out of puddles
- Do not open any electrical (fuse) boxes. If any work needs to be carried out on the fuse box contact your supervisor immediately
- Ensure portable appliances are switched off before removing the plug
- Remove leads from sockets by grasping the plug and not the lead
- Do not use PVC tape to repair worn or damaged leads. Have the cord replaced
- Switch off portable appliances when not in use

Electrical Emergency Procedure

If an appliance fails to operate, trips the safety switch or circuit breaker, smokes or sparks immediately switch it off and unplug it if safe to do so.

Isolate the power and apply a Lockout tag. Advise your supervisor immediately. Do not attempt to fix the problem or operate the appliance until the appliance is repaired and the tag is removed.

ELECTRICAL SAFETY

Isolation/Tag Out Procedures

1. The yellow “Out of Service” tag procedure is used to prevent the unauthorised use of plant and equipment which is considered to be unsafe, operationally defective, unserviceable, or when continued use could result in further damage.
2. The red “Danger” tag is designed to give personal protection to an individual working on a particular task or in a particular area.
3. A machine/equipment or process may be tagged “Danger” BY ANY PERSON who considers it to be unsafe or unfit for continued use.
4. Once tagged the machine/equipment MUST NOT BE OPERATED or used by a person other than those authorised to carry out the required inspection / repair.
5. Failure to obey the tag system will result in disciplinary action commensurate with the severity of the breach.
6. Before placing a tag in position the required details (e.g., the name of the person applying the tag) must be filled out on the tag.
7. The tag must be tied or securely fastened to the machine/equipment on or adjacent to the main positive isolators, valve, control, etc in such a position that it will be clearly visible to anyone attempting to operate or use it. Switches such as push buttons, emergency stops and control switches are not positive isolators and should never be used as such. If any uncertainty exists about the correct switch ask the supervisor to confirm your selection.
8. Where there is a need for multiple switches valves or positive isolators to be isolated a “Danger” tag shall be placed on each one by every individual working on the task.
9. The Supervisor must then be notified of the action taken.
10. The tag must remain attached to the machine/equipment until the defect has been corrected. The “Out of Service” tag can be removed after the supervisor has given permission.